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Conservation performance

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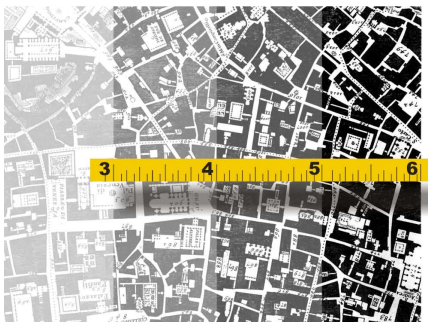

6th INTERNATIONAL SEMINAR ON URBAN CONSERVATION

Measuring Heritage Conservation Performance

Silvio Mendes Zancheti
Katriina Similä

ORGANIZERS

Olinda & Rome
2012

6th International Seminar on Urban Conservation

MEASURING HERITAGE CONSERVATION PERFORMANCE

Organized by Silvio Mendes Zancheti & Katriina Similä

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LATAM

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FOREWORD

ICCROM is an organization created by and for its Member States. For over half a century it has been our constant concern to maintain our relevance and usefulness for heritage institutions and professionals in different parts of the world. It is with this mandate in mind that I take great pleasure in presenting this publication, Measuring Heritage Conservation Performance, hoping it will reach the widest possible public. This volume is the compilation of the work presented at the 6th International Seminar on Urban Conservation organized in Recife, Brazil in March 2011.

In 2008, ICCROM's regional programme for Latin America and the Caribbean LATAM chose the theme of Economic Indicators in Heritage Conservation as one of its areas of collaboration. It was recognized that such a tool was necessary in all fields of heritage, in small archives, national museums or historic towns. The pressure to be accountable, and the lack of language and terminology to talk about what we do in these terms is felt throughout the cultural heritage field. CECI (Centre for Advanced Studies in Integrated Conservation) took the leadership in addressing this issue within the LATAM programme.

The seminar in Recife brought to light at least three important trends. Firstly, there is a substantial amount of work underway on this theme, both in academic and heritage settings. It is encouraging to note that the call for papers for the seminar attracted 120 proposals. Secondly, even if the seminar was organized within the framework of the regional LATAM programme, the papers proposed were from all over the world—confirming that this is an issue of interest not only to the Latin America and the Caribbean, but to colleagues and institutions worldwide. Thirdly, we have come to reconsider the title of our theme. What started out as Economic Indicators, has now matured and widened into Measuring Performance in Conservation, in recognition of the fact that the economics of conservation is only one dimension of accountability and that it is not necessarily a good thing to isolate this dimension from the wider context of social processes.

Measuring and indicating are useful activities to keep track of what we are doing: are we achieving the goals we set ourselves? Equally important is communicating with decision makers and other stakeholders, expressing the essence of our actions in terms understandable to people outside of our specialized field.

The diversity of approaches and the determination to come up and test different ways of measuring performance in conservation represented in these papers are a testimony of the eagerness of the heritage professionals to engage with the society at all levels. I hope sincerely that by making this body of work available we will not only encourage debate and discussion within conservation field, but also inspire engagement and participation of new colleagues from other areas of society, with whom we are willing and eager to join forces so as to build a more sustainable future.

Mounir Bouchenaki
Former Director-General, ICCROM

Measuring Heritage Conservation Performance: the seminar

Introduction

One of the great challenges for institutions and scholars of heritage conservation and protection has been to develop instruments for assessing the performance of the conservation actions of complex assets such as urban sites, cultural territories, landscapes and collections of many types of objects. UNESCO, for example, has been improving its Periodic Reports on the state of conservation of the assets on the World Heritage List in order to make the evaluations more transparent and less subject to distortions caused by technical and political constraints. However, monitoring and evaluation systems remain at an incipient stage; such systems would allow the performance of conservation actions and their impacts to be identified, recorded and assessed in an objective way. There are few conservation monitoring systems in continuous use and they are generally concentrated in developed countries with well-established heritage conservation institutional structures. Costs are generally used as an excuse for not implementing the monitoring systems, but also transparency is not a usual practice in heritage policies around the world.

There are some other difficulties encountered in designing and implementing heritage monitoring systems linked with the state of art of the conservation theory and practice. Ever since the *Burra Charter*, the theory of conservation has been undergoing a paradigm shift that sets the maintenance of significance as the central goal of heritage conservation. In addition to being informed by expert opinion, this change indicates that conservation of complex heritage assets must take into account the opinions of social actors directly involved with the assets (the stakeholders), and by doing so, this introduces cultural relativism and the use of subjectivity as an analytical tool. It is well established in theory that the assessment of the state of conservation of cultural assets is not objective in the positive sense. It depends on the subject that performs the evaluation and the criteria used to define damage or risks to the attributes of objects that convey values. This recognition does not put aside the objective methods for evaluating conservation, but frames them in a contingent structure. In this way, the use of indicators has been suggested as a useful way to construct a monitoring instrument applicable to the different types of complex assets as this permits the performance of conservation actions to be evaluated, as well as the associated public policies relating to conservation including the enhancement of economic value, sustainability and social inclusion.

The 6th International Seminar on Urban Conservation *Measuring Heritage Conservation Performance* addressed these issues by analysing both the theory and practice of evaluation of heritage conservation maintenance and of its impacts, and tried to respond to the following issues:

1) What are the consequences of change in the theoretical paradigm for monitoring and evaluation instruments for complex assets such as urban sites, cultural territories, landscapes and collections of various objects?

2) How can the performance of the conservation of heritage assets be evaluated over time? Can the performance of actions on different assets of the same kind or of different kinds be compared?

3) What lessons are to be learned from the use of indicators in the evaluation of conservation actions? Is it possible to estimate the efficiency and effectiveness of using these instruments for monitoring heritage conservation?

4) Have there been experiences of assessment or of use of conservation indicators that can contribute to the debate and so to the development of the theory and of the monitoring tools?

The response to the challenges posed by the call for papers was quite representative of the interest in the theme of the seminar. More than 120 abstracts were submitted, coming from specialists of academic and practical conservation and the development field from 23 different countries. During the seminar, 33 papers were chosen for presentation and/or inclusion in the proceedings. The Executive Committee of the seminar asked Isabel Villaseñor and Valerie Magar to prepare a position paper that would introduce the theme of the seminar to the participants and the authors of the papers.

This book gathers all papers selected for the 6th International Seminar on Urban Conservation. The papers were organized according to six subthemes for evaluation of conservation performance: identification and inventories; assessment and evaluation; economics and development; monitoring and measurements; participation and inclusivity; and indicators.

The 6th International Seminar on Urban Conservation was part of the activities of the LATAM Programme of ICCROM. It was held in Recife during the period of 29 - 31 March, 2011. It was jointly organized by the Centre for Advanced Studies in Integrated Conservation (CECI) and the Graduated Program on Urban Development of the Federal University of Pernambuco (MDU/UFPE), with the participation of the Brazilian National Institute of Historic and Artistic Heritage (IPHAN) and the Joaquim Nabuco Foundation (FUNDAJ). It received financial support from the following Brazilian institutions: *Conselho Nacional de Desenvolvimento Científico e Tecnológico* (CNPq), the *Coordenação de Aperfeiçoamento de Pessoal de Nível Superior* (CAPES) and the *Fundação de Amparo à Ciência e Tecnologia do Estado de Pernambuco* (FACEPE).

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Assessing the performance of conservation activities

Isabel Villaseñor Alonso[1] & Valerie Magar Meurs[2]

Abstract

The assessment of conservation activities is a growing field of research, which is the result of three different types of concerns. Firstly, conservation professionals are asking themselves, from a purely ethical and professional point of view, how successful their actions and activities have been. Secondly, this tendency is the result of pressing funding needs that have prompted conservators and heritage professionals to find ways to demonstrate the effectiveness of conservation in order to justify expenditure or request further funding. Finally, this concern has also been promoted by the necessity to engage with wider audiences through the use of adequate and convincing data, as well as a means of getting more public recognition and support. The paper does not aim at generating a specific methodological tool for the assessment of conservation practice. Rather, it aims at reviewing the various theoretical perspectives that have been proposed for the evaluation of the performance of conservation, as well as the various indicators that have been used or could be used for assessing both the positive and negative impacts of conservation activities. The paper reviews indicators and methodologies used by other fields of research in order to explore their applicability for the evaluation of conservation actions.

Keywords: value assessment, heritage performance, indicators

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Introduction

The need to assess conservation activities is a growing field of research, which is the result of three different types of concerns. Firstly, conservation professionals are asking themselves, from a purely ethical and professional point of view, how successful their actions have been. Secondly, pressing funding needs have prompted conservators and heritage professionals to find ways to demonstrate the usefulness and effectiveness of conservation in order to request funding. Finally, this concern has also been promoted by the necessity of conservation agencies and organizations to engage with wider audiences through the use of adequate and convincing data, as well as a means of getting more public recognition and support.

This paper does not aim at generating a specific methodological tool for the assessment of conservation practice. Rather, it aims at reviewing the various theoretical perspectives that have been proposed for the evaluation of the performance of conservation activities, as well as the various indicators that have been used or could be used for assessing both their positive and negative impacts. This paper also reviews indicators and methodologies used by other fields of research in order to explore their applicability for the evaluation of conservation actions.

1. Definitions and values of cultural heritage

Before evaluating the performance of any activity, it is necessary to define the criteria under which it is being evaluated, which necessarily requires defining the aims and objectives of such activity, as well as the theoretical discussions that underpin those aims. Any assessment of conservation activities requires therefore an explicit statement of what the aims and objectives are, as well as the motives and reasons that justify those aims. These discussions may seem unnecessary but they are in fact crucial because definitions of cultural heritage vary broadly across countries and cultural areas. Cultural heritage is also entailed with a variety of values and therefore the objectives of conservation activities are radically different depending on the cultural area and the types of projects.

This paper considers inclusive and broad perspectives for the definition of cultural heritage and for establishing the objectives of conservation practice. For this reason, international conventions and charters are reviewed, as they constitute the synthesis of worldwide discussions about cultural heritage and conservation.

The definition of cultural heritage has been expanding over the last decades. It is now considered that cultural heritage encompasses monuments, groups

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of buildings and sites with cultural and natural values (UNESCO 1972), objects, landscapes and places of cultural significance (ICOMOS Australia, 1999), as well as living and intangible heritage (UNESCO 2003). Although this paper focuses on material (or tangible) cultural heritage, its principles could be used in the future to assess intangible cultural expressions.

2. Further aims of conservation practice

Perhaps the most widely accepted ideas about the aims of conservation are those established by the *Burra Charter* and the UNESCO Conventions, which consider that the primary aim of the profession is the conservation of cultural significance and the values that are entailed in cultural heritage. In this sense, it is widely accepted that the primary aim of conservation practice is to preserve the values attributed to heritage and those aspects that give significance to objects, buildings, sites, landscapes and traditions.

In recent years, however, professionals have questioned the role that conservation of cultural heritage must play in societies. Research carried out by the Getty Conservation Institute (2000, p. 3), for instance, has stressed that heritage conservation is "an integral part of civil society", and that conservation can no longer be an isolated profession with its own distinctive aims, but should reach out to people and have a positive impact on society, including social and economic benefits. British heritage professionals and institutions have also emphasized the role that conservation has in public life, arguing that a further aim of conservation is to have an impact on the social and economic realms of society (Jones and Holden, 2008). That is to say, there is a clear tendency of heritage conservation of shifting attention from cultural heritage to the social agents that confer cultural values to heritage.

Some recent trends have also gone further and considered not only the values placed on cultural heritage and the people involved with it, but also the environmental impacts generated by conservation practice. This is the case of National Trust, United Kingdom's non-governmental body in charge of protecting the country's heritage, which has proposed the *Triple Bottom Line Tool*. This approach draws on sustainability principles and considers the impact that conservation practice has on people, finance and environment (Lithgow and Thackray, 2009). However, it is worth noting that the environmental aspect should not only be seen as something to which negative impacts should be minimized, but it should be regarded as an asset that could also be enhanced, given the fact that cultural and natural values are often closely linked, and natural values are also worthy of conservation, enhancement and responsible management.

Based on the outlined principles, an assessment of conservation activities should consider the preservation of cultural significance as well as a clear understanding of the positive and negative social, economic and environmental impacts that such activities may bring about.

3. Assessing the performance of conservation

In the field of culture and cultural heritage conservation, it has been recognized that indicators need to develop further since otherwise it is impossible to evaluate the success of related programs. After a thorough analysis of the world's situation of culture and development, the World Commission on Culture and Development (1996, pp. 44-53) highlighted the relevance of developing indicators in order to obtain a finer picture of specific situations.

In the field of environmental conservation, an indicator is defined as "a quantitative or qualitative factor or variable that provides a simple and reliable means to measure how well a desired outcome, value or criterion has been achieved or fulfilled" (Schreckenberg *et al.* 2010, p. 29). Indicators are therefore useful for evaluating long-term trends, and informing on planning and policy-making.

Indicators are also useful to encourage public involvement if they are used with a stakeholder approach. In this way, indicators can be used as reliable data to address the interested public before the reformulation of policies (see Figure 1).

Regarding the characteristics of indicators, it has been emphasized that they should be both conceptually-based and simplified in order to be practical (Hubbard, 2009). It is also worth noticing that indicators should always be dictated by the aims of conservation and by the values linked to cultural heritage that we are trying to protect. In this sense it is important to bear in mind that the cultural significance of each place or site is constantly being reformulated due to the changing nature of values (see Zancheti *et al.*, 2009). This implies that indicators need to be constantly reformulated in order to account for the change in cultural significance and the consequent change in the aims of conservation. Therefore, conservation activities should not try to

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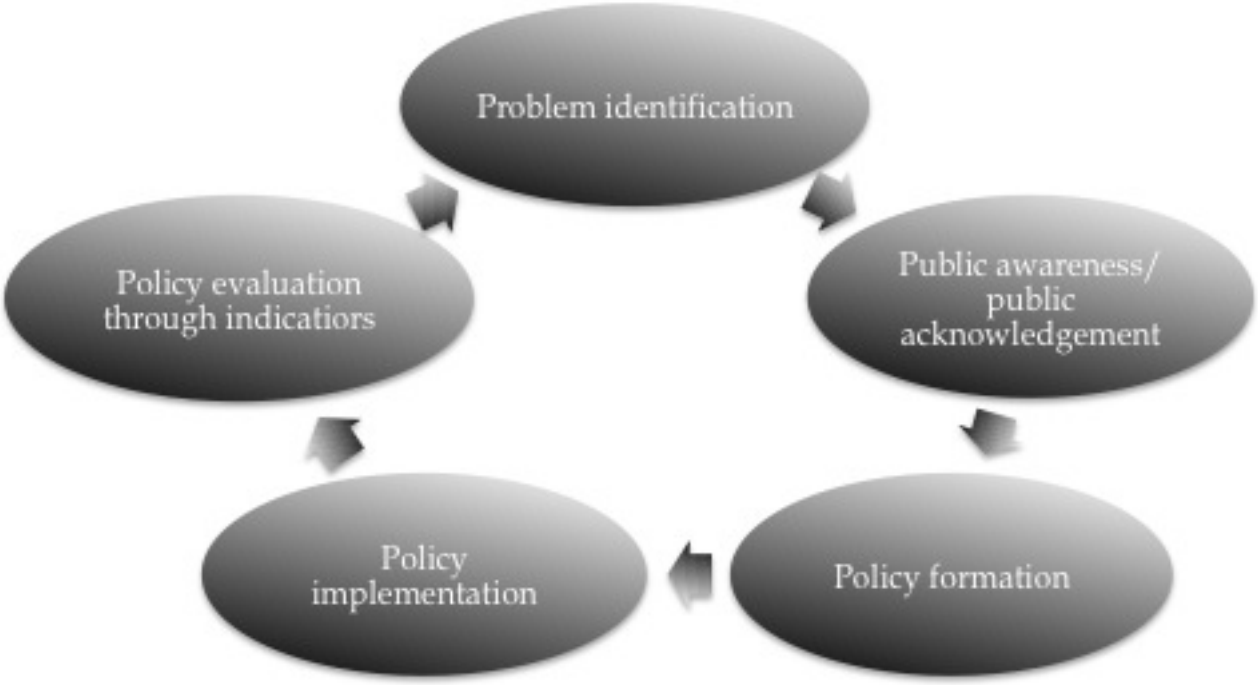

Figure 1. The role of an indicator in policy making (Source: Moldan, 1997, p. 59, cited in Miller, 2001).

meet the desired targets without carefully assessing whether indicators are still applicable.

Traditionally, indicators have been selected by conservation professionals or by national or international agencies. However, in the field of environmental conservation a different approach has been proposed by Fraser *et al*. (2006) and Nazarea *et al*. (1998) whereby indicators are selected by the stakeholders as a means of promoting community empowerment and sustainable environmental management, as well as capturing an accurate picture of the values attached to the natural environment. This approach could also be very useful in assessing the performance of cultural heritage conservation, since evaluation parameters and criteria would reflect the values that stakeholders confer to cultural heritage.

The types of indicators vary widely depending on the aspect that is being assessed. They range from quantifiable, objective and standardized indicators, such as relative humidity ranges for preventive conservation standards, to those qualitative and subjective culturally defined indicators, such as the sense of place related to cultural heritage.

It has been pointed out that the multidimensional and multi-objective nature of conservation demands evaluation techniques that comprise multiple criteria, which may be difficult to capture with a single index (Rostirolla, 1993, p. 136). For these reasons, we believe that it is not possible to standardize a method or define a specific list of indicators for evaluating the performance of conservation in different countries and different kinds of projects. Consequently, this paper aims solely at compiling and analysing the existing literature on the topic, so that it informs on the design of specific evaluation tools that could be developed depending on the scale and characteristics of the projects, as well as on the socio-cultural context in which conservation activities take place.

Four areas of assessment are reviewed in this paper: a) the conservation of cultural significance, including both the fabric and the values ascribed to cultural heritage, b) economic impacts, c) social impacts, and d) environmental impacts. Each of these areas requires different indicators and methodologies of assessment.

4. Assessing the conservation of cultural significance

The cultural significance of heritage comprises both the fabric (materials) and the non-tangible values related to it. An alteration of the constitutive materials, for instance, has an impact on the integrity and authenticity of cultural goods, which are attributes that directly affect the way we perceive and value them. In this sense, it is worth keeping in mind that material and nonmaterial aspects of cultural significance are intricately linked. However, due to the different types of methods that are used to assess the fabric of heritage and those that inform

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on its nonmaterial cultural values, they are reviewed separately.

4.1. Assessing the conservation of the fabric

The assessment and monitoring of conservation processes and materials that aim to preserve the fabric of cultural heritage have been long-standing concerns for conservation practitioners. For this reason, much data have been generated relating to the appropriateness of conservation materials and methods of intervention. It is without any doubt the most developed area of assessment, though it lacks standardized indicators due to the large variety of materials, types of decay and conservation processes to be recorded and monitored.

Some ranks and standards for the 'ideal' or 'optimum' conservation of heritage materials have been defined over time (Alcántara, 2002), with numerous publications indicating the results of very elaborate research mainly focused on museum and archive collections, but systematic approaches for the evaluation and monitoring of processes and methods (and their results) are still incipient (World Heritage Centre / ICCROM, 2002).

It is also worth mentioning that the relevance of conserving the fabric varies across cultures, since some cultures prioritize nonmaterial values over the conservation of the fabric. Perhaps one of the most disseminated examples is the rebuilding practices of Shinto shrines in Japan. In these shrines what is actually maintained is the tradition and construction know-how rather than the material itself, since buildings are demolished and reconstructed every 20 years (Brock-Nannestad, 2000, p. 30; Inaba, 2005) according to the Shinto belief about the renewal of nature. Examples from other parts of the world were clearly shown in ICCROM's Forum on living religious heritage (Stovel *et al.,* 2005).

Due to the degree of development of this area, as well as the variety of materials and conservation processes involved, this aspect is not analysed in detail here. The reader is advised to consult relevant work on remedial and preventive conservation, such as Appelbaum (2007), Matteini and Moles (2003), Roy and Smith (1994) and Adelstein (2004) as well as on monitoring (World Heritage Centre – ICCROM, 2002).

The overall trend is to recommend the use of a combination of identifiable and measurable elements, and accurate documentation techniques, so that evaluations can be repeated over time.

4.2. Assessing the conservation of nonmaterial cultural values

Due to the scientific approach that has characterized conservation practice in the last decades and the consequent predominant emphasis on the material fabric of heritage, assessing the conservation and enhancement of nonmaterial cultural values has often been overlooked. This has also been the result of an approach focusing on monuments and art collections that was developed in Western traditions. In this sense, the *Nara Document* (Lemaire and Stovel, 1994), the *Burra Charter* (ICOMOS Australia, 1999) and the *Convention for the Safeguarding of Intangible Cultural Heritage* (UNESCO, 2003) constitute important theoretical baseline knowledge in the formulation of a wider understanding of cultural heritage and for developing approaches that consider nonmaterial cultural values (Wijesuriya *et al.,* 2006).

The World Heritage Committee and various national heritage institutions have carried out assessments of cultural significance in order to decide whether a particular building, site or landscape can be inscribed on heritage lists, particularly the World Heritage List. In the same way, a common practice in conservation is to formulate a statement of significance that incorporates the values surrounding cultural heritage, and subsequently formulate the conservation proposal based on that statement. Unfortunately, however, conservation projects do not usually carry out these types of assessments after conservation activities take place, assuming that interventions do not change cultural significance and that only the assessment of the fabric is worth documenting, assessing and monitoring after conservation interventions.

Nonetheless, it is clear that conservation activities modify the way we interpret and value objects, landscapes and sites (Lemaire and Stovel, 1994, p. 2; Getty Conservation Institute, 2000, p. 8), and therefore conservation has an important impact on heritage's cultural significance. A clear example is the cleaning of Michelangelo's paintings of the Sistine Chapel at the Vatican. In this case, regardless of whether the cleaning processes did or did not remove original materials, the conservation intervention generated a huge controversy that had a tremendous impact on how the public and art specialists perceive these paintings (see Eliot, 1987; González Tirado, 2010), which modifies the values and the cultural significance attached to them.

The assessment of cultural significance is particularly relevant for living heritage, due to the crucial

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role that cultural values play in this type of heritage. Miura (2005) and Baillie (2006) have already given a striking example in the case of Angkor, Cambodia, where traditional conservation approaches centring on historical and aesthetic values have undermined the living values of this site, causing a negative impact on its spiritual and social values. This is of paramount importance and a very much-overlooked aspect of conservation that requires attention in the formulation of any procedure that aims to assess conservation activities.

Authenticity and integrity constitute aspects of cultural significance that are relevant to assess before and after any intervention, since they may be altered by conservation actions. However, it has been observed that both authenticity and integrity depend on how these notions are understood by the different cultures. This realization has actually had an impact on the widening of UNESCO's definitions (see Lemaire and Stovel, 1994; World Heritage Centre, 2008).

In summary, the conservation of the fabric has been the most developed area of assessment in conservation. Regarding the nonmaterial aspects of cultural significance, although they have been considered in the formulation of statements of significance, the assessment of these values has been much overlooked in the evaluation of conservation activities, since it is largely taken for granted that they are not altered by conservation interventions. This should undoubtedly be reviewed, and recommendations be formulated to address this issue.

5. Assessing economic impacts of conservation activities

Heritage economics is a relatively new field of research that involves many aspects of heritage conservation and economy. There is a growing realization that cultural heritage is worth conserving because it has a capital asset which has been called 'cultural capital' as it constitutes a force for development (Mason *et al.* 1999; Throsby, 1999). In this sense it is worth mentioning that a European Commission survey demonstrated that the cultural sector showed larger economic growth in comparison to other industries that had been traditionally considered as more productive (Giordano, 2007).

There are various postures in considering the different ways in which cultural heritage can be used to promote economic benefits, and they range from the ones that privilege profitability – often undermining other values of cultural heritage – to the ones that have a more balanced approach in which the economic factor is only one aspect amongst many others to be considered. In this sense it is necessary to refer to the *Burra Charter*, in which the concept of compatible use is explained. That is to say, cultural heritage may be used and enjoyed by present generations, although this should not compromise its integrity and its values and should involve "no or minimal change on its cultural significance" (ICOMOS Australia, 1999, p. 3). In this way, and along with the principles of sustainability, cultural heritage should be used and economically exploited in ways that do not damage its values and do not compromise its future use and enjoyment.

Despite the relevance between cultural heritage and economics, a proper discourse to establish a dialogue between heritage professionals and economic instances has not always been developed, partly because conservators and heritage professionals have been more focused on the technical, ethical and educational aspects of their professions.

Additionally, the lack of interest and discussion has partly been the result of specific institutional and working frameworks of conservation practice. For instance, heritage professionals from countries where governmental bodies are in charge of cultural heritage conservation have been less actively involved in economic discussions, since they are hired by national institutions and given allocated financial resources. In contrast, conservators from countries where conservation is in hands of non-governmental bodies have become more aware of the relevance of the economics of conservation and the need to justify their actions to governments and funding bodies. These countries are the ones that have developed methodologies for assessing conservation activities with the aim of obtaining convincing data to request financial resources to funding instances.

5.1. Use values vs. non-use values

Despite these advancements, quantitative assessments of the economics of conservation and restoration of cultural heritage remain elusive due to the complex mix of use and non-use values (Mason, 2005, p. 11). Use values comprise those values that are related to the use of heritage, directly or indirectly, at present or in the future. Examples of use values are tourism, education and research, which may produce jobs or tax revenues. In contrast, non-use values do not involve a direct economic benefit, but represent, for instance, the values of knowing that particular goods exist.

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This duality regarding use and non-use values in the benefits of cultural heritage conservation has influenced the way economic studies are carried out; some studies start with the premise that conservation multiplies the benefits of investments because it provides positive outcomes or externalities, while many others focus on the fact that the generation of use values gives origin to non-use values, such as social values (Mason, 2005, p. 12).

Moreover, in addition to the mixture of use and non-use values, heritage conservation produces private and public benefits. This is in turn related to whether investments are made with public or private funds. In the first case, the aim of public investment is to maximize social welfare, and therefore it is concerned not only with economic benefits but also with public social values. In the case of private funding, the emphasis may be solely on economic terms (Peacock and Rizzo, 2009, p. 137), and the evaluation of the investment's benefits is therefore different. Due to the mixture of use and non-use values, as well as private and public interests, it is not possible to establish a straightforward cost-benefit type of analysis, since monetary investment of conservation activities is not comparable, for instance, with social benefits obtained after conservation activities.

It is worth noticing that depending on the scale and characteristics of conservation projects, specific benefits can be expected. Small-scale rural conservation projects, for instance, have different scopes and economic expectations in comparison with the conservation of historic town centres.

5.2. Methods of assessing economic impacts

Mason (2005) has already reviewed various methods of assessment in conservation projects, including cost-benefit studies, economic impact studies, choice modelling (consumer preferences or non-use values), and regression analysis of multiple variables and their relationship with heritage conservation.

Some of the most often used methods to assess economic benefits have been the 'basic cost studies': in particular, cost-benefit analysis. This type of analysis looks at the incomes and outlays of projects, which aims at assisting decision makers by informing them between investment alternatives. They are usually not concerned with non-use values and care has to be taken as to what costs and benefits are included in the analysis (Rypkema, 1991; cited in Mason, 2005, p. 12). English Heritage's 'Dividend Methodology' (English Heritage, 2005), for instance, is a cost-benefit study that looked at the total amount of money and balanced it against the number of buildings improved, commercial and domestic floor space renovated, number of jobs created and environmental improvements. This study was very useful for repositioning English Heritage and for demonstrating the effectiveness of the institution in regenerating some of the most economically deprived areas in the United Kingdom.

Other methodologies comprise economic impact studies (EIS). These methods assess use values of conservation activities within the context of a specific local or regional economy. They range from quantifying conservation investment and balancing it against money returned to governments in the form of tax revenues (Listokin *et al.,* 2002; cited in Mason, 2005, p. 8) to comparing the numbers of jobs produced by conservation activities to those jobs that would have been produced by construction activities of new buildings (New Jersey Historic Trust, 1998; cited in Mason, 2005, p. 17).

Economic impact studies have reached consensus in the fact that heritage conservation constitutes a good economic investment. In the United States, these types of studies have concluded that investment in conservation does pay off mainly due to tax revenues resulting from those investments, although some of these studies are based on gross assumptions (Mason, 2005, p. 14). Nonetheless, economic impact studies have the disadvantage of being very resource-intensive, requiring considerable amounts of money to carry out the analysis, often with the necessary data being unavailable. A frequent weakness of economic impact studies is the lack of comparison with other investment alternatives, since most of these studies conclude that conservation is a good investment, although with no reference with other options (Mason, 2005, p. 13).

5.3. Cultural tourism, conservation and economic impacts

Without any doubt, the argument that has been more often used in demonstrating the economic benefits of cultural heritage is tourism, which is briefly analysed here because it is sometimes intricately linked with conservation and management projects of cultural heritage. Historic and archaeological sites attract millions of tourists every day from all over the world, which leaves substantial amounts of money in the form of entrance tickets to sites, hotels, restaurants, airlines, etc. Nonetheless, immediate concerns are raised for those familiar with heritage management and conservation. These concerns include the possible environmental implications, and whether

tourism contributes to the conservation of heritage and promotes an adequate socioeconomic development. One important aspect to be considered is the distribution of money brought by tourism, since there are many cases in which the money ends up in few hands, often of foreign origin, instead of being evenly distributed in the local community.

The Centre for Sustainable Destinations of National Geographic has outlined the *Geoturism Charter* (2010), which endorses the principles of the *Global Code of Ethics for Tourism* of the World Tourism Organization (1999), as well as those embodied on the *International Cultural Tourism Charter* (ICOMOS, 1999). The *Geoturism Charter* therefore encourages tourism that sustains and enhances "the geographical character of a place – its environment, culture, aesthetics, heritage, and the well-being of its residents" (2010). The charter encourages the respect for the natural and cultural integrity of places, minimizing impacts and promoting a richer tourist experience.

Indicators for evaluating the sustainability of tourism are still being developed, and often no consensus exists due to the nature of subjective qualitative data, as well as the fact that on occasion the definition of sustainable tourism is not clear-cut. However, the Delphi technique has been used as method for assessing sustainable tourism (Miller, 2001). This technique consists of having a group of specialists who answer questions in two or more rounds. An anonymous summary is provided after each round, which allows the experts to reconsider their own opinion in the light of others', with the aim of achieving comprehensive consensual answers after some rounds.

In summary, the assessment of economic benefits of conservation activities is a complex task due to the mixture of use and non-use values, as well as the public and private benefits. Cost benefit analyses and economic impact studies are the most often used assessment tools, although they usually overlook non-use values. Even though it is not the aim of this paper to analyse cultural tourism, it is necessary to say that the economic benefits of cultural tourism can only be considered positive when the conservation of cultural heritage is not compromised, neither in terms of physical integrity, nor in terms of cultural significance, and when an adequate and sustainable local socioeconomic development is promoted, together with the conservation of the environment.

6. Assessing social impacts of conservation activities

Social indicators are only starting to be developed, and no standardized methodologies exist regarding how to assess social impacts of cultural heritage conservation. Moreover, when assessments do exist, it is often difficult to evaluate the impact of heritage projects because there are no data available for the periods before the start of the project (see RIMISP, 2007, p. 7).

Social impacts and the improvement in people's quality of life have been a frequently overlooked aspect in the evaluation of conservation activities. However, despite these aspects not being formally assessed, numerous projects across the world have shown that the conservation and revalorization of cultural heritage builds on social capital in a variety of ways, which is something that can contribute positively to the sustainable development of communities.

The emphasis on social aspects is paralleled with the development of different theoretical stands in the economics of development, whereby development is understood in much broader terms, including aspects beyond mere economic growth. The United Nations Development Programme (UNDP) considers that human development 'is about people realizing their potential, increasing their choices and enjoying the freedom to lead lives they value' (UNDP, 2010). Specifically about culture, the World Commission on Culture and Development (1996) of UNESCO on its final report, *Our Creative Diversity*, gave further insights on the relationship between culture and development, with the aim of expanding the notion of development.

This social emphasis in some conservation projects is also paralleled with the strand of archaeological practice known as Public Archaeology (see Merriman, 2004), which in turn derives from general stakeholder theory (see Jones, 1995; Scheffran, 2006). This approach makes an emphasis on the active involvement of individuals, taking into account their views and perspectives in decision making processes and sometimes of conservation activities as well. As mentioned below, many conservation projects across the world have resulted in a sustainable development of communities, although this has not been assessed through the use of indicators.

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6.1. Social capital, sense of community and sense of cultural identity

As mentioned above, one aspect that is frequently mentioned in conservation heritage projects is social capital, which is defined as the degree of connectedness between individuals or groups, which give them a variety of benefits and the ability to become more productive (Paxton, 1999, p. 90). Social capital depends mainly on the trust that individuals have on each other, as well as on the association capacity of groups. Both trust and association capacity have been measured by structured interviews with scoring systems, in which individuals are asked questions about their social life and the trust they have in people (Paxton, 1999, pp. 105-107).

The sense of community is also a very frequent aspect cited in conservation and heritage literature, which is described as a very powerful and positive feeling from individuals belonging to a particular social group that can be enhanced through the valorization and enjoyment of cultural heritage. Sense of community has a dramatic effect on people's attitudes and actions, since it positively affects their perception of social relations and their own control and empowerment. Sense of community has also been assessed through structured interviews with questions about how people feel about their communities (Chavis and Wandersman, 1990).

Sense of community is closely related to sense of cultural identity. The latter is a type of collective identity, by which individuals feel, in a self-ascribed way, connected to other individuals who share some cultural characteristics (Ashmore *et al.*, 2004, p. 81). Cultural identity is based on a common cultural heritage that may appeal to ethnic, religious or national values and aspirations. However, we know that heritage and cultural identity may also be a source of conflict when tolerance and cultural diversity are not promoted. For this reason any assessment should also consider the negative social consequences that conservation and the revalorization of cultural heritage may bring about. The sense of cultural identity is generally assessed through questions of self-understanding and self-ascription. It has also been assessed through the use of discourse analysis and content analysis. Discourse analysis is the qualitative interpretative analysis of meaning that is applied to texts, speeches, and social practices in which social actors express themselves (Abdelal *et al.*, 2005, p. 14), which requires deep social knowledge and interpretative skills, as well as familiarity with the cultural discourse. Content analysis is a quantitative assessment of specific meaning codes that are present in texts or speeches (Abdelal *et al.*, 2005, p. 17).

The sense of place is also a potential social benefit obtained with the conservation of cultural heritage. In this respect, English Heritage (2009, p. 13) states that the revalorization of the historic environment has a clear positive impact on the sense of place that people have, which in turn can impact on crime levels, social inclusion and regeneration. Individuals with stronger sense of place, therefore, engage with their communities in a more active way and therefore build on social capital. English Heritage's approach is underpinned by the notion of 'sustainable communities', which aims, among other things, at developing the local economy, encouraging participation of community members and fostering a diverse creative culture with a strong sense of place (English Heritage, 2005, p. 10).

6.2. Positive social impacts: some examples

Some concrete experiences of conservation and heritage projects have shown positive social impacts, albeit without standardized social indicators to demonstrate this success.

In the case of Incallajta, an important archaeological site in Bolivia, involvement of the local community in the excavation and management of the site resulted in the revalorization of the archaeological remains, which propitiated a harmonic and sustainable development of the community based on the strengthening of social bonds (Muñoz Collazos, 2007).

A similar approach has been taken on projects by conservators from the *Coordinación Nacional de Conservación del Patrimonio Cultural* (CNCPC) of Mexico. These projects have a community-based approach that emphasize the active participation of members from rural or small-scale communities, and in fact conservators only intervene when communities have asked for professional assistance (Magar, 2005; Noval Vilar, 2010). This group of conservators consider the members of communities as the legitimate owners of this heritage (Noval Vilar, 2009), in contrast to national discourse and legislation that emphasizes national ownership (Diario Oficial de la Federación, 1972). After conservators have been called by the communities, the first stage is to organize 'reflection workshops' where the values of heritage are discussed and outlined that dictate the conservation processes. These projects aim at developing a sense of common ownership of their

heritage, strengthening their cultural identity and social bonds (Herbert, 2003). The projects have been largely successful not only because they promote conservation of their heritage in a sustainable way, but also because they foster social and economic development of these communities, which are usually impoverished and marginalized, with low schooling indexes and deprived of young men who have migrated elsewhere in search of better income possibilities (Noval Vilar and Schneider, 2005).

In the same way, the archaeological research project carried out at the Huacas of the Northern Coast of Peru focused on the revalorization of cultural heritage, particularly earthen architecture, in order to promote sustainable development through the reinforcement of territorial cultural identity (RIMISP, 2007). The study made a qualitative assessment, with positive results on aspects such as territorial identity, social inclusion, social cohesion and tourism development (RIMISP, 2007, p. 80).

Following these ideas, we know that many conservation activities and other heritage projects have positive social impacts, although the real challenge is to develop and use indicators for the assessment of social benefits because conclusions tend to be based on appreciations. In the same way, the lack of assessment methodologies may result in negative impacts being overlooked.

To sum up, social impacts have been much overlooked in the assessment of conservation activities. Although conservation projects have reported important social benefits, indicators have not been used and possible negative impacts have been neglected. Social sciences and environmental conservation have developed some methodologies for the assessment of social impacts that may be applicable to cultural heritage conservation.

7. Assessing environmental impacts of conservation activities

It is paradoxical to think that despite the fact that environmental ethics have informed and inspired much of the ethic of cultural heritage conservation, very little interest has been taken in conservation activities to pro-actively protect the natural environment.

The environmental implications of cultural heritage conservation actions – as in any kind of human activity – are becoming increasingly relevant in the light of abundant evidence that shows the degradation of the physical environment and the depletion of the world's natural resources. More recently, scientific evidence has also shown that human-produced greenhouse gas emissions have had a strong impact on climate change, which is becoming an idea widely accepted by policy makers worldwide. However, attitudes towards the care of the environment differ widely across countries; this is the result of varying cultural conceptions of nature as well as different levels of public awareness and degrees to which environmental issues are incorporated in public policies and discourse.

In addition to concern about minimizing the impact of conservation activities on the natural environment, there is a need to preserve and enhance the natural character of sites that possess both cultural and natural significance. In this sense, the environment is an essential aspect of sites with mixed values and something that is worth using and enjoying as well as conserving for future generations.

Another cause for concern, which has led to a more focused attention on the environment, is the impact of climate change in heritage conservation concomitant with the documented increase in natural disasters.

7.1. Assessing natural values

Regarding the determination of natural values of sites and landscapes, the criteria of UNESCO (2010) may be used not only for selecting the most outstanding examples of natural sites, but also for pinpointing the presence of natural values. These criteria include the natural beauty of a place, its relevance for representing the earth's history, or the existence of habitats that are important for preserving biological diversity.

In addition, statements of natural significance can be obtained by consulting stakeholders, in the same way that statements of cultural significance are obtained. A specific methodology for capturing the perception of individuals about their natural landscape is the method known as 'thematic appreciation'. This technique examines the stories narrated by individuals when they observe pictures of their natural landscape (Nazarea *et al.*, 1998), which may be used for identifying subjective values attached to the natural heritage, as well as for monitoring changes in the perception of those values.

7.2. Assessing negative environmental impacts

Regarding the negative environmental impacts of conservation, greenhouse emissions are probably one of the most important consequences to consider.

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Air travel in particular can contribute enormous amounts of greenhouse gases that are pumped into the atmosphere, something that is often intentionally or unintentionally overlooked. A round-trip economy class flight from New York to Shanghai, for instance, contributes 2,000 kg of CO_2 (International Civil Aviation Organization, 2010). Air travel should therefore be considered in all conservation activities, including human and materials transportation for conservation projects, meetings, seminars and training courses. A number of methods to calculate carbon emissions have been created (see Carbon Footprint, 2010; The Nature Conservancy, 2010), which could be easily incorporated into integrated methodologies for measuring the results of conservation actions.

Preventive conservation of collections may also be very demanding in terms of the energy required for environmental control, especially air conditioning, which produces large carbon emissions. Measurements of energy bills should therefore be monitored and targets regarding the efficiency and possible reduction of energy use should be established. In recent years, a special focus has been given to developing sustainable approaches for the control of environmental conditions within museums, particularly by looking at the possibilities offered by traditional building techniques (Toledo, 2006).

In addition to the emission of greenhouse gases, there are many conservation materials and process that can have a considerable negative impact on the environment. They include the use and discard of solvents and other toxic substances such as biocides, adhesives and consolidants, as well as the discard of various types of solid waste such as packaging material used in collections, and rubble produced by architectural restoration. Some indicators for such impacts may be found in Hammond *et al.* (1995, p. 20).

7.3. An example of environmentally-aware methodology

One of the few methodologies that considers environmental impacts as criteria for evaluation is the National Trust's *Triple Bottom Line Tool*, which aims at assessing the impact that conservation activities have on people, finance and the environment. The theoretical underpinnings of this approach derive from sustainable frameworks, in particular the World Commission on Environment and Development, which defines sustainable development as "development that meets the needs and aspirations of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987, p. 43).

The criteria of the *Triple Bottom Line Tool* include energy and water consumption, as well as waste and carbon footprint. This assessment tool includes not only the impact of building and conservation activities, but also indirect activities such as human and materials transportation related to the projects and the amounts of greenhouse emissions they produce.

In summary, the environmental aspect is also a highly overlooked area of assessment of conservation activities, although some countries have started to incorporate these issues in their evaluation methodologies. It is beyond the scope of this paper to review all the literature of environmental indicators but a good review can be found in Niemi and McDonald (2004).

Conclusions

Due to the fact that definitions and aims of heritage conservation have widened during the last decades, there is a need to develop new approaches and methodologies for assessing the performance of conservation activities. One of the most important tendencies in conservation has been the shifting of attention from cultural heritage to the people that value such heritage.

There is a growing need to evaluate the efficacy of conservation activities. However, indicators and methodologies of assessment are much needed in order to capture the necessary data to monitor the conservation of values entailed in cultural heritage, as well as the economic, social and environmental impacts that conservation activities may produce. Assessments are needed in order to communicate to funding bodies, policy makers and the interested public with sound and convincing data about the possible benefits of conservation. However, it must be stressed that both positive and negative impacts of all aspects involved in conservation practice should be assessed. In this sense, it is emphasized that the aim of assessments should not be to demonstrate the benefits of conservation, but to evaluate the performance of this activity in order to guide future interventions, maximize benefits and avoid negative impacts.

In trying to evaluate the performance of conservation, a comprehensive stance has to be taken in order to avoid overlooking the multidimensional nature of cultural heritage and the material and nonmaterial

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values that stakeholders confer to it. Assessing only a few areas of conservation or making use of restrictive indicators may lead to misleading conclusions about the performance of conservation.

Traditionally, material aspects of conservation activities have been the most privileged area of assessment. In recent years the role of nonmaterial values has been stressed, and therefore it is emphasized that cultural significance assessments should also be carried out after conservation activities, as it has become clear that conservation does in fact have an important impact on this aspect.

The economic benefits of cultural heritage conservation have gained more relevance in the last couple of decades, whereas social benefits and sense of well-being are more recently starting to be explored. However, a largely overlooked aspect of conservation practice is environmental impact, which has not been incorporated in the discourse of mainstream conservation practice but is in urgent need of evaluation.

For the development of evaluation approaches, all of these aspects will require time, with indicators focusing on heritage before, during and after conservation actions or projects, as well as the possibility of replicating the measurements or assessments over time, in order to get reliable and comparable data.

Measuring the performance of conservation activities poses many methodological problems. It involves using radically different indicators, both quantitative and qualitative, which depend on the type of heritage, the type of intervention, and the socio-cultural context in which conservation projects take place. This implies that specific methodologies need to be developed locally, that may only work for certain types of interventions or certain types of projects. Therefore, designing a specific multinational index is not recommended, since it may not be applicable to all countries or situations.

In the future, many methodologies from other fields, especially environmental conservation, may be applicable to cultural heritage conservation. Finally, it will always be important to bear in mind that conservation goals should dictate indicators and not the other way around.

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Conserving and identifying heritage: a methodological contribution

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Abstract

This article sets out a methodology for identifying cultural heritage. It has been compiled by condensing several studies undertaken at the Centre for Advanced Studies in Integrated Conservation (CECI) during the Post-Graduate Program in Urban Development (MDU UFPE). It is held that the identification process is an indispensable activity not only for recognizing cultural assets as heritage of a collectivity of people, but also as a process for generating information from which guardianship of this heritage and the management of its conservation can be defined. In order to meet these conceptual and doctrinal challenges, three experiences of applying the methodology will be adopted as empirical references: the Isthmus of Olinda and Recife, the Saint Peter of the Clerics Courtyard and the towns of Água Branca, Delmiro Gouveia and Olho d'Água do Casado - Alagoas. The article is structured so as to follow an expository thread which enables the reader to understand general assumptions, experiences that have taken place and a detailed explanation of the methodology for identifying heritage to be better understood.

Keywords: Identifying heritage, methodology for identification, historical sites, conservation planning

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Introduction

From the perspective of planning urban conservation, the process of identifying heritage assumes an indispensable role. Besides being fundamental to recognizing cultural assets as the heritage of a collectivity of people, since such recognition also provides them with legal protection, it is also a dimension to be considered in setting up monitoring and evaluation systems. According to Viñas (2003, p. 40), it has to be considered that the contemporary theory of conservation posits that the recognition of the value of heritage can be changeable over time and "it is a conventional value, agreed and granted by a group of people, and this may include, in some cases, by a single person."[1] The identification procedure should also be considered as a moment of assessment to be repeated. Therefore, methodologies of identification gain notoriety because it is at the time that they are applied that they have gathered guideline information in order to define parameters and conservation strategies over time. Further, the shaping, adoption and implementation of a methodology will be an integral part of validating recognition.

Stovel (2004), on addressing the issue, believes that the classification process and the periodic reports of the assets included in the World Heritage List are two sides of the same coin. According to him, the classification process is understood simply as the first phase of data collection, as it provides the base parameters for a future review. The periodic report, in turn, is understood as a second, third or final stage of reviewing the data collected for the classification document.

The quality and reliability of the information collected during the process of identifying heritage assume central importance for designating the evaluation and monitoring instruments. The condition of the asset at the time of its being recognized as heritage, therefore, becomes the raw material and benchmark for constructing the instruments and evaluating the results of conservation, respectively.

Theoretical and applied studies conducted by the Centre for Advanced Studies in Integrated Conservation (CECI), by the team that is a component of the Service for Identifying and Authenticating Cultural heritage (SIAC), enabled a methodology for identifying heritage assets to be drawn up. The objects considered in order to define the methodological steps are material cultural assets, especially historic sites. The development of this methodology begins with the understanding that identifying cultural property requires different modes of knowledge of its built attributes to be adopted.

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The following investigative tools were used: research studies on urban history and oral history, reading of the urban layout and surveying the landscape and urban-architectural areas. These are considered in what falls within knowledge of a material object and, in particular, with regard to the physical-spatial and functional attributes. The application of these axes, taken together, should consider the nature of the asset, the objectives of the study, the products to be presented (book, pamphlet, manual, signage, web page, etc.), alongside the existing human and financial resources.

The methodology presented in this article is based on presenting three experiences undertaken in urban areas and then, the procedures adopted are evaluated. These three projects took place between 2005 and 2008 and were carried out in the cities of Olinda and Recife, in the state of Pernambuco, and Água Branca, Delmiro Gouveia and Olho d'Água do Casado, in the State of Alagoas.

The assembly of this methodology is an important contribution to discussions on instruments for planning conservation in historic areas, the scope of which is to produce information to identify, evaluate and disseminate the values and attributes of a particular item of cultural heritage, i.e. to make it possible to explain the cultural significance of a heritage asset.

1. Identifying cultural assets and experiences undergone

1.1. Isthmus of Olinda-Recife: history, identity and memory

The study concerning the 'Isthmus of Olinda-Recife: history, identity and memory',[2] was underpinned by historical research and revealed historical and cultural attributes long since forgotten on the isthmus. It included oral history research, used to identify the memory of the place contained in reports and formal statements from experts and residents, and reading of the current natural and built landscapes.

1.2. Historical research and oral history research

The research strategy was concentrated, first and foremost, on the historical survey. This consisted of identifying and recording primary and secondary sources with emphasis being given to iconography and printed material of the age in addition to bibliographies and current photographs. [3] The investigation of these sources was guided by splitting long-term historical time into two periods: the first refers to the period from the 16th to the 19th centuries[4] and the second to the 20th and 21st centuries.

The survey of the historical sources was conducted in libraries and archives in the cities of Olinda and Recife. The recording and cataloguing of the documentary sources followed a standard catalogue card model that enabled the records to be collected speedily and uniformly. The cards were organized by theme and consist of a printed catalogue for internal consultation by the researchers.

The iconographic records were divided into maps, photographs and lithographs.[5] A general catalogue of the images, identifying the institution, the author and the bibliographic reference was compiled, and became part of a digital archive.

Research in the cities' documentary and iconographic collection was not the only form of research on the isthmus. The oral reports of those living in the shanties by the isthmus and of Pernambuco intellectuals were also incorporated into the sources, in order to register sketches of such people's memory of and identification with the isthmus. Thus, investigation directed the survey of oral history to two focus groups: Pernambuco intellectuals; and residents of the shanties known as Maruim Island and the Slum of Milagres, which lie next to the isthmus. The first focus group consisted of three scholars: the architect and historian Jose Luis da Mota Menezes and the journalist and historian Leonardo Dantas, who are knowledgeable about the history and culture of Pernambuco, and the archaeologist Ana Nascimento, project coordinator of the archaeological excavations on the Isthmus of Olinda and Recife. The second group consisted of three elderly residents of the area.

The interviews were guided by induction, utilizing questions and informal conversations, in line with the possibilities offered by each focus group. In the group of experts, the conversation was guided by topics, which then guided the drawing up of ten questions to form a questionnaire. It was applied; the statements were recorded, transcribed and interpreted.

The oral record of the group of shanty residents differed from the technique used with the experts. We did not build a questionnaire in order to avoid provoking inhibition and negative reactions from the respondents. An identification card was drafted with the interviewee's personal data, and contained the following variables: age, place and social group. In order to use the recorder, the interviewee's consent was first sought. The recording of the statements

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took place during informal conversations and questions about the place, which led to their recalling the facts by using keywords of common concern to their daily lives. The oral statements were transcribed into a digital base such that they form an archive on the Isthmus of Olinda and Recife.

1.3. The reading of the urban layout

The reading of the urban layout followed the elements of its urban-environmental structure: physical structure and active structure. To this end, we used the Unibase of Recife and Olinda and current photographs. The reading was conducted, after defining the study area, over five visits to the following locations: the isthmus itself, Maruim Island, the port of Recife and the city of Olinda, which enabled us to locate the isthmus in relation to the cities of Olinda and Recife and its access points and to define seven landscapes or environmental units and make a formal characterization of each of these landscapes. The visits were structured prior to their being made in accordance with each of the surveys. The information collected was recorded on maps and field cards.

1.4. Interpretation of the documentary historical sources

Having organized the documentary sources, we proceeded to match these up and check the consistency of the information, as well as interpreting this material.

The official primary sources, such as engineers' reports, were analyzed in line with the technical language used, their criteria for value and the progressive discourse that permeated engineers' plans in the late 19th and early 20th centuries. Thus, the language, values, and discourse were also elements of analysing consistency of the newspapers of the age, travel and war diaries, folklore and poetry in addition to legislation on protection, all of which described the isthmus as being at the heart or its specific historical context.

The consistency of the secondary sources was verified as per the research focus and by identifying inconsistencies in relation to the history of the isthmus. The fortifications built there during the Dutch occupation, for example, contain elements for discussion and unproven information according to some authors. Therefore, works that showed dubious information were dispensed with so as to proceed towards another important step: comparing different sources that had been researched.

Comparing the sources represented one of the main stages of the research, this being the time to raise hypotheses and to establish key themes about the inflections of history and the meanings acquired by the isthmus over the centuries. In this phase, all the different kinds of historical sources were contextualized and compared in order to check the multiple ways of understanding the place.

It should be noted that the landscapes and the isthmus seen from Olinda and from Recife as well as the statements of the residents and the experts shape a significant part of how to identify the place, how it is remembered and what its unique features are.

Having identified the asset, and having confirmed its authenticity and integrity, the project moved on to producing the website using a web design team which was different from the team that conducted the studies. Thus, adjustments were made and complementary text and iconography added to the media and information language.[6]

1.5. Advertising the Saint Peter of the Clerics Courtyard[7] in Recife as a tourist attraction

The urban and architectural complex called 'The Saint Peter of the Clerics Courtyard', an asset listed by Iphan, comprises the Church of Saint Peter of the Clerics and the houses surrounding it. Besides the beauty that results from the contrast formed between the richness of the church and the simplicity of the surrounding buildings, the whole unit displays great urban unity and is one of the most complete in the neighbourhood of Santo Antônio. The Saint Peter of the Clerics Courtyard also bears witness the diversity of Pernambuco's traditional popular manifestations, having been classified by Gilberto Freyre as the place which is the "most Recife-like in Recife". However, despite having these attributes, the courtyard has been undergoing a process of being forgotten about and becoming degraded, which goes straight back to the state of conservation of its assets, which have fallen into disrepair.

Given this situation, the project 'Promotion of Tourism in the Saint Peter of the Clerics Courtyard in Recife'[8] was carried out in order to advertize the place as a tourist attraction. One of its products is the website 'Saint Peter Courtyard: Popular Tradition and Tourism in Pernamco'.[9]

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1.6. The construction of the site: content and form

The creation of the website followed a logic of construction based on historical interpretation, morphological interpretation, and the interpretation of the traditional popular manifestations of the site, held in interaction with the local community. The methodology adopted involved the local community in the decisions to be taken, ranging from the design of material containing information to the formatting of the final product. To do this, the CECI technical team endeavoured to raise awareness among the various social actors present (religious bodies, residents, owners of bars and restaurants, city managers) of the relevance of the historical and artistic value attributed to the site by calling attention to its cultural significance and the importance of the role of the community as a 'guardian of heritage'.

The stages of the work consisted of: identifying the place, defining the themes, analysing the relationship of the community with the history of the site and the construction of the narrative; these sometimes took place simultaneously.

1.7. The historical interpretation

Saint Peter of the Clerics Courtyard is considered one of the most expressive architectural and urban groupings of Baroque culture in Pernambuco, in which the importance of the Church of Saint Peter of the Clerics stands out. The church, with its traces of Baroque, and the houses surrounding it have been the subject of numerous studies in the field of the history of art and architecture. These have given high value to this religious monument and the architectural grouping, and have categorized it as a national historical and artistic heritage asset. Saint Peter of the Clerics Courtyard keeps, in its urban configuration, traces of Dutch Baroque, which had a profound impact on the history of Recife. Archaeological studies carried out in the late 1990s showed that an aspect of the layout of the group of houses of the courtyard was part of the so-called City Maurícia or 'Mauritiopolis', designed and constructed during the government of Maurice of Nassau (1637-1644).

1.8. The morphological interpretation

The urban and architectural grouping of the Saint Peter of the Clerics Courtyard consists of the Church of Saint Peter, the courtyard and 63 buildings that surround the four sides of the church. The buildings surrounding the church are mostly single-story houses, but include three two-storey town houses (*sobrados*) and twelve one-story town houses. The greatest incidence of townhouses in the courtyard is in the block opposite the church façade, thus creating a dialogue between the voluminous buildings in the tall category. The townhouses, in general, stand out because of their height, which is different from the rest, and the fine decorative work on their façades; these are the most ornate, with friezes, entablatures, balconies and a large number of spans.

The ground-level houses are traditional two-door vernacular buildings, twinned on either side, with mortar façades, except for a few buildings that are covered in ceramic and brick tiles. The doors and windows of the ground-level houses have straight or shallow arched lintels, one feature being stone or mortar frames. Most of the roofs are covered with ceramic channel tiles, of the gutter and spout type, and their ridges are parallel to the street, i.e. parallel to the sides of the church. Almost all roofs are partially hidden by the parapets that rise from the façades and create gutters for rainwater runoff.

The urban design and the built grouping still maintain a good level of completeness, which make it a site of great value as it recalls the past so well, though its uses have been greatly modified since the late 1960s.

1.9. The interpretation of popular and artistic manifestations today

Saint Peter of the Clerics Courtyard has been the stage for various traditional popular manifestations. In order to make an interpretation of the current culture regarding the courtyard, knowledge needs to be gained of the main cultural events that take place on the site. This includes shows that present traditional and popular songs and dances, whether sacred or profane; displays of art and a wide range of gastronomical options; institutions that do their business; and the character and types of services offered. Research on these cultural expressions was conducted in various registries in the city, and a large number of hard copy references and items of iconography were found.

In the Saint Peter Courtyard there are three institutions of relevance to culture: the Casa do Carnaval, the Aloizío Magalhães Museum of Modern Art and the Training Centre for Visual Arts. The first works with popular culture and the others with the contemporary development of the visual arts by organizing exhibitions and performances.

The documentary searches carried out to interpret current culture were supplemented by statements

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gathered from interviews with people who have been linked to the Saint Peter of the Clerics Courtyard for many years; people who have lived, worked or frequented the place and noted how it has changed over time. More than just the length of time spent in the courtyard, there is the feeling of belonging to the place that has, in fact, turned them into 'mistresses of the house', or the 'hosts of the courtyard'. The record of active effects has led to an oral memory database having been compiled for the site, something that will be of extreme importance for future research on the courtyard.

1.10. The community's participation

In parallel with the morphological and historical research, three educational and decision-making workshops were held in which the community and government authorities took part. It could be seen, based on the contact with the owners and tenants of Saint Peter of the Clerics Courtyard properties, that the best remembered aspect of its history for them was that of its bohemian years, which began in the 1960s. Themes that sprang out from the research undertaken included religious occasions, the black presence, vestiges of Dutch urbanism, the Portuguese occupation and the artistic wealth of the Baroque, which were not sufficiently known by the community, who were surprised by the relevance of the values found in the place where they live.

1.11. The towns of Água Branca, Delmiro Gouveia and Olho d'Água do Casado - Alagoas

The third experience we have had and the one which guided the construction of the methodology presented here was based on the project 'Identifying the Cultural Assets in the Towns of Água Branca, Delmiro Gouveia and Olho d'Água do Casado – Alagoas'.[10] The aim of this investigation was to record the cultural assets to which tools for their protection could be applied. We identified a set of 29 assets that were fit for protection, and these included isolated buildings, urban groupings and cultural landscapes. Some of the assets identified as having cultural value came to be institutionally recognized as being part of cultural heritage of Alagoas, such as the buildings with the internal and external registry and the whole area of the complex of the former hydroelectric plant of Angiquinho in the municipality of Delmiro Gouveia.[11]

Research in the towns of Água Branca, Delmiro Gouveia and Olho d'Água do Casado was motivated by the absence of studies on identifying cultural assets in which there is interest in preservation as well as by the lack of recommended safeguards for the elements listed, given the prospect of change in the economic and physical-territorial structures of the region of the Lower São Francisco, which would, undoubtedly, affect the existing heritage assets.

Thus, a methodology was used that interrelated historical and documentary research, identification of assets and the reading of the urban morphology. The historical method was indispensable for identifying and preserving the memory of the cultural asset, in that being able to identify it was made possible based on recognizing the dimensions that defined and characterized it in times past and present.

1.12. Historical and documentary research

Thus, the manuscript, bibliographic and iconographic documentation, alongside the oral sources, constituted the material that was fundamental to recomposing the identity, memory and physical transformation suffered by the place in its historical, morphological and aesthetic dimensions. Using these sources, the themes that supported the interpretation and construction of the historical narrative were defined.

Within the procedures necessary for interpretation, the following steps were performed: preliminary knowledge of the towns by means of the reading of secondary sources; construction of indices; and visits to the registries and archives, including virtual ones, after having consulted and recorded bibliographic and iconographic sources. The first sources were recorded on 29 reading cards, including rare works, and the second sources consisted of maps, plans and about 1,406 photographs. After listing the sources, we proceeded to organize the documents, checking for consistency, identifying key themes and the direction that interpretation was taking. After concluding the historical research, we moved on to surveying the information *in situ*.

1.13. Identifying the assets and reading the urban layout

The identification of *in situ* assets consisted of: exploratory, systematic and confirmatory surveys, and also of compiling supplementary material. Each stage of the survey had different and complementary objectives, namely:

Exploratory survey: This was guided by suggestions from experts with knowledge and experience of the region and its history, and direct observation

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by the research team. The identification in the exploratory survey was complemented by a preliminary photographic survey of the assets that, it was suggested, should be preserved. On analysing this information, a card was designed for the purpose of identifying and systematically characterizing the assets that had been preliminarily identified. These cards were used in the urban-architectural and landscape survey of the various types of assets. These included cultural landscapes, urban groupings, single buildings and architectural elements. The characteristics of the assets were ordered as per the following variables: location, morphology, constituent/construction materials, state of conservation and values attributed.

Systematic survey: This consisted of filling in the identification and characterization cards for all the assets that had been surveyed in the previous step in addition to new assets that had been identified through consultations and interviews with residents, particularly prominent people in the towns and participants from local public and private institutions, especially cultural ones. The carded assets were photographed; a total of 350 pictures were taken. This information was supplemented with the collection of documentation in local public bodies. After having completed the systematic survey *in situ*, we proceeded to make an analysis and synthesis of the assets carded. They were placed in the historical context of their formation and the possible relationships of assets to one another were checked in accordance with cultural, economic and social aspects. As a result, a list of items to be protected was assembled. Relevant cultural values, inserted into the logic of the historical narrative, were attributed to them.

Confirmatory survey: This consisted of the *in situ* confirmation of the characteristics of the assets included in the protection list, of gathering complementary information on the surroundings and of a detailed analysis (or test) on the authenticity and integrity of the assets. At this stage of the survey, more than 853 photographs were taken with the aim of showing the details and characteristics of the assets selected.

Knowledge of the historical documentary archives, current photographs, the *in situ* visits and the interviews with people who are thoroughly familiar with the history of this region guided how we came to perceive the main issues that justify the importance of the cultural assets. The time frame established, from the 18th century to the early 20th century, was substantiated by the facts that brought about spatial transformations of the territory common to the three towns, represented by the construction of the Paulo Afonso railroad, the Angiquinho Hydroelectric Plant and the Linhas Estrelas Factory, as well as the introduction of the skilled worker group in Pedra and the urban layout of the town of Água Branca.

Twenty nine assets were identified as being heritage assets. The original decorative features of the assets identified are largely intact or have undergone minor alterations that do not violate the principles of authenticity established by the international organizations for safeguarding heritage. They form a significant collection and one that is of unequalled historical and artistic value in the Northeast, and perhaps even in Brazil as a whole.

It is important to stress that despite having limited resources to conduct this survey, this project stands out among studies on identifying heritage assets in Brazil, because it is one of the few to have conducted a survey of an integrated character from multiple points of view: the geographical area covered, the historical period and the typologies of the assets.

2. Putting forward a methodology for identifying cultural heritage

The identification of a cultural asset is related to giving recognition to its historical and formal content. The procedures required in this activity involve applying, in a coordinated way, distinct methods: the historical one; that of oral history; that of reading the urban layout; and that of survey of the landscape and the urban-architectural groupings. The use of such methods should consider the nature of the asset and the objectives of the study and can be applied as a whole or separately. By obtaining this information, complete and firm knowledge about the asset can be ensured as to its physical, spatial and functional attributes.

The historical method is indispensable for reconstructing values associated with identifying and preserving memory and cultural heritage. The method enables a narrative to be constructed and the forgotten identity of the place and the collective memory to be drawn up again. Thus, the manuscript, bibliographic and iconographic documentation form essential sources in this process.

Thus, historical interpretation means building a meaning for the events of the past. More and more, historiography seeks to break away from the paradigm of objectivity and to tackle understanding the

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'horizons of meaning' inherent in human experience in time and space. The interpretation of historical documentation today necessarily passes through 'comprehension', which differs from the explanation or analysis of the actual fact in itself. Using such an understanding as the starting point, the interpretation of the meanings is not limited to the social practices involved by representations in time, but becomes the very forming of mental images as a constructed reality in a given social context.

The oral history method, for its part, has its affinities with the theoretical foundations of the psychohistory of Febvre ('New History'), who believed there was something to learn from the encounter of man as an individual, vis-à-vis the 'mental universe'. Psychology as mental scientific knowledge began to interact with the new concepts constructed by the New History, which helped in the study of both personalities and cultures. The call for an interdisciplinary approach accelerated in the first two or three decades of the 20th century. Both the everyday and 'disinterested' were valued by Febvre, Bakthine and others.

Thus, the collection and analysis of interviews become the main tools of oral history to investigate specific issues of memory. This represents "always a construction and depends on a selection of past events and on the creation of meanings due to the context of the present" (Fernandes, 1997, p. 35). Halbwachs (1990) claimed that memory is largely a reconstruction of the past aided by data taken on loan and applied to the present.

In the oral statements it becomes possible to identify values and meanings attributed to the object, which marked the memory of individuals in the past as they do in the present. For this reason, the oral sources need to be problematized based on the values and meanings that structure the narratives, the themes discussed and the histories of life because they are representations that have been re-signified in the course of present/past dialogue. These representations emerge from a set of memories selected over time, which became significant in a broader context of the interviewee's life (Fernandes, 1997). It is for the historian to collect these recollections as snippets of memories that have been organized, as well as it being up to the historian to leave space for new meanings and values to emerge, in a process in which "it must be expected to change, involve multivalence and contention, and be contingent on time, place, and other factors" (Mason, 2004, p. 65).

The reading of the urban layout and the survey of the cultural assets (landscape and urban architectural groupings), the last operational step proposed by this method of identification, is underpinned by morph-typological theories. The main works considered are: Carlos Aymonino (1995), Vicente Del Rio (1996), Maria Elaine Kolsdorf (1996), Philippe Panerai (2006) and Luz Valente Pereira (1996). It consists of apprehending the urban layout of the area studied and is conducted by direct observation with the objective of understanding its current morph-typologies, the dynamics of its use and occupation and its tendencies to be transformed.

The first step in the activity of identification is gaining preliminary knowledge of a cultural heritage site through a visit and reading secondary sources. Such information, which is of a perceptual and bibliographic nature, enables the record of knowledge and the definition of key indices or thematic keys to begin.

After this first step the historical research begins which consists of visits to the local and national registries and archives as well as consulting virtual archives in order to survey and record the primary sources – manuscripts, printed material, bibliographic and iconographic records (maps, drawings, designs, photographs, prints, paintings) – related to the object of investigation. To the extent that the information has been surveyed, this must be registered on their own cards and in folders on specific themes, on digital media. This survey activity should be concurrent with checking the consistency of the sources and with setting research and analytic hypotheses. The interrelationship between the survey activities and the record of the sources, and checking consistency and setting hypotheses will require continuity in terms of the relationship of the primary and secondary sources and identifying key issues and arguments that make up a narrative. The discovery of topics provided by the sources enables definition of uniqueness on the basis of characteristics such as figures, legends, natural environment, choice of location, socio-economic factors, occupation and use of land and architecture.

Special attention should be given to the analysis of the historical cartography because of its importance for understanding the transformations of the urban layout. As specific procedures, the following are emphasized: individual analysis of each map taken in accordance with the morphological categories adopted (grid, streets, blocks, lots, buildings); analytical complementation and/or correlation

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with the manuscript and bibliographic sources; and comparative and sequential analysis between the maps adopted with the identification of the main morphological characteristics.

The expository structure is not identical to the path of research and therefore there is a need for substantive knowledge of the sources and objectives of the work in order to define the structure of the narrative.

Having completed the historical research, the research of the oral history begins. This consists of collecting and analyzing interviews and depositions. Before starting to apply the method, it is necessary to structure the research instruments, which consist of:

- Defining the keywords for the interview with the focus groups (these words may be provided by the documentary archive previously compiled);
- Identifying and defining focus groups (e.g. experts, communities, users, tourists, ordinary residents, business people, public servants, etc.);
- Drafting the central questions in line with the object of study or cultural asset, so as to be fully aware of the meanings and records of memory and the values of the focus groups;
- Drawing up an identification card on the person interviewed, on which personal data will be recorded as well as drawing up a questionnaire and ordering the central questions;
- Holding and recording interviews to be conducted in two ways: one flexible in order to have the interviewee talk about his/her experiences relating to the cultural asset and the other using a questionnaire.

The last step of the identification process is the reading of the urban layout and the survey of heritage assets, whether landscape or urban-architectural grouping.

The urban layout is read from the following elements of its urban-environmental structure: physical structure and active structure. These structures are perceived by using the following variables:

- **Physical structure**: geophysical, hydrographic and vegetal structure, besides the urban grid – its outlines, its force lines of occupation (vectors of growth), its dominant orientations and its geometry, and moreover the formats of the blocks and lots, the built typology and the relationship between full and empty spaces, existing linear and nonlinear public spaces and patterns of occupation.
- **Active Structure**: Identifying the predominant uses by zones: leisure-entertainment, residential, commerce and services (including public services), industrial and rural; estimating the population resident in the area; classifying the urban road system; state of the infrastructure; identifying, characterizing and locating the existing main intervention projects.
- From the reading of these two structures, a synthesis should be built of the tendencies of transformations present in the area in order to indicate its image, its potentials and the limits of the urban structure.

The survey of the landscape and urban-architectural grouping heritage assets should be guided by a standard form (which has both multiple choice and open fields) that considers different elements. For the urban-architectural assets what is surveyed is the architectural style, the current use, the typology, category, implementation, the materials and shape of its roof and walls, its conservation status and problems encountered. For landscape assets, the elements for analysis are its natural components (topography, vegetation, bodies of water and climate), built components (volume, scale, permeability, uniqueness, diversity, linearity, completeness, full and empty sites, colours, visual barriers rhythm, uses), lookout points and beauty spots, landscape units, power lines, state of conservation and problems encountered. Besides these elements, the analysis of both types of assets should also indicate what value could be attributed to the asset so as help in the later stage of attributing values.

The correlation of the historical factors with the morpho-typological elements of the models and artistic styles, which are erudite architectural and urban factors, is an important task of identification since it enables influences and mutations to be evaluated.

Over the course of implementing each of these surveys (analytical activities), moments to synthesize are needed to redefine the key issues and the

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arguments set out in the historical survey. It should be noted that the sequence of conducting the surveys, with the exception of that relating to prior knowledge, can be defined on a case-by-case basis. And there may be situations where some can be conducted in parallel, e.g. the historical survey and the reading of the urban layout.

Interpretation, founded on the notions of spatialities and temporalities, should result:

- In definition of uniqueness on the basis of characteristics such as figures, legends, natural environment, choice of location, socio-economic factors, occupation and use of land and architecture as well as identifying what is similar to other places.

- In choosing a key idea or a representation of the asset which may guide the construction of the narrative.

- In defining the authenticity and integrity of the cultural heritage asset. For this definition there is a need to ensure that the historical survey and the reading of the urban layout and/or the landscape and urban-architectural has been completed. It is also essential to define the time-frame that enables the evaluation of past and present in the elements comprising the cultural heritage asset under study. That is, this evaluation requires a comparative analysis to be made between the situation today and in the past. But which past? The one that has documentation (dossiers, inventories, photographs, etc.) that enables consistent comparison of the design, function, building material and surroundings, as set out by UNESCO.

The above-discussed conceptual and methodological study conducted on the historical method, the method of oral history, and the procedures adopted by the institutions responsible for the classification and listing of cultural heritage assets have enabled a methodological framework to be formed that guides the identification of the asset in question. However, certain prerequisites and precautions for the correct and fruitful implementation of the steps proposed and tested have yet to be set out:

- Prior knowledge of cultural heritage asset must be identified so that adjustments and implementation strategies of the study are carried out satisfactorily. The historical method, therefore, should be started before the others, but there may be situations where it is more appropriate to start with one of the other methods. This situation may be that of a cultural heritage asset that does not have enough documentary historical records or which are consistent. The method of oral history, the reading of the urban layout and the landscape and urban-architectural survey may also be suitable for the study of each asset.

- The application of at least three of the four procedures that make up the methodology is needed to ensure consistency of identification of the asset.

- A clear and precise definition of the study must be conducted and its product, which means determining the level of detail, size and profile of the team and the equipment and time required to conduct the study. It should be remembered that this definition is directly linked to financial resources available.

- The team must be brought to the same level and its members integrated, given that the four procedures need to be interactive to define authenticity, integrity and value.

The proposed methodology for the identification process of cultural heritage assets emphasizes the connection between intellectual processes and the process of social construction and material aspects and aspects of memory, meanings and values. It could be said that the methodological procedures established take account of identifying a cultural heritage asset, and should be enhanced by keeping in step with the studies on the authentication process and systems for monitoring and control that are being developed and tested.

It is worth remembering that this enhancement can also happen at any time throughout the process of constructing 'Cultural Significance'. This is embodied in the *Declaration of Significance*, which, since 1990, has become a UNESCO and World Heritage Centre requirement for applications for inclusion of a heritage item on the World Heritage List. Cultural Significance "has a decisive role regarding conservation activities. It is used as an analytical instrument and as a guide to interventions on heritage objects, monuments and sites, especially for conservation

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policies, programs and projects" (Zancheti *et al.*, 2009, p. 48).

The identification of heritage assets goes beyond the objectives of giving recognition to cultural assets as heritage of a collectivity of people and of generating information from which advertising and the guardianship of heritage can be defined. In addition, its management, monitoring and conservation can be evaluated. This is the starting point for establishing Cultural Significance: a social construct which sets out social judgments and validations of the present and past meanings and values attributed to an asset.

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Endnotes

[1] Original text: "es un valor convencional, acordado y concedido por un grupo de personas, o incluso, en ciertos casos, por una sola persona".

[2] The team that undertook this study comprised Virgínia Pontual, Renata Cabral, Magna Milfont, Flaviana Lira and Anna Elizaizabeth Lago. Funding was received from the *Fundo Pernambucano de Incentivo à Cultura* (Funcultura)/ Government of the State of Pernambuco.

[3] The first phase was preceded by establishing the object area of the study, training and preparing the team, bringing the knowledge of its members to the same level, defining activities, and so forth.

[4] The survey of the period from the 16th to the 19th centuries consisted of identifying the bibliographic sources, travellers' accounts in print chronicles and war diaries, beyond the iconography of the Isthmus of Olinda and Recife, which lasted from the start of the Portuguese settlement up to the consolidation of the main urban infrastructure of the cities in the 18th century.

[5] The 32 maps were scanned and processed. The photographs and lithographs amounted to a total of 82.

[6] The graphic and design of the website (layout) consisted of transferring the content into another language to identify cultural heritage. The result of the research can be viewed at: www.ceci-br.org/istmo.

[7] *Pátio da Igreja de São Pedro dos Clérigos* (Portuguese).

[8] The team that conducted this work was comprised of Monica Harchambois, Virginia Pontual, Renata Cabral, Magna Milfont and Rosane Piccolo. The resources provided came from the MONUMENTA Program and the Inter-American Development Bank (IDB). The product or website is called 'Saint Peter Courtyard: Tourism and Popular Tradition in Pernambuco' or see http: //www.patiodesaopedro.ceci-br.org/saopedro/pt/index.htm.

[9] The website diluted the dense content of the scholarly interpretations of the history, morphology and the current culture of the Saint Peter of the Clerics Courtyard into fluid texts, photographs, videos and maps.

[10] The team that conducted this work consisted of Silvio Zancheti, Virgínia Pontual, Ana Rita Sá Carneiro and Rosane Piccolo. Funds were provided by the *Instituto Xingó/ Chesf*.

[11] State Listing by Decree of 30 November 2006, which put into effect Resolution n. 1, of 2 June 2006, of the State Council of Culture.

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Significance and cultural landscape: A new approach to heritage management

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Abstract

This paper seeks to discuss whether the guidelines for inclusion, conservation and management of sites of cultural significance proposed by the *Burra Charter*, (Australia ICOMOS), and adopted by UNESCO, representing the new trends in theories of heritage conservation, meets the specifics of the new heritage categories, such as the cultural landscape. This category was included by UNESCO in 1992, by the European Landscape Convention in 1995 and the Institute of National Historic and Artistic Heritage (IPHAN) in 2009, and it represents a breakthrough in overcoming the dichotomy in the relationship between man and nature by understanding that World Heritage should bring together the natural and cultural aspects, tangible and intangible, resulting from this relationship. Despite the progress achieved, questions remain: do the guidelines proposed by the *Burra Charter* respond to the needs of integrated management of a complex heritage property in a constantly changing category such as that of cultural landscape? Another question to be asked, considering that the landscape concept developed by the New Cultural Geography is based on assigning values to socially validated heritage, is: will the geographical concept of cultural landscape contribute to the 'paradigm shift' which is based on cultural significance? These questions will guide the text.

Keywords: cultural landscape, heritage, heritage significance

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Introduction

The cultural landscape, considered one of the key concepts of geography, had its theoretical conception in the 19th century and is preset in a number of approaches along the scientific route, sometimes inserted as a chain of thought. It has been the target of extensive discussions as part of a movement for both acceptance and refutation, as is characteristic in scientific development (Melo, 2003). During this process, methods of study have been developed to substantiate various theoretical and methodological conceptualizations through identifying, describing and interpreting the landscape through material artefacts produced by man as an expression of culture. Traditional geography conceptualization, along with interpretation of symbolic character, was supported by geographers who created the 'New Cultural Geography' school of thought in the 1980s. In this context, based on approaches used in the disciplines of social sciences and philosophy developed over 80 years, the study of intangible aspects of the landscape is incorporated.

The concept of cultural landscape incorporated by national and international heritage bodies represents an evolution in heritage approaches when understanding that heritage listed in this category are constantly evolving and integrate natural and cultural aspects, which must be managed in accordance with the approach of integrated conservation from a systemic and integrative method (Bezerra and Melo, 2007). This change resulted from the enlargement of the heritage concept, based on the attribution of value by aesthetic criteria of monumentality of property to be included and the historical and cultural values of peoples expressed in their relationship with the environment according to the assumptions of the *Venice Charter* of 1964.[1] Thus, according to Menezes (2002, p. 51), "the real breakthrough was to move from isolated monuments or simply juxtaposed to a more consistent spatial integration", from the monument category to the "heritage property".

In this context, the International Committee of the United Nations for Education, Science and Cultural Organization (UNESCO) in 1992 incorporated the category of cultural landscape based on the idea of sustainable development from the value of

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relationships between man and environment, understood in a specific context and as a property in a state of constant change resulting from a dynamic process that is based on the relationship between nature and society. Moreover, the insertion of the cultural landscape as a World Heritage category represents the inclusion of immaterial or intangible aspects in the list of universal heritage value. In this sense, heritage is no longer to be evaluated only in its material aspect and incorporates values assigned by the social actors who experience a range of meanings that the heritage has for them. UNESCO has recognized the importance of meanings attributed to certain heritage sites by requiring a statement presenting the cultural significance of all candidate sites to enter the World Heritage List. The cultural significance of a heritage site is recognized as central to the identification and development of conservation action, and this document should gather all the reasons for which a heritage site should be preserved, the reason why it is meaningful and which are the more urgent aspects that require protection (Manson, 2004).

The *Burra Charter* became the guiding document for such heritage actions, based on identifying meaning for each heritage site, establishing a methodology that seeks to comprehend meaning for the group of actors involved in developing heritage policies. In the document, the cultural significance of a particular place or heritage site is understood as the set of aesthetic, historical, scientific, social or spiritual values for past, present or future generations, with this set of values present not only in the built elements, but also in the site as a whole: in its urban fabric, uses and associated elements (Australia ICOMOS, 1999). Developed by the International Council on Monuments and Sites (ICOMOS) from Australia, the *Burra Charter* represents the new trends in theories of heritage conservation. However, it is debatable whether its guidelines for inclusion, conservation and management of sites with cultural significance meet the specifics of certain categories of heritage, such as that of cultural landscape.

In this context the question is: do the policies proposed by the *Burra Charter* meet the needs of integrated management of a complex and constantly changing category of heritage such as cultural landscape? Another question to be asked, considering that the landscape concept developed by the New Cultural Geography is based on assigning values to socially validated heritage, is: Can the geographical concept of cultural landscape contribute to a 'paradigm shift' which is based on cultural significance? This article raises these issues and seeks to understand how the use of the theoretical-methodological conceptualization developed by the New Cultural Geography can assist in the identification and management of World cultural landscapes. Aiming to contribute to this discussion, the article was organized firstly to show how the concept of cultural landscape from its conceptual development of geographical science was inserted as category of heritage property in the World Heritage List. Next, we present how cultural landscape, based on the special features of its theoretical and methodological conception, can contribute to a 'paradigm shift' that is based on cultural significance, defined according to the assumptions of the *Burra Charter*.

1. Cultural landscape on the World Heritage List

Today, 66 cultural landscapes are recognized by UNESCO as having outstanding universal value.[2] These are places that represent the combined work of man and nature, are illustrative of changes in society over time regarding the influence of limitations and/or physical opportunities present in the natural environment and are indicative as well of successive social, economic and cultural forces that interfere with it (UNESCO, 2008).

Perhaps it is a little redundant to speak of the cultural landscape. The notion of landscape is, in itself, something cultural, generated by man. However, by adding the adjective 'cultural' to landscape, UNESCO seeks to emphasize that it is the result of human interactions with the environment, where there is presence of tangible and intangible values in the landscape (UNESCO, 2010). This understanding of the cultural landscape is quite similar to the academic concept developed in the early 20th century when the geographer Carl Sauer, strongly influenced by traditional German geographers, established the morphological method of analysing landscapes. For Sauer and the Berkeley school, created from his ideas, "culture is the agent, the natural area is the medium, the cultural landscape is the result" (Sauer, 1998, p. 59). Sauer advocated a dialectic posture between culture and nature as the basis of landscape studies in geography (Cosgrove, 2003). This thought that environmental and cultural elements are separate, though related, is a reflection of the Western tradition that treats natural goods as given by God in order to satisfy human needs. That is, the thought that man is not part of nature, but that nature exists to meet man's survival needs, according to the anthropocentric view (Bezerra and Melo,

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2007). Sauer's proposal was made precisely to overcome this dichotomy.

The evolution of scientific thought widened the approaches to cultural landscapes as a key concept of geographic science. In the 1980s, a new current of thought called 'New Cultural Geography' sought to update the concepts and methods established in the beginning of the century. This group of geographers did not wish to break with the products of Sauer, but to conduct opposition to quantitative analysis (Melo, 2003), including in the symbolic dimension of the study of cultural landscapes. Cultural landscape is no longer seen simply as a result and is understood as a reflection of the relationship between man and nature as a holistic concept. One of the criticisms developed by the New Geographers was that traditional cultural geography had more interest in material aspects of landscape because it is based on logical, leading those geographers to locate studies between social organization and landscape and emphasize only visible aspects of cultural geography, since these can be quantified. Thus, cultural geographers involved in this line of thought turned their attention almost exclusively to built artefacts (Duncan, 1990).

In this context some adherents of this new current of thought, like Duncan, come to interpret the landscape as a text, to be studied through further qualitative methods such as hermeneutics. The work of Duncan (1990) is fundamental to understanding this new approach to landscape. In this work, *The City as Text*, the author shows that to understand the landscape in a cultural perspective we "should […] fill in much of what is invisible — to read the subtexts that are beyond the visible text," (Duncan, 1990, p. 14). From this conceptualization, a more subjective approach achieves the landscape scope. It is understood not only by physical characteristics, but also from their symbolic meanings, as "all landscapes have symbolic meanings because they are the product of appropriation and transformation of the environment by man" (Cosgrove, 1998, p. 108). Another approach to landscape as a cultural fact is presented by Augustin Berque. The French author believes that the landscape is not just something that is a concrete form of the environment, nor is it a projection of some observer's subjectivity. Berque (1998, p. 33) states that the landscape is both "matrix and mark":

> "Matrix Landscape as structures and forms of the landscape contributes to the perpetuation of uses and meanings among generations; Mark Landscape as each group impresses signs and symbols of its activity on its space."

Integration of the landscape as a World Heritage category represents a major milestone in heritage development. While the list based on the 1972 UNESCO convention demands physical attributes to justify its universal value, the adoption of cultural landscapes shows the importance and values of intangible heritage for humanity (ICOMOS, 2005).

The category appears under the UNESCO guidelines as a response to changes in understanding the relationship between man and nature. Based on the understanding that man is part of nature, and linked to the expansion of disciplines such as ecology and the quest for sustainable development, the institution looks to treat heritage in an integrated manner, overcoming an already anachronistic thought within UNESCO itself (Ribeiro, 2007). As a way of guiding the application of management and planning of landscape, with a view towards protection, UNESCO found that cultural landscapes can be classified into three categories: 'clearly defined Landscape', created and designed by man (e.g. Lednice cultural landscape in Valtice in the Czech Republic); 'organically evolved Landscape', a relic or fossil (e.g. cultural landscape of Wachau, Austria); and 'associative cultural landscape', associated with tangible and intangible human attributes (e.g. Tongariro National Park, located in New Zealand).[3]

Apparently there is an attempt to encompass different currents of thought throughout the three subcategories of the cultural landscape. While one has a strong traditional geographic influence through the evolving historicist understanding of the landscape presented by Sauer, the associative landscape subcategory utilizes the understanding of meanings that an area has for the population, as presented by the New Cultural Geography. In addition to them, clearly defined landscapes seem to be so much more connected to one side of landscape, linked to landscape architects (Ribeiro, 2007).

Proposals submitted to UNESCO are considered with the aid of ICOMOS, with the assistance of the International Union for Conservation of Nature and Natural Resources (IUCN) when necessary, to validate the exceptional heritage character (UNESCO, 2008). However, it should be noted that in the list of registered cultural landscapes there is a tendency to highlight landscapes related to traditional communities living in close contact with nature or landscape interventions (Ribeiro and Azevedo, 2010). The study by Fowler (2003) entitled 'World Heritage

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cultural landscapes 1992-2002'[4] analyses the thirty sites registered up to that time in the cultural landscape category. In this work the author identified ten sites that were considered national parks, which presents a strong emphasis of the natural aspects in the recognition of heritage in this category by UNESCO. It is noted that although the category being treated as a cultural heritage, its natural values are posted, generating an absence in the list of mid-sized or metropolitan cities. Cultural landscapes of universal value are characterized from a geographical point of view, by their major elements such as mountains, bodies of water, modes of traditional agricultural production and human settlements; or from an intellectual point of view by their historical, social and/or religious meaning (Ribeiro and Azevedo, 2010).

This trend indicated by Rafael Ribeiro in a recent article had already been highlighted by Peter Fowler in his own work commissioned by UNESCO. The author presented among his recommendations the importance of expanding the category of cultural landscape also to urban, industrial and coastal areas and even underwater landscapes (Fowler, 2003). However, the lack of metropolitan areas and medium size cities is still felt on the list. Given the lack of discussion on this subject, new categories are created in order to fill gaps. The debate over the creation of the new category of Historic Urban Landscape reveals the inability of the institution to recognize that large urban areas may also be recognized for the interaction between man and environment.

Historic Urban Landscape are understood through changes in heritage understanding, stimulated by the Charter of Venice with the understanding of the monument in a specific context. The new theme conceives of changes in the way heritage is dealt with: from static heritage to an understanding of heritage as dynamic; from an isolated object, to something integrated. Moreover, the new concept aims to overcome the understanding of historic areas as a single building group or as real estate heritage, accepting that even an Urban Historic Landscape can be considered as a representative site of human creativity that includes traces of the history of a particular occupation (Jokilehto, 2010).

Given the above, this view fails to recognize that every cultural landscape is in itself a single heritage that emphasizes the holistic thought and need of management actions aiming at integrated conservation for maintenance of values allocation that is recognized and validated as universal. Moreover, the traditionally understood cultural landscape by UNESCO is itself a historical landscape, since it presents the accumulation of human activity traces over time. Thus, why could an historic urban area not be recognized by UNESCO as a heritage property, according to the cultural landscape criteria?

It is observed that there is still far to go in understanding the cultural landscape as a heritage property. This category has specificities that need to be addressed in the search of the maintenance of tangible and intangible characteristics of heritage. Thus, one of the major challenges is to associate the guidelines and tools for conservation and management proposed by official documents established by UNESCO to a unique cultural landscape category.

2. Cultural landscape and its specificities

With the UNESCO requirement from the 1990s that each site or cultural landscape candidate to the World Heritage List must submit a statement of cultural significance, cultural values are seen as keys to identification and assessment of heritage.

Entering heritage values in preservation practices represents a shift in conservation efforts, when changing the focus on the object itself to the people of this (and future) generations who will use the heritage (Munos-Viñas, 2005). Carrying out conservation actions based on heritage values increases the importance of the subject who interacts with the heritage, since it is he who will define why heritage is valuable, since:

> "[...] values are social categories, results of human thought, set in a cultural context and not natural attributes. They do not exist 'per se', they are always relative attributes and dependent on the comparison or relationship among heritage." (Zancheti and Jokilehto, 1997, pp. 3-4).

The *Burra Charter* is the document that guides heritage actions based on the identification of the meanings of each heritage site, establishing a methodology that seeks to understand the meanings, development of heritage policies and management of heritage, aiming the management of the site in accordance with defined policies (Australia ICOMOS, 1999). Despite the *Burra Charter* being the reference document for establishing conservation policies through the values attributed to heritage, it is believed that it does not answer all the specificities of certain heritage categories defined by

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UNESCO, specifically that of cultural landscape. As the *Burra Charter* has suffered some criticism related to the procedures of significance understanding, a reflection will be performed on how the cultural landscape, from the specificities in its theoretical and methodological conceptualization, can contribute to a 'paradigm shift' that is based on cultural significance.

One of the criticisms made by Zancheti *et al.* (2009) is that in the *Burra Charter* the theoretical approach to the concept of cultural significance assumes a positivist-empirical approach, since cultural values are treated as inherent in the heritage property. With respect to the theoretical conceptualization of cultural landscape, from the 1970s there was a change in approach so that culture was conceived as it was in the traditional geography, based on logical positivism. In this conceptualization, the culture was seen as external to man, able to be analysed from material artefacts produced by man, with the individual conceived as a mere "agent of cultural forces" (Duncan, 1990, pp. 181-184). Thus, culture was seen as inherent to material artefacts but individuals were not being considered as bearers of culture.

However, with new theoretical concepts developed by followers of the New Cultural Geography, landscape analysis became based on the meanings derived from the values assigned by individuals. In this sense, culture began to be designed beyond the material aspects, based on subjectivity, signifying a huge step forward since from then on culture will have an individual character, as all individuals have culture. Within this context, both individuals and groups internalize culture differently. This non-material culture is defined by shared values and beliefs, constituting the collective imagination (Cosgrove, 1994, p. 389).

As McDowell (1996, p. 164) states, there was a new understanding of production and reproduction of cultures through social practices that occur at spatial level differently. In this context, as landscapes are built over time and specifically have a dynamic character, as they are a product of social practices, shaped by the action of social groups, and therefore a diverse presentation in a state of constant evolution. This conceptualization of culture can contribute to heritage instruments in the management of a complex heritage property as the cultural landscape.

Dynamic character, which is one of the specificities of landscape, also has to be considered when establishing guidelines to promote conservation and management of heritage included in the cultural landscape category. However, according to Zancheti *et al*. (2009), the *Burra Charter* addresses values assigned to a heritage as something immutable, without considering the various possible changes over time. Manson (2004) highlights the importance of overcoming the inertia by with which the significance is understood through the progressive notion of the subject with a more minimalist approach, accepting that interpretations vary over time.

The main specificity of the cultural landscape is based on its holistic approach to a heritage site, which enables understanding of multiple relationships between man and environment, from tangible and intangible elements and from natural and cultural ones (Ribeiro, 2007). To answer these specificities of the landscape new methods of interpretation were created, based on philosophies of meaning, especially in phenomenology and hermeneutics, where the landscape is likely to be read as a written text by several different authors with various historical layers superimposed over time with the possibility of varying interpretations. These texts are the natural, social and cultural contexts, where it is possible to interpret the meanings and values assigned to landscape through existing depictions in various forms of cultural, written, visual and oral expressions in order to grasp the different cultural values expressed through it which result from relationships established between social groups and nature (Melo, 2010). It is based on these methods of interpretation that landscape can be seen, but beyond these simple visual forms, it enables man's encounter with the dimensions of one's being, and becomes an expression of human existence (Besse, 2006). As different meanings are assigned to the landscape, it being a reflection of the environment's ownership by man (Cosgrove, 1998), we can ask: if values are assigned to the landscape from such individual meanings, why only involve experts in the value assignments of heritage, i.e. those involved in the heritage preservation? In this sense, the participation of social actors in the identification of heritage values is essential. This is one more criticism made of the *Burra Charter* by Zancheti *et al*. (2009).

Cultural landscapes, due to their specificities, present some challenges in building a management system aiming at their conservation. One of these challenges is to build a system for managing landscapes in order to implement conservation actions of natural and cultural heritage in an integrated manner. In this sense, the question arises: how to operationalize this category, seeking heritage recognition, if manager institutions treat heritage dichotomously

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(Melo, 2010)? Given that in western culture, man is traditionally stood apart from nature and that this has reflected directly in the management of spaces, reflection on overcoming this dichotomy must be made in order to establish policies for conservation of cultural landscapes. This debate is fundamental since this reflection must occur in different institutions that work with the cultural and natural heritage, both in UNESCO and the States that are part of the agreement, such as Brazil. Distinct institutions will follow divergent ways from that proposed by the concept of cultural landscapes, which seeks to enhance the relationship between man and environment in an integrated manner, understanding the landscape as something unique.

As a result of this institutional organization, there are protection actions carried out for historic sites that consider only architectural and urban values to the detriment of natural elements, as well as some heritage which is valued only for their natural value. This attitude reveals the difficulty of understanding the cultural landscape, which must be understood in its specificity of a single heritage property, considering the multiple relationships between man and environment from the tangible and intangible elements, natural and cultural. This reflection aims to bring to light some challenges to be faced by international and national heritage agencies in the creation of tools aiming to guide the management of heritage under the category of cultural landscape in accordance with defined policies.

Conclusion

Given the above, it seems that there are still many paths to be followed in the theoretical and methodological understanding of the cultural landscape as a category of heritage property. Despite its institutionalization for nearly 20 years, questions remain; not only for the tools that guide conservation policies, created by national and international agencies aiming to manage cultural landscapes as heritage, but also the shape of the cultural landscape category as incorporated into the UNESCO heritage list. In this sense, it was treated in the text as the category of cultural landscape as it was incorporated into World Heritage. UNESCO, when including different schools of thought through the three subcategories of cultural landscape, shows a tendency to highlight landscapes related to traditional communities living in close contact with nature or landscape interventions, while there is a lack of metropolitan areas and medium size cities conceived as cultural landscapes. Given this gap, new categories were created, such as the Historic Urban Landscape, seeking to integrate the large cities holistically into the Heritage list.

However, a better understanding of the cultural landscape from the theoretical concept addressed in the New Cultural Geography would tend to minimize the misunderstandings that have already occurred. Understanding the landscape as cultural heritage that can be read through records produced by man, endowed with strong symbolism, includes not only traditionally occupied areas or places where the presence of nature is striking, but also allows for the insertion onto the list of towns and cities of medium size replete with symbolism and a strong relationship between man and nature. In this context, we hope to have contributed to reflection on the questions and challenges that are presented by the heritage category of cultural landscape. We have tried to bring to the debate some specificities of the theoretical and methodological conceptualization of the cultural landscape in order to contribute to the 'paradigm shift' that relies on the cultural significance, which is one of the instruments of assessment and identification of heritage, among them, the landscape.

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The Complexity of Historic Garden Life Conservation

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Abstract

The emergence of the modern garden was one of the milestones of Brazilian modernism and garden architecture establishes itself on a city scale in association with building architecture. In Brazil, the modern garden was created in Recife by Roberto Burle Marx in the 1930s. Then, a garden design was considered by Marx as an aesthetic reintegration of elements of surrounding landscape where the vegetation is the main element. In this case, with the inclusion of living beings in its composition, garden conservation adds to the complexity of life. The garden is a monument, an architectural composition in which the main material is the plant: alive, perishable and renewable. Its conservation implies the safeguarding of heritage values, and the lack of conservation in turn causes degradation that will only be rolled back with restoration. One of the requirements for garden conservation is the elaboration of an inventory and indicators to monitor the level of conservation.

Keywords: Burle Marx, historic gardens, heritage values

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Introduction

The development of actions for the conservation of historic gardens is a relevant issue to cultural heritage. In Brazil, some urban gardens were lost or vandalized by political and speculative interests or through the ignorance of their administrators and population. The notion of cultural heritage is not restricted to a vision *stricto sensu* of goods built by man, because it enlarges and covers the landscape and other examples of interaction between man and nature, highlighting special locations to which the story and look confer value, such as parks or zoos, botanical gardens, squares, gardens, nurseries, public walks, private backyards, gardens, rural, forested routes, plants of historic centres, cemeteries with seasonal vegetation, surrounding green spaces, monuments or historical sites, cultural landscapes, archaeological landscapes, ethnographic landscapes, natural sites and enclaves of wild areas in the urban fabric.

Historic gardens can induce in visitors a new attitude. When well cared for, they are an example of respect for nature, the environment, human beings and the work of man, including ancestors. Such a decision inevitably generates procedures of care, which requires conservation indicators to assess the permanence of its original features, their attributes and therefore heritage values assigned, which together justify its cultural significance.

Heritage values refer to the physical point of view, including not only materiality, but also immateriality. These values include: material, design, location, surroundings and people's feelings. Any legacy of past suffering transforms or deteriorates, the same as the result of natural wear and use. The sum of these different modifications will often eventually become part of the historical character and the essential material of the cultural resource.

The city of Recife, in the northeast of Brazil, has a significant body of public gardens created by landscape artist Roberto Burle Marx in the 1930s and

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Figure 1. The Garden of Delights, Hieronymus Bosch, 1504. Oil on wood. Museo del Prado, Madrid, Spain (Source: http: // homepage.mac.com/kennyneal/jei/050825bosch01.jpg).

1950s, which were inventoried to be provided as historic gardens. The ability to ensure its conservation lies in developing a system of indicators which must be evaluated for authenticity and integrity.

Concerning the inclusion of living beings in its composition, garden conservation adds to the complexity of life. This is explicit in the *Charter of Florence* (1981), which describes the garden as a monument, an architectural composition whose main material is the plant: alive, perishable and renewable. These living elements of the garden are one of the main subjects of discussion of the spirit of the place and seem indispensable for that character of vitality. The spirit of the place, as the *Declaration of Québec* (2008) states, "offers a broader understanding of character alive, while permanent of the monuments, sites and cultural landscapes".

1. The significance of the garden and the historic garden

In a poetic and spiritual sense, reference to the garden is formed from metaphors associated with memories, nostalgia, joy, beauty, colours, flowers, birds, shadows, light, childhood and fantasy. Nevertheless, be nature transformed into fireworks and still 'nature alive', it has its own existence, because it carries these metaphors full of symbols and meanings that reflect the aesthetic taste of an era, representing the ideals and aspirations of man and situated in space and time.

From a semantic point of view, more than any other historical or cultural heritage type, the garden brings forth the essence of its constituent nature: culture and biophysical components such as vegetation, terrain, soil, water, climate; that is, life; and the support on which life manifests itself. Take as its essence the randomness of life, understood as a continuous process of exchanges and relationships that manifest, above all, as the possibility to awaken all the senses because it is among the artistic manifestations that challenge our sensory systems;

> "In principle, gardens are pleasant to the eyes; the sound of leaves in the wind, source or bird attracts our ears; the smell of flowers and herbs attracts our smell; the taste of fruit flatters our palate and the velvet softness of a fruit or a flower produces pleasant tactile sensations. It is possible to add to this set of perceptions that the drawing of the entire attracts our intellect and awakens a deep admiration" (Moreno, 1988, p. 312).

When referring to garden, Moreno refers to its origins pertaining more to the creation of promised paradise, exposing the possibilities of happiness offered by Divine Providence through nature. The strength of fantasy of the Hieronymus Bosch triptych "The Garden of Delights", reveals the history of the world from creation, told in panels depicting the 'Garden of Eden', the 'Garden of Earthly Delights' and 'Hell' (Zorrilla, 2000), Figure 1.

Between heaven and hell, between good and evil, lies the earthly life full of lust in the utopia of Bosch. These gardens of human life reveal symbolically the relationships established at the moment of creation, and the organized nature of the pictorial composition of the environment necessary to understand the narrative. In this structure, united by the same horizon and luminosity, heaven and earth differ from hell, bleak and hopeless. These symbolic character

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bindings confer to the elements of nature the protagonism of the scenarios in which men, men-trees and men-animals merge. Bosch actually refers to the biblical tradition of the book of Genesis (*Gen.* II - III), by revealing the garden as the place to meet metaphysical and material human needs and places it in the paradise of Eden, to cultivate and save.

The symbolic character of these classic references reveals the garden as a genuine microcosm that materializes the infiniteness of the universe within the limits of its entirety. To scan nature, the idea of the garden turns to the relationship sky/land/man, represented by idealized landscapes in which the knowledge about the performance of their constituent elements – matter and energy – requires a long journey to be understood in the language of space construction, as artistic language, and subsequently recognized as work of art. The transformation of nature amidst 'natural' nature or the transformation of nature amidst 'cultural' nature of the urban space makes gardens a haven of order amid disorder. "Nature is however the scope of disorder, emptiness and fear; to address it takes thousand of dangerous thoughts. But this wild space can be understood as a garden" (Clark, 1994; in Roger, 2007, p. 38).

Systematized studies on nature were initiated in the 16th century, when numerous treaties began to focus on the proper way to build and maintain a garden. These writings have helped since then to make the garden independent of architecture as an unattended art. But the art of considering the building and maintenance of the garden as science of landscape came later, in the 18th century. Note, however, that the origin of gardens is in the Neolithic age, when man abandoned his itinerant condition to adapt to a sedentary life and social organization. The first Near Eastern cultures bear testimony to this; beginning with the domestication of the palm, there are approximately 5,000 years worth of garden history in Mesopotamia, one of the earliest urban civilizations (Moreno, 1988). The gardens of the East, Egypt, the Hellenistic world, Romans, Arabs; those in medieval times and the Renaissance; and those from the Baroque, Romantic, Neoclassical, Modernist periods, and contemporary periods; all reveal the artistic intentions of their creators as well as the structure of each society and culture that they represent. For Ana Luengo (2009), they are as tattoos, which externally express the internal processes that are responsible for setting their idyllic vocations.

Conversely, these 'tattoos' crossing time as a signatures in landscape acts in counterpoint to recognition of mutant garden character, since this materializes in an ephemeral existence of elements of nature that necessarily undergo their own biological cycles. In what way does the garden continue to exist as a garden across time and be recognized as a masterpiece, sanctifying images of cultural nature but still, being of this same nature, the essence of its content?

To keep a historic process of artistic creation and, simultaneously, biodiversity and homeostatic garden balance as a biotope is no easy task and requires extrapolation. As a palimpsest of the landscape the layers of its conception are sent to rescue the essence of the natural elements that characterize and enable them.

Three elements can be emphasized in garden nature: land, water and vegetation. It is essential to recognize that it is the interdependence between them that makes the garden. The land as soil and support can determine the evolution of the set, by the definition of its mineral composition that favours larger or smaller quantities of organic matter. For the soil, climate issues are decisive, qualifying them as drier, humid, saline, alkaline or acidic. Water, which dampens the plant and soil, complements favourable conditions for the development of vegetation. As irrigation or as an element of composition, water joins the land with bud vegetation, which most symbolizes the garden among the elements of nature.

The vegetation of the garden completes the triad, closing the cycle of interdependence between its elements. However, it conveys the feeling that land and water seem to exist for flourishing trees, shrubs, grasses and ground cover and weeds, necessary for the web of interrelations in this microcosm. Through their roots, plants absorb water filled with nutrients that are extracted from the soil and by leaves, and evaporates water excess as converted in transport. This vital cycle establishes itself in the dynamic of the garden but is intentionally organized nature. Traditionally, the tree as a plant seems to be the best representative of these symbolic character bindings, because since remotest antiquity it is associated with man eating fruit, a stand-in for fertility.

Having recognized the garden as a stand-alone art, independent of architecture, it is in its binding with the architecture and the city that the garden consolidates its aesthetic qualities and the value of its existence. This link between culture-nature, city-garden, subtracts from the understanding of a garden as an idea of mimesis of nature, because it relates the garden with the art of one season. In the

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vision of Mexican architect Raul Garcia, the garden is one of the main representations of an entire history of a people and their nationalism, corresponding to the historic production of society. Understood as a cultural object, it also constitutes a living file that ensures the permanence of plant materials and constructions (Garcia, 2002). According to this understanding and identified artistic, historical and cultural features, the garden acquires the condition of a cultural resource as an historic garden, as framed by the *Charter of Florence* (1981).

2. Garden, temporality and Burle Marx

The *Charter of Florence* (1981) considers the historic garden a living monument, composed of a perishable and renewable material. It is striking that, when designing works with vegetation, it is in "direct complicity with living beings that grow and develop over time, creating and recreating spaces to each new season" (Macedo, 1982). In this way, the garden is essentially moving harmoniously in relation to time and space. Even its physical elements, such as its soil/subsoil and hydrography pass through gradual changes related to the development cycle. Over time a garden does not degrade, but experiences a normal process revealed in the dynamics of its own evolution (Leenhardt, 2008); a garden differs from architecture because it is not a finished work.

According to the landscape designer Roberto Burle Marx (1967), plants obey a sort of determinism connected to the laws of growth, physiology, biochemistry and biophysics. Any plant is the result of a long historical process that incorporates its current state and all its experiences from a long line of upside that gets lost in the vagueness of the first beings. The plant in turn enjoys the highest degree of the property of instability. It undergoes a constant mutation, a permanent imbalance, whose purpose is its own quest for balance. The plant lives in resonance with the environment and there is a correspondence between the conditions of the niche that it occupies and its requirements for sunlight, growth and reproduction. The life of a plant is a cyclical activity, with breaks marked by death and by germination.

Where the appearance of the garden is unstable, since it is a composition of natural elements, interventions must be doubly insightful. Once the influence of human intervention is deployed in the garden, in respect of the control of germination and growth of plants, it is minimal in its intrinsic causes, summarizing the maintenance services. Although the ageing of a garden is desirable, this doesn't discount liability to human failure.

As a botany researcher, Burle Marx had a vast repertoire of knowledge on the customs, traditions and local vegetation appropriated (Oliveira, 2009). This is a procedure coupled to modern art in the sense that represents symbolically the nationality and identity of the garden. About it, he expressed:

> "[...] try in my work to form a vocabulary for the rich Brazilian flora, of its infinite variety, introducing native species in gardens; studying, passionately and constantly, the ecological associations and observing the natural landscape and fighting for the preservation of this heritage" (Burle Marx, 1966, p. 32-33).

A major concern of Burle Marx when designing gardens was to save at least a portion of our decimated flora and, via the collection of identical flora in nature, to discover potential for landscaping, to decently multiply species in the gardens, to demonstrate the garden's great value, when used correctly, in harmony with the environment, and thus to safeguard natural heritage. The idea of valuing the flora of Brazil, through the use of native plants, aims mainly to bring to the inhabitants of cities knowledge of our natural wealth, while somehow helping to perpetuate species which are threatened with extinction. In fact, to make gardens is often to 'perform' complimentary microclimates, keeping alive the idea that, in associations, plants placed side by side, are almost in a relationship of need (Burle Marx, 1967).

In nature, associations are not random because they obey aspects of compatibility that depend on a complex game of climate, soil and the plant itself, soil and the interaction between plants and animals and that of plants among themselves. The phenomenon of association is intimately connected to one of the most fascinating biological phenomena: adaptation (Burle Marx, 1967). The vast Burle Marx corpus of knowledge regards botany and ecology as largely the subjects of research for the rich and diverse floral mosaic of north eastern Brazil, but more precisely, Pernambuco, where Burle Marx conceived his first public garden (Praça de Casa Forte, 1935) developing the 'tropical garden' (Figure 2).

When he was living in Recife (1935-1937), Burle Marx designed several squares in the set of 15 public gardens: Praça de Casa Forte Square, Praça Euclides da Cunha, Praça da República, Campo das Princesas Garden and Praça do Derby. Later in the 1950s,

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Figure 2. Praça de Casa Forte, 2008 (Landscape Laboratory, UFPE).

highlights of his garden design were the gardens of Praça Salgado Filho and Praça de Dois Irmãos, today Praça Faria Neves. Chosen as the most representative of his work, these gardens were inventoried in 2009 to be recognized as world cultural heritage.

The success of plant specimens and their broad geographic distribution, whether native or exotic, that features in Brazilian gardens is due to the power of observation of Burle Marx and his knowledge of the plant in its habitat and as an element of landscape, by knowing plant associations, phyto-sociological importance, and how it fits into the natural scenic world (topography, soil, altitudes, and lighting). This is fundamental from the viewpoint of gardens.

Plants as living elements constitute the main subject of the garden and basic content for the definition of indicators for conservation.

3. Heritage values and indicators of garden conservation

The preservation of a historic garden depends on the combination of several items that characterize its complexity and involves material and immaterial aspects. For this conservation exercise it is necessary to know in detail the components of the garden through identification of attributes, followed by the recognition of heritage values. In the vision of Choay (2001, p. 213), the fundamentals of valorization are conservation and restoration. The classic work of Riegl (1999, p. 24), which deals with the valuation of built monuments, the modern cult of monuments, lists contents by their value to historical evolution, following his statement that "evolutionary thought therefore constitutes the core of all modern historical conception". This means that values are neither static nor immutable because life is always producing new stimuli and therefore values change.

Values arise from consensus or agreements among people and are a purely historical category (Connor, 1994) because they are coupled to facts in weighted in time and space, generating a certain existence. And the values of a historic garden as a heritage resource are generated from the inherent relationship with the historical context in which it was produced. This set of assigned values empowers cultural significance, i.e. the full relevance of the garden. On the other hand, authenticity, subject of *Nara Document*, 1994, refers to the confirmation of the permanence of the original features: construction materials, furniture, stroke, type vegetation, and other artefacts; whereas integrity means wholeness, a condition of having no part missing. The combination of these articulated elements forms a set.

According to Riegl (1999), the cultural values of built monuments are, initially, the historical value and artistic value. For a garden, the ecological value is added and that it is also the specialist value. In scientific works in the sphere of historical and cultural heritage, there are references to other values involving directly use by a population, such as educational, social, ecological and spiritual values, among others.

Cultural significance becomes, in the theory of conservation, the central object that directs development of monitoring instruments that evaluate the conservation of heritage objects: these are indicators. Indicators are quantitative or qualitative standard measures concerning concrete facts in the social, economic, environmental or cultural sphere and have a broader meaning than the simple 'given data' to which they relate because they express a changing reality and the direction in which such change moves. They are distinguished from 'raw data' by being contextualized in a theory or in reference to a system. They are 'prepared' to translate data that relate to and, therefore, assume, 'extra' information that is inherent in everything analyzed.

According to Januzzi (2003), in relation to academic research the indicator would be the liaison between the explanatory models of theory and empirical evidence of the observed phenomena. From a programmatic point of view it is an operational tool for monitoring a reality (Januzzi, 2003). The set of indicators that relate to a particular aspect of reality or intervention area and cover the range of aspects that they define or characterize is called a 'system of indicators'.

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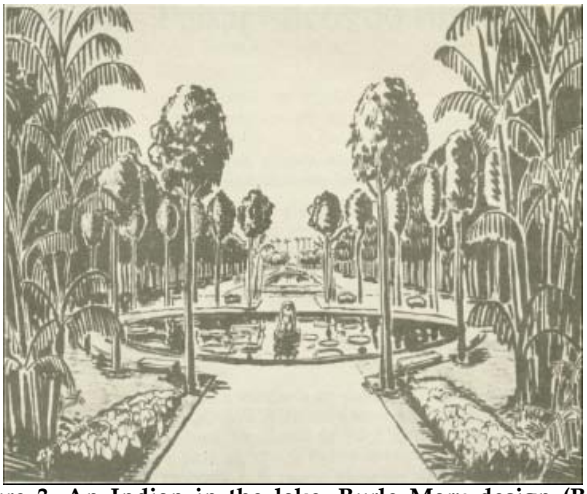

Figure 3. An Indian in the lake, Burle Marx design (Burle Marx, 1987).

Figure 4. The sculpture of a man from Sertão region in Praça Euclides da Cunha, 2008.

4. Indicators of conservation of Burle Marx gardens

The restoration in 2004 of Praça Euclides da Cunha in Recife, a garden that was designed by Roberto Burle Marx in 1935, represented a landmark in the debate on the conservation of historic gardens. Gradually, awareness about the need to preserve this special type of monument is growing but there are still great difficulties, beginning with ignorance by technicians and gardeners about the complexity of a garden/artwork and need for training by those responsible for its maintenance.

The garden restoration experience was led by the Municipality of Recife and by the Landscape Laboratory at the Federal University of Pernambuco. It was nationally recognized because it was in Recife that Burle Marx established his career as a landscape designer. The inventory of Burle Marx gardens in Recife was completed in May 2009 and prompted the discussion between researchers and technicians with the purpose of recording the valuation of a garden monument. The heritage values of the gardens recognized so far are set out, with a view towards formulating indicators of conservation. In fact these contain overlapping values, but are directly relevant considerations for the content of each indicator.

The **historical value** is understood from steps that stood out in the course of evolution of a particular aspect of human activity. It represents something that is so essential and vital in the evolutionary chain that it has conditioned what occurred later. The change of elements of the original design of some of the Burle Marx gardens is now much more evident. For example, the sculpture of an Indian in Praça de Casa Forte (Figure 3) was placed in the central lake of Amazonian plants and the sculpture of a civilized Indian was placed in the centre of cacti from Praça Euclides da Cunha (Figure 4).

The presence of high-density construction – housing, commerce and services – in the area surrounding Praça de Casa Forte induced a new aspect to the indicator: permanence of constructive typology of the time of garden construction. From the identification of species, it is seen that 42% of total species in the garden today are from the original design of Praça de Casa Forte. Another indicator then is: presence of vegetation from the original project.

With regard to historical buildings, in Praça de Casa Forte and Praça da República various types were identified. This generated the indicator: presence of historic buildings or monuments in the square and in the surrounding area. Legally there is an instrument protecting special areas of Historic Preservation such as the old houses of Praça de Casa Forte, but this makes no mention to the garden. Another indicator was therefore generated: effectiveness of implementation of the standard of protection.

Signs for the gardens would demonstrate heritage education level, but the absence of these in relation to Burle Marx gardens in surrounding and other locations of the city was noted. This prompts development of the following indicator: existence of signage for historic gardens to Centre-suburb and signposts in surroundings and within the garden.

A tour is another item of extreme importance that informs residents and discloses the attractive aspects of the place. There isn't an official tour that provides residents and tourists with the knowledge of this historical legacy. This indicator is: inclusion in the tourist circuit as part of the city history.

The **architectural value** refers to the types of construction and the materials of the components that

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hold the character of the garden landscape. Five indicators are suggested: permanence of types of traditional buildings; permanence of stroke from the original project; relationship of integrity of the elements of the garden; garden's relationship with the urban context; and linkage with other gardens or the nearby public open spaces.

Artistic characteristics are defined by design, shape and colour, says Riegl (1999). The **artistic value** is based on the condition of a particular level of evolution of arts for which one cannot find any equivalent replacement.

To set the garden according design principles and to consider shape, color, time and rhythm, Burle Marx maintained a correspondence to the thoughts of Riegl. Burle Marx even claims that the art of the garden is the arrangement of learning with nature. You can see the depth of the artist's thinking when he expressed the complexity of the garden as a set of elements of nature where is left the entirety of artistic knowledge. This relationship is the foundation of art and ecology. The condition of artistic value, however, is tied to the evolution of thought at the time and therefore to the proximity with the requirements of the ideals of modern art. This means that there is an absolute artistic value (Riegl, 1999, p. 27). The indicators for this value are: colour, shape and texture of plants to make a scenic effect; the relationships of a unit: stroke and plant types in full and empty spaces; indoor and outdoor experiences/ relationship of scale; vegetation scale: identification of plant based (shrubby tree and herbaceous) conforming spaces.

The **ecological value** refers to the vegetation used in artistic composition and how this is associated with creating natural environments of extreme sensitivity. This value relates to the educational value, because the garden, according Burle Marx, is also a laboratory where experiments are made. Such projects have the character of saving at least a portion of our flora and preserving cultural heritage, bringing to the inhabitants of cities knowledge of our natural wealth.

In the case of Praça Euclides da Cunha this is seen in the representation of the *caatinga* ecosystem, where the suggested indicator is: representation of the *caatinga* landscape ecology. Regarding environmental comfort the indicator is: influence of square on the local microclimate. Immediate substitutions (when necessary) as well as a periodic renewal program are necessary for the preservation of the garden on an unchanged condition, for the floral composition study is of utmost necessity to ensure the health of the specimens as well as an effective management plan. In this case the indicator is: identification of phyto-sanitary aspects of specimens.

Characterization of the vegetation of gardens as geographical distribution (biomes) is accomplished by sorting into exotic and native categories and then looking at the issue of eco-physiology, once the environmental and nutritional specificities of each species is necessary to ensure its permanence and/or survival is met, prompting the indicator: phyto-geographical species distribution of garden components.

Generally this requires the study of phenology, i.e. understanding of seasons and repetitive occurrences of natural phenomena such as pollination, maturation and reproduction and of selective biotic and abiotic forces. In this way, phenology studies contribute to the understanding of regeneration and reproduction of plants. They indicate the way that we can ensure survival and management because the reproductive period is of great importance to the population dynamics and survival of species.

Knowing phyto-geographical species distribution will enable the development of all its stages; knowing that the flowering and fruiting period varies from one species to another is vital to ensure a seed bank and to possible a hand-sowing of species that meet the original landscapes' project specifications. This must be available to make substitutions in gardens, this being a requirement of the *Charter of Florence*. For both the indicator is: identification of phenophases of species.

Another aspect relates the conservation of the water surface and consequently the existing fauna, whose indicator is: treatment of water surface.

The **social value** of Burle Marx gardens is expressed in the relationship that he seeks to establish between the offered activities to the use of spaces and user aspirations. This is evident in the design of the Praça de Dois Irmãos (1958), today Praça Faria Neves (Figure 5), and in Praça Salgado Filho (1957). The indicators for this value are: square use by the surrounding population, modalities of population participation and organization for actions of heritage preservation.

The **spiritual value** is present in the human sense of completeness of nature that affects the transcendence that the garden is able to provide. This is a very intense relationship between people and the garden. This value bears close relation to culture because for

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Figure 5. Praça Faria Neves, 2008 (Landscape Laboratory, UFPE).

Mexicans and Chinese the garden is a representation of the cosmos which transcends the physical dimension. This refers to the feeling of renewal of the spirit provided by resting in the garden. Actually, this value indicates the strength of immateriality that serves as the intermediary between the other values. This sensation or exchange is visible on the users of the Praça de Casa Forte, Praça do Derby and Praça Faria Neves. In this case the indicators are: assimilation of the proposal of the originator and feeling of belonging to the place.

A synthesis of the indicators proposed for the conservation of Burle Marx gardens are listed in Appendix 1.

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Appendix 1. Heritage values of Burle Marx gardens in Recife and their respective indicators of conservation.

Heritage values	Indicators
Historic value	1. Permanence of constructive typology of square construction season;
	2. Presence of vegetation from the original project;
	3. Presence of historic buildings or monuments in the square and surrounding;
	4. Effectiveness of implementation of the standard of protection;
	5. Existence of signage for historic gardens to Centre-suburb and signposts in surroundings and in the square; and
	6. Inclusion in the tourist circuit as part of the history of Recife.
Architectural value	1. Permanence types of traditional buildings;
	2. Stroke remaining from the original project;
	3. Integrity of the elements of garden;
	4. Garden's relationship with the urban context; and
	5. Articulation with other gardens or the nearby public open spaces.
Artistic value	1. Colour, shape and texture of plants like scenic effect;
	2. Unity of relationship between stroke and plant types in full and empty spaces;
	3. Experiences of interior and exterior/relationship of scale; and
	4. Identity of plant based (shrubby tree and herbaceous) conforming spaces.
Ecological value	1. Representation of the *caatinga* landscape ecology;
	2. Influence of the square on the local micro-climate;
	3. Identification of phyto-sanitary aspects of specimens;
	4. Phyto-geographical distribution of species components of the garden;
	5. Identification of the phenophases of species; and
	6. Treatment of water surfaces.
Social value	1. Square use by the surrounding population;
	2. Modalities of participation; and
	3. Organization of the population for the actions for the preservation of heritage.
Spiritual value	1. Assimilation of the proposal of the originator; and
	2. Feeling of belonging with to the place.

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¿Conservar uma feira livre? Or, preserving dynamic, complex heritage by accenting societal character and socio-spatial conceptualization

Klaus Hartwig Brendle[1]

Abstract

Contributing to the challenge of imparting complex heritage, this conference is concerned with the step after their preservation. Therefore it is (only) possible to deal with that which has been selected before and has been evaluated as worthy of nomination as heritage. In this perspective, questions begin in the pre-phase of a protected object. In particular, those submitted under *Conservação Urbana* as 'complex assets' like sites, cultural territories and entire landscapes – favoured by UNESCO in recent years – require 'complex' instruments indicating their state as composite places. Preventing later problems with monitoring is helpful in order to look precisely on a place's living identity and dynamic qualities; otherwise, later on, it may come under a precarious pressure.

Besides heritage of an intangible nature, the Brazilian *Inventário Nacional de Referências Culturais* (INRC) includes the categories 'places' and 'buildings' focusing on 'complex and dynamic cultural processes'. Through the heterogeneous mixture of (social) processes, (urban) space and (architectural) objects – namely by the large traditional market of Laranjeiras/Sergipe – this approach presents an example of a process, some different methods and a theoretical framework for how to observe, describe and indicate local socio-spatial phenomena. Extracting the events and process rules and their spatial consequences force considerations to concentrate on the merged features of 'usage and shape'. Aiming at the 'significance' of the *feira* and not only the most-demanded visual 'worthy-of-protecting' market scenes, the focus here is on the framework for the disposition of societal and design rules and their (historical, behavioural and material) resources. Fostering the dynamic background of this heritage, this approach works out the inherent crucial substance and the socio-spatial constitution of built and landscaping qualities. The potencies and the rules of their visual and livable essentials allow deduction of an adequate monitoring system in order to accomplish the conservation and performance of those sites.

Keywords: complex heritage and assets, dynamic place and cultural landscape, monitoring, urban and architectural analysis

[1] Laranjeiras/Sergipe – *Inventário Nacional de Referências Culturais* (INRC – Laranjeiras) *Identificação* [National Registry of the Intangible Heritage – Identification and Documentation]. Work carried out by: *Brasilis Consultoria & Empreendimentos (Execução*), Recife/Pernambuco; Dr. Betânia Brendle (General Coordinator), Klaus Brendle (Technical Coordinator), *INRC-Laranjeiras Equipe* (Laranjeiras/Sergipe). Client: I*nstituto do Patrimônia Histórico e Artístico Nacional* (IPHAN), Ministry of Culture; Superintendência de Sergipe. Relatórios 1 – 5. Laranjeiras/Sergipe, Brazil. Work in progress.

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Introduction

The description of 'what is going on in the *feira*' requires two different approaches: 'how it is' (Samuel Beckett, 1963)[1], and the history of its life cycle. If one includes the monitoring phase, it would be necessary to add consideration of the estimated future development of the protected heritage. In the case of the *feira livre* in Laranjeiras Sergipe (Northeastern Brazil) we would have to consider a long history of 'how it was', with undoubtedly several changes occurring up to the present day; the Saturday market was first mentioned in 1799 (Grupo de Restauração, 1975). Unfortunately within this project (Laranjeiras *INRC*, 2010) there was no opportunity to gain a deeper understanding of the past, though of course this would be interesting and quite complicated because of the mixture of research disciplines. Moreover, the market is part of the economic and cultural history of Sergipe and would require an adequate analysis of its regional functions, features and interchanges.

1. The place

Therefore, keeping in mind that the missing history would indeed enhance the following approach, let us look on the present *feira* in Laranjeiras. The area where the market takes place is localized at the northern edge of the former *cidade* (see Figure 1).

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We have to imagine that before the construction of the *Trapiche* buildings and the covered *mercado* (end of 19th century), presumably the open market was organized directly at the banks of the *Rio Cotinguiba*. The western part of the now built-up site has been used by a campus of the *Universidade Federal de Sergipe* (*UFS*) for two years, while the *mercado* has been in operation since its construction. At the eastern part of the southern riverbank are some commercial houses with one or two storeys, including a former bakery (now under restoration) and another *Trapiche* (a large hall structure, formerly for storing sugar, etc.) restored for cultural events. At the south side of the large and long square there are three important buildings from the 19th century: The *Paço Municipal*, built for the visit of the emperor in 1860 and now the city hall; the *Casarão Rollemberg* (now under restoration); and at the west end the former *Teatro Santo Antônio*, which, after some changes, is now used as library for the *UFS*. The smaller buildings in between with one or two storeys are used for shops, bars, etc. The architecture of the buildings is mostly neat and modest, stamped by flat thin façades with many ribbon windows and doors. This gives a horizontal character and makes a quiet background to the architecture of the public buildings (see Figure 2) The marketplace consists of an addition of wide short streets and larger squares all along the northern city centre with a length of about 180 metres and various widths between 10-25 metres, with a maximum of 40 metres, in total about 8400 square metres, including the *mercado*). Through the low horizontal façades and the wide space the open blue sky becomes a part of the urban character. The huge square also offers various views up to the green hills crowned by white chapels. Although in the middle of today's centre of Laranjeiras, the built sequence of public spaces is accentuated by a strong environmental impact from the surrounding landscape.

Figure 1. The market square within the historic town centre, its different accesses and connections.

Figure 2. Bird's-eye view of the market and the urban space from the east to the west. [The planned market-site in the background; not visible: the University buildings (*Trapiche*), the *Mercado* building (right) or the Rio Continguiba.]

The pavement varies between the later, more comfortable, granite stones (*paralelepípedo)* at both ends of the place and the former pavement of limestone flags in the middle (see Figure 3), called *coração de negro* ('heart of the negro', following Valladares, 1983) or *pé-de-moleque*, 'foot of an urchin'. The plain is subdivided into regular parts by this type of pavement, mostly by vertical inserted stone plates that form direct lines all over the square. Many of these lines are destroyed or nearly invisible. This pavement is probably the first one in Laranjeiras, made in the 19th century. It characterizes the atmosphere of some other old streets and lanes in the historic centre, but because of its rough structure, variety of size, state and soft consistency, it causes some problems in present standards of use.[2] There are sidewalks along the houses at the south and also at north along the large *Trapiche* buildings. Since these buildings are constructed on a higher level (probably against flood disasters from the river) they have an inclined, ramp-like apron. Rainwater is collected in deep and roughly constructed and now sometimes destroyed gutters and a few big drains. Maintained trees grow at both ends along the street-like parts, protected by low walls. Along with two isolated lampposts in the middle in front of the *mercado*, public road lighting is installed along the southern buildings on high posts with lamps that send an over-bright yellow light in

the dark. There is nearly no street public equipment like benches etc., only a monument commemorating the city's foundation. Nevertheless, along the *Rua Sagrado Coração de Jesus* is a longer balustrade that is the haunt of the people in front of the *prefeitura*, called *murinho* ('little wall').

Figure 3. *Feiralivre*, the historic pavement and the *Mercado* building.

The commercial town centre is a pedestrian area (the former *Rua Direita do Comércio*) directly leading to the market square (now called *Rua Getúlio Vargas)* and contains two small supermarkets, some bars, a bank and several shops. Along both sides of the square are found some simple bars and shops, all the local hardware stores, and also some waste houses or ruins (some of them currently undergoing a kind of 'reconstruction'). At the east end the main bus station (*rodoviária*) was built. Sometimes the neighbourhood opposite *Trapiche* gives shelter to some tables with handicrafts. Besides the *prefeitura,* the most important building is the listed covered *mercado*, to be opened at three sides to the market by many wooden doors (see Figure 3). In the western *Trapiche* buildings leading to the university the main entrance is just outside the market zone, not affecting the popular event. Their many doors are shut everyday, which gives the recently restored buildings a strangely ambivalent character. The *mercado* is also closed during the week but every door opens widely on market-days.

2. Attainability

The realm of the *feira livre* has many different accesses (see Figure 1). The possible former direct route from the countryside now connects only some areas of simple detached houses with the centre, leading across the river over a small road bridge. Its former direct (visual) importance was probably lost because of the construction of the other bridges the *mercado* building cuts off in the 19th century. Today there are two different main access points at the eastern and western end of the market square, by which the people of some suburbs of Laranjeiras and its surrounding villages reach the market. In particular, on Saturdays public buses are organized that wait there for the tour back to the villages, guarding in the meantime the many bags and plastic sacks of purchases and foodstuffs. The southern access is divided among some streets and lanes. Motorized visitors drive mostly into the *Rua Sagrado Coração de Jesus*. Other consumers who walk to the market mainly use the central pedestrian street, *'Rua Direita'* as it is still called by the people. A very special inland manner of coming to the market is by *mototaxi,* or motorcycle. At every access where motorized traffic reaches directly the market, motorcyclists park their vehicles until someone wants to be transported homeward. Another more traditional way of visiting the market is by horse, generally pulling a little wooden cart. Some people still do this and let their horses wait at two common places. We exemplify the variety and details of going to the market in order to expose the various underlying 'scripts' emerging into a functional substructure behind the 'picturesque image of a Brazilian market', exploring a complex socio-spatial entity.

The way back home might be the same but is visibly different because of the many sacks and bags that must be transported. The professional *mototaxista* offers his backseat to the customer and all purchases are mounted between him and the transported person. People sit waiting on the sidewalks, while someone is searching around for a last article, surrounded by a pack of bags until the taxi or one's car is loaded with all goods. Many of the pedestrians rent a *carregador,* who wait at common places for a job. If hired, these young boys follow the customer on the market through the swarm of people and collect every bag, melon, vegetable and other purchase in their metal wheelbarrow (*carreta*). In the end the consumer is joined by the boy on the way home, sometimes pushing a heavy load.

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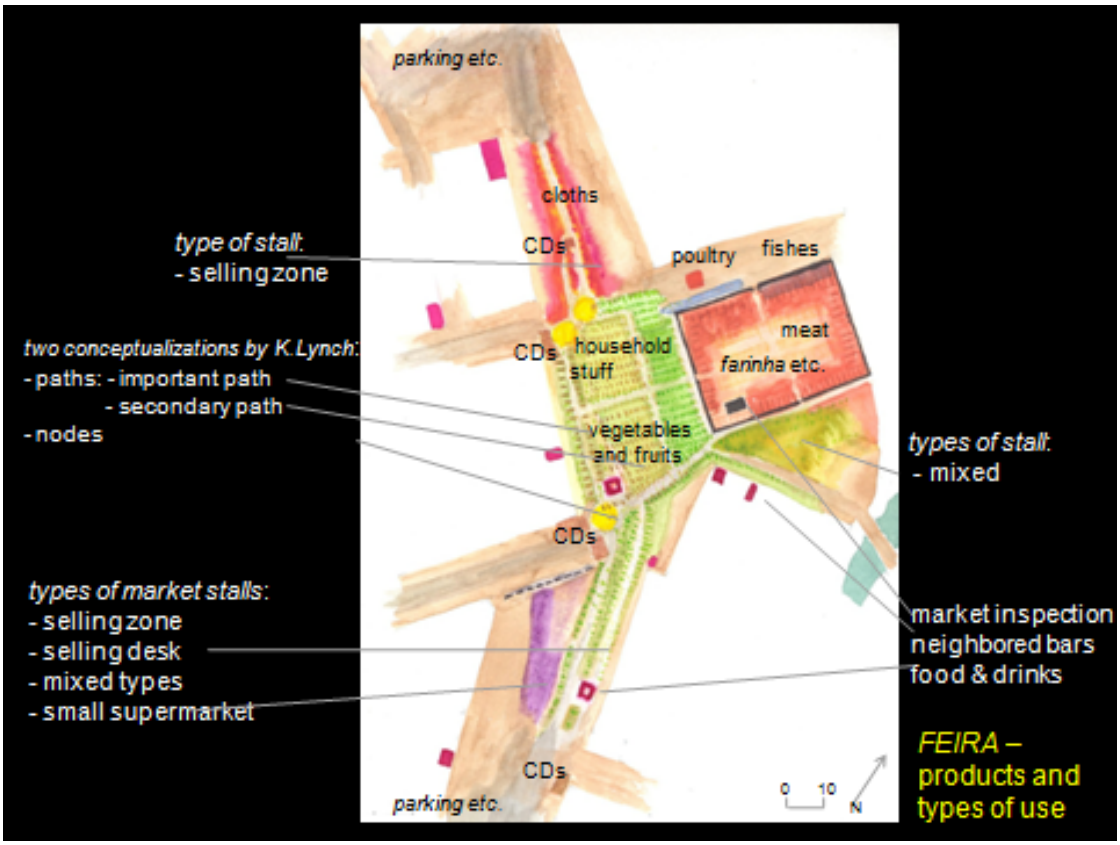

Figure 4. The market and its products, types of market stalls and other uses and functions.

3. Setting

The market takes place in the square and in the *Mercado* every Saturday from before 6 o'clock in the morning until about midday, but activity begins Friday late afternoon and lasts until Saturday evening. First the market stalls have to be transported to the place. Only parts are stored behind the *Mercado* along the river. The common stall type is like a table (1.2 x 2 metres), made from heavy steel (profiles and plates), dark red coloured, with folding legs. Most of them are prepared to fix a light metal roof construction. It is not our purpose to describe all the types and variations, e.g. the *barracas* for snacks and drinks, the used furniture, the improvised electricity supplies and the broad variety of baskets, containers, boxes, sacks, bottles, tanks, receptacles etc., although it is an inherent material part performing the *feira*. In the *INRC*-project this equipment, neatly arranged and including balances and other objects are analyzed. Some men start to distribute the folded tables around and to build up them here and there. With its undefined occurrence and maturity – the slow pace of the event – this procedure seems like a 'growing up'. The build up of infrastructure, becoming a spatial overture of the following activities and the market shape is likely non-systematic. The stapled metal pieces, some a bit damaged; the combination of 'spidery' thin profiles and flat table-boards; their accidental, irregular distribution over the place; and their various spatial relations appear like an artificial hybrid installation on the fragmented, but solid underground of rough *antigas* stones. But we will never see a completely prepared equipment constellation, because in the early evening the first trucks arrive with tired people and many goods, boxes and other things. The dealers start to settle into the unfinished rows of tables, paths and the space in between them. However we have no opportunity to look more carefully at the many steps in constructing the stalls and skillfully arranging thousands of products, things and foodstuffs. Innumerable awnings and plastic sheets are fixed all over as protection against rain or sun. The *Mercado* fills with fish, meat and the many kinds of *grãos* and *farinhas* (grains and flours). Meanwhile some people sleep under the completed tables, others have a meal, etc. This happens all throughout the night under the bright public lighting. For the distribution of the different merchandise on the market, see Figure 4. At the very end in the early morning the small retailers fill up the narrow lanes and paths and the voids around the stalls with their little items, while the first customers look for the best and freshest items.

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4. Events

This short view of the weekly routine of the *feira*'s creation illustrates some of the underlying layers: the socio-behavioural and spatial-objectifying preparation. The process rules became visible with the ongoing flow of time and actions to change the purpose of the public space for its weekly market functions. Like a weekly breath, things happen fluently; the town prepares itself for the return of this more than 200-year-old event. There is no exact boundary either in time or within the occupied space. The occupation, extension and stabilization of usages and spaces (and sub-spaces) are established by a minimum of rules and various flexible but typical objects. They rely on a precious and valuable culture of time use (in Brazil) and incorporate the basic needs and the customs of the people involved. The continuum of this transformation from a market town and back again to daily life over the week is created by the integration of social and material factors within the proceeding. Everything starts and finishes in non-strictly defined stages or steps; for example, a car crossing the centre may be blocked by some chains or by the municipal law enforcement officers almost all of Saturday morning. Crossing traffic is increasingly interrupted by the traffic itself and the spreading of the stalls all over the place; it is 'organized' gradually and by self regulation as well as by the many trucks being unloaded, items in the lanes, people working, etc. We have to consider these process qualities as inherent ones for the final visible appearance, realization and performance of the *feira* ('market picture'). Further on, understanding the exceptional change of the town centre, we realize also that the historic fabric is the necessary'receptacle' and place for the regular two-centuries-old event. We can even establish that on Saturdays the market is the heart of the whole region: all roads lead directly to and from the market's access points (Figure 5).[3] The market is the reason why and accumulates many more activities as well as economic and other transactions in the centre. By gathering people, the *feira* features as a socio-spatial realm of contact and becomes a substantial part of the town's tradition and identity.

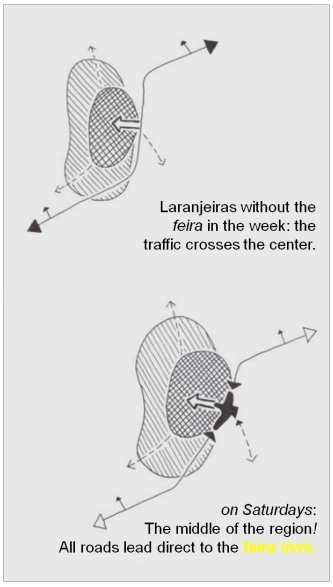

Figure 5. The *feira*'s regional integration.

If we look at the material layers of how the market is works,[4] we find another set of rules and lines that form the activities and the heritage object's appearance. The market area is subdivided by larger paths in different sections: 'quarters', with numberless tables in rows and different kinds of products (Figure 4). A similar structure is found in the *Mercado* building, but with fixed market stalls or small platforms on the ground. The spatial distribution of products is more or less the same every Saturday. The present regulation plan is undated and not performed as drawn. On one side this regulation characterizes the different shopping activities, but on the other side by observing the practiced business and how the retailers occupy the space we recognize a loss of evident structure. By using sometimes both sides of the tables, by building up baskets, boxes and goods in front and between the tables, a stall becomes its own universe. Sometimes several tables are used by one dealer while others may be empty. Throughout the market small retailers put a box here or an improvised table there, or stand around holding just a few things for sale in their hands. This flexible spatial structure is filled with more sellers, products and different possibilities than places for merchandise to be displayed. So the nodes, paths and lanes became narrower, dense and overfilled. Also the irregular pavement and occasional large holes (especially when it rains) have an effect on the arranged order and people's movements. Imagine the boys with their wheelbarrows, pushing through the swarm of people, men carrying heavy bags and things, children running all around, and young well-dressed women strutting proudly in between.

A very special and important space and 'compressor' is the *Mercado* building. By its fundamental functions for the market and its many open doors it forces people to pass through from one side and leave through the other. There is a permanent flow through the entrances and along the main axes. We hear the different noises of people's activities. The huge sheltered space compresses all action to a certain socio-spatial density; by going from the inside

to the outside and changing between the wide-open and hot *feira livre* and the shady hall intense impressions in all dimensions of perception are made. A butcher said that this fluid flow of customers is (one of) the essence(s) of this *feira*. We realize that these '*spatial* actions' are one of the affecting conditions of Laranjeira's market.

The spatial score (or script) has become its colours, smells, sounds; its time, rhythm and the sequence of movements. If we want to express formation rules we may say that there is a main underlying structure that is pictured by the market's vivid reality (*or* using a musical vocabulary: there is an always new improvisation like in jazz music; always new and different renditions of the same underlying theme or phrase). With its well-proportioned dimensions the width of a path allows narrowing it until a certain density is reached that creates a swarm of people and things. People move in a slower, sometimes pressed velocity and density changes to accommodate the situation, attractions and locality. In this traditional space the 'communication' or interaction between people and objects become a flowing line and network like the tune of a well-structured and formed musical composition.

5. Understanding

Practicing this kind of writing in the descriptive report is transferring and imparting both observed facts and perceived impressions, founded on a detailed methodology and local examination. For the field research we defined 5 typical places (each sector ca. 10 x 10m) at defined pre-observed localities (with different products and spatial structure) and documented all equipment and details ('hardware'), this is shown in Figure 6. Secondly, at defined moments ('time-cuts') we mapped all people in these sectors and their activities. Thirdly, we conducted short interviews with these customers within the same time period. Additionally in the same 5 sectors the sellers were interviewed as well as some professionals from the market organization, some jobbing workers, etc. Alongside other research, these interviews made it possible to get information about motifs, origins, products, customs, business background, periods of visits, organization details, etc. The knowledge of usage and its conditions explicate a typical scenario like a script, or formation rules ('software'). The limited possibilities of this paper (and of the *INRC*-project) do not allow for discussion and practice of more sociological, psychological, behavioural, urban and architectonic methods that have been developed by scientists from the first environmental approaches of the humanities. Meanwhile there exist a wide range of methods and techniques that deepen and enhance socio-spatial approaches and their possible results in order to understand complex real situations at different levels and from different perspectives. We see a lot of methods and concepts such as Roger Barker's 'behavioral setting', Kurt Lewin's *psychologischer Lebensraum* ['psychological

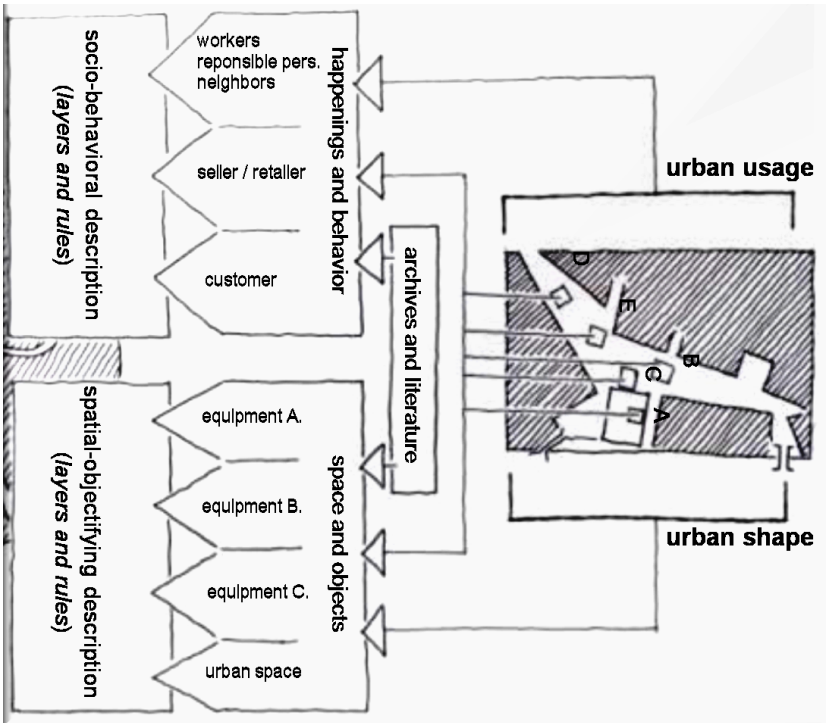

Figure 6. The five sectors of local survey and the workflow diagram.

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life-space'] and other concepts, Roland Günter's [socio-spatial] approach of *sozialer Raum* in Burano and Rome which includes socio-spatial and architectural mapping-methods, the many POE-researches in the United States and elsewhere, to name a few. Also, on an urban level, there is Kevin Lynch's useful understanding of an 'image of the city'[5], Michael Trieb's *Stadtgestaltung* (urban design planning), Christopher Alexander's 'pattern language', Klaus Humpert and Eda Schaur's research into morphological structures through 'self creating' ways in settlements, Ralf Kessenich and the author's application of methods of 'oral history' to large-scale urban images (1994), the author's system of 'urban usage and urban shape' (1990, 1995, 2010), and additionally town planning methods *e.g.* by computer simulation and functional-structural extrapolations. All of these allow complex analyses and descriptions of 'what is going on in the market/city/a wide range of territories'. We may even add artistic approaches and sensitizing 'visualizations' like the film *Koyaanisqatsi* (directed by Godfrey Roggio, 1982) or some of the presentations at the last Venice Architectural Biennale. If we focus on the processes, interchanges of objects, spaces, functions (customs) and social behaviour (either of small groups or under a sociological perspective) we have a scenic background that produces picturesque imagery. Then we are (*more*) able to discover and classify the main crucial factors of complex heritage appearing in landscape, urban or architectural 'forms' and 'spaces'. The inherent movements, changes, developments and their conditions and rules define the special dynamics and changing qualities as part of their 'cultural significance' (Australia ICOMOS, 1999)[6] according to an ongoing responsibility.

A third important group of rules is fixed by the administrative organization: matters like the conditions for stall charges, hygienic checks, security measures, etc. that we only mention here without going into deeper detail. This set of organization rules manifest a background for every activity on the site and need to be examined carefully because of their possible effects on market function and appearance. Additionally, the local socioeconomic situation constrains job possibilities, e.g. for the *carregadors*. Also, some sectors of local business depend on the *feira* performance and the present conditions.[7] Yet the market remains 'authentic'; but who will do such a job for less money in future? These questions may become part of a monitoring activity and need observation and sensitive consideration in the case of new developments, substitutes, ideas, and better payment. But at the moment there is a greater danger for this *feira livre*: the municipal administration is planning to remove the open market on the opposite riverbank outside the historic centre in a flat event square without any architectonic framework, creating again an *Erro Caruaruense*: the misconceived idea of changing the listed *feira* in Caruaru/Pernambuco.

6. Conceptualization…

Those analyses exemplify social and spatial parameters on different scales and layers, make possible descriptive sets of qualities and help to discover their assets, constraints and ongoing future development. This market survey may give an idea how to apply, adapt and extend appropriately instruments to larger urban and regional places. Cultural landscapes and the city's usage and shape require a complex analytical model defining sets of qualitative and typical factors. Resuming the general, holistic knowledge about the *feira* and some results of the fragmented, but defined and extrapolated typical 5 sectors, we propose as one step to differentiate 10 general potentialities, qualities and fields of possible influences:

- *Accumulation potency*: The site ('place') is able to compress and promote its own system and/or a connected (larger scale) system.
- *Insufficiency potency*: The site ('place') has a certain (controlled) imperfection that allows adaptations, modifications and further activities and/or construction.
- *Integration potency*: The site ('place') is able to integrate further items within itself and/or itself in a (larger scale) system.
- *Locality potency:* The site ('place') inherits a strong uniqueness by its attainability, geo-morphological and culturally formed environment and built objects (see Norberg-Schulz, 1979).
- *Modularity potency*: The site ('place') consists of (variable and/or flexible) modules and/or entities and is structured by particular intervals (space in between).
- *Organization potency*: The site ('place') embeds material and immaterial structures and forms of communication,

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affordances and combinations that give background and future opportunities.

- *Regulation potency*: The site ('place') constitutes certain unofficial rules, customs, arrangements, etc.; maybe as traditions or by 'self-regulating' systems; and/or open like a net for further developments.

- *Time fluidity potency*: The site ('place') has its ongoing realm and may be regarded as a 'small' universe which defines and/or lives its proceedings and 'being' (-in-time) within its cultural values.

- *Unlimitedness potency*: The site ('place') is structured in different levels, realms, 'times' and/or in modules with edges, limits, borders, intervals etc. that inhabit a certain kind of (controlled or open) interface between each other and the entities within and/or 'outside'. This ability gives opportunities for fluent effects, links and further developments but also a 'relaxed, soft background' within the proceedings and between the (built) elements.

- *Usage potency*: The site ('place') is essentially occupied by the core significance of its well known uses and associated customs, activities and events including the inherent useful objects and surrounding fabric. This accentuation means a close connection to the society's reality, scopes and constraints and a necessary substantial openness to future developments.

These 10 short (abstract and processual) explanations of qualities of complex places can only be a limited attempt and of course require more scientific, definite surveys. Imagining that all ten qualities are inherent in the combination of social and material factors, the explanations become more practical and closer to reality. Furthermore, when locally adopted, they achieve founding specifications, representing the flow of daily (urban) life. On every level we found those units of social and spatial factors (patterns). The conceptual combination of 'usage and shape' helps to differentiate the factors *and* to keep them together. It widens the understanding of dynamic phenomena in between the dilemma of being protected and enclosing openness to change. Focusing the preservation on built elements is obvious, but these 'pictures' are not sufficient to be helpful for the complicated decisions on how to accept or better to conceptualize (*design*) future necessities and possibilities. If we rely on the results of these processes we may lose the exceptional (design) pre-conditions. On the other hand the recent practice of protecting intangible heritage separately introduces new problems because such heritage might lose its imminent material conditions (see Pinto on *farinha*, 2005). Complex heritage depends on the unity of 'hardware and software formations'. By understanding and integrating dynamic factors and social-spatial effects we expand the criterion, making it easier to impart significance and garner political acceptance within the essential 'lines' of the preserved and protected heritage. For this we need an adequate, much deeper analysis of what is going on and how it is producing the hardware we are enthusiastic about.

Buildings, cities, cultural territories – and *feiras* – are immanently 'products and permanent processes' of social happenings;

> "The city… **[or market]**…is a state of mind, a body of customs and traditions, and of organized attitudes and sentiments that inhere in this tradition. The city… **[or *feira*] …**is not, in other words, merely a physical mechanism and an artificial construction. It is involved in the vital processes of the people who compose it, it is a product of nature and particularly of human nature" (Park, 1915).

7. …AND BEYOND!

Against this background we may discuss the preservation and monitoring of complex heritages; *e.g.* Dresden. Was the city's traffic system part of this (*former*) cultural World Heritage? Of course it was (in history and on the actual maps), but not – I am sure – in an explicit and operant way. There are train paths, a few road bridges (mostly built in 'modern' GDR times) over the Elbe river in the heart of the *ex*-heritage nearby the *Elbterrassen*. The river itself was and is a 'traffic artery'. Was anyone thinking of traffic lines as an underlying part of (the history of) the cultural landscape and baroque city? Or how they would develop in future?[8] Or the new planned bridge over the Rhine in the middle of the World Heritage Upper Mittelrhein Valley – maybe it might be a new part of the genuine old European transportation Rhine-artery? In Brazil the extension of ministry buildings is clearly designed and 'calculated' to maintain a relationship between single buildings and open space; is it sufficient to keep free just some (important) views throughout the townscape along

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the diagonal edges of the Praça dos Três Poderes? Or the slight unimportance of the former planned *setores centrais*; how would it have been possible to enhance and develop them in order to keep them as marked commercial localities, avoiding the visual 'loudness' of the nearby later buildings? What, for example, will happen on the Island of Reichenau in southern Germany if the local economic market based on vegetables collapses and the protected green fields surrounding the middle-age churches become endangered? Are we 'prepared' by outcomes of a complex analysis, besides a visual-aesthetical and historical comprehension? Or, as in the example of Lübeck's historic centre where in recent years the most interesting and characteristic postwar buildings (*Wiederaufbau-Architektur*) were and are still being destroyed because no one takes care of developments later than the building period of the Hanseatic city. The typical postwar urban shape and its buildings were constructed outside the protected Hanseatic areas but are closely surrounded and adapted in a contemporary way to the city's shape (Brendle, 2004). Is it acceptable to cut off entire parts of the city's postwar development and history?

All these briefly mentioned examples demonstrate that preserved large-scale (world) heritage does not incorporate important items and dynamic qualities like aspects of traffic, functional changes, historical ruptures, actual and basic urban or landscaping parameters although they are 'entire cultural places'. However, the summary of these influences, historical facts, present usage and cultural attitudes make them important heritage for the world, presenting (built) solutions with specific urban structures and architectural languages.

Conclusion

The dismantling of Laranjeira's *feira* begins slowly when the first fish-sellers pack their things at about 11 o'clock while the fruit stalls look bright in the morning sun. But voices praising the food's qualities sooner or later get louder and louder. The attention of the costumers gradually changes to the coloured cloths stalls, while the butchers organize their exit. After midday we realize that this *feira* will come to and end with the week. The very last products get the last chance of being sold, trucks and cars surge into the constellations of stalls; red-overall clad men and women appear to collect the rubbish that has increased substantially in the last two hours. In the late afternoon, sometimes until the shining of the bright street lighting, the spidery constellations of empty tables slowly disappear, here and there, leaving behind a pure urban space. It is still many hours before gradually more and more cars roll between the last market stalls; now in the evening the square belongs to them. Saturday night has come.

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Endnotes

[1] in […] first publication. Comment C'est [1961]/How it is [1964]. I am not referring only to this suitable title, but also to the flow of text which could be a metaphor about the flow of permanent activities and actions affecting something like a feira: the weekly appearance, beginning with building up the market, and then disappearance forming a non-specific, endless and timeless phenomena. "[Es] bietet sich die Möglichkeit, den Wirklichkeitsbezug immer erneut ästhetisch auszuweizen. Dies meint der Titel: 'Wie es ist'." ([There] exits the possibility, to turn out the relation to reality always again and again in an aesthetic manner. This states the title "How it is.") www.de-wikipedia.de

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[2] Since November 2010 it is under restoration but in an ineffective manor and with less technical skills; e.g. not enhancing the substructure (bed) and filling now the joints between the flagstones with grout which will make the stones break.

[3] Laranjeiras is not crossed by statewide roads; currently the traffic is constrained in the centre because of a circuitous road.

[4] "Como a Feira Laranjeirense funciona", subtitle of a first report of the INRC Equipe at the UFS on 19 March 2010.

[5] 'urban elements: *vias* (paths), *limites* (edges), *bairros* (districts), *pontos nodais* (nodes), *marcas* (landmarks)'.

[6] "Cultural significance means *aesthetic, historic, scientific, social or spiritual value for past, present or future generations*."; emphasis author's own.

[7] What might happen within the "complex system" when these underlying conditions will change…

[8] Here is not the place to judge if the now-constructed Elbe road bridge really is necessary…

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How to register memory? Documentation, recording, archiving and preservation of intangible cultural heritage in Venezuela

Jenny González Muñoz[1]

Abstract

Culture as a social construction of human beings and nature produces intangible manifestations sustained primarily by the oral tradition, which gives it significant features that print decisive elements for the creation of technical documentation, recording, archiving and preservation of intangible cultural heritage. In Venezuela, the problems in carrying out this task have remained; failures related to the true meaning ascribed to intangible cultural expressions considered from the perspective of libraries for attributing items of material culture. The best documentation, in-depth research product is essential not only for the preservation and revitalization of intangible cultural heritage but for the formation of consciences on the basis of respect and appreciation for the sake of intercultural dialogue.

Keywords: intangible cultural heritage, documentation, records, files, preservation, Venezuela

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Introduction

The status of cultural processes is implied in its expression, a neat and unique human being, who takes hold of their interpersonal relationships to meet and conduct their own collective life projects. This, guided by necessity, creates a series of utilitarian items, but also carries away an ability to improve themselves, their environment, context and community. Culture leads man to worship gods, clinging to the existence of higher beings to justify their stay in the world and respond to uncertainties and doubts; this creates myths, rites, ceremonies and legends.

The functions of aesthetics, customs, traditions and preferences in establishing different types or aspects of culture that change as situations occur, imply a dynamic power that is manifested in the daily treatment and non-daily life according to the weather conditions and space.

Culture is a constant imperative for each and every one of the world's societies, giving a possible statement about the presence of cultural events in each act of daily life. It registers from the teaching of values and behaviours at home to made-up creations and academic development. Beyond that, culture is a need for social outreach, economic, political and artistic, hence its ability to establish itself as a dynamic reference and transformer in a number of different areas. The importance of building a collective consciousness that allows for us as a constituent part of our culture and traditions is significant for understanding our history, with further subsequent analysis and interpretation necessary in using specific elements or self-reflection as a society. In this sense, the role of oral tradition is essential not only because it is a tool used by people who do not know historical writing as part of its original establishment, but also because it is achieved in rural and farming communities, where elders are true 'living books' capable of containing major events for the locality or region, including its historical origins.

Orality is a symbolic expression, an act with intended meaning from a human being to another and another, and is perhaps the most significant feature of the species. Orality, then, was for a long time the only system for men and women's expression and transmission of knowledge and traditions. (Álvarez Muro, 2001).

Orality is the expression of the world of meanings and senses that is the culture, history turned into sustained memory and staged through the spoken word. Oral traditions are all oral testimony, narrations concerning the past. This definition implies that only oral traditions, that is, narrating testimony, can be taken into account. This is not sufficient to distinguish them from written records, but from all material objects that can be used as sources for knowledge of the past (Vansina, 1968).

However, as the cultures established under these characteristics are held by man himself, their survival and preservation over time is fragile so they should be treated with recording and documentation

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programs according to their 'intangible' terms as they often are for generational use immediately, and this special treatment should be aimed towards their promotion and preservation.

1. Cultural Heritage: beyond the intangible

To delve into the documentation, recording and archiving of assets from intangible cultural events, you must clarify concepts such as heritage and cultural property. UNESCO, as the international body responsible for enacting the guidelines related to protecting and safeguarding cultural heritage in Article 2 of the *General Provisions of the Convention for the Safeguarding of Intangible Cultural Heritage*, dated October 17, 2003, states:

> "The 'intangible cultural heritage' means the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage [...], is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity" (UNESCO, 2003).

The inclusion of objects, artefacts and cultural heritage is inherent in the approach to re-cognition of those who know of its history, deriving values for identity and self-reinforcement where there is a sense of ownership. In Venezuela the people of the parish of La Pastora (Caracas) identify with Amadores corner, where the tragic death of Dr. Jose Gregorio Hernandez occurred. He was a character who in popular belief was attributed the connotations of a saint, so that in this case the corner per se is not important but instead the legends that accompany mythology about medical miracle cures. The festival which is held every December 29 in Timotes (Mérida state) on the occasion of the celebration of San Benito de Palermo is a tradition, sustained from generation to generation, significant not only in dress and sacred images, but in the faith of *promesantes* and parishioners. The myths of the indigenous Warao (Delta Amacuro State, Figure 1) are held on through time, not in the figure of those who have but a collective belief. The Dancing Devils of Naiguatá (Vargas State, Figure 2) have their assessment begin in the religious and collective representation embodied in

Figure 1. Oral tradition Warao. Delta Amacuro State.

Figure 2. Dancing Devils of Naiguatá Vargas State.

their masks and costumes. Hence, the registration and documentation of this heritage should continue distinguishing characteristics entrenched in what has been called 'content analysis'. It is indispensable to provide detailed references, though brief, so that users can establish levels of understanding that approach the value of such demonstrations.

Heritage as a set of tangible and intangible assets inherited from our ancestors is not constrained by a certain time that it enhances; on the contrary, it remains entrenched in the temporal and spatial (Hernandez, 2002), hence its dynamic character. The product of this heritage is collected and preserved to continue its transmission from generation to generation, avoiding a potential rupture or disintegration, which can lead to an inevitable loss. Hence the importance of customs, traditions and native languages, known as real culture and viewed as:

> "The cultural identity of a people is historically defined across multiple aspects that portray their culture, such as language, communication tool between members of a community, social relationships, rituals and ceremonies, and collective behavior, this is, value systems and beliefs" (González-Varas, 1999, p. 43).

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In Venezuela there is a substantial amount of intangible cultural expressions that have been sustained and preserved by the communities to which they belong, but it is for the State to 'take all necessary measures to ensure the safeguarding of intangible cultural heritage', as expressed in the *General Provisions of the Convention for the Safeguarding of Intangible Cultural Heritage* in Article 11, which implies the creation of regulatory bodies of both the recording and the handling of such goods, as well as the establishment of laws to ensure their preservation (UNESCO, 2003). In this South American country, the Ministry of Popular Power for Culture contains the Cultural Heritage Institute (CPI), which holds the General Register of Cultural Heritage of the country bounded by the Protection Act and Cultural Heritage Protection and Regulation (2005, p. 49), with the objective to "identify all that is distinctive and significant to the cultural identity of Venezuelans, corresponding to its artistic, historical, plastic, environmental, archaeological, paleontological or social aspects."

In the instructions governing the General Register of Cultural Heritage and the Venezuelan assets comprising it, included in the law (2005, p. 49), Article 5, Chapter 1 speaks of the form to be used for tangible and intangible cultural heritage by applicants, which must provide the following items:

1. Name
2. Location: region, state, county, city or town centre, parish and direction
3. Owner, trustee, custody or charge
4. Category to which it belongs
5. Description
6. Assessment of the applicant
7. Technical assessment
8. Condition
9. Photographic or audiovisual record
10. Registration date of its declaration and its publication in the Official Gazette
11. Legal documents in evidence
12. Public input or administrative actions undertaken to safeguard the asset
13. Revitalizations and other interventions

The registration form includes the 'description' as a reference summary of the event postulated, while terminology points to a simple sketch that can not delve into a qualitative analysis concerning the intrinsic content from the point of view of social value or cultural expression. Despite this, the law says that what is relevant is community support to achieve institutional recognition of a particular manifestation of cultural heritage that enhances its true social salience.

Beyond the register, the CPI-edited catalogues of Venezuelan cultural heritage, consisting of 336 books, are a source of equity census results from 2004-2007; enumerated as targeted municipalities in each of the entities' federal counties: 24 compact disks that show some of the demonstrations (singing, dancing, ceremonies, objects, etc.); and an atlas with 1,700 maps that allow the consultant to locate the demonstrations geographically. No doubt these efforts are valuable, though, it is worth noting that in such cases we can only speak of registration and not documentation, since reading the catalogues we realized that the focus has been on location and the name of the cultural expression, leaving very few lines of description (no content analysis) which is necessary to explain the relevance of the terms for being 'intangible'. There are also significant errors and omissions in these records. For example, in Trujillo state there is a traditional dance called 'the Doll Calendar' dating from precolonial times associated with Momoy culture-group heritage, who were once settled there. Its significance is huge because it contains the ancestral Andean world view of singing to the moon (represented by the giant doll) who is adored by the 'dwarves' that dance around accompanied by a music unique to this demonstration. On the CPI catalogue for the state of Trujillo, Urdaneta municipality, there is an entry for a 'Dance of the Dwarfs' (the popular but incorrect name), as follows:

> "The dwarf party calendar is part of the Christmas celebrations and is celebrated every 24 December. The simulated character is a grotesque face painted on a belly dancer. A parade accompanies singers of carols around the streets and houses in the region" (CPI Catalogue, p.73).

As shown, the summary description is so incorrect that it is impossible to know and understand the symbolic significance of the dance, its history, or the true meaning of that which has been considered to be the intangible cultural heritage of Venezuela. We usually find these examples when we study how to record and document this heritage as it continues to provide tools for cataloguing objects but not sustained expression in the oral tradition.

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In addition to the CPI, the same entity is assigned to the ministerial Centre for Cultural Diversity, an organization created in 2006, with the mission "to interact with the multiplicity of ways in which cultural diversity is expressed in Venezuelan society, valuing the benefit of Latin American and Caribbean integration" (http://www.diversidadcultural.gob.ve). Within this organization is a Collections Management department, which holds the documentation, records and archives of intangible cultural heritage contained in the photographic, audiovisual, literary and ethnographic compilations that correspond to 28 countries in Latin America and the Caribbean.

2. Documentation: a path to the preservation of cultures

When we refer to the cultural heritage of a region, we are talking about a wealth of knowledge and action that encompasses elements which the collective believes are there for life and, therefore lay hold of them to face their problems and project their collective improvement models (Bonfil, 1991). All of this has to do with the sense of identity, which is regarded not as an identity factor, but as an element that leads to identification, hence the feeling of belonging and consequently of ownership, as illustrated by Nietzsche:

> "The history of his city becomes for him the history of his own self. He understands the walls, the turreted gate, the dictate of the city council, and the folk festival like an illustrated diary of his youth, and he rediscovers for himself in all this his force, his purpose, his passion, his opinion, his foolishness, and his bad habits." (Nietzsche, 2005, p. 17).

The nature of intangible cultural events and their continued dynamism, makes any attempt to record them complex. This adds the powerful ability of adaptability (for example, religious ceremonies and potions) that approximates survival or permanence time (e.g. myths, stories, music). The tangible hardly does because if one destroys the building, to cite one factor, the only vestige that remains is the ethnohistorical memory; it is the immaterial, the oral tradition, as well of technical support that remains.

To document, record and archive intangible cultural heritage one should make use of media (photos, videos, audio tapes, bibliographies), but keep in mind that they are nothing but instruments of support, because what is truly significant is the event itself, hence the transcendent nature of the documentation.

According to Guzman and Verstappen (2002) the term 'documentation' in some places:

> "…leads directly to the idea of a collection of documents. This meaning tends to give more importance to the proper collection of documents you have. 'While other' means first, the act of recording the results of an investigation [...] during this process creates documents" (Guzman and Verstappen, 2002, p. 6).

It then establishes two types of documentation: a reference and a variety of library and other information organized in records not fully processed. Here the accurate identification of events is crucial, as well as not making mistakes or providing false information to researchers and other users.

In Venezuela the institutions working on the basis of the revitalization, preservation and dissemination of intangible cultural heritage tend to focus on the classification and collection of items such product demonstrations, tending to leave the optimal background documentation of research conducted by specialists of each type of knowledge. This minimizes enhancement that can be given by the traditional knowledge that should actually be the primary focus. In these cases, the record is confused with the creation of catalogues, inventories and accumulation of media as well as with a de-virtualization of the initial task, as it continues to give precedence to the objects placed in collections and not to strengthen the investigation of cultural knowledge being monitored effectively, or supplies of audio-visual media and that its importance lies in keeping alive the diversity of cultures.

The lack of systematic procedures based on specific tools coupled with processes emerging from the activities of contemporary social scientists, has made the recording process set aside instrumental sources such as the ethnohistorical reconstruction of memory based on things such as rites, ceremonies, empirical knowledge, artistic creations and other activities in the community.

Collections Management Centre Cultural Diversity in Venezuela (CDC) uses archival methodologies appropriate to the wealth of their records of intangible cultural expressions, also attempting best practice with infrastructure and conservation of materials (see Figure 3 and Figure 4, next page).

To maximize both the registration file, i.e. cataloguing and organizing the media, and documentation

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Figure 3. Audiovisual archive.

Figure 4. Photo archive.

of cultural events collected there, we made use of DocuManager, a document information system that users helps offer access to different audiences under the supervision and guidance of assigned specialists. It provides technical information (format of photography, for example), a detailed placeholder, the name of librarian, the researcher name, date of registration as well as other information. In performing our work *in situ* to determine the current status of registration of countries included in the photographic database we realized the deficient state of the database used. There is a clear case where using a good systematization tool fails because the data input or the content analysis is shallow or absent. In many cases it seems to have been more relevant to include technical data, repeating patterns of documentation, recording and archiving consonant with manifestations of material nature, but not successfully adaptable to the characteristics of intangible heritage as referred to in this text.

Upon entering DocuManager, windows are deployed that allow users to easily search either by country, name of archivist, reference code, city, etc., and to see how many items are in the registered collections. But when accessing the files the information provided in the content analysis is in most cases is minimal. Technical details that are not a user researcher's interest are ignored, and greater attention is instead given to explanations of clothing depicted, reference to oral tradition, social relevance and other relevant data elements.

Registration tasks must be forged from equity research, where the contents of the analysis are more than a cursory amount of words, such as in the case of media which is immaterial and unlikely to leave a record conserved in time, beyond oral tradition. Without proper documentation, it becomes a mere object of the collection.

The registration and inventory work should be supplemented with their own specialized tasks files, noting that a good safeguard policy should include both the strengthening of community practices that give life and sustainability to intangible heritage including public outreach and education by organizing collections documented and possible services

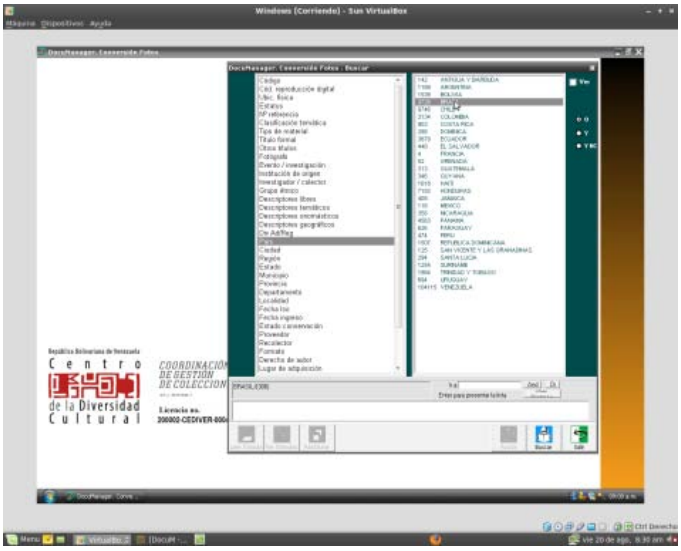

Figure 5. Access seeker.

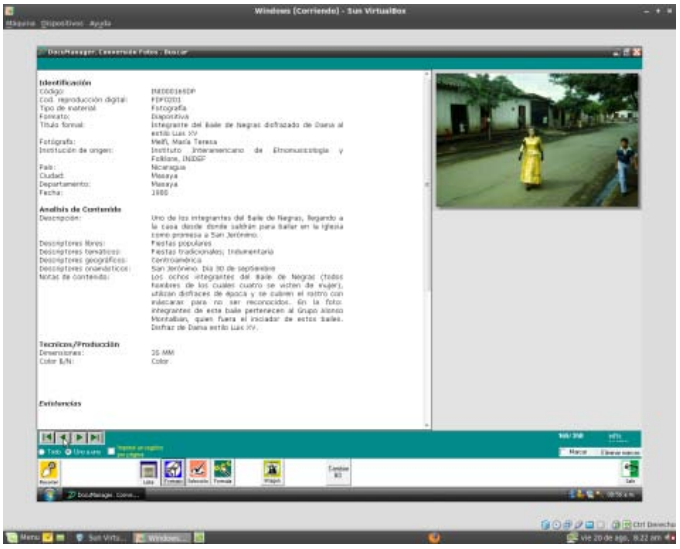

Figure 6. Documented model information users.

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that promote knowledge management. (Consejo Nacional de la Cultura y de las Artes, 2009, p. 37)

By strengthening the documentation of these 'community practices' as mentioned above, one is also conducting conservation or safeguarding work as a means to preserve against negligence, destruction or misuse of the performances, demonstrations and cultural performances of villages. These all provide for the adoption of a series of measures aimed at identifying optimal factual knowledge, protecting (which is part of the role of documentation), promoting as an approach to other areas, revitalizing to avoid extinction or misuse and diffusion in terms of transmission of the various economic aspects. This means, therefore, its protection and conservation. The statement in Article 2 of the *General Provisions, of the Convention for the Safeguarding of the Intangible Cultural Heritage* reflects this:

> "'Safeguarding' means measures aimed at ensuring the viability of the intangible cultural heritage, including the identification, documentation, research, preservation, protection, promotion, enhancement, transmission, particularly through formal and non-formal education, as well as the revitalization of the various aspects of such heritage." (UNESCO, 2003).

Life can be inferred from each and every one of these issues highlighted because they are concatenated to the extent they are adding to the identification and ownership of communities with respect to the terms arising from their own culture, resulting in elements of national identity, regarded from the most specific to the general. In this sense, the role of education is vital for the construction of new consciences guided by respect for cultural diversity and its generators.

The institutions carrying out public policies based on intangible cultural heritage should be ready to support the furtherance of research works not only with the stock they have in their collections, but on the changes that traditions have experienced over time. It is not enough to comply with registration rules and file appropriate forms for the conservation, or in many cases, the revitalization of these cultures, even if excellent documentation is held. In this sense, the preparation of publications, websites and IT systems should emphasize the analysis of cultural content owned by them, and open the door to knowledge through educational strategies that promote respect and appreciation as well as building increased dialogue between cultures.

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Conservation of urban architectural heritage in Rosario: inventory, regulation and evaluation instruments

Carolina Rainero[1]

Abstract

Conservation of built heritage must be considered as an identity and local development factor that plays a positive role in building the urban landscape. However, urban dynamics themselves jeopardize built heritage, since building a city on an existing one implies substitutions that, in many cases, act against urban memory. This paper intends to reflect upon urban policies' follow-up and monitoring strategies of urban architectural heritage protection and conservation in Rosario.

The *Urban and Architectural Heritage Conservation and Rehabilitation Municipal Program*, which depends on Rosario Municipality's Planning Office, has implemented an extensive property protection program. The first actions were focused on control of demolition files which involved heritage buildings, on elaboration of an inventory of property in the city's central area – highly exposed to substitution given its high real estate value – and on participating in the elaboration of the new urban code (2008) that has used urban indicators to attempt to discourage indiscriminate substitution in heritage areas as a measure to complement direct property conservation. The state action proposes regulatory instruments that, on the one hand, regulate or limit actions on heritage and, on the other, prioritize the incorporation of heritage in the definition of urban landscape. Heritage protection is not feasible with just the elaboration of property inventories or protective regulation. These represent the reference framework and the starting point of continuous and permanent follow-up and monitoring of the actions that public conservation policies must address in relation to urban heritage interventions.

Keywords: urban conservation, architectural heritage, inventory, regulations instruments

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Introduction

Experiences in historic cities cannot be taken as referents since they differ in nature, whether for historical, constitution or growth dynamics reasons. On the other hand, the population fails to see in heritage a wealth factor, and tends to consider heritage a load rather than an alternative for development. The city grows and is transformed and, unfortunately, irreplaceable buildings and property can be substituted in this process, giving rise to an evident contradiction. From the physical perspective, the city is being built on the existing city, but this could take place without destroying the several layers that overlap in space-time. Its unique buildings, streets and landscape as a whole make up a rich tangible heritage which, like landmarks or anchorage, account for historical continuity, provoking reflections of urban heritage and culture as regards identity, forms of evocation and memory. Therefore, it is necessary to reflect upon management, from the indirect control of urban shapes to the instruments that permit anticipating architecture – city projects.

Figure 1. Rosario. Central Area (Source: Arq, Carolina Rainero).

1. City characterization

Towards 1852, Rosario, a village of 9,785 inhabitants, became a town (Figure 1).[1] By that time, the village had extended spontaneously following the Hispanic checkerboard orthogonal tradition, from the core of the settlement made up of the chapel and

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the square outwards. In 1866 the first section of the Argentine Central Railway (*Ferrocarril Central Argentino*) opened, and this determined a new element in the spatial structuring of the city and the region. The rise in the number of inhabitants contributed by immigration, the expansion of the port activity, and the growing agricultural exports trade helped the city grow by founding new villages, incorporating hamlets or adding rural territory. Thus, a city with varied hues, a mosaic of landscapes with a distinct identity, was formed.

In the first decade of the 20th century the works that would change the city's appearance were built: the port, the first urban park (Independence Park), the hospital, the racecourse and the Saladillo baths,[2] among others. Rosario became a booming 'metropolis', where the modern age has left unique fingerprints, especially in the downtown area. Until 1930, while there were substitutions of the original buildings, the city grew on new land. However, from then on, the city was built on the existing town. From 1930 to 1966, the country underwent a social and economic crisis, presided over by military administrations. The city could not elude the national reality and experienced scant transformations. Towards 1968, when the economy and urban transformations were booming, the Rosario Regulating Plan was enacted. Its Code stipulated the division of the urban area into Districts, which arise from reordering and streamlining the city zones, and indexes were established to anticipate changes in the urban landscape.

The city is still growing fast but has to face the consequences of unattended regulations regarding urban land 'qualification'. The lack of appreciation of the existing city needs to be emphasized. The indexes suppose an empty lot and no pre-existing structures are recognized. Therefore, the city heritage and its urban landscape are left unprotected. The aforementioned indicates that, for the purposes of considering urban heritage, Rosario presents a complex reality (Figure 2).

Figure 2. Paradigmatic Buildings. Rosario. Central Area (Source: Arq, Carolina Rainero).

2. The city and its urban heritage

Despite having a unique natural coastal landscape and a wide variety of built heritage, this richness is not openly recognized by the inhabitants. Some of the reasons for this are: lack of sensitivity to a common past,[3] a mercantile nature, and property developers' speculation, which has pervaded almost all of the city's development actions, motivating the urban heritage devastation for decades, and even unto the present, due to the current economic boom.

The central area is the most affected area. This presents paradigmatic works linked to the city's urban history where the progress paradigm, understood as upward development, has caused irreplaceable losses and generated a change in the landscape scale. However, if society does not claim protection of the city heritage, public regulations are left with little margin to be applied. Unfortunately, in my view, urban regulations, which have regulated the city since its inception until the elaboration of the 2007 Urban Plan, did not reconcile appreciation of the urban land with heritage. The regulating instruments have always considered the urban land as empty, with no precursors. This causes vulnerability in the local urban cultural heritage.[4]

3. Heritage regulations

The city's distribution and construction regulating instruments have contributed to destruction rather than protection. As mentioned above, the 1968 Urban Code has been partly responsible for substitutions, due to the indiscriminate treatment the urban land has received. However, the first precedent regarding the intention to conserve and value the urban heritage dates from 1984, when Decree No. 0998 was issued and the Evaluating Committee was formed[5] to evaluate and advise regarding any intervention on real estate property whose building permits dated from before 1953. In 1987 the Evaluating Committee became the Urban and Architectural Heritage Conservation Committee. By Ordinance No. 5278, the Urban Conservation Fund of Rosario was created, which represents 3% of municipal taxes. Also, demolition permit and approval procedures were amended.[6] In 1996 the Urban and Architectural Heritage Conservation and Rehabilitation Program[7] was established, under the Planning Office of the Municipality of Rosario.

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Until 2007 heritage protection and conservation was realized through proposals created by ordinances and decrees including:

- Action programs: Revitalization of the Downtown[8] and the Program of Preservation, Conservation and Publication of Rosario's Industrial Heritage.[9]

- Special plans for quarters declared of urban interest, in order to restore buildings that are representative of the quarter's urban history, preserve urban morphology, and encourage private investment[10] and the **historic, urban and architectural area** of Oroño Boulevard.[11]

- Declarations of Historical and Cultural Interest, such as the urban complex made up of the Central Argentino Railway Repair Shops.[12]

- Elaboration of the *Central Area Inventory* (Figure 3)[13] listing heritage buildings and sites declared of municipal interest to create a catalogue. Categories of heritage buildings, rides and urban sites are established, as well as their different degrees of protection.

4. Planning Office's Conservation Program

Conservation of built heritage must be considered as a factor in identity and local development that plays a positive role in building the urban landscape. However, urban dynamics themselves jeopardize built heritage, since building a city on an existing one implies substitutions that, in many cases, act against urban memory. The introductory section of the Urban and Architectural Heritage Conservation and Rehabilitation Program in the local government's website indicates the nature of the urban heritage conservation policy:

> "[…] this Program encourages a city project where urban interventions, whether private or public, introduce restoration and enhancement of urban and architectural heritage as a driving force to promote public spaces, and recreate diminished, messy or 'vague' areas […] The project points to restore heritage buildings and sites, in order to highlight those features that go unnoticed to the average person, to strengthen the local identity and to boost the sector's economy [development factor]."

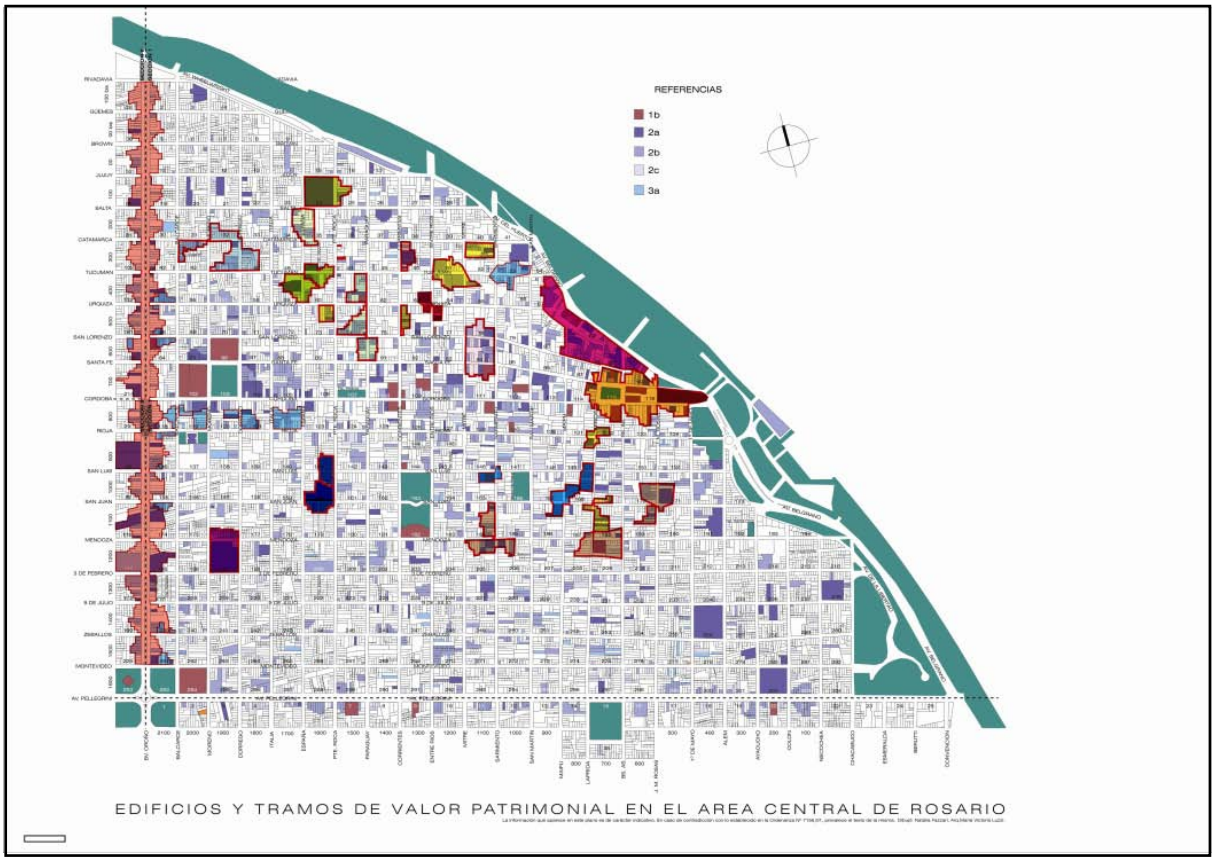

Figure 3. Central Area Inventory (Source: Historical, Urban and Architectural Conservation Program; Planning Office of the Municipality of Rosario).

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As mentioned above, heritage is considered a key factor and an identity resource in urban planning. Therefore, four action lines are defined:

- Elaboration and instrumentation of a legal framework, developing specific guidelines to rule action in heritage areas and sites.
- Restoration of heritage buildings, through interventions in both public and private buildings, technical and management counselling; urban subsidies and agreements.
- Survey, indexing and inventory.
- Disclosure and awareness, through campaigns and publications.

At present, the state action proposes regulatory instruments that, on the one hand, regulate or limit actions on heritage and, on the other, prioritize the incorporation of heritage in the definition of urban landscape.

5. Rosario's Urban Code and conservation of urban architectural heritage

The recent introduction into the Urban Code of built heritage conservation issues creates a radical change in heritage policies. Rather than considering heritage as an isolated issue, heritage policies now give heritage a key role in the configuration of the urban landscape. In 2006 The Planning Office and *Universidad Nacional de Rosario* agreed to propose urban heritage protection criteria to meet Rosario's special needs, to update and re-formulate the inventory of heritage buildings of all urban areas – the central area, first and second rings and city limits – and to create measures to protect not only heritage buildings but also urban landscape.

The studies indicate that some homogeneous areas are recognized which, despite having a low rate of heritage buildings,[14] determine urban landscape feasible to be conserved. This particular aspect of what can be defined as *scattered heritage* motivates a regulating proposal to address protection of the landscape or its surroundings beyond the property protected by the inventory.[15]

Historical, architectural and urban heritage protection should consider the following criteria:

- Promoting uses and activities to ensure the life of the heritage property.
- Defining ability to build and height rates to discourage introducing substitution processes in heritage property sites.
- Expanding the protection area of a heritage property to the neighbouring lots, in order to highlight it or to ensure a good view of the protected property.
- Encouraging public-private agreements (urban agreements).

5.1. Instruments and regulations

The following examples help to introduce some considerations regarding the Central Area Urban Reordering Plan in relation to the heritage issue: Urban Code – Ordinance 8243/08. These include the 'indirect' heritage protection instruments in the Urban Ordering Plan: General Urban Regulations, Particular Urban Regulations and the protection instruments and realization of special sites of municipal land.

These instruments might be applied to special interest areas in a single or combined way, in the form of statements, and they are classified into: historical protection areas, ecological and environmental protection areas, natural reserve areas and social interest areas.

Moreover, the concept of urban and construction agreements is introduced. These legal instruments formalize the agreement between Rosario Municipality and public, private or joint venture entities for urbanization, reconversion, urban reformation and protection, conservation and urban rehabilitation actions.

Regarding general urban regulations, expiration of construction indexes is proposed, and these are substituted by the sections category – or significant fragments – which correspond to completion, renewal and heritage.[16]

Finally, protection of the heritage surrounding property is introduced, and this leads to higher appreciation, giving these maximum construction heights to match the conservation sections.

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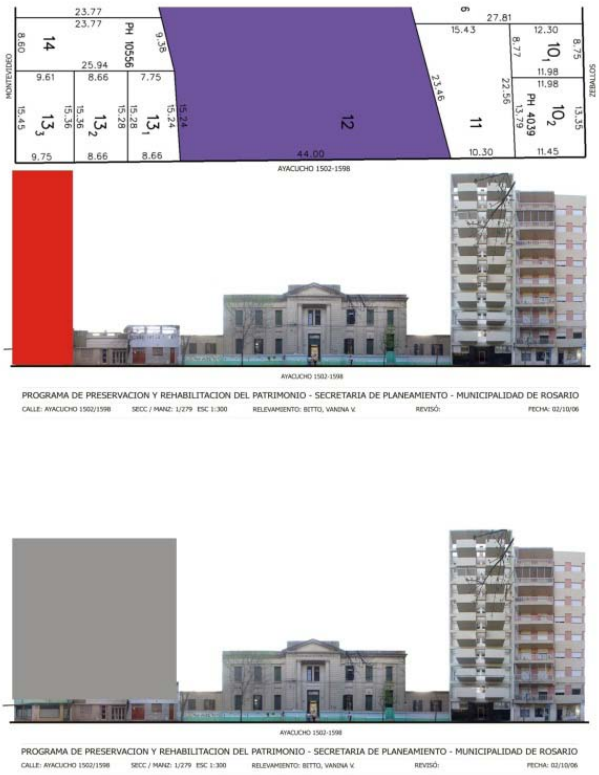

Figure 4. Central Area Inventory Detail (Source: Historical, Urban and Architectural Conservation Program is established, under the Planning Office of the Municipality of Rosario).

5.2. 'Direct' heritage protection instruments

5.2.1. Inventory - Indexing

Review of the Central Area Heritage Buildings and Sites Inventory and Catalogue (Figure 4) was proposed, to substitute the Inventory enacted by ordinance 7.156/01. Moreover, Decree 28148 stipulated that the Heritage Conservation and Rehabilitation Program would send the Council an updated Inventory of Central Area Heritage works and sites, would study the particular cases of protection by section and protection of the vicinity, and would include new buildings in the inventory and/or remove those buildings that no longer retain the special nature which first helped to include them in the inventory.

5.2.2. Inventory and indexing of Rosario's Central Area Architectural and Urban Historical Heritage Property

This instrument helps define regulations for architectural heritage protection and conservation in the city as a whole. It stipulates the following elements:

- Regulations regarding preservation criteria, intervention modes, conservation and rehabilitation of buildings, and management mechanisms must be in place.
- The owners of heritage buildings must keep them in good order, and make the necessary works to conserve or rehabilitate them.
- An ordinance compliance control mechanism is to follow up conservation and rehabilitation actions, in association with the Private Works General Office and using the guidelines determined by the Planning Office, through the Urban and Architectural Heritage Conservation and Rehabilitation Program.
- **Categories**: grouped according to how an indexed building is capable of constituting a place. The city contains unique buildings, and other buildings that make up sections (sections and section-corners) which contribute to the definition of urban fabric.
- **Degrees of protection:** establish the restrictions enforced.
- **Comprehensive protection of the property**: achieved through assessment of its distinctive parts, preservation of its surroundings and/or conservation of ornamental components and their corresponding record or documentary conservation.

There are two types of protection of the inventoried property: direct or indirect.[17] The first type highlights two gradients: comprehensive and partial. Scientific restoration criteria determine the interventions. Also, specific protection is introduced to keep a documentary record of the ornamental elements, and environmental protection is introduced to protect public spaces. *Intervention levels* describe the intervention modes for conservation and/or rehabilitation and the possibility of reforms and/or extension of the inventoried property according to its heritage value. Each degree of building protection admits a different level of intervention. The Urban and Architectural Heritage Conservation and Rehabilitation Program plans to update the Heritage Buildings and Sites Inventory and Catalogue on a regular basis, to include buildings from different areas of the city, and to change the degree

of protection of the buildings which might reach the status of ruin.

5.2.3. Historical Protection Areas - APH

Historical protected areas were defined and demarcated as a protective regulating instrument. Among the instruments devised to protect and/or realize the city's built, environmental and landscape heritage, the Historical Protection Areas (APH) and the Ecological and Environmental Protection Areas (APEA) are worth focusing on. These, added to the urban indexes proposed by the new urban code, deal with the conservation of the property and preservation of the landscape in a comprehensive way. Those sectors in the urban fabric containing historically and/or architecturally valuable buildings or particular conditions in their construction, in the morphology of the whole building and in the composition and/or character of their public spaces need to be protected.

Several management instruments are articulated to ensure urban landscape conservation:

- Inventory and indexing of heritage property.
- Degrees of construction protection for inventoried property.
- Construction conservation measures and potential transformations of use.
- Specific urban indicators for the lots involved.
- Conditions for design, materials and installation of elements on the façade.

Numerous APHs have been established in the central areas – Pichincha, Oroño, Paseo del Siglo – and in the once neighboring towns, today residential districts: Pueblo Alberdi, Saladillo and Fisherton (currently in progress) to enable the protection of the whole complex beyond the individual works.

Disclosure strategies and citizens' participation.

Disclosure is an instrument that permits the average person to get acquainted with heritage protection actions. The following disclosure strategies of the direct protection instruments described – inventories and APH – intend to involve the average person in heritage conservation:

- Urban rides related to the heritage property that originates the APH.
- Publication of a catalogue containing the urban routes.

The specialist group I belong to, representing Universidad Nacional de Rosario in the Agreement with the Municipality of Rosario, has just elaborated a project called 'Agreed – Shared-Heritage', which permits the active participation of the average person in the appraisal of heritage.

Once the inventory of the city areas is proposed, mechanisms are established to disclose its progress so that the citizens can to voice their opinion. New heritage elements which are especially meaningful to the inhabitants, and which after the initial historical/architectural/documentary appraisal contributed by the specialists were not included in the inventory, may be incorporated. Including the directly involved social actors' opinion helps to verify inventory relevance.

This project's particular objectives:

- To communicate to the citizens the catalogue of weighted works as city heritage corresponding to the districts.
- To encourage rediscovery of significant works in the area which determine the identity of the urban landscape.
- To enable the contribution of the citizens in the recognition and appraisal of urban cultural heritage.
- To establish a space of citizen participation in the actions involving local heritage.

This initiative becomes an inventory validation tool. This will permit appreciation and rightsizing of the Heritage surveyed as a group elaboration by all the actors, specialists and general public, who determine the urban fact, from a new qualitative interpretation that includes the appraisal arising from symbolic heritage (intangible heritage) contributed to by the experiences that create urban culture in time. This project encourages citizens to discover and appraise the heritage that characterizes, defines, and identifies the place where they live. We consider that feeling a part of it all involves citizens in its conservation.

Instruments for Monitoring and Assessment.

A strategy must be formulated to assess the new code actions' effectiveness, especially in the central area, in relation to the substitution of heritage property (for example, by discouraging tall buildings),

that can be measured by following up the filing of demolition and new work forms. Regarding the statements of Environmental Protection Areas and Historical Protection Areas, a plan is being devised to permit monitoring (identification, recording, and assessment tasks) in those areas, as an evaluation tool to measure effectiveness of the proposed conservation measures.

Last but equally important are the supervision actions that must be proposed in relation to the interventions in the buildings included in the inventory.18 Establishing protection degrees to limit and define the permitted actions on the property becomes worthless if compliance is not supervised. It is also necessary to have a comprehensive preventive conservation program of that unique property in order to ensure its conservation conditions once intervention has been made.19 It is worth remembering that one of the primary dimensions of heritage is its documentary nature, and each intervention damages the property to a higher or lower degree. Therefore, the actions must be anticipated in order for harm to be minimized.

Conclusion

From the mid-20th century until the enactment of the Rosario Urban Plan, the instruments responsible for preserving and conserving urban cultural heritage proved to be inadequate and insufficient. Isolated efforts, an elaboration of the inventory or an approximation to the definition of Historical Protection Areas, cannot be managed in a sustainable way. Heritage management policies must cease to be restrictive and must permit city transformations through the effective inclusion of the heritage property in urban planning.

In the recent years the Conservation Program has developed a sustained action in relation to urban heritage, eliminating the dissociated interpretation of heritage and urban development, and including it as an inseparable factor in the constitution of the city landscape. While cultural heritage refers to the inhabitants' identity and the city memory – the identity dimension – its potential cannot be wasted in relation to its capacity to promote urban transformations and local development. So far, actions have focused on the identity dimension rather than on the transformation potential, economic appraisal, sustainability and participation of citizens.

As I see it, however, guidelines or instruments have to be devised to evaluate the effectiveness of the proposed actions and to monitor their effect in the long term. Imbalances must be noticed, and the instruments that directly or indirectly act on complex heritage property must be self-regulated or adjusted. Preventive conservation has contributed a new commitment to follow up and control actions on cultural property, struggling for minimal interventions, potential to reverse actions and supported by scientific knowledge. Urban heritage conservation policies should be ruled in the same way, introducing conservation and intervention evaluation and monitoring tools.

From the aforesaid, several questions arise:

- Which indicators account for the effectiveness of the conservation policies implemented?
- Is monitoring a key tool?
- Who must execute it?
- Does citizens' participation have the highest potential to follow up the actions that compromise urban heritage?

If the citizens are uninterested in conservation, nothing can be sustained. Heritage protection is not feasible just with the elaboration of property inventories or protective regulations. These represent the reference framework and the starting point of a continuous and permanent follow-up and monitoring of actions, which public conservation policies elaborate in relation to urban landscape transformations.

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Endnotes

[1] Provincial Law of August 3, 1852 – Section 1: The village of Rosario becomes a town called 'Ciudad de Rosario de Santa Fe'.

[2] Swimming pool complex and recreational areas on the outskirts.

[3] The city experiences considerable immigration from the mid 19th century to the first decades of the 20th century.

[4] Urban cultural heritage considered as urban landscape.

[5] Decree 2791. Evaluating Committee of demolition permits for buildings built earlier than 1953.

[6] The occupied land with existing buildings in all the districts of the Urban Code will file their demolition dockets in the Architectural and Urban Heritage Conservation Committee.

[7] Honorable City Council. Ordinance Nº 6171. 1996.

[8] Honorable City Council. Ordinance Nº 7675. 2004.

[9] Honorable City Council. Ordinance Nº 7065. 2002.

[10] Decree Nº 25662 – 2005. Special plan for Pichincha quarter. Brothel quarter, linked to development of the city of the late 19th century.

[11] City Council. Ordinance 7910. Boulevard dating from 1886 which makes up a unique urban ride due to its morphological features. 2005.

[12] Rosario Repair Shops. Designed by Architect Boyd Walker (1886).Steam locomotives hub, power substation, technical offices and sawmill.

[13] City Council. Ordinance Nº 7156 / 2001.

[14] Over a total of 35 blocks, there are:

1 b protection-degree buildings: 1

2 a protection-degree buildings: 14

2 b protection-degree buildings: 50, some have been demolished.

[15] Ordinance 7156/01.

[16] These are permitted a maximum construction height matching the neighbouring building height of 21 meters and 12 meters respectively.

[17] Reference, environment, landscape.

18 Any conservation strategy –regardless of the scale of the heritage property- demands a maintenance commitment to ensure its proper conservation. This is so expressed back in 1964, in the Venice Letter, Section 4, which reads: …monument preservation requires, first and foremost, a great deal of permanent care of the monument…

19 In 1997, within the Framework of the Urban Heritage Conservation Municipal Program, the Heritage Buildings Sponsorship Plan was proposed, to include restoration of paradigmatic buildings in the central area.

Rainero, C. 2012. How to register memory? Documentation, recording, archiving and preservation of intangible cultural heritage in Venezuela. *In* Zancheti, S. M. & K. Similä, eds. *Measuring heritage conservation performance,* pp. 59-66. Rome, ICCROM.

Assessing the cultural significance of world heritage cities: Zanzibar as a case study

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Abstract

This paper focuses on the World Heritage property 'the Stone Town of Zanzibar', located on the island Zanzibar, in the United Republic of Tanzania. The Stone Town is a case study that is part of a larger research program called: 'Outstanding Universal Value, World Heritage cities and Sustainability: Surveying the relationship between the Outstanding Universal Value assessment practices and the sustainable development of World Heritage cities' lead by the Eindhoven University of Technology, the Netherlands; and UNESCO World Heritage Centre, France.

The aim of the research is to help stakeholders involved in policy, management, and development of the Stone Town determine the adequacy of their current strategies towards sustainable development of the Stone Town, without damaging its Outstanding Universal Value (OUV) as defined by the World Heritage Centre. By assessing the OUV as stated in the official documents as well as the authenticity and integrity of the attributes representing the OUV apparent in the core zone, a comparison can be made.

The policy documents (the Decision Text, Recommendation File and the Nomination File) will be assessed by means of revealing the dimensions of the cultural significance of the Stone Town in terms of cultural values. To complement this, the cultural values represented by the attributes of the Stone Town as well as its authenticity and integrity will be surveyed. This leads to a better insight into the (in-) consistencies between the ascribed cultural values represented in the policy documents on the one hand and the physical attributes on the other.

Keywords: Stone Town, Zanzibar, World Heritage, UNESCO, sustainable development

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Introduction

This paper focuses on the World Heritage (WH) property 'the Stone Town of Zanzibar', located on the island Zanzibar, United Republic of Tanzania. The case study of the Stone Town is part of a larger research program called: 'Outstanding Universal Value, World Heritage cities and Sustainability: Surveying the relationship between the Outstanding Universal Value assessment practices and the sustainable development of World Heritage cities' lead by the Eindhoven University of Technology, the Netherlands; and UNESCO World Heritage Centre, France (Pereira Roders and Van Oers, 2010). It is an innovative, collaborative and comparative research program that aims to make a significant contribution to both research and practice on World Heritage management and sustainable development (*ibid*.).

The main question of this case study is: how can the Stone Town develop sustainably, without damaging its Outstanding Universal Value (OUV)? This paper, however, will cover only part of this question. The research presented in this paper consists of a systematic analysis of the following policy documents containing information on the cultural significance of the Stone Town: the Decision Text (DT), the Recommendation File (RF) and the Nomination File (NF). This in order to find out in what way the original justification for inscription – as adopted by the World Heritage Committee (WHC) under criteria (ii)[1], (iii)[2] and (vi)[3] (ICOMOS, 1999) is to be found echoed along the subsequent policy documents and in the physical attributes that make up the Stone Town.

Vroomen, Y.; ten Hoope, D.; Moor, B.; Pereira Roders, A.; Veldpaus, L. & B. Colenbrander. 2012. Assessing the cultural significance of World Heritage cities: Zanzibar as a case study. *In* Zancheti, S. M. & K. Similä, eds. *Measuring heritage conservation performance,* pp. 67-74. Rome, ICCROM.

This research continues the work of previous studies into the Stone Town regarding its OUV and its development. The first study was the UNCHS/ Habit report (LaNeir and McQuillan, 1983); its purpose was "to assist the government of Zanzibar which is deeply concerned about the potential loss of this valuable national patrimony to outline a development and conservation strategy for the Stone Town and to determine the magnitude of the effort required" (*ibid*., p. 1). This report included a record of the current situation of the Stone Town as well as recommendations for the future management and conservation of the Stone Town. In 1992 the First International Conference on the History & Culture of Zanzibar was held. The major focus of this conference was the history and conservation of Zanzibar Town. A publication of proceedings (Sheriff, 1995) and the preceding conference raised the awareness of the condition, and subsequently, the conservation of the heritage that is known as the Stone Town. This led to the 1996 Aga Khan Trust for Culture publication (Aga Khan Trust, 1996) containing the conservation Master Plan for Stone Town, conducted between 1992-1994. In 1999, based on the latter publication, the Application File for the inclusion on the World Heritage List (WHL) was made (URT, 2010). After inscription in 2000 the Aga Khan Trust for Culture published a report that includes "an explanation of how to design new buildings in compliance with the law, an analysis of traditional stone structures and common causes of failure, detailed descriptions of traditional building technologies and up-to-date conservation techniques, and advice on how to plan and execute repairs to traditional buildings" (Steel and Battle, 2001). Recently there has been a mission to Stone Town of Zanzibar (May 2008) from both UNESCO and ICOMOS. The report shows the discrepancies between interpretation and presentation of the criteria of OUV. Other threats mentioned are: the current management, which endangers the OUV of the attributes; and physical disturbances such as traffic congestion, telecom masts, waste management, damage from rainwater, etc. (Bakker and Elondou, 2008).

1. Aim and problem definition

The aim of this research is to help stakeholders involved in policy, management, and development of the Stone Town determine the adequacy of their current strategies towards the sustainable development of the Stone Town, without damaging its Outstanding Universal Value as defined by the World Heritage Centre.

The Stone Town of Zanzibar, United Republic of Tanzania, has the broadest level of cultural significance as it was considered to be of Outstanding Universal Value to all of mankind when listed as WH in 2000, under criteria (ii), (iii) and (vi). According to the WHC, Stone Town "is an outstanding material manifestation of cultural fusion and harmonization" (UNESCO, 2000). Moreover, "for many centuries there was intense sea bourne trading activity between Asia and Africa, and this is illustrated in an exceptional manner by the architecture and urban structure of the Stone Town" (*ibid.*). Lastly, "Zanzibar has great symbolic importance in the suppression of slavery, since it was one of the main slave-trading ports in East Africa and also the base from which its opponents such as David Livingstone conducted their campaign" (*ibid.*).

Due to the inscription of the Stone Town in UNESCO's WHL, the State Party (SP) has agreed that "legislative and regulatory measures at national and local levels should assure the survival of the property and its protection against development and change that might negatively impact the outstanding universal value, or the integrity and/ or authenticity of the property" (UNESCO, 2008). In other words: international inscription comes with local responsibilities.

These responsibilities could conflict with the fact that just like other World Heritage (WH) cities, the Stone Town continues to function as a living settlement. These urban settlements need to evolve and meet the needs of their citizens, preferably in a sustainable way. Evolving requires transformation and development. Although many development projects are labelled today as 'sustainable', there is a substantial risk that these developments have an adverse impact on the cultural significance of WH cities. On the other hand, there is also the risk that the quality of OUV assessment practices influences the sustainable development of an urban settlement.

Ever since the inscription of the Stone Town on the WHL, pursuit of development has resulted in conflicting interests that endanger the OUV of the property. These issues, though, were already apparent before the inscription (Bakker and Elondou, 2008, p. 15). At the time of inscription on the WHL, developmental pressures were mentioned, including environmental pressures – visitors/tourists pressures; as well as natural disaster preparedness and the number of inhabitants within the property and buffer zone. During the mission to Stone Town in 2008 of Karel A. Bakker (ICOMOS) and L.

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Assomo Eloundou (UNESCO WHC), the issue of development was still regarded as a threat (*ibid.*). These developmental pressures are jeopardizing the OUV of the Stone Town. As stated above, the main question of this research is: how can the Stone Town develop sustainably, without damaging its Outstanding Universal Value? The content of this question has been divided in three sub-questions: 1) what is the current level of authenticity and integrity of the OUV of the Stone Town? 2) who are the stakeholders involved in the managing of the OUV of the Stone Town and what are their roles? and finally, 3) what are the development-related threats and respective causes found affecting the OUV of the Stone Town? Since this article presents the initial results of the research, it will focus mainly on the first sub-question.

2. Background

The WHC defines OUV as the "cultural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity" (UNESCO, 2008, p. 14). The WHC considers a property as having OUV whenever a property meets one or more of the ten selection criteria.[4] The carriers of the OUV are coined as 'attributes'. These attributes "are a direct tangible expression of the outstanding universal value of the property" (ICCROM *et al.*, 2010). In addition the Guidance on the preparation of Retrospective Statements of Outstanding Universal Value for World Heritage Properties, states that attributes "include the physical elements of the property and may include the relationships between physical elements, essence, meaning, and at times related processes, that need to be protected and managed in order to sustain OUV" (*ibid.*). In the case of the attributes, which convey the OUV, both the 'authenticity' and 'integrity' are of importance.

They are determined by means of the following definitions. 'Authenticity' is defined as "the degree to which information sources about this value may be understood as credible or truthful" (UNESCO, 2008, p. 21). To question the authenticity of a property the following aspects are mentioned in the Operational Guidelines (OG's) 2008: "form and design, materials and substance, use and function, traditions, techniques and management systems, location and setting, language, and other forms of intangible heritage, spirit and feeling and other internal and external factors" (UNESCO, 2008, p. 22). By assessing the attributes on these points, the authenticity can be determined. 'Integrity' "is a measure of the wholeness and intactness of the natural and/or cultural heritage and its attributes" (UNESCO, 2008, p. 23). "Examining the conditions of integrity therefore requires assessing the extent to which the property: includes all elements necessary to express its outstanding universal value; is of adequate size to ensure the complete representation of the features and processes which convey the property's significance; suffers from adverse effects of development and/or neglect" (*ibid.*). Based on section 89 of the OG's 2008, the Retrospective statement mentions assessment criteria which will have to be taken into account, regarding cultural properties: "Wholeness = whether a significant portion of all the attributes that express OUV are within the property, rather than beyond the boundaries; Intactness = whether a significant portion of all the attributes are still present, none are eroded*, and dynamic functions between them are maintained. [*in the case of ruins, this means that they should still be capable of expressing OUV]; Degree of threats = the degree to which the attributes are threatened by the development of neglect" (ICCROM *et al.*, 2010).

The research is conducted from the perspective of the necessity of sustainable development of WH cities. Therefore the notion of sustainability has to be elaborated on because sustainable development and sustainable use are widespread terms that have constantly differing definitions. The definition of sustainability used here is: WH properties are developing sustainably whenever developments prove they are meeting the economic, social, ecological and cultural needs of the present generations, "without compromising the ability of future generations to meet their own needs" (Brundtland, 1987) nor "adversely impact the Outstanding Universal Value, integrity and/or authenticity of the property" (UNESCO, 2008).

3. Methodology

This case study is supposed to assist stakeholders involved in policy, management, and development of the Stone Town to determine the adequacy of their current strategies towards the protection and sustainable development of the Stone Town, without damaging its OUV as defined by the WHC. The first step is to assess the OUV. By assessing the OUV as stated in the official documents as well as the authenticity and integrity of the attributes representing the OUV apparent in the core zone, a comparison can be made.

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The policy documents (the DT, RF and the NF, as stated in the introduction) have been assessed by means of revealing the dimensions of the cultural significance of the Stone Town in terms of cultural values. The attributes and cultural values have been retrieved from the data by coding, using the Cultural Value Survey Method (Pereira Roders, 2007) which proposes eight main cultural values: social, economic, political, historic, aesthetical, scientific, age and ecological. Additionally, the cultural values represented by the attributes of the Stone Town as well as its authenticity and integrity are being surveyed. This leads to a better insight of the discrepancies between the ascribed cultural values found represented in the policy documents on the one hand and the physical attributes on the other. This may result in the identification of discrepancies in the documented research of the attributes of the Stone Town that will have to be endorsed.

By revealing the dimensions of the cultural significance of the Stone Town in terms of cultural values it will be possible to compare the values found represented in the policy documents and in the physical attributes. Therefore it is necessary to identify the cultural values found in the DT, RF and the NF, while simultaneously ascribing cultural values to the attributes by means of background literature on the specific attributes and/or cultures that incorporate them.

In order to obtain the required information a physical survey is fundamental. Data collection for the survey consists of photographs, drawings, and textual descriptions. To obtain information, for example about the programme, function and the materiality (authenticity and integrity) of the attributes, both oral and documentary inventories are being conducted. Documents about the specific building periods and styles have an additive function in the endorsement of the findings, as well as a complementary function where the findings from the physical inventory lack the required information.

4. Cultural significance survey

The assessment of cultural significance – by means of the cultural values – the mentioned criteria in the DT, RF, NF and the attributes has been quantified and provided in Table 1. The table illustrates how often the values are present in the respective statements.

The SP, United Republic of Tanzania, has mentioned three criteria under which they regarded the importance of the Stone Town, these being criteria (iii), (iv) and (vi). These criteria have been assessed in the column NF. Remarkably, the Advisory Body (AB) ICOMOS has adapted these criteria within their RF under the heading 'Justification by the State Party', which are assessed in the column RF, under the double asterisk. Subsequently ICOMOS formulated three new criteria that were later adopted by the WHC in the DT. The cultural values of the latter two documents are filed in the column under the single asterisk and the DT.

In case of the attributes the table indicates whether the attribute represents the cultural value or not. This assessment is based on the knowledge derived from the available literature (Sheriff, 2008). It is possible therefore, that an expansion of the cultural values will follow.

The described the approach is illustrated by the analysis of the Kiponda ward, in the eastern part of

Cultural Values	DT	RF		NF	Attributes					
					Carved doors				*Barazas*	
		*	**		Swahili	Arab	Indian domestic	Indian merchant	Arab	Indian
Social	2	2	3	4	x	x	x	x	x	x
Economic	2	2	2	2	-	x	-	x	x	x
Political	1	1	-	-	-	x	-	-	-	-
Historic	2	2	4	4	x	x	x	x	-	-
Aesthetic	2	2	2	2	x	x	x	x	x	x
Scientific	-	-	2	3	x	x	x	-	-	-
Age	-	-	1	1	x	x	x	x	-	-
Ecological	-	-	-	-	-	-	-	-	-	-

Table 1. Quantification of cultural values.

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the Stone Town adjacent to the former creek, with a focus on one specific street: Khod Bazaar (a bazaar street, where from historic times onwards mainly Indian shops were to be found, Figure 1). The Stone Town consists of eight wards (*mitaa*), which each have their distinctive character.

In the DT, RF and the NF, several attributes that convey the OUV of the Stone Town can be distinguished. In these documents 26 attributes are found both on the urban scale and on level of the individual building.[5] For the research represented in this paper, there were two attributes that were highlighted: the *baraza* and the carved door. As stated in the NF: "The Stone Town is an agglomeration of various architectural traditions from the East African coast and the world of the Indian Ocean" (URT, 1999, p. 12). Both the *barazas* and the carved doors are two attributes in which this cultural fusion can be seen very explicitly. "[…] the different quarters of the town were not segregated but bound together by an intricate network of intimate narrow lanes and a great series of social nodes, such as mosques, coffee places and *barazas* i.e. meeting points that have created a cosmopolitan whole" (URT, 1999, p. 13). The *barazas* can be ascribed to two groups of people in Zanzibar, Arab and Indian, but each of them gives form to the *barazas* in a different way. The carved doors are an even broader example, for there are four types of carved doors:[6] Swahili, Arab, Indian domestic and Indian merchant doors.

Figure 1. The Kiponda *mita* and the Khod Bazaar (red) relative to the Stone Town.

These attributes are analysed by dividing them into these different groups and subsequently authenticity and integrity will be determined as stated Section 1.

In order to assess the authenticity and integrity of the carved doors and the *barazas*, physical research has been conducted, which resulted in the maps seen in Figure 2 and Figure 3. Figure 2 indicates the buildings that contain carved doors. The doors have been specified to their distinctive origin, being Swahili (orange brown), Arab (darkish brown), Indian domestic (brown), Indian merchant (light brown) and other (beige). The four photographs included in the figure show the Swahili (left), Arab (middle left), Indian domestic (middle right) and the Indian merchant door (right) and clearly depict the distinctive typology.

Authenticity is about form and design, materials and substance, use and function, traditions and location as well as setting, as has been stated in the Background section, above. Swahili doors are rectangular and are made up from local timber. The doors are very simplistic and lack elaborate carvings. The centre post and/or the lintel are the only places where one may find carvings, indicating the status, profession or symbolism associated with the inhabitant. These doors were the first to be found in Stone Town and are associated with a domestic function.

Save the centre post, the respective door does not clearly suffer from adverse effects of development and/or neglect. Moreover, all the features that convey the property's significance are present. It is therefore safe to say that the door is intact.

Like the Swahili door, the Arab door is rectangular and shows right angles in both posts and lintel. The construction is easily read from the rivets on the door. The stout rivets – typical of early Arab doors – are very plain and minimalist, unlike the extrovert bosses of the Indian domestic doors. The door is probably made from local wood since the Indian people imported teak wooden doors, which endure the Zanzibari climate better. The function – often elaborately depicted by the carvings on the door frame – is most likely to be domestic, due to a lack of a distinct trade made visible in the carvings. However, the carvings depict the usual carvings of the Arab doors of Zanzibar; the chain that frames the door is meant to keep evil spirits out and protect the inhabitants of the house. Moreover, the chain illustrates the occupancy of a slave trader. The abstract image of the fishes at the bottom of the outer post is

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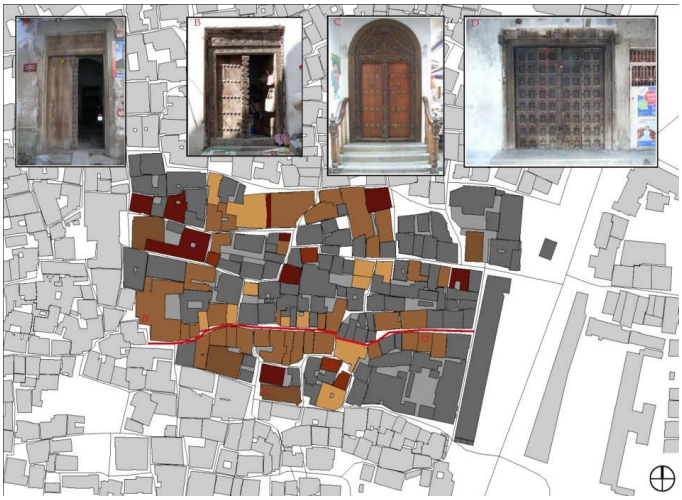

Figure 2. Carved doors in Kiponda.

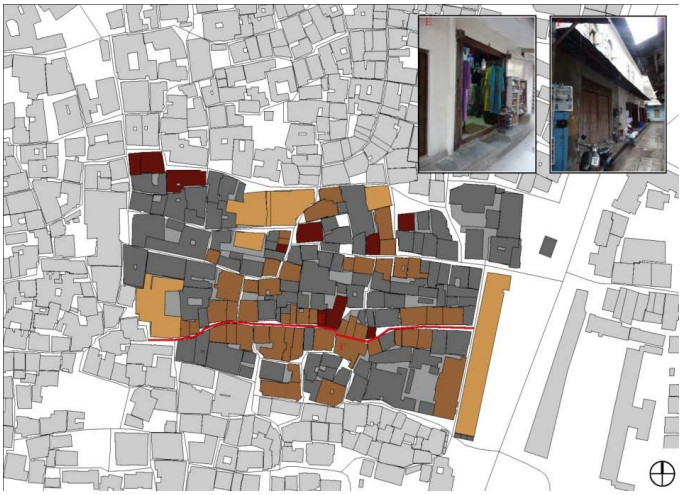

Figure 3. Map of *barazas* in Kiponda.

used symbolically for fertility in Arab door carving. Next to the chain a date palm is depicted, this stands for plenty. The abundant lotus flowers, seen both in front and on the top on the centre post are a sign of royalty: a sign of a ruler of power, according to John da Silva.[7] The rosettes that decorate the lintel are derivative from the lotus flower. In all, the depicted Arab door illustrates the required authenticity. Since this door does not clearly suffer from adverse effects of development and/or neglect, and all the features that convey the property's significance are present, it is safe to say that the door is also intact.

The Indian domestic doors are the most elaborate doors to be found in coastal Swahili cities along the East African coast. They have a rectangular frames with an arched lintel. The doors are often made from local wood or teak, if affordable. Like the Arab doors (which followed the Indian doors in style) the Indian doors are elaborately carved and bear telltale signs of the profession of the inhabitant and their status. The carvings on the depicted door show plants and flowers, which are derivatives of the Arab designs. The bosses and the brass knockers on the door are typical for this type of door. The integrity of the respective door seems to be affected; while the door frame seems authentic, the doors themselves show signs of replacement in the colour and type of the wood used.

The Indian merchant door is of Gujerati origin and typical for the Indian merchants who settled down in the Stone Town in streets like the Khod Bazaar. Gujerati doors are broad and have a rectangular geometry. The material used is teak. The Gujerati doors were used as shop fronts. The double doors made it possible to expose the entirety of their trade to the street without customers having to enter the shop physically. These doors were seldom decorated, save the centre post and the corbels. Like the Arab doors, the rivets clearly show the construction of the door. The Gujerati doors, unlike the more elaborately carved and ornamented Indian domestic doors, do not have the bosses that made the Indian domestic doors so famous. Similar to the Arab door, the integrity of the Indian merchant door does not seem to be diminished in any way.

The map shown in Figure 3 indicates the buildings that contain the *barazas*. The origin of the *barazas* is specified by colour: Arab (darkish brown), Indian (light brown), or other (beige). The two photographs of the Arab *baraza* (upper left) and the Indian *baraza* (upper right), clearly depict the distinctive typology. The Indian *baraza*, according to John da Silva,[8] is not a real *baraza*, but more a pavement, meant to keep the water from coming into the shops and to display wares.

The Arab *barazas* are constructed from stones and mortar, with a plaster finish. Original Arab *barazas*, or benches, are about 40 cm in height and have curved armrests. The *barazas* were mostly used as a social meeting place, a place for interaction and communication as well as the reception area for the visitors. The Arab *baraza* does not suffer from obvious adverse effects of development and/or neglect. Moreover all the features that convey the property's significance are present. It is, therefore, safe to say that the *baraza* is intact.

The Indian *baraza*, or pavement, is much lower than the Arab *baraza* and generally lacks the armrest. The armrest, when present, is not similar to those on the the Arab benches. The diminished height is directly dependent on the respective function. The Indian *baraza* is meant to prevent water from coming into the shops and to display goods outside of the floor area of the inside of the shop. The photograph

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depicting the Indian *baraza* clearly shows this function. Similar to the Arab *baraza*, the integrity of the Indian pavement does not seem to be diminished in any way.

Conclusions

By combining the results from the cultural significance survey of the policy documents and the attributes with the authenticity and integrity of the carved doors and *barazas*, it becomes possible to assess the impact of the documents on the built environment.

The most striking difference between the DT and the NF is the absence of the political value in the NF and the absence of the scientific and age values in the DT compared to the NF. Also the stressing of the social and historical value in the NF regarding the DT stands out. When comparing the cultural values ascribed to the carved doors with the DT, it is apparent that both the scientific and age value are not represented in the DT, even though the carved doors themselves do represent these values. A comparison between the DT and the cultural values ascribed to the *barazas* makes visible that the DT stresses the political and historic value, which is not to be found among the *barazas*.

There is a discrepancy between the values of the DT and the attributes. The described Indian domestic door seems to represent a loss of authenticity and integrity. From this it can be concluded that the discrepancy does have a negative influence on the attribute. It is probable that due to the discrepancy between the cultural values, there is no systematic approach or even consensus between the parties involved. The conservation and maintenance of the OUV of the respective attribute could therefore be significantly harmed. This assumption will have to be tested by the careful analysis of the policy documents regarding the management and development of the Stone Town.

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[1] ii) "The Stone Town of Zanzibar is an outstanding material manifestation of cultural fusion and harmonization.", in: ICOMOS. Advisory Body Evaluation no. 173rev. (1999). http://whc.unesco.org/archive/advisory_body_evaluation/173rev.pdf (accessed October 14, 2010).

[2] (iii) "For many centuries there was intense sea bourne trading activity between Asia and Africa, and this is illustrated in an exceptional manner by the architecture and urban structure of the Stone Town.", in *ibid.*

[3] (vi) "Zanzibar has great symbolic importance in the suppression of slavery, since it was one of the main slave-trading ports in East Africa and also the base from which its opponents such as David Livingstone conducted their campaign.", in *ibid.*

[4] Criteria for inscription on the World Heritage List. http://www.unescoworldheritagesites.com/world-heritage-site-inscription-criteria.htm

[5] Attributes on urban level: urban structure, old tombs, fountains, trees, vistas, graveyards, parks, other green areas, monuments and significant buildings. Attributes on building level: carved doors, balconies, fenestrations, fascia boards, decorative plasterworks, doorways, covered passages, tile work, timber staircases, arches/niches, *barazas*, pillars, verandas, courtyards and crenellations.

[6] Interview with John da Silva, 6-12-2010.

[7] Interview with John da Silva, 29-11-2010.

[8] Interview with John da Silva, 6-12-2010.

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Assessing the cultural significance of world heritage cities: the historic centre of Galle as a case study

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Abstract

This article presents the first results of a survey on the historic centre of Galle. Galle is one of the many World Heritage cities as acknowledged by the World Heritage Committee (WHC), UNESCO. The Historic centre of Galle is a case study that is part of a larger research program called 'Outstanding Universal Value, World Heritage cities and Sustainability: Surveying the relationship between the Outstanding Universal Value assessment practices and the sustainable development of World Heritage Cities' led by the Eindhoven University of Technology, the Netherlands; and UNESCO World Heritage Centre, France.

The aim of the research is to determine the adequacy of the current strategies of the stakeholders involved with the policy and management of sustainable development of the historic town of Galle. The main question therefore is: how can the historic centre of Galle develop sustainably, without damaging its Outstanding Universal Value? This paper will focus on the results of the literature study and the survey of official UNESCO documents undertaken to assess the cultural significance of the historic centre of Galle, by means of revealing the dimensions of its cultural significance in terms of cultural values. The paper will conclude with an illustrative test case where the study of documents and literature are complemented by the preliminary results of our fieldwork.

Keywords: UNESCO, World Heritage cities, sustainable development, cultural significance assessment, cultural values, historic centre of Galle

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Introduction

This article presents the first results of a survey on the historic centre of Galle. Galle is one of the many World Heritage cities as acknowledged by the World Heritage Committee (WHC), UNESCO.

Galle as a case study is part of a research program called 'Outstanding Universal Value, World Heritage cities and Sustainability: Surveying the relationship between the Outstanding Universal Value assessment practices and the sustainable development of World Heritage Cities' led by the Eindhoven University of Technology, the Netherlands; and UNESCO World Heritage Centre, France (Pereira Roders and Van Oers, 2010).

The main question asked in this case study is: how can the historic centre of Galle develop sustainably, without damaging its Outstanding Universal Value? This paper however, will focus on the results of the literature study and the survey of official UNESCO documents undertaken to assess the cultural significance of the historic centre of Galle, by means of revealing the dimensions of its cultural significance in terms of cultural values. The paper will conclude with an illustrative test case where the study of documents and literature is complemented with preliminary results of fieldwork.

Because this is a case study the surveys are very site-specific. However, at the same time, it is part of a global comparative research. At the moment similar studies are being conducted in the Stone Town, Zanzibar, Tanzania and Willemstad, Curacao.

1. World Heritage

Galle is a World Heritage city. World Heritage cities are urban settlements that include "cultural heritage with the broadest level of cultural significance, which is acknowledged by the World Heritage Committee (WHC), in UNESCO, as of Outstanding Universal Value (OUV) for the whole mankind. This cultural heritage is known worldwide as World Heritage (WH)" (Pereira Roders *et al.*, 2010). The World Heritage Committee defines Outstanding Universal Value (OUV) as the "cultural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity" (UNESCO, 2008, p. 14). A property then is considered as having OUV whenever it meets one or more of the ten selection criteria, as defined by the WHC.[1]

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The OUV of World Heritage property is expressed through a variety of attributes. These attributes "are a direct tangible expression of the outstanding universal value of the property" (UNESCO, 2008, p. 26); "and may include the relationships between physical elements, essence, meaning, and at times related processes, that need to be protected and managed in order to sustain OUV" (ICCROM *et al.*, 2010). Additionally, one has to assure authenticity and integrity, as well as the implementation of an adequate protection and management system to ensure that safeguarding standards have been met (UNESCO, 2008, pp. 20-29). Authenticity is to be understood as the requirement to be genuine, i.e. the WH property should be truly what it is claimed to be" (*ibid.*), and integrity is a "measure of the wholeness and intactness of the cultural heritage and its attributes"(*ibid.*).

1. World Heritage city of Galle

The historic centre of Galle (Figure 1), best known as Galle Fort, is situated on the southwest coast of Sri Lanka and is considered to be the best example of a fortified city built by Europeans in south and Southeast Asia (ICOMOS, 1988). It was listed as World Heritage in 1988, under criterion (iv), meaning the historic city is "an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history" (UNESCO, 2008). However, the Decision Text (DT) did not include any justification for inscription besides this selection criterion, so there is no Statement of Significance for Galle already approved by the WH Committee. The reasons behind this remain unclear for the time being. After the Decision Text, the second most important document concerning the cultural significance of the historic centre of Galle is the Advisory Body Evaluation (ABE) by UNESCO's Advisory Body ICOMOS (International Council on Monuments and Sites), which was used for the listing of the property as World Heritage (WH).

Figure 1. The Galle Fort (http: //wajiragalle.com**).**

When recommending its inscription for the World Heritage List (WHL), ICOMOS stated:

> "Galle provides an outstanding example of an urban ensemble which illustrates the interaction of European architecture and South Asian traditions from the 16th to the 19th centuries. Among the characteristics which make this an urban group of exceptional value is the original sewer system from the 17th century, flushed with sea water controlled by a pumping station formerly activated by a windmill on the Triton bastion. However, the most salient fact is the use of European models adapted by local manpower to the geological, climatic, historic and cultural conditions of Sri Lanka. In the structure of the ramparts, coral is frequently used along with granite. In the ground layout all the measures of length, width and height conform to the regional metrology. The wide streets, planted with grass and shaded by suriyas, are lined with houses, each with its own garden and an open veranda supported by columns – another sign of the acculturation of an architecture which is European only in its basic design" (ICOMOS, 1998).

The ICOMOS statement already shows it is indeed "an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates [a] significant stage[s] in human history." What does this mean in the reality of a living settlement?

2. Problem and aim

The aim of the research is to determine the adequacy of the current strategies of the stakeholders involved with the policy and management regarding developments towards a sustainable development of the historic town of Galle.

By inscription of the historic centre of Galle on UNESCO's World Heritage List (WHL), the State Party of Sri Lanka has agreed that "legislative and regulatory measures at national and local levels should assure the survival of the property and its protection against development and change that might negatively impact the outstanding universal value, or the integrity and/or authenticity of the property" (UNESCO, 2008, p. 25). In other words: international inscription comes with local responsibilities. At the same time the historic centre of Galle has, and must continue to, function as a living settlement. The need to evolve and meet the needs of citizens, preferably in a sustainable way, requires

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development. The lack of fine tuning between transformation due to development needs and maintaining OUV may result in irreversible damage to the Outstanding Universal Value of the property, and consequently, raising the risk of having the historic centre of Galle removed from the WHL, as recently happened to Dresden, Germany. Eventually this could also be the case for Galle Fort, if impact on OUV by development plans is not properly assessed by the State Party of Sri Lanka (SP).

The need for development already jeopardizes the historic centre of Galle. As the society has changed over time, pressure for development and upgrading within the fort is being felt, in order to address evolving needs of its inhabitants in their day-to-day pursuits. (UNESCO and SP, 2003). Existing problems regarding these development and upgrade pressures within the historic centre are (i) the difficulty for stakeholders concerned with policies and management within the fort to remove existing unauthorized building activity; (ii) an inadequate sewage and solid waste management; (iii) noise pollution and fumes caused by increasing traffic and inadequate vehicle management within the fort; (iv) overhead wires, cables, TV antennae and water tanks marring the roof-scapes of the fort; (v) closing-in of verandas for domestic security reasons, altering the street-scapes; and (vi) "unauthorized change of use" of houses (UNESCO, 2003). These developments to meet the needs of the local community living and working within the fort all threaten the outstanding universal value of the historic centre of Galle, and sustainable solutions are a necessity.

The sustainable development of a city often seems to conflict with care for its cultural heritage. Although many development projects are today labelled as 'sustainable', there is a substantial risk that these developments have an adverse impact on the cultural significance of WH cities. On the other hand, there is also the risk that the quality of OUV assessment practices influences the sustainable development of an urban settlement. Therefore sustainable development in this research is defined as follows: sustainable developments should meet the social, economic and ecological needs of the present generations, 'without compromising the ability of future generations to meet their own needs' (Brundtland, 1987) nor 'adversely impact the Outstanding Universal Value, integrity and/or authenticity of the property' (UNESCO, 2008).

3. Approach and methods

The aim of the research is to assess the adequacy of the current strategies of the stakeholders involved with the policy and management regarding developments towards a sustainable development of the historic town of Galle. Using the above-mentioned definition of sustainable development will be important and is therefore prominent in the main question of the research: how can the historic centre of Galle develop sustainably, without damaging its outstanding universal value?

In this study, first we consider the imperative of sustainable development of the historic centre of Galle shall be considered; to not "*adversely impact the Outstanding Universal Value, integrity and/or authenticity of the property*" (UNESCO, 2008, italics author's own), or in other words, to protect the OUV of the property. To be able to assess the adequacy of strategies concerned with the protection of the OUV in a later stage of the research, the exact nature of the OUV of the historic centre of Galle must be identified, as well as the attributes that are found to represent it. Finally, the state of the OUV at the time of inscription and its current state will be assessed, in order to make statements about the current level of authenticity and integrity of the OUV.

The first sub-question will be the following: what is the current level of authenticity and integrity of the OUV of the historic centre of Galle? Which are the attributes found representing the OUV? How much of these attributes still remain today?

Then, the second mentioned condition for sustainable development of the historic centre of Galle shall be considered; to meet the social, economic and ecological needs of the present generations, 'without compromising the ability of future generations to meet their own needs' (Brundtland, 1987), or in other words; to meet the evolving needs of the local community within the historic centre.

Assessing these evolving needs of the local community living in the historic centre of Galle would require sociological, economical and/or anthropological surveys. However, the scope of this research being mainly architectural, only the development pressures on the built environment caused by these evolving needs of the local community can be adequately assessed. Thus, these particular evolving needs of the local community causing development pressures can be considered as being the immediate threats to the OUV, which will be assessed. To be able to assess the adequacy of strategies concerned

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with dealing with these threats later on, first the threats caused by the (evolving) needs of the local community of the historic centre of Galle in their day-to-day pursuits, causing pressure for development, need to be identified. Moreover, the way in which these development threats affect the attributes expressing the OUV will be inventoried.

The second sub-question follows: what are the development-related threats caused by the evolving needs of the local community found affecting the OUV of the historic centre of Galle? What are the development-related threats? How do they affect the attributes expressing OUV?

In order to develop the historic centre sustainably, stakeholders concerned with policy and management regarding developments within the historic centre of Galle are responsible for adequate development strategies which take into account both conservation of the OUV as well as dealing with the particular needs of the local community causing development pressures which pose a threat to the OUV. Both of these conditions for sustainable development are discussed above.

Next these stakeholders will be identified and categorized according to their role in the management process. It is interesting to understand their roles, but also the level of communication and cooperation between them, if any. Furthermore, it is crucial to understand how these stakeholders manage developments within the historic centre of Galle with regard to both the conservation of the OUV as well as adequately dealing with the threats to the OUV posed by development needs. In other words, how far can their current development strategies be considered sustainable?

This leads to sub-question three: who are the stakeholders involved in the policy and management regarding developments within the historic centre of Galle and what is their current strategy towards sustainable development? Who are the stakeholders involved and what are their roles? How do these stakeholders currently manage conservation of the OUV as well as deal with development-related threats?

After the assessment of these inventories using the cultural significance survey (Pereira Roders, 2007), justified statements about the adequacy of the current strategies of the stakeholders involved with the policies and management regarding developments can be made. The assessment will also help move towards simultaneous protection and sustainable development of the historic centre of Galle, meeting the evolving needs of the society living within the walls of the fortification, without representing a loss of its Outstanding Universal Value for mankind, as defined by the World Heritage Committee. In the following section the cultural significance survey used for the assessment of the inventories will be elaborated upon.

4. Cultural significance survey

Pereira Roders (2007) states that cultural significance is multidimensional and argues for the coexistence of other cultural values than the traditional historic, aesthetic, scientific and social values to justify the nomination of a property as cultural heritage. In addition to the four traditional cultural values she also distinguishes economic, political, age and ecological values. The ascription of these eight values to the inventories form the base for the literature survey carried out in this research.

As an original contribution on its own, this literature survey allows stakeholders involved with the management of the historic centre and its cultural significance to understand its varied natures and determine the adequacy of their current strategies, as well as to define further strategies towards better protection. Moreover, when complemented with field surveys and interviews, this survey can also help by determining where and/or by whom exactly the cultural significance is being kept alive, either in the city or by the community.

Systematic analysis of the inventories made to answer the three sub-questions were made by coding for the eight above-mentioned cultural values to make the results comparable and show discrepancies and/or similarities between the inventories, not only within the case study, but also among all of the case studies being carried out in the global research program. Additionally, the literature survey allows the identification and categorization of the attributes expressing the OUV of the property. These findings will also be complemented with those from fieldwork and interviews.

5. Preliminary results of the literature study

Since nomination in 1988, many official documents have been produced addressing where the cultural significance of the historic centre of Galle is to be found. The Advisory Body Evaluation by ICOMOS and the Nomination File (NF) by the SP have been

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used as data to carry out this literature survey. The NF was the original document of the SP of Sri Lanka to apply for inscription on the WHL with UNESCO. However, ICOMOS being the official Advisory Body of UNESCO, the ABE is the most important document available when it comes to the justification for inscription of the historic centre of Galle on the WHL, in the absence of an official Decision Text. It was the ABE that led to inscription by UNESCO. When analysing these and other documents systematically, it is possible to conclude how far the original justification for inscription is echoed in the subsequent documents (the respective progress of each and/or the potential for conflict between arguments).

The WH Committee decided to inscribe the site on the basis of cultural criterion (iv), being "an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates [a] significant stage[s] in human history", which would mainly reflect historic values. (Pereira Roders and Van Oers, 2010).

However, as can be seen in Figure 2, besides the expected historic values a multitude of other values have been identified in the Advisory Body Evaluation and Nomination File. All but the age value are represented in expressing the OUV of the property as stated by ICOMOS and the SP, so inscription solely on the historic value of criterion (iv) seems to do the historic centre of Galle injustice. One reason for this discrepancy could be the general character of the historic aspect of criterion (iv). As the nomination concerns the historic centre of Galle dating to the period from the 16th to 19th century, this would make all its attributes of historic value, regardless of their aesthetic or economic nature. This could have left other cultural values unjustly undervalued in the process. In applying this insight, we can see that other cultural values become more prominent in both documents at the expense of the historic value; for example, the aesthetic and political value in particular now seem to be highly represented in the documents.

Now, when comparing the cultural values of the ABE with those of the Nomination File (NF), we can see how far the original justification for inscription is echoed along the subsequent documents and if similarities or discrepancies exist between them. The following preliminary conclusions can be made about the individual cultural values identified in these documents:

Similarities: Some small differences aside, both documents highly represent political and aesthetical values.

Discrepancies: The NF seems to give considerably more importance to the social and economic values than the ABE does, whereas it considers the historic, scientific and ecological values of far less importance than does the ABE.

5.1. Attributes

Besides the ascription of cultural values in order to make different official documents comparable, by analysing the ABE and NF systematically it is also possible to identify implicit and explicit descriptions of the attributes that convey the Outstanding Universal Value in the historic centre of Galle. For instance, the ABE states: "Galle provides an outstanding example of an urban ensemble which illustrates the interaction of 'European architecture' and 'South Asian traditions' from the 16th to the 19th centuries".

Those are rather vague and general descriptions, so further elaboration on the terms 'European architecture' and 'South Asian traditions' is needed to find the features applicable to the attributes in Galle Fort, which express the interaction of the two terms stated above. Further in the ABE, more specific description is given of the interaction of the South

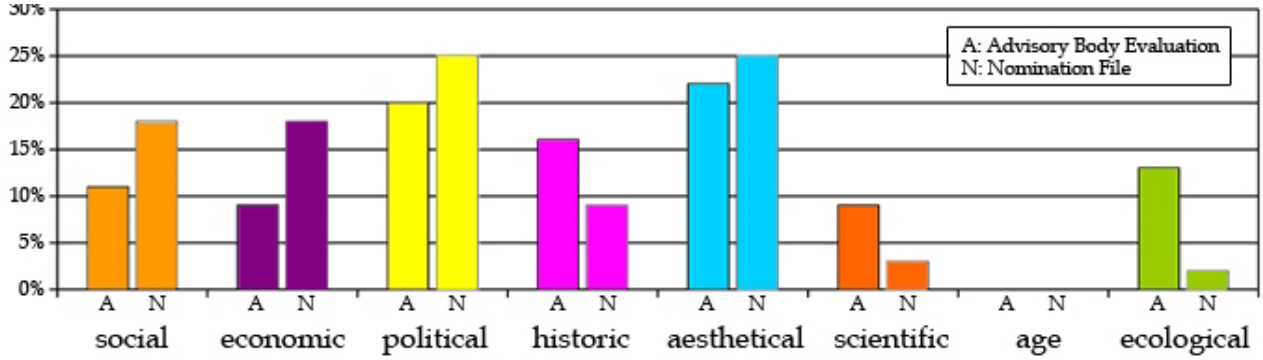

Figure 2. Cultural values identified in the Advisory Body Evaluation and the Nomination File (Boxem and Fuhren, November 2010).

Boxem, R.; Fuhren, R.; Pereira Roders, A.; Veldpaus, L. & B. Colenbrander. 2012. Assessing the cultural significance of World Heritage cities: the historic centre of Galle as a case study. *In* Zancheti, S. M. & K. Similä, eds. *Measuring heritage conservation performance,* pp. 75-81. Rome, ICCROM.

Asian traditions: "[…] the use of European models adapted by local manpower to the geological, climatic, historic and cultural conditions of Sri Lanka."

However, this is still a general description, although it gives more insight into the 'South Asian traditions': the adaptations to geological, climatic, historic and cultural conditions of the environment. To see how those adaptations are expressed in the attributes of Galle, further (documentary) inventory is needed; this is also needed in order to understand the varied nature of the features in the attributes of Galle Fort.

In the book *The Architecture of an Island* (Lewcock *et al.*, 1998) a very thorough and extensive study of Sinhalese architecture and the emergence of the various (colonial) styles on the island, adaptations of the colonial buildings to the warm climate of Sri Lanka are mentioned:

> "The great hall, or rear living room, which runs across the back half of the house, has no ceiling, but extends in height up to the sloping underside of the tile roof. The loosely jointed tiles allow hot air to escape to cool the room on hot days. Very large windows and doors open alternately into the wide shaded veranda which fronts the rear courtyard […] the arrangement of the plan allows continuous cross ventilation through the centre of the house from the front to the back." (Lewcock *et al.*, 1998).

By analysing such documents, one can find some of the elements that exemplify the features of the European models adapted to the 'climatic conditions of Sri Lanka' in Galle Fort. It is also possible to specify the general descriptions found in the ABE and the NF. However, the ABE and NF give some explicit descriptions of attributes as well, as the ABE states: "The wide streets, planted with grass and shaded by *suriyas*, are lined with houses, each with its own garden and an open veranda supported by columns."

Figure 3. An open veranda in Galle Fort (Boxem and Fuhren, December 2010).

Therefore, one can consider a house with its own garden and an open veranda supported by columns as one of the attributes in Galle Fort, expressing its Outstanding Universal Value. This is confirmed by the Nomination File, which states:

> "Long rows of single-storied houses with terra-cotta roofs sloping down from the central ridge towards the streets supported by rounded brick or timber columns bordered the tree lined streets. These columns created a veranda which separated the house from the street. […] The entrance door which is placed centrally in the façade is the main access into the house and the central courtyard" (UDA NF).

Thus, the Advisory Body Evaluation by ICOMOS and the Nomination File of the State Party (documentary inventory) includes several (implicit and explicit) attributes. One of the main attributes which is mentioned explicitly in both documents is the 'open veranda supported by columns' (Figure 3), on which we will elaborate in the following test case.

5.2. Test case

Since it is mentioned explicitly in both the ABE and the NF, and because it is one of the main attributes which determines the street-scape in Galle Fort, the previously identified attribute 'open veranda supported by columns' is used here as an example, in order to illustrate how fieldwork will complement the results found in the documents. The amount of 'open verandas supported by columns' existing at the time of inscription on the WHL, as well as the state in which they were at that time will be determined (Kuruppu and Gamini, 1992) and mapped. This map will contain all buildings within the Fort, in which the attribute is highlighted.

By means of assessing their presence and, if present, their integrity and authenticity the amount of 'open verandas supported by columns' still existing today has been inventoried. This physical inventory has taken by mapping, photography and sketching. This has resulted in another urban map in which the remaining amount of the attribute is highlighted. When both the maps are combined – the map containing the attributes at the time of inscription with the map containing the attributes still remaining today – into a third map, the difference in the amount of 'open verandas supported by columns' can be observed.

Boxem, R.; Fuhren, R.; Pereira Roders, A.; Veldpaus, L. & B. Colenbrander. 2012. Assessing the cultural significance of World Heritage cities: the historic centre of Galle as a case study. *In* Zancheti, S. M. & K. Similä, eds. *Measuring heritage conservation performance,* pp. 75-81. Rome, ICCROM.

Figure 4. Closed veranda in Galle Fort (Boxem and Fuhren, December 2010).

From the first exploratory oral inventories with employees of the Department of Archaeology (DA) and the Galle Heritage Foundation (GHF), stakeholders concerned with the policy and management regarding developments within the fort, preliminary conclusions can be drawn that many of the verandas have been purposely shut by the private owners, in order to meet their social need of increased privacy (*ibid.*), Figure 4.

Besides that, the Periodic Report of 2003 by the State Party of Sri Lanka states as well that "an increase of unauthorized changes either in use or in its architectural appearance, [have been] altering the street-scapes within the Fort" (UNESCO and SP, 2003). This could very well be a reference to verandas, although it is not made specific.

Following further inventories, conclusions can be drawn on the authenticity and integrity of the 'open verandas supported by columns' in 2011. While this is still a work in progress, the preliminary statement that these unauthorized changes, the shutting of the verandas, have resulted in a decrease in authenticity and integrity of the attribute, negatively affecting the 'aesthetic value' and thus, the OUV of the historic centre of Galle.

Since this is still work in progress, next steps are to find out whether there are additional reasons for private owners to close the veranda of their houses beyond the social need for more privacy. Also, we will examine whether stakeholders concerned with the policy and management regarding developments within the fort recognize this development as a threat to the OUV of Galle Fort and whether they have s sufficient and adequate regulations to stop those unauthorized changes.

Based upon this research, we expect that in the future it will become possible to draw conclusions on how heritage policies and management could better and more efficiently deal with this problem in order to meet the evolving needs of the local community as well as to avoid adversely impacting the OUV; in other words, to develop sustainably.

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The conservation assessment as a tool for cultural heritage identification, monitoring, and evaluation

Carla Maria Teixeira Coelho[1] & Claudia S. Rodrigues de Carvalho[2]

Abstract

Preventive conservation has provided important tools for identifying, monitoring and evaluating the conditions of cultural property, and the impact of conservation actions upon them. One such tool is the conservation assessment, a methodology developed by the Getty Conservation Institute (GCI), which proposes an integrated analysis of macro-climate, building, collections and organizational aspects that impact preservation. The Fundação Oswaldo Cruz, a Brazilian Ministry of Health Insitution, through Casa de Oswaldo Cruz, one of the departments charged with the preservation of the Institution's cultural heritage, including historic buildings and archival, bibliographic, museological and biological collections, has been developed as the research project 'Preventive conservation of collections maintained by Casa de Oswaldo Cruz'. Selected by an internal edict of research support, it is based on conservation assessment methodology and the development of this research encompasses three main stages: environmental monitoring of areas of custody of the collections, elaborating the conservation assessment of buildings and collections and the establishment of conservation strategies. This article aims to present the development of this research, demonstrating the importance of using consistent tools to assess and record the various factors that may impact on the conservation of cultural property. The diagnoses of conservation tools are important not only for the definition of conservation strategies, but also for monitoring the effectiveness of those actions.

Keywords: preventive conservation, conservation assessment, monitoring

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Introduction

The contemporary challenges faced by professionals working in the field of cultural heritage preservation have stimulated increasing development of scientific criteria on which to base the actions related to conservation of cultural property. The growing number of objects to be preserved, constant pressure against the use of historic buildings and collections and climate change are factors that highlight the urgent need to implement strategies for effective and sustainable action to preserve our heritage. Within the field of preservation, preventive conservation has provided important tools for identifying, monitoring and evaluating the conditions of cultural property, and the impact of conservation actions on them.

The preventive attitude must be the basis for the protection of cultural heritage, and the preventive conservation central concept is described throughout preservation history and theory, since the 19th century. In the beginning of the 1990's the *New Orleans Charter for the Joint Preservation of Historic Structures and Artifacts* was written as the result of two symposiums on museums in historic buildings promoted by the American Institute for the Conservation of Historic And Artistic Works (AIC) and by the Association for Preservation Technology International (APTI). The document presents guidelines to be used in the preservation of historical buildings and the collections housed in them, pointing out that the specific preservation needs in each object should be defined after a detailed study of the situation and that those studies should happen through the interdisciplinary collaboration of qualified professionals. It also states that any preservation action should strive to balance the needs of the buildings and of the collections.

In 2000 preventive conservation was declared, through the European preventive conservation strategy Project, the stepping-stone of all European heritage preservation policies. This project had several European countries involved and resulted in a meeting in Vantaa, Finland, where strategic lines of action were defined. During the SPRECOMAH (Seminars on PREventive COnservation and Monitoring of the Architectural Heritage) that took place in Europe in 2007 and 2008, preventive conservation definitions were discussed, and the guidelines of the events highlighted the importance of monitoring cultural heritage. According to the guidelines, the study and monitoring of cultural heritage is essential, and should be included in long-term planning.

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Preventive conservation aims to identify risks and mitigate the causes of deterioration of cultural property, avoiding high-impact interventions. To reach these goals, it must be based on the development of sound assessments, technologies involved, the environment around them, and the causes of the deterioration processes by addressing in a holistic way sites, buildings and collections. The methodology for making integrated conservation assessments of buildings and collections was developed by the Getty Conservation Institute (GCI), and improved for the project 'Collection in hot and humid climates'. In the late 1990s it was consolidated in the manual *The Conservation Assessment: a Proposed Model for Evaluating Museum Environmental Management needs* (Dardes, 1998). Organized by Kathleen Dardes, GCI senior project specialist, this publication proposes the integrated analysis of macro-climate, building, collections and organizational aspects that impact on their preservation.

In Brazil, the first experience of performing this type of diagnosis occurred in the Sacred Art Museum of Federal University of Bahia in 1998 from a partnership between the Museum, the GCI, the Vitae Foundation and the Centre for Conservation and Furniture Restoration of Cultural Property, Federal University of Minas Gerais (UFMG-CECOR). One of the aims of this study was to test the adequacy of the methodology of the GCI in Brazilian institutions. The Sacred Art Museum comprises an important collection formed by 17th century buildings, which housed the former Convent of St. Teresa of Avila, and the collection of pieces of religious art from the 17th to the 19th century that originate from different religious brotherhoods. The project sought to identify the causes and agents of deterioration processes of the building and collections, and set guidelines for short, medium and long term improvement of storage conditions on the whole.

Since the work of the Museum of Sacred Art, some positive examples of applying this method of conservation assessment made by Brazilian institutions responsible for preservation of cultural artefacts have shown the effectiveness of this tool.

Fundação Casa de Rui Barbosa (FCRB), a public institution under the Ministry of Culture based in Rio de Janeiro, is responsible for preserving the memory of the life and work of Rui Barbosa through custody, preservation and dissemination of his patron legacy: his home, furniture, library and archive records. Since 1997 FCRB has been conducting a long-term study to develop preventive strategies for the conservation of movable and immovable property under its stewardship, adopting the methodology proposed by GCI as a base for the different stages of assessment, understood by the staff as a tool knowledge in the present and the future.

Fundação Oswaldo Cruz (Fiocruz), a public research institution linked to the Ministry of Health, also based in Rio de Janeiro, is responsible for the preservation of an important collection related to cultural heritage of health care, including historic buildings, archival collections, photographs, bibliographic material, and museum of biology. Given the enormous diversity of cultural property under its responsibility, the *Casa de Oswaldo Cruz* (COC), one of the departments responsible for the preservation of cultural heritage of this institution, in 2008 created a team of multiple professionals composed of experts from several departments whose goal is to design, organize and develop action plans for implementation of preventive conservation. As a result this group is developing the research project 'Preventive conservation of collections maintained by *Casa de Oswaldo Cruz*', selected by a research editor promoted by COC in 2009, and with estimated completion in first half of 2011. The development project has the support of FCRB, through a partnership established between the institutions.

This article aims to present the development of this research, demonstrating the importance of using consistent tools to assess and record the various factors that may impact on the conservation of cultural property. The conservation assessment tools are important not only for the definition of conservation strategies, but also for monitoring the effectiveness of those actions.

1. Characterization of the study object

Fiocruz was created in 1900 with the goal of fighting the great problems present in the Brazilian public health care system. Currently, its purpose is to promote health and social development, to generate and spread scientific and technological knowledge and to be an agent for citizenship. Its headquarters are in the city of Rio de Janeiro, in the neighbourhood of Manguinhos, where the first buildings constructed to house the institution's activities remain preserved and where collections of great importance to Brazil's national heritage are gathered.

The *Casa de Oswaldo Cruz* (COC) is the technical-scientific unit of Fiocruz responsible for the preservation of the institution's memory. The heritage

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preserved by COC is composed in the present day of a highly diversified range of buildings and collections related to the history of biomedical science and health care.

From these buildings we can highlight the diversity of styles and uses. In the Manguinhos campus, the collection of preserved buildings is composed of the *Núcleo Arquitetônico Histórico de Manguinhos*, which gathers the first constructions made to house Fiocruz activities (built between 1904 and 1922), and the modernist buildings that are representative of the institution's second stage of implementation (built between 1947 and 1955). The current utilization of these buildings is highly diverse, covering administrative, educational and laboratory facilities, a hospital and even an exposition of the institute's collection. With the creation of new Fiocruz campus, the heritage area preserved by COC is expanding and bringing new challenges to its body of technicians.

Because of the huge diversity of cultural heritage under direct or indirect responsibility of COC, the teams that work for the conservation of those objects have been searching, through an interdisciplinary effort, to establish criteria and methods to ensure the integrated preservation of historical buildings and collections in a sustainable and efficient manner, through the development of preventive conservation plans.

The research project 'Preventive conservation of collections maintained by House of Oswaldo Cruz' aims to identify the causes of degradation and potential risks to the collections preserved by the COC and to define preventive strategies to ensure the preservation of the buildings and collections, reducing the need for restorative interventions.

A pilot study was established, defining as objects of research study the Moorish Pavilion and Life Museum's Technical Reserve. In this article we will focus on research related to the Moorish Pavilion (Figure 1). As well as housing important collections, the Pavilion is a building of great artistic and historical importance, and has been protected by IPHAN since 1981. The combination of the building and the collections housed within makes an interesting example for reflection on how to act to improve conditions in a balanced manner, arising from a concern for the coexistence of historic structures and the artefacts within them as defined by the *New Orleans Charter* (1992).

Figure 1. Moorish Pavilion (Source: Departamento de Patrimônio Histórico/COC/Fiocruz).

Located on the main campus of Fiocruz in Manguinhos, the Pavilion is part of the first generation of buildings built to house the activities of the institution, formerly known as the Oswaldo Cruz Institute, and still is its greatest symbol. The Moorish Pavilion was designed by Portuguese architect Luís Moraes Junior and built between 1905 and 1918, high on the slopes of the terrain of the institution, with the main façade facing the sea. This follows the trend in architectural composition of the late 19th and early 20th century in Brazil for Eclecticism, revealing influences of Moorish architecture[1], especially in the rich ornamentation of the building. In 1981 the Pavilion, along with other buildings of historic architecture in Manguinhos, was listed by the Department of Historical and Artistic Heritage (SPHAN), now the Institute of Historical and Artistic Heritage (IPHAN). In 1986, the scope of listing was extended to a demarcated area of preservation into the environment around the buildings.

Designed to accommodate the laboratories and offices of the first scientists from Fiocruz, the building now houses collections of great importance, such as the Entomological Collection, the Rare Books Section of the Library of Biomedical Sciences and part of the museum collection from the Museum of Life. Besides these aspects of the collection, the Pavilion also houses the offices of the presidency and other administrative units of Fiocruz.

The Entomological Collection contains approximately five million insects collected since 1901 by the first scientists of the Oswaldo Cruz Institute. Since then it has grown to occupy rooms on the 2nd floor of the Moorish Pavilion. The solution adopted to ensure the conservation of the collection from the acquisition of the first specimens collected was to use mothballs in each of the drawers that store the

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Figure 2. View of the Enthomological Collection's storage (Source: Departamento de Patrimônio Histórico/ COC/Fiocruz).

collection. In 2008 the restoration work of the Moorish Pavilion's front wing was completed, including the construction of metal bookcases with sliding files suitable for storage of wooden drawers where the insects are stored in the collection (Figure 2). A system with rubber seals was provided in each module of the sliding files in order to ensure the tightness of the seal. There is no climate control system in the rooms occupied by the collection.

The Rare Books Section of the A. Overmeer Library for Biomedical Sciences still occupies the rooms originally designed to house the library of the Oswaldo Cruz Institute, located on the 3rd floor of the Moorish Pavilion (Figure 3). The collection is housed in a separate area of the lecture hall, and contains a set of steel shelves on four floors installed in 1913. Consisting of diverse publications (books, journals, theses and pamphlets), the collection comprises about 40,000 volumes of works in the areas of natural history, the biological sciences, medicine and public health published between the 17th and 20th centuries. In the 1990s an air conditioning system with chilled water and a rechargeable battery, integrated with central air conditioning system of the building, was installed to control humidity in the collection area.

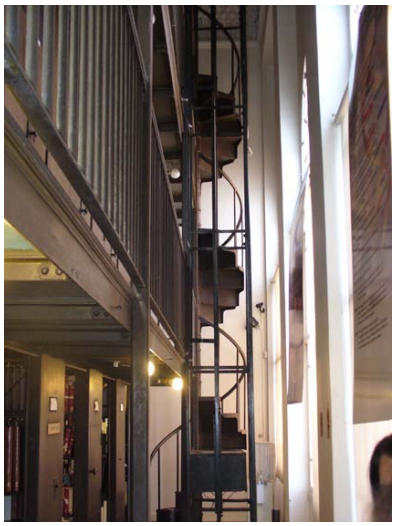

Figure 3. View of the Rare Books Collection's storage (Source: Departamento de Patrimônio Histórico/COC/ Fiocruz).

The museum collection housed in the exhibition rooms of the pavilion is composed of various objects related to the institution's history and to health in Brazil, including laboratory equipment, furniture and works of art. The exhibition rooms are also heated by the central air conditioning system. In this case, the heating system (fan-coil heating) was adopted to ensure human comfort in the space, rather than to present a solution for humidity control.

2. The methodology

Due to the great complexity involved in developing strategies relating to preventive conservation, interdisciplinarity is seen as one of the key to success in this type of work. According to May Cassar (2006), preventive conservation should be a shared responsibility, requiring a great deal of interaction between different types of professionals – conservators, architects, engineers, archivists, librarians, museum curators – who bring different experiences and perspectives to identifying problems and proposing solutions, avoiding duplication of efforts. For the development of this research a team of technicians from Fiocruz and from different units with different backgrounds was created, supported by the technical staff of the House of Rui Barbosa Foundation. To diagnose the collections a consultant specialist in collections conservation was also hired.

The current state of cultural heritage, whether movable or immovable, is the cumulative result of past and current environmental conditions, the intrinsic vulnerability of the materials, presence of factors that promote decay, use, and the history of interventions suffered. Thus, based on the methodology for making conservation assessments proposed by the GCI group, a work plan for the development of research was defined by the team, comprising three main stages: environmental monitoring of areas of custody of the collections, making the conservation assessments of collections and the building, and the establishment of conservation strategies.

The methodology proposed by the GCI is not specifically formatted for the evaluation of historic

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buildings, but for any type of building that might house collections. Given the specificity of the object of the research study, a deeper analysis of the history of the building, the interventions performed over the years and the state of conservation of the constructive elements was incorporated into the work.

2.1. Environmental monitoring

Environmental monitoring includes the collection and recording of data on environmental parameters at a particular location, measured in a systematic, uniform and repetitive way. The collection of long-term data allows the identification of deterioration of relations between objects, and their causes, allowing also verification of the effectiveness of solutions adopted for the conservation of collections. In the case of humid tropical climates, one of the main agents of deterioration is water, whether through the percolation of moisture from humid soils, the infiltration of rainwater through the roof vents and unsealed or high relative humidity. The presence of moisture in the environment leads to biodegradation of the construction materials of the buildings and the matter that constitutes the mobile collections, especially those of organic character.

The Moorish Pavilion has five habitable floors, approximately 5,000 square metres of building area and more than 60 rooms. For the development of this research project, priority areas to be monitored were defined: the Entomological Collection, the Rare Books Library (room collection, room of duplicates and reading room) and the Exhibition Hall of the Museum of Life. An external monitoring point on the east balcony of the building was also set.

To conduct the monitoring, equipment, specifically data loggers that measure and register the data of temperature and humidity every hour in each of the defined points (Figure 4), were used. The minimum duration of such monitoring should be a year, so that they can evaluate the environmental characteristics of the areas in question during all four seasons, as each one represents changes in temperature, relative humidity, insulation and incidence of wind. Taking into account the duration of the study, the team established an 18 month period of monitoring, which began in October 2009.

The collected data were gathered monthly and organized into sheets, with monthly charts produced for each of the monitored points. From the analysis of data from relative humidity and temperature collected, and the issues raised by the conservation assessment of the collections, it will be possible to assess the conservation impact of environmental conditions where these collections are housed.

Despite that the evaluation stage of monitoring data is not yet complete, preliminary analysis of data already allows some considerations to be made. In the case of the Library, the evaluation of monitoring data indicated that the existing climate control system, although designed to ensure conditions for the conservation of the collection, has been unable to properly maintain the stability in relation to relative humidity in the environment of collection. At times, there is a variation of more than ten percentage points in 24 hours, and also some peaks above 65% RH, the value at which the materials, especially those of organic base, are more susceptible to biodegradation.

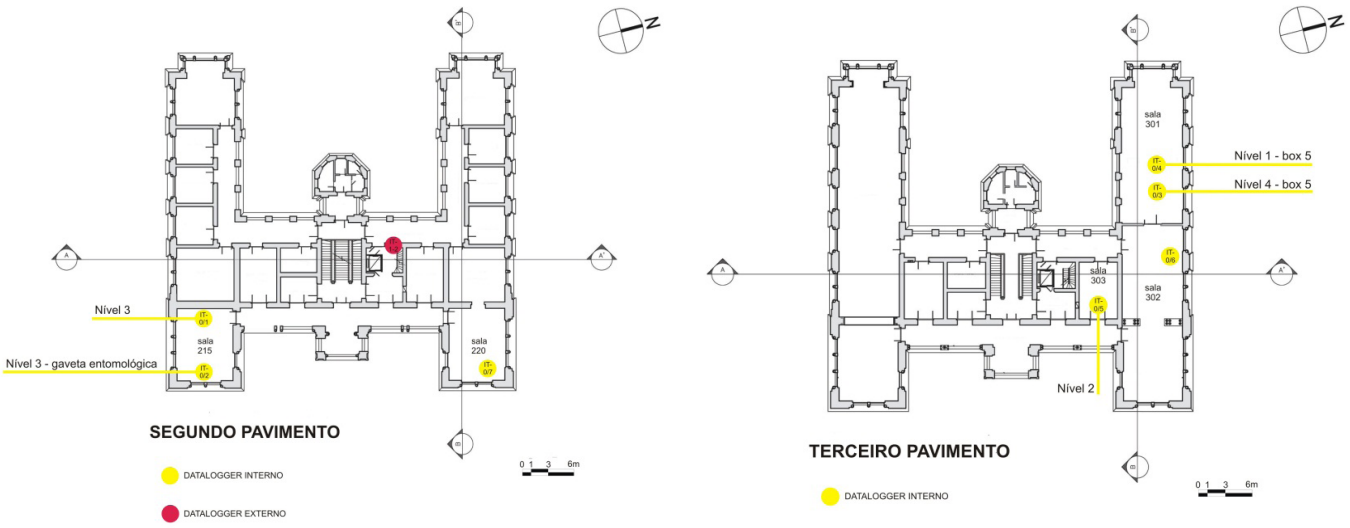

Figure 4. Monitoring equipment installed at Moorish Pavilion – 2nd and 3rd floors (Source: Departamento de Patrimônio Histórico/COC/Fiocruz).

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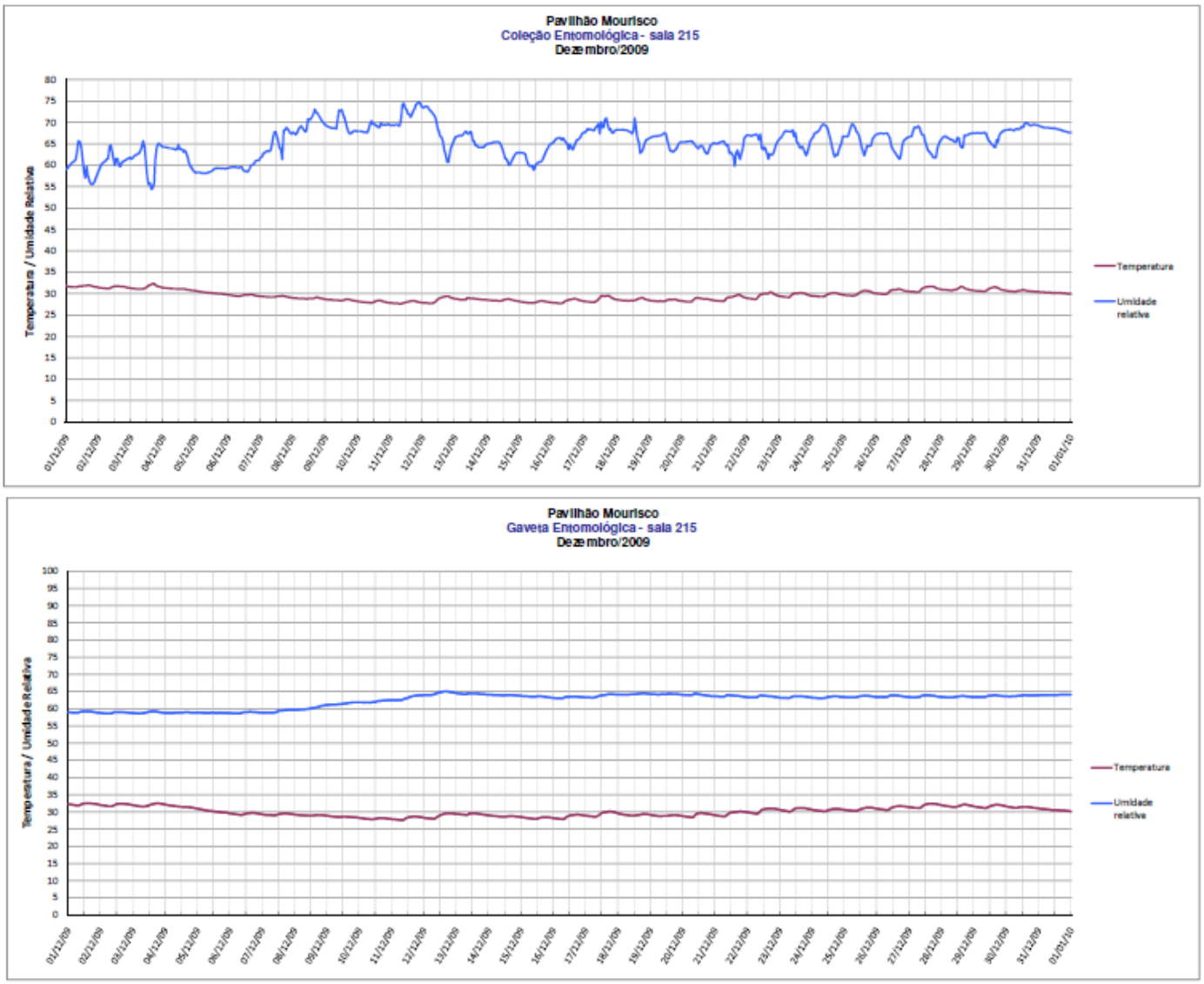

Figure 5. Temperature and Relative Humidity graphics of Entomological Collection – room and drawer (Source: Departamento de Patrimônio Histórico/COC/Fiocruz).

Regarding the Entomological Collection, monitoring data collected in the room indicates high levels of relative humidity and temperature (sometimes exceeding 75% RH and 30°C), though the environment does not possess any type of mechanical climate control system. The analysis of data collected in the drawers of the collection, however, indicate that the entomological drawers and the sliding file sealing system had been functioning as barriers to the conditions identified in the room, ensuring a more stable micro-environment with reduced values in relation to RH and temperature (Figure 5).

To complement the survey data related to temperature and relative humidity, data for rainfall and wind movement in Rio de Janeiro were collected through the site INMET (National Institute of Meteorology). The institution has a database of measurements that have been conducted since the 1930s, and provides consultation on the Climatological Standards; a selection of data from each of the indices mentioned above were converted into monthly averages. For the study, the most recent standards (1961-1990) were raised. Data analysis will allow a deeper understanding of the macro-environment of the building and its impact on the conservation of the building and the collections housed there.

2.2. Diagnostics of the building and the collections

The diagnostic stage was divided into three phases: preliminary survey data, observations and interviews on the site, and analysing data and defining strategies. The diagnostic process should always be started with a review of all available information about the building and collections, given that the literature on a heritage may reveal information that cannot be obtained through direct observation. During the first phase of the diagnostic process, the existence of abundant technical documentation was identified relating to works undertaken in the Moorish

Figure 6. View of the Moorish Pavilion's flat roof and Tower (Source: Departamento de Patrimônio Histórico/ COC/Fiocruz).

Pavilion from the 1980s – the time of creation of the Department of Cultural Heritage of the COC. The form of organization and storage of such documentation, however, did not allow this information to be available for consultation.

With technical guidance from the Department of Archives and Documentation of COC, the organization of the documentation files for the project was carried out. A separation of the documents related to other buildings of the campus of Manguinhos was necessary. Each file created consists of plans, specifications, techniques, work diaries, reports and photographs. Through this exercise, it was possible to create a list of works carried out in the building, and analyze and compile data on cards for each of the interventions in the Pavilion.

Besides creating an database that can be updated and should be regularly supplied with information about new interventions, the preliminary data organization enabled the identification of some weak points of the building. The data analysis revealed, for example, that the towers north and south of the Pavilion underwent restoration works of large proportions in 1989 and 1990, respectively. In 2008, a map of damage done in order to support a new restoration project already indicated serious conservation problems and the need for further intervention (the project is currently awaiting release of funds).

As with the towers, the elements that compose the roof of the building were identified as vulnerable (Figure 6). Between the late 1980s and early 2000s new waterproofing works were performed on the 5th and 7th floors (1988 and 1991), the battlements and turrets of the 5th and 7th floors were restored (1996 and 1997) and the rain ducts attended to (2000). In 2005, a new study to review the waterproofing of the roof was made.

At this stage of data collection, we researched existing bibliographic material about the building and the collections. The goal of this step is to consolidate the existing historical data, including issues related to the use and modifications in the building since its construction to the current day, and to organize information about materials and construction techniques for counting in the inventory of the building.

The second stage of the diagnostic included field trips for information gathering. Through direct observation and interviews with curators of collections and users of the building, information was collected about the conservation of the constructive materials of the building, existing facilities, and collections; and also on the methods of storage and display of collections, routine cleaning and maintenance and preservation policies. To develop the diagnostic of the collections the company *Papel e Natureza Assessoria em Preservação* has been contracted. The work was coordinated by the technical director of the company, the museologist Ingrid Beck.

In the Library, a survey was conducted by random sampling to quantify the frequency of damage to the collection. The diagnosis indicated as major problems those caused by insect damage, brittle paper and binding with the cover loose or lost. We also identified problems related to excessive ultraviolet radiation. The main room of the collection has large windows in iron and glass on the façades facing north, south and east. The survey conducted in the first phase of the diagnostic indicated that the windows of the north and south sides were fitted with curtains with UV protection in 2000, but the top (flag) remained unprotected until 2010. The windows of the east façade were protected by curtains only in 2008. The result of these conditions could be observed during the survey for the diagnostic stage, which indicated that the books housed in the bookcase facing east have been deteriorating much more rapidly than the others. The problems identified in the conservation of rare works, such as damaged bindings, can result in loss of value, both material and informational.

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The diagnostic exercise of the conservation of the collection indicated that the conservation problems identified may be related to inadequate protection from conditions of humidity, temperature, light radiation and pollutants, confirming the information collected by environmental monitoring. The diagnostic exercise performed in the museum collection showed that the exhibition rooms are under suitable conditions. By the decision of the curators of the exhibition, the documents exhibited in these rooms are facsimiles, ensuring the preservation of the originals. Artificial light is controlled and natural light, coming through the windows, is filtered through curtains of special fabric that blocks ultraviolet radiation.

The assessment proposed in the larger research project is still in development, and the predicted time for the conclusion of the work is the first semester of 2011. As the expected results, we can highlight the identification of the causes of deterioration of buildings and collection, and the determination of environmental control guidelines for the areas that house the collections. As secondary results, the research will contribute to a reduction in need for restoration interventions in buildings and collections; to the improvement in team actions in the maintenance staff, and to the development of applied scientific research, promoting knowledge exchange between other institutions that deal with this issue.

The conservation assessment is an important tool not only for the definition of conservation strategies, but also for monitoring the effectiveness of those actions. Through this type of assessment, which must be periodically updated, it is possible to set a concrete picture of the situation and to establish conservation plans that will allow preventive actions that are sustainable in the long run.

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Endnotes

[1] Architectural style developed in the context of Islamic art from the second half of the 11th century to the end of the 15th. The architectural complex of the Alhambra, built in Granada (Spain) between 1238 and 1492 is the most significant example of Moorish architecture. The Alhambra palace served as citadel and fortress, as well as the residence of sultans, senior officials, servants of the court and elite soldiers.

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Perception and evaluation of visual quality of the urban landscape in historic areas

Mirian Sartori Rodrigues[1] & Maria Cristina Dias Lay[2]

Abstract

The article addresses perception and evaluation of cultural built heritage and its contribution to the visual quality of urban landscape in order to ascertain the level of importance attributed to heritage buildings and to identify the physical characteristics of existing buildings on sites of heritage value that are more and less attractive to users, as well as the indication of historical and affective values which possibly influenced the user perceptions with respect to environmental and aesthetic quality. Historic areas of two cities were selected as case studies. Piratini represents cities with preserved historic centres, and a pioneering urban legislation; and São José do Norte represents cities where cultural heritage was adulterated due to a lack of legislation to guarantee the preservation of built heritage. The research was implemented through the use of qualitative and quantitative methods in two stages of investigation. The first aimed at gathering elements to define the study area through mental maps and interviews with users of historic areas, which allowed the identification of the strongest positive and negative images of public buildings and urban spaces. In the second stage, questionnaires were administered to evaluate images of urban scenes with different levels of homogeneity. The goal was threefold: to investigate the role built cultural heritage has on the visual quality of urban landscape, to measure the damage to the aesthetics of the city caused by the lack or non-inclusion of issues relating to preservation of cultural heritage in the process of urban planning and to support the elaboration of public policies on the preservation and planning issues. The results indicate the relevance of bringing together experts in the field of preservation of cultural heritage and users of historical areas, emphasizing the importance of user engagement with public policy issues of heritage preservation, which allow the appropriation of cultural heritage by local communities.

Keywords: built heritage; urban landscape; visual quality

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Introduction

In the process of planning and ordering the dynamics of urban growth, cultural built heritage, considered in its full scope and complexity, begins to impose itself as a major component to be considered in the process of evolution and transformation of cities. Despite the statement of its importance, cultural built heritage in most Brazilian cities is absent from public policies and land management. Regardless of national heritage at regional or local level, the Brazilian municipality has constitutional authority and obligation to protect it. However, in most cities, cultural heritage issues are not accepted, understood or prioritized. The lack of control and concern for aesthetic quality and consequences to the visual appearance of cities characterized the problem in this research. Generally the regulatory instruments of projects are directed more to define the constructive potential than the aesthetic quality of new buildings; their insertion into the landscape and compatibility with the pre-existing structures. Consequently, the absence of urban legislation for preservation of cultural built heritage, as well as the absence of regulatory mechanisms and control of urban aesthetics, leads to the destruction of local cultural heritage and the growing disqualification of the landscape and visual appearance of historic cities.

This study investigates the level of importance attributed to the built cultural heritage by the population and identifies environmental aspects and qualities that tend to be more and less attractive to users, when evaluating a set of buildings of a certain area. This establishes the values (architectural, historical, emotional, etc.) present in the area that may influence the perception of its users with respect to urban aesthetics. Moreover, considering that the environmental image affects the attitudes of individuals in relation to urban space, awareness of the visual appearance can be an important component to be considered in the search for improvement in the quality of landscape aesthetics. The literature suggests that built heritage is an essential element in the rescue of pleasant things and transmitters of

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sense of well-being, these being gradually lost in the process of building modern cities, as well as the relationship between man and environment. In the environmental assessment process, historic buildings tend to be perceived positively and aesthetic values associated with formal and symbolic (Lang, 1987).

Usually located in the central areas of cities where changes occur more quickly and frequently, the permanence of historic buildings is considered essential to maintain the sense of continuity of places, while the destruction of heritage buildings and landscape change can affect individuals' perceptions. According to Lynch (1997), rapid changes in the urban environment, added to technical and functional changes, can be emotionally upsetting for the people and disrupt their perceptual image. The study of aesthetics seeks to identify and understand factors that contribute to the perception of an object or a process as beautiful, or how they can provide a pleasant experience (Lang, 1987). Stamps (1989) explains the significance of studies on the visual quality of the perceived environment, based on the fact that the aesthetics of the urban landscape is related to the human need to have pleasant sensations. Thus, one can infer that pleasant surroundings would be potential generators of pleasant sensations. Discovering how to preserve or create these environments perceived positively by the local population should be a constant objective of the urban planning process. Still, studies with an emphasis on cultural heritage buildings (e.g., Azevedo *et al.*, 1999) indicate that the predominance of historic buildings is a reference in the mental process of structuring an urban area, which is related to certain attributes such as the external appearance of buildings, their historic importance and use.

Thus, visual quality contributes to the appearance of cities and affects the well-being of individuals, whose senses are stimulated through continuity, variety and existing formal standards in urban landscape as well as through images compiled from the cognitive process of the individual (Reis, 2002). The evaluative response is directly related to the physical-spatial environment and previous experience of observers and their views, expectations and cultural experiences, involving the processes of perception and cognition. In the evaluative response, perception and cognition have probabilistic relationships with one another and with the physical characteristics of the built environment, resulting from the interaction between individuals and the environment. This model suggests two broad components of the evaluative response – perception and cognition – and two types of environmental variables: formal and symbolic (Lang, 1987). While formal attributes consist of physical elements of buildings that comprise the architectural form used to describe it objectively, buildings and urban space also have symbolic attributes, the result of the experiences and values acquired in the interaction between the individual and the urban landscape. Besides these, there are visual qualities of landscape attributes that transform them into objects of attention, despite the ability of selective vision.

The compatibility of formal and contextual new insertions is also mentioned as an important element in evaluating the urban landscape since the composition of buildings suggests an idea of aesthetic order in visual perception (Reis, 2002). On the other hand, in an urban setting where there was concern about the pre-existing buildings, there may be a great contrast and variety of heights and volumes and this diverse visual environment can generate a confusing, chaotic setting, where individuals may feel disoriented (Lozano, 1988). According to Nasar (1998), cities can increase their positive image evaluation, enhancing the visual coherence or order through a variety of features that can aid in the perception of order, such as readability, repetition, replication features of façades, uniform texture, little contrast between elements or between buildings and their natural context and identifying features and focal point.

Moreover, Lang (1988) argues that some architectural variables carry symbolic meanings, considering their relationship with the dimension of affective experience, such as composition (architectural style), spatial configuration (volume ratio), materials, lighting and the nature of pigmentation (colour). Therefore, numbers of buildings or buildings of a particular style show cognitive relations associated with them as symbols of an idea or historical time, acquiring values that affect aesthetic evaluation, such as historical significance, age, urban references and positive associations with a period in history. Coeterier (1996) highlights the importance of historic buildings as an existential value for people on three levels: place identity, personal identity and group identity; he also argues that historic buildings amplify the sense of community and collective identity. As Lynch (1975, p. 40) remarks, people usually respond favourably to historic sites for a variety of reasons, and he argues that "many historic and symbolic places convey a sense of security and continuity," adding that the character of the personal

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image of time is crucial for individual welfare, as well as to achieve success in time to coordinate the environmental transformation and maintain this image of time.

This article deals with aesthetic issues in the process of visual perception of the built environment related to the built cultural heritage and its contribution to the visual quality of the urban landscape, with the aim of emphasizing the damage to the aesthetics of the city caused by the lack or non-inclusion of preservation issues of heritage buildings in the process of urban planning, as well as gathering input for public policies on preservation and planning.

1. Methodology

The aesthetic response was measured based on the different levels of satisfaction expressed by individuals regarding the formal and symbolic attributes of buildings. The ratings herein are based on the premise that there is interplay of influences between individuals and visual aspects that make up the urban landscape. The role of cultural heritage buildings in the urban setting was investigated in two cities with initial settlement occurring in the 18th century, and with different degrees of preservation: Piratini represents cities with preserved historic centres with a pioneering urban legislation, while São José do Norte represents cities where cultural heritage was adulterated due to a lack of legislation to guarantee the preservation of built heritage.

The research was implemented through the use of qualitative and quantitative methods in two stages of investigation. The first aimed at gathering elements to define the study area by applying the technique of mental maps and interviews to users of historic areas, which allowed the identification of the strongest positive and negative images of public buildings and urban spaces (Figure 1). In the second stage, 113 questionnaires were administered in order to evaluate images of urban scenes with different levels of homogeneity, chosen based on criteria established to meet the objectives of the investigation. Data obtained through questionnaires were analyzed quantitatively by means of frequencies and non-parametric tests. Three scenes from each city were selected in order to accommodate study aims, with the necessary prerequisites being: a) located within areas of study defined in the first stage; b) of different levels of homogeneity in external formal features, with heights and construction times resulting in a more homogeneous scene, mixed (more or less homogeneous) scene as well as an heterogeneous scene; c) representative buildings of cultural heritage (buildings of the ancient period), present in its composition and d) buildings representative of modern period, buildings of the contemporary period and/or adulterated buildings present in its composition.

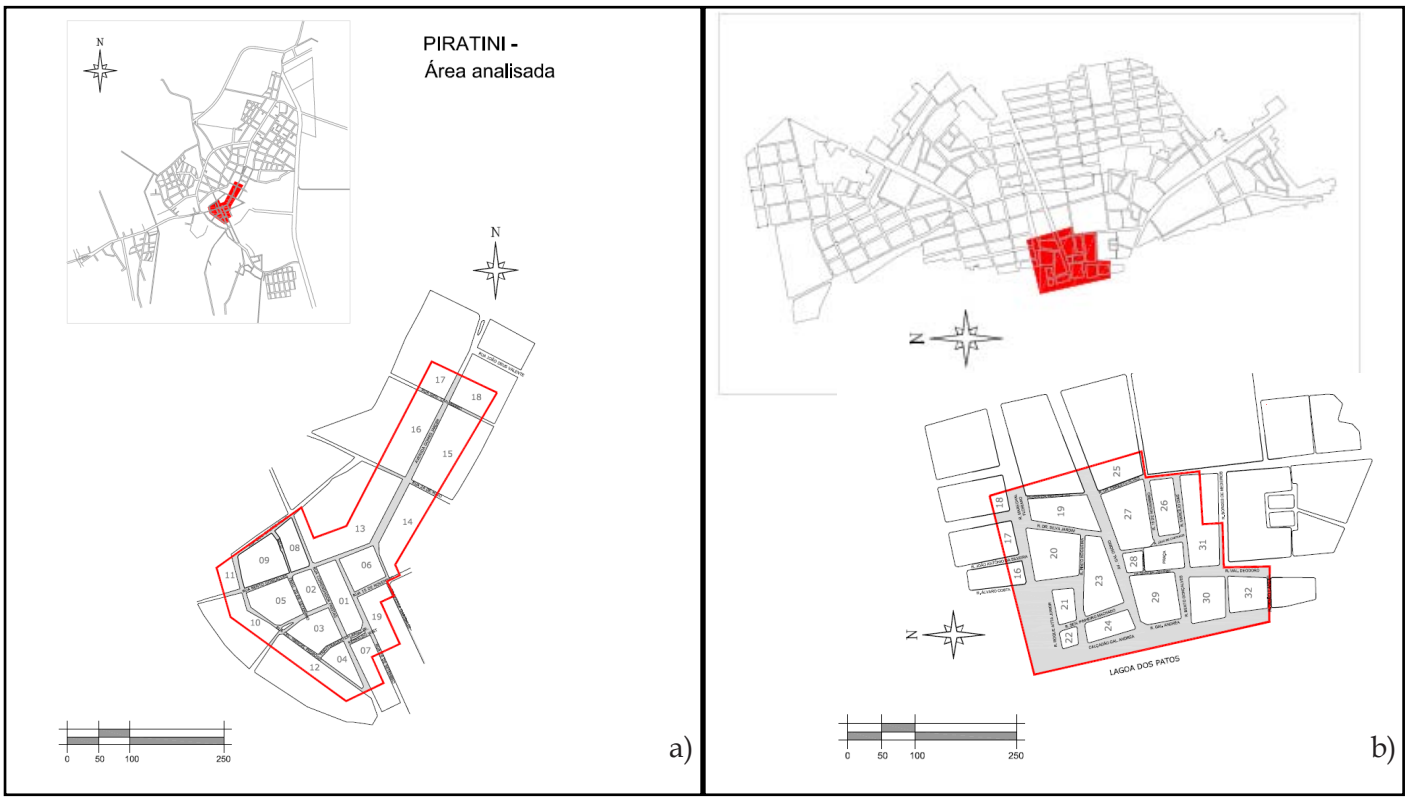

Figure 1. Definition of study areas. a) Piratini; b) São José do Norte.

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For the purposes of this research, different styles and mixtures of styles were classified according to the following periods: a) the early period (until 1930), including the buildings in this period with language influenced by Luso-Brazilian colonial style – the eclectic buildings that anticipated modernism, called 'pre-modernist' by Nauomova (2009), basically corresponding to Art Nouveau and proto-modernist styles; b) the modern period (1930 to 1980), influenced by various architectural currents responsible for the consolidation of the Modernist movement such as Art Deco, the Chicago School, European rationalism, expressionism, and the neo-classical revival (Kiefer and Light, 2000); c) the contemporary period (after 1980), marked by the revision of the modern movement; and finally, d) buildings from any period, disfigured by the loss of their original typological characteristics due to profound changes or replacement of items and construction materials. Regardless of typological classification, this research was focused on identifying building in multiple periods of time in order to verify the role that a cultural heritage building – represented by buildings of the ancient period – plays in determining the visual quality of the urban landscape.

2. Relationship between cultural built heritage and visual quality of the urban landscape

In order to investigate the role that built cultural heritage has in an urban setting, especially if it contributes positively to the visual quality of the urban landscape, the three selected scenes with different degrees of homogeneity were assessed by respondents in each city (Figure 2).

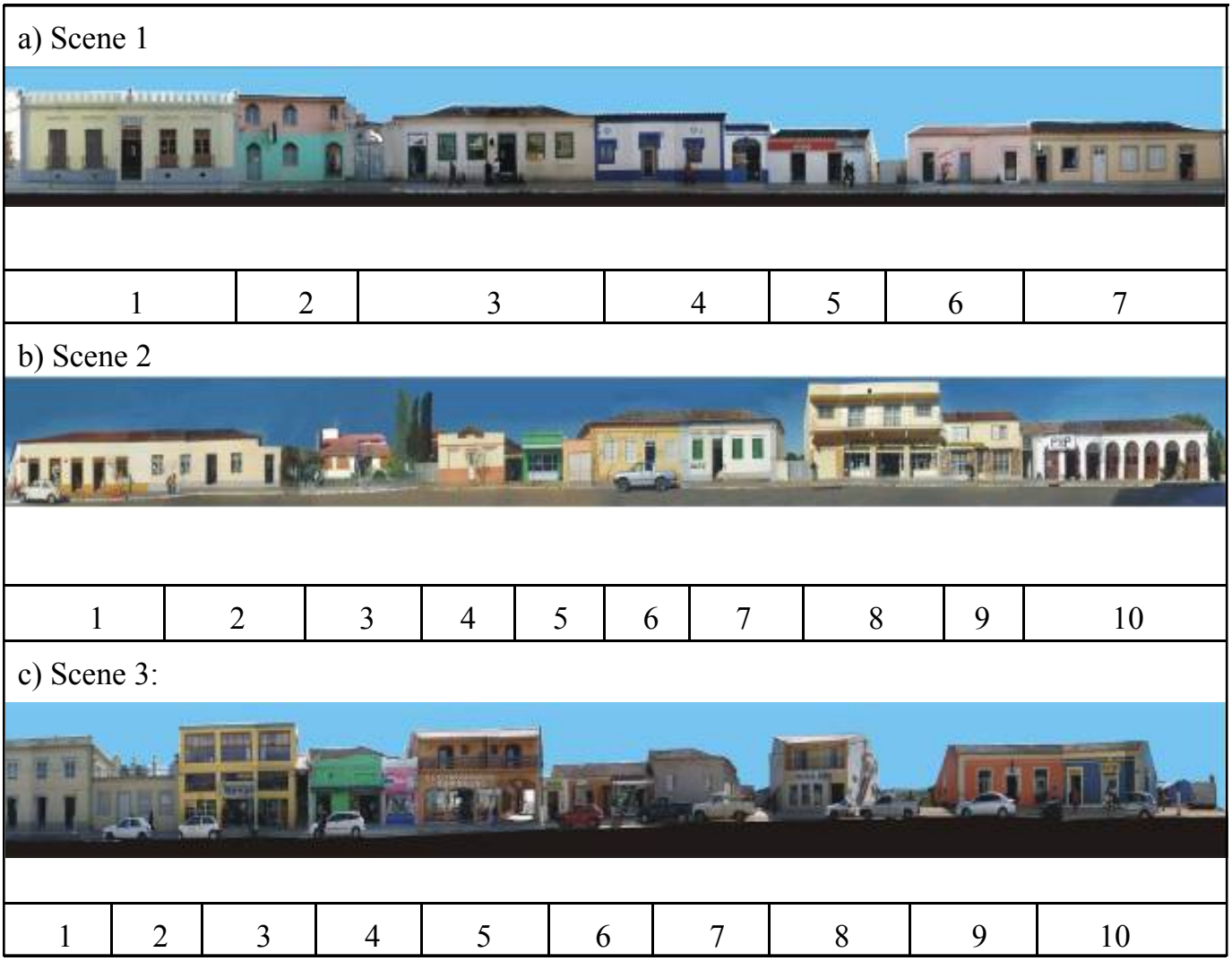

Figure 2. Urban scenes Piratini: a) scene 1; b) scene 2; c) scene 3 (Source: M. Rodrigues and A. Romanini, arquivo IPHAN).

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Positive justifications		Negative justifications	
%	Justification	%	Justification
33.3	Outstanding-Preservation of historic building	19.4	Lack of harmony with colours
19.4	Historic meaning-symbolic value of historic buildings	16.6	Visual pollution-advertisements
19.4	Pleasant appearance; beautiful	13.8	Lack of conservation

Table 1. Visual Appearance scene 1 - Piratini. Justifications related to visual appearance of scene 1 - Piratini.

2.1. Assessment of urban scenes: Piratini

Scene 1- This is the most intact scene in terms of preservations of cultural heritage buildings and also the most ordered (Figure 2a). The buildings that make up the scene are mostly from ancient period. Buildings 1 and 3 are the best preserved of cultural heritage buildings, protected by preservation law. Building 7 maintains most of the external formal characteristics. Building 4 has the characteristic structure of the buildings of Luso-Brazilian architecture and introduction of certain eclectic decorative elements. Buildings 5 and 6 had their roofs and frames changed. Building 2 is the only one from the contemporary period with incorporation of old elements like arches and French-style frames. The first scene was viewed favourably by 70% of the sample of respondents. The main reasons justifying positively and negatively the visual appearance of the scene are shown in Table 1.

The main reason for positive evaluation of the appearance of the scene is 'preservation of old buildings', emphasizing the importance that respondents from Piratini give to cultural heritage buildings. A second positive justification is 'historical meaning' – the symbolic value of historic buildings, indicating meanings and values attributed to built cultural heritage. The same percentage perceives a pleasant visual appearance, allowing pleasantness and beauty to be associated directly with the homogeneity of the scene. The main negative cited is 'lack of harmony in colours', suggesting how this attribute is enhanced by *Piratinenses*. Note also, how the issue of visual pollution caused by lack of regulation in the use of advertising media on the perimeter of the historic centre is perceived by users. Conservation status was the third most frequently cited negative and can not be ignored, as the state of conservation seems to be relevant in aesthetic judgments (Nasar, 1998; Kings and Lay, 2006).

scene 2 – This mixed scene consists of old and new buildings that represent different styles, blending styles and periods of architecture such as the Luso-Brazilian, eclectic, modern and contemporary (Figure 2b). The five buildings of the early period (1, 2, 6, 7 and 10) are protected by municipal law. Building 1 has constructive characteristics of the Luso-Brazilian architecture. Building 2 has the same formal characteristics of traditional building, but its window frames were replaced by French-style windows. Building 3 is a contemporary building, with a retreat of gardens, side setbacks and vegetation that differs from the others. Building 4, from modern period, has straight and trimmed elements. Building 5 suffered several alterations. Buildings 6 and 7 form a single volume and have the structure of the Luso-Brazilian architecture and standard neoclassical decorative details. Building 8 is from the contemporary period and is the tallest, with a balcony running across the front façade that spreads along the promenade. Building 9, with two floors, belongs to the contemporary period and building 10 has a different typology, with a structure of Luso-Brazilian architecture and roof tiles, but with arched and French-style openings.

Positive justifications		Negative justifications	
%	Justification	%	Justification
2.2	Beautiful appearance	6.6	Existence of modern and old buildings
6.6	Existence of modern and old buildings	1.1	Ugly modern buildings/new and ugly
1.1	Outstanding preservation of old buildings	1.1	Visual pollution

Table 2. Visual Appearance scene 2 – Piratini. Justifications related to visual appearance of scene 2: Piratini.

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This scene was viewed favourably by more than 50% of respondents. The main positive and negative reasons given by respondents to evaluate the appearance of the scene are shown in Table 2.

'Beautiful appearance' is the main positive justification, followed by 'the presence of modern and old buildings', which suggests integration between the buildings of different periods. In other words, there was compatibility between the new formal inserts and those already in existence. The integration of buildings from different periods can be considered a major factor in the aesthetic evaluation of the scene which, although less homogeneous than the first, was considered positive for more than 50% of respondents and with a beautiful appearance. The 'outstanding preservation of old buildings' is the third positive justification used, which shows the duality of views on evaluative responses to the appearance of the scene and about what and how, whether positively or negatively, the buildings that compose the scene contributed. 'Presence of modern and old buildings' was considered positive by some but negative for many others, as the main negative justification, which is further reinforced by the second most significant response that considers modern (new) buildings 'ugly'. Visual pollution was negatively perceived by users and exemplifies the intensity with which it can affect the visual quality of the urban scene.

Scene 3 - The most heterogeneous scene, as amended by recent constructions and alterations, was considered one of the 'ugly sites' in the mental maps, because it has three contemporary insertions that altered the structure of this ancient quarter, both external and formal characteristics with respect to number of floors (Figure 2c). Of the five buildings from the ancient period in the scene, four are protected by municipal law (1, 2, 9 and 10). Buildings 1 and 2 have the structure of the Luso-Brazilian architecture, but standard neoclassical elements were added. Buildings 9 and 10 have typical characteristics of the Luso-Brazilian architecture. Building 7 is from the early period. Buildings 3, 5 and 8 belong to the contemporary period. Building 4 is from the modern period and despite having been included in the Inventory of Property, is uncharacteristic. The same happened with building 6, which had the spans and frames replaced.

This scene was viewed favourably by only 23% of respondents. It is the less orderly scene and the only scene of the three where 'ugly' is indicated as an evaluative response. Justifications focused as negative (Table 3). The 'presence of modern and ancient buildings' was the negative justification with the highest frequency, suggesting that in this scene there was no integration between the buildings of the early period (pre-existing buildings) and new inserts. The diversity of styles, different forms of buildings and modern buildings / new profile contributed to the chaotic scene. When the contributions of each building to the visual quality of the scene were evaluated, a similar situation occurred where ancient buildings were favoured and buildings of the modern period and the contemporary period were negatively evaluated.

%	Negative justifications
41.6	Existence of modern and old buildings
36.1	Chaotic scene
25.0	Different formal characteristics of buildings
9.4	Diversity of styles
16.6	Modern-new buildings
11.1	High

Table 3. Visual Appearance scene 3 - Piratini. Major reasons related to the visual appearance of scene 3: Piratini.

2.1.1. Analysis of the aesthetic preference of scenes in Piratini

The order of preference of scene 1s, 2, 3 was confirmed by 66.7% of respondents, while 8.3% preferred order 1, 3, 2. The more homogeneous scene (scene 1) was evaluated positively by approximately 70% of respondents. The second scene was rated positively by over 50% of the sample. The more heterogeneous scene (scene 3) was evaluated positively by only 23% of respondents. Analyzing the results on the visual appearance of the scenes it can be inferred that the greater the degree of homogeneity, more visual quality has the scene, and vice versa. The comparison between the frequencies obtained on aesthetic assessment of each scene shows the trend of positive assessments on the scene 1 and 2 and the most negative evaluations in the third scene.

2.2. Assessment of urban scenes: Sao Jose do Norte

Scene 1 - Despite its peculiar appearance, scene 1 in Sao Jose do Norte represents original structures to a greater extent (Figure 3a). With the exception of building 11, from the contemporary period, the other buildings were all listed by the Institute

Positive justifications		Negative justifications	
%	Justification	%	Justification
37.5	Outstanding preservation of old buildings	20.0	Lack of conservation
20.0	Symbolic value of historic buildings	7.5	Lack of attractiveness
15.0	Existence of modern and old buildings	5.0	Alteration of façades

Table 4. Justifications related to the visual appearance of scene 1- Sao Jose do Norte.

of Historical and Artistic Patrimony of the State (IPHAE). Building 2 has recently been recycled. Buildings 1, 3 and 8 are old, but were adulterated to a greater or lesser degree. Buildings 5, 6, 7 and 9 had façades upgraded into 'deco' style. Building 10 is one of the few terrace houses of the Luso-Brazilian style most preserved, both externally and internally. Building 12 is a corner house of the modern period. scene 1 was evaluated positively by 70% of respondents. The main positive and negative reasons given by respondents to evaluate the appearance of the scene are in Table 4.

The main positive justification highlights the preservation of old buildings and the second deals with the symbolic values and historical significance. The third reason concerns the positive contrast perceived by the presence of ancient and modern buildings. Since this scene was rated negatively by only 5.6% of respondents, the negative perceptions received little justification. The main one was 'conservation status', mentioned by 20% of respondents, followed by lack of attractiveness of the scene and changes made to the façades.

Scene 2– This scene maintains the land structure from the colonial period with a few buildings remaining from the original built heritage, currently adulterated or in poor state of conservation, with modern and contemporary insertions (Figure 3b). This scene was positively evaluated by 55% respondents, while 17.5% considered it ugly. The main

Figure 3. Urban scenes, São José do Norte: a) scene 1; b) scene 2; c) scene 3 (Source: M. Rodrigues and A. Romanini).

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Positive justifications		Negative justifications	
%	Justification	%	Justification
15.0	Conservations status	15.0	Conservation
15.0	Colour of façade	15.0	Existence of modern and old buildings
10.0	Existence of modern and old buildings	10.0	Demolitions and alterations to the façades

Table 5. Justifications related to visual appearance of scene 2 – São José do Norte.

reasons justifying the positive and negative assessment of the scene are shown in Table 5.

It appears that the main positive justifications on the assessment of the scene is the 'conservation status' and the 'colours of the façades', which highlights how maintenance of buildings is an attribute valued by *Nortenses* (the appellation for the residents of Sao Jose do Norte). The existence of modern and new buildings was the third positive justification, as respondents believed that the buildings contribute to the renewal and upgrading of the urban scene. However, the mix of modern and old buildings was considered one of the main negative justifications, along with conservation. The demolitions and changes in the façades are the third justification presented. The scene presents such a situation due to the partial demolition of a two-story colonial terrace that dominates the centre of the scene (building 7) and adulteration of façades in varying degrees.

Scene 3 – The heterogeneous scene collects representative examples of Luso-Brazilian architecture from the colonial period (Figure 3c). The single storey row houses were adulterated. The colonial mansion located in the centre of the scene (6), which dominates by its volume, height and other formal and symbolic attributes, is in disrepair. Both building 7 (modern period) and building 8 were identified through mental maps as 'ugly' places. This scene was positively evaluated by 15% of respondents. Compared with the heterogeneous scenes of the other city, it achieved the highest negative rating (37.5%). The main reasons justifying the perceived visual appearance of the scene are shown in Table 6.

Although most of the justifications are negative with respect to the visual appearance of the scene, *Sobrado dos Imperadores* (building 6), despite its poor condition, was highlighted with the following statements: 'could be restored and would be beautiful; is poorly preserved; conservation is not good but it gives life to the scene; the unique beautiful building in the scene is not well maintained'. The state of preservation was the main negative justification (42.5%) and in this context, changes such as alteration in the façades, was more accurately perceived than in the previous scene, where five adulterated buildings were considered positive.

2.2.1. Analysis of aesthetic preference of the scenes in São José do Norte

The order of the scene 1s, 2, 3 was preferred by 42.5% of respondents, followed by the order of scene 2s, 1, 3 (32.5%). scene 1 was preferred by 47.5% of residents. For scene 1, the rating was slightly higher than the second scene, considered mixed. Comparing the two scenes, the second presents a greater number of adulterations, six in all, five of which were positively assessed. It transpires in the questionnaire responses that, due to the loss of much of the original structure of the city and state of ruination of the remaining historic buildings, preservation seems to be the key variable that affects preference. In contrast to Piratini, where there is a rigorous and critical assessment from the residents regarding the inclusion of new buildings and adulterations, in São José do Norte evaluation does not depend on whether the building is ancient, modern, contemporary, restored using good technique

Positive justifications		Negative justifications	
%	Justification	%	Justification
35.0	Outstanding building (*Sobrado dos Imperadores*)	42.5	Conservation
-	-	32.5	Alteration to façades
-	-	12.5	Outstanding building (*Sobrado dos Imperadores*)

Table 6. Justifications related to visual appearance of scene 3 ð S«o Jos® do Norte.

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or without its original character. For example, two respondents over the age of 60 expressed a preference for new and modern buildings, rather than the historic ones. Another aspect that respondents make clear is preference for buildings with more than one floor row houses, even when adulterated, are considered positive, suggesting some preference for this type of architecture. Findings about the aesthetic assessment of each scene shows the trend of positive assessments on the scene 1 and 2 and negative evaluations concentrated on the scene 3.

In the third scene, although chaotic, adulterations were perceived as negative. Analyzing the responses as 'adulteration of terrace house; modified façade; other buildings have been altered; because it is very uncharacteristic, nothing is as it should be' allows us to infer that the domain of the *Sobrado dos Imperadores* house, with its formal and symbolic weight, positively influenced the aesthetic response. Some respondents commented that the buildings should be restored to its original characteristics and almost all respondents pointed the *Sobrado dos Imperadores* house as a priority for restoration.

3. Relationships between visual appearance of the scenes and formal attributes

The relationship between the assessment of the visual appearance of the scenes and the composition of the buildings was obtained by evaluating the formal attributes 'volume', 'roofs' and 'façades' in each scene. In homogeneous scenes (scene 1, Figure 2 and Figure 3) the correlation between the 'assessment of the visual appearance of the scene' and 'perception of compatibility of façades' was confirmed (Spearman coef. = 0.244, sig. = 0.00), suggesting that recognition of the presence of order and typological patterns of the façades that constitute both scene 1s, play an important role in the positive evaluation of homogeneous scenes (69%). In the mixed scenes (the scene 2s) statistical support was found for asserting that the 'assessment of the visual appearance of the scene' is directly linked to the 'perception of compatibility of façades' (Spearman coef .= 0.283, sig. = 0.00); that is, perception of formal compatibility between the façades was a relevant attribute for the positive evaluation (51.3%) of mixed scenes. The research also identifies a correlation between the 'assessment of the visual appearance of the scene' and the 'perceptions of compatibility of roofs' (Spearman coef. = 0.235, sig. = 0.01). This relationship suggests that formal compatibility of roofs contributed to the positive assessment of the scene.

In heterogeneous scenes (scene 3s), where negative evaluation was higher (32.8% negative and 22.2% positive), correlation between 'assessment of the visual appearance of the scenes' and 'perception of compatibility of volume' was found (Spearman coef. = 0.222, sig. = 0.00), which suggests that the lack of formal compatibility between the volumes of the buildings that compose the scene contributes to negative evaluation of the heterogeneous scenes; the lack of adequate volume reduces the level of satisfaction with the visual appearance. Also identified were correlations between the 'assessment of visual appearance' and 'perception of compatibility in terms of façades' (Spearman coef. = 0.194, sig. = 0.03), revealing that the evaluation of the appearance of the scene is directly linked to compatibility between the façades of buildings. In the case of the heterogeneous scenes, the trend of appearance evaluation was negative, that is, lack of formal compatibility decreased the level of satisfaction. In assessing the visual appearance, only the formal attribute 'façades' presented statistic significance in the homogeneous, mixed and heterogeneous scenes, indicating the importance of this attribute in the urban setting. This result allows us to infer that the greater the compatibility between the façades, the higher the level of satisfaction with the visual appearance of the urban landscape.

4. Relationships between visual appearance of the scenes and formal compatibility

Analyses were conducted to verify how formal characteristics of pre-existing buildings (formal compatibility) were perceived in relation to new buildings inserted in the pre-existing scenario (Table 7, next page). In all the scenes (homogeneous, mixed and heterogeneous) in the two cities, respondents did not perceive the existence of formal compatibility with new insertions in the urban setting.

In the homogeneous scene in Piratini, where only one building of the contemporary period was inserted (with two floors and height similar to the next door house), there is the lowest percentage of formal incompatibility (44.4%). This shows the accuracy by which the new inserts were valued by the respondents, especially in a well-preserved ancient structure.

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		Piratini	S. J. Norte	P. Alegre
S.1	Compatible	36.1%	12.5%	8.1%
	Neutral	19.4%	12.5%	24.3%
	Not compatible	44.4%	75.0%	67.6%
S.2	Compatible	11.1%	12.5%	2.7%
	Neutral	13.9%	17.5%	16.2%
	Not compatible	75.0	70.0%	81.1%
S.3	Compatible	13.9%	10.0%	13.5%
	Neutral	16.7%	12.5%	10.8%
	Not compatible	69.4%	77.5%	75.7%

Table 7. Perception of formal compatibility.

Relationships between evaluation of visual appearance, perceived formal compatability, volume, roof and façade were further explored (Table 8).

Correlations were significant between 'assessment of visual appearance' and 'perception of formal compatibility with pre-existing buildings' only in the scene 2s (Spearman coef. = 0.271, sig. = 0.00). This trend makes sense because due to its characteristics – not as homogeneous as the first and not as heterogeneous as the third – it received the most intense negative assessments about the insertions of new buildings occurring primarily by *Piratinenses* (75%), which confirms perceived incompatibility of the new insertions with respect to pre-existing buildings.

A perceived lack of compatibility of volume was detected in all six scenes studied. In the scene 1s, statistical support was found for asserting that the new insertions are not compatible with the volume of pre-existing buildings, where the lack of compatibility of volume between the buildings indicates the importance of adequate volume in the aesthetic response to visual appearance of urban scenes, especially when the buildings tend to be more homogeneous. In scene 2s, correlation between 'formal compatibility of the new insertions' and 'compatibility of volume' was also identified (Spearman coef. = 0.342, sig. = 0.00). In the scene 3s, there is a repetition of the correlation between 'formal compatibility of the new insertions' and 'compatibility of volume' (Spearman coef. = 0.407, sig. = 0.00); indicating that the perceived lack of formal compatibility between pre-existing buildings and new insertions is influenced by the lack of compatibility of volume. When correlated with the presence of 'compatibility of roof' the influence of lack of compatibility of roof in the perception of formal compatibility of the scenes was also verified. Note that the negative ratings increase inversely with the degree of preservation of the scenes, so that the scene 3s (heterogeneous) were the most negatively evaluated regarding the compatibility of roof.

When evaluated separately, in the scene 1s correlation between 'formal compatibility between pre-existing buildings and new insertions" and "compatibility of roof' was identified (Spearman coef. = 0.354, sig. = 0.00), indicating once again that the lack of compatibility of roof negatively affects perception of formal compatibility of the scenes. In scene 2s, there is the same correlation (Spearman coef. = 0.486, sig. = 0.00) and in scene 3s, this correlation is even stronger (Spearman coef. = 0.496, sig. = 0 , 2000). Besides confirming that there was no concern for integrating roofs of the new insertions in relation to pre-existing buildings, it can be seen that the more heterogeneous the scene, the lower the perceived compatibility in terms of roof.

The compatibility of façades assumes a key role in the aesthetic preference of the scenes and on the perception of formal compatibility between the pre-existing buildings and new inserts. The perceived lack of compatibility in the three scenes indicates that most respondents considered that there was no such concern. The homogeneous scenes show correlation between 'perception of compatibility of

Visual Appearance	Scenes 1		Scenes 2		Scenes 3	
	*Cor.	Sig.	Cor.	Sig	Cor.	Sig.
Assessment of visual appearance	-	-	0.271	0.00	-	-
Compatability in terms of volume	0.545	0.00	0.342	0.00	0.407	0.00
Compatability in terms of roofs	0.354	0.00	0.486	0.00	0.435	0.00
Compatability in terms of façades	0.331	0.00	0.540	0.00	0.435	0.00

Table 8. Relationship between visual appearance and formal compatibility of new insertions. * Cor. = Correlation

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the new insertions' and 'perception of compatibility of façades' in the scene (Spearman coef. = 0.331, sig. = 0.00), indicating, according to the frequencies obtained (Table 8), that compatibility was negatively perceived, and that the façades of new buildings that were inserted into the urban landscape did not adequately consider the characteristic features of pre-existing façades. The mixed and heterogeneous scenes also show a significant correlation between 'perception of formal compatibility of the new insertions' and 'perceived compatibility of façades' (Spearman coef. = 0.540, sig. = 0.00), demonstrating the importance of reconciling the façades of the old and new buildings. In this respect, the results confirm results obtained by Groat (1988) on the suggestion to incorporate some degree of replication (repetition of certain elements, but with current design) in the design of façades, in addition to replication of the spatial pattern (contextual appropriateness) and mass (volume).

Conclusion

Results indicate the role of built heritage in the aesthetic evaluation of the urban landscape and emphasize the relevance of studies focused on urban aesthetics as a need to promote actions to qualify of public spaces. The importance of a particular order, established by formal consistency, is confirmed. For example, when still present in the urban scene in the form of sets, the old buildings tend to fit into a recognizable pattern, suggesting an idea of order, which justifies the preference of the more homogeneous scenes over the others. On the other hand, the perceived chaotic profile of the heterogeneous scenes highlights the lack of order, justifying the arguments of authors such as Lozano (1988), Weber (1995), Nasar (1998) and Reis (2002), who consider order as a human need, recognized as an important component that affects evaluation of visual appearance of the environmental. The valuation of the buildings of the early period is confirmed by both their particular formal and symbolic attributes when related to the urban context and especially for their contribution in qualifying visual aesthetics of the urban landscape. Also confirmed is that the symbolic attribute 'historical value' can positively affect aesthetic preference, corroborating studies by Coeterier (1996).

Results indicate that both the preservation of heritage buildings and the aesthetic quality of new buildings cannot be conceived without considering the set of pre-existing buildings. Even if belonging to different periods and different styles, the buildings form relationships with each other and can compose harmonic sets, an organic environment with a pleasant visual appearance which will be positively evaluated, or establish ruptures as a mixture of missing pieces, leading to chaotic appearance and negative evaluations. It was possible to identify relevant aspects in relation to matters of cultural built heritage and the importance of including issues of urban aesthetics in the process of city planning. It also underscores the importance of bringing the users of the historic core concerned with public policy issues relating to preservation of cultural heritage, urban aesthetic and urban planning. On one hand research results confirm the positive contribution of the buildings of the ancient period in visual quality of the urban landscape, while on the other it is evident the need to curb the actions of distortion, mutilation and even demolition of buildings of ancient period located in historic cores.

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The design of an assessment system for sustainable rehabilitation

Ana Teresa Vaz Ferreira Ramos[1] & José António Raimundo Mendes da Silva[2]

Abstract

Rethinking intervention in the built legacy can represent one of the paths to the achievement of sustainable development. To endorse processes, key factors to assess are methodologies, materials and solutions to change the approach of this intervention, in order to promote sustainable practices that lead to a rational use of resources, reduction of waste production, the encouragement of local activity, respect for the individual or the creation of new opportunities to reduce social disparities. This paper presents a sustainability assessment system for the built environment, specifically addressing urban centres with historic features and consisting of a built fabric with high cultural value but often marked by dereliction and constructive degradation. The system was designed based both on the analysis of other assessment systems worldwide and the analysis and characterization of the urban areas, mainly through a comprehensive survey work of the 'old town' of Coimbra (Coimbra's downtown). The results achieved by applying this methodology allow us to define a profile of intervention that clearly shows the performance in each area assessed. The main objective was to create a decision support tool that guides the activities of designers and engineers involved and to guide the user's attitude to building occupation and maintenance, specifically attending to the level of resource consumption and waste generation.

Keywords: sustainable rehabilitation, sustainable construction, urban sustainability, old city centres, traditional construction

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Introduction

The understanding, after the oil crisis in the 1970s, of natural resources characteristics, their limits and their scarcity, produced a new overview of the world. However, the changing needs of the world's life style are a great challenge: how can it be possible to change ways of life of societies with different cultural, traditional, economic, political and social organization? In reality there is no doubt that it is an obligation of the local governments to promote and to encourage this change. The impact of sustainable development has been introduced at several intervention levels: global, regional and local ones, from the city to the housing buildings. Intervention must be carefully planned, not only in terms of new buildings and urban space, but also for the built environment that urgently needs to be renewed and invigorated in order to promote less use of resources and less production waste.

Urban areas, consisting of centres of resource consumption and waste generation, must be rethought in order to optimize their needs and create rational and self-sufficient spaces that meet the needs of their inhabitants. Considering this framework; rather than encourage the expansion of urban areas, we need to rethink the built environment and induce its renewal, with a new organization that meets the requirements of today's society.

1. Inputs to the information analysis process

1.1. Methodology

The design of an assessment system for analysing the sustainability of rehabilitation interventions in old city centres began to be structured from the analysis of several sources of information to guide the work and organize the existing knowledge in this area. Initially we have carried out an analysis about the leading growth models that gave rise to the concept of sustainable development and, subsequently, their implications for sustainability in construction, identifying the fundamental principles of its implementation (after Edward, 2005; Graham, 2003):

- Resource consumption compatible with the natural ability to replace them: minimize resources consumption; maximize the use of renewable and recyclable resources; do more with less – efficient resources.

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- Create systems that allow consumption to take full advantage of the energy/quality ratio: make use of solar resources; use of energy with a large number of small steps rather than a few major stages; minimize waste.
- Creation of materials that result in nutrients or raw materials for the production of resources: elimination of pollution; use of biodegradable materials; reuse of components in buildings.
- Improving adaptability and functional and biological diversity: allow access to easily recyclable materials without destruction of materials which are difficult to recycle; protection and upgrading of biodiversity.

The approach to sustainability involves a building at all levels, related to its existence over time. This complexity of factors, briefly, arises from the interaction between the building and the environment with behaviour similar to an ecosystem (Kibert *et al*., 2003).

Then we proceeded to a comparative analysis of diverse systems for assessing sustainability, implemented in several countries, and the analysis of these systems' tools devoted to the assessment of new existing buildings in order to identify the most relevant differences that resulted from the phase of its life cycle. To compare some of the various systems (BREEAM, Building Research Establishment Environmental Assessment Method, United Kingdom; LEED, Leadership in Energy and Environmental Design, USA; SBTool - Sustainable Building Tool, global; and LiderA, Sustainability Assessment System, Portugal) a matrix with common areas was created, assigning the evaluation criteria with similar objectives and with the same object of assessment. Figure 1 presents a summary of the information gathered at different phases that allowed the grounding of the assessment system structure.

All data collected were then confronted with the strategies that have been defined by the Urban Rehabilitation Societies, firms with public-private partnership, created in 2004 and already implemented in major cities in Portugal. The following section

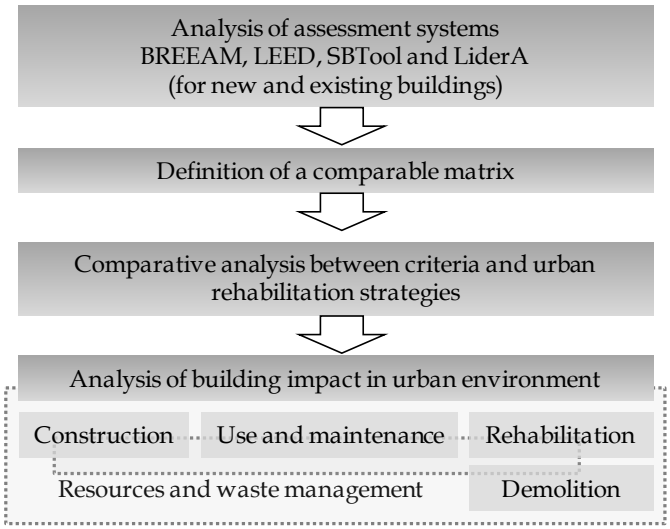

Figure 1. Sources and type of data analyzed.

will address in greater depth the characteristics and objectives of these urban management firms. Finally, some aspects of the impact of the building, at all phases of their life cycle, in urban environment were detailed. All these elements allowed defining the areas of assessment, as well as the assessment criteria required for their analysis. It is also important to note the call for transforming the current linear metabolism of cities into a circular metabolism (Figure 2), based on aspects such as the existence of a mixed nuclei, with capacity of producing energy, and with a transport system based on the use of sustainable energy sources (Gumuchdjian and Rogers, 1997).

1.2. The Urban Rehabilitation Societies and their strategies

In 2004 a Decree-Law (No. 104/2004 of 7 May) was published with the goal of reversing the tendency

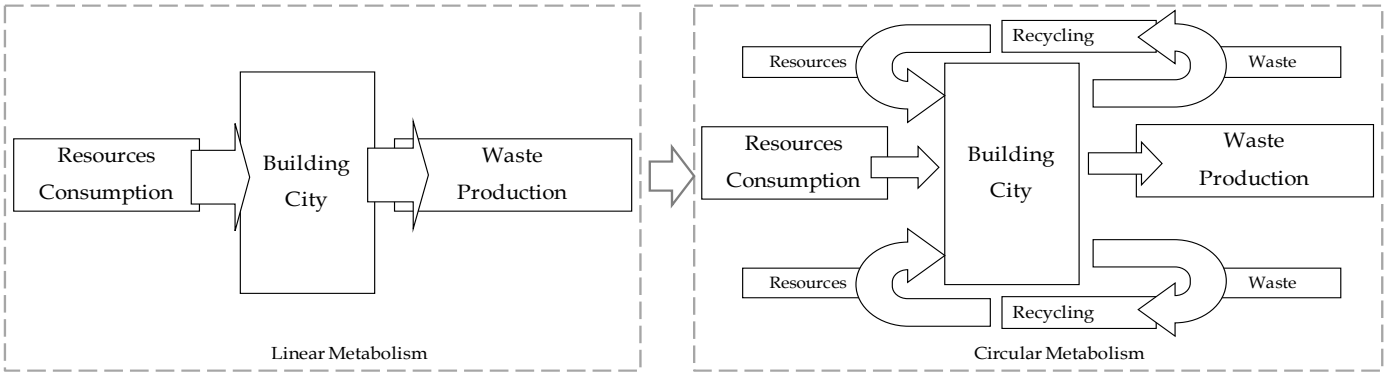

Figure 2. Linear and circular metabolism.

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towards degradation and abandonment of historic urban areas by emphasizing the responsibility of government at the municipality level for urban rehabilitation procedures. In this context, this Decree-Law allows municipalities to constitute Urban Rehabilitation Societies (URS), which are empowered in terms of, for example, expropriation and licensing. It is also a URS task to support owners in the preparation and implementation of rehabilitation actions, assuming the following responsibilities:

- License and authorize urban operations;
- Expropriate the property and the rights attached to them for urban regeneration, and provide easements for those purposes;
- Carry out operations for relocation;
- Supervise the work of urban rehabilitation.

SRU also have the power to draft a strategic report for each unit of intervention, which may match to a block, street or courtyard, and in cases of particular interest, a building. This report should hold the following information:

- The definition of buildings to rehabilitate, and extent of interventions scheduled for therein;
- An indication of the respective owners, other owners of real rights and lessees;
- A project-based intervention, which describes the strategic options in rehabilitation, namely with regard to housing, accessibility, equipment, infrastructure or public space, when the intervention should cover these areas, explaining briefly the reasons for the options undertaken to reflect the weighing scales between the different relevant public interests;
- The planning and budget of interventions to be carried out;
- The suggestion of possible individuals interested in joining forces with the owners for recovery of property purposes.

The strategic report should also comprise information that makes it possible to identify conservation status in terms of security, sanitation and aesthetic conditions through the survey of each building that is part of the same unit.

This study analyzed the strategies defined by the *URS Coimbra Viva, Porto Vivo* (Porto Vivo, 2008; 2008a) and Lisbon Occidental (CML, 2005; Lisbon Occidental, 2006) responsible for the rehabilitation of the older areas of the main Portuguese cities, respectively, Coimbra, Oporto and Lisbon. The strategies defined by the Urban Rehabilitation Societies were analysed, identifying common aspects or elements that may compromise sustainability and considering the positive and negative impacts of its implementation in urban sustainability. We have identified the following common strategies: rehabilitation and revitalization of buildings – interventions tailored to construction needs; public space interventions; habitability conditions improvement; mobility improvement; parking rearrangements; and economic activity reorganization. The modernization and adequacy of infrastructure are considered strategic in Lisbon and Oporto.

Lisbon is moreover adopting, as fundamental, the following actions: i) to encourage residential occupancy; ii) to remove or assimilate dissonant elements; iii) to vacate public areas and interior courtyards; iv) to consider demolition in case of public interest; v) to allow increases in building height; and vi) to renovate urban public equipment. In Oporto it is regarded as essential to educate the population about the importance of heritage, to promote social development, to enrich the area in terms of tourism and landscaping, and to ensure mobility between the two margins of the river. In Coimbra, the need to keep 20% of households under controlled pricing, to encourage land consolidation, to preserve archaeological evidence and to improve environmental quality are all emphasized.

It is also possible to say that the strategies that focus on the redevelopment of buildings allow an increased quality of indoor environment, as well as in improving mobility and promoting local economic activity. The boosting of local economy helps to improve the quality of life for residents and promotes the interest of the area, either as trade and service centre or as a central element of patrimonial and cultural tourism. Some strategies can provide barriers to sustainability in the processes of rehabilitation, namely demolition, the eviction of public areas or increasing building heights. These strategies should be properly organized and coordinated to minimize their impacts, particularly those involving construction waste generation, increased density in face of the value resulting from the occupation of existing buildings, the increased volume of new buildings, increase in paved surfaces and the

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resulting reduction of green areas that are already scarce.

2. Characterization of older areas: Coimbra's downtown

2.1. Assessment purpose

The creation of an assessment system should take into account the characteristics of the area or object assessed. The use of global systems can lead to the application of complex and ineffective models against the objectives of assessment. Some assessment systems adopt a comprehensible methodology for defining tools geared to what is intended to assess. These specific tools allow an objective and guided assessment of the action that is to be developed. This work focuses on designing an evaluation system geared specifically for old areas, which requires a thorough knowledge on the subject of assessment in order to consciously define the proper tools to use. The knowledge of the building in terms of their construction characteristics, interventions throughout their existence, and circumstances of use such as sanitation or housing allow also the definition of assessment levels that are compatible with three key features: i) what exists; ii) what it is possible to improve; and iii) the level of improvement to be aimed at.

The definition of this system is based, firstly, on the main characteristics of Portuguese construction, with a more general approach on techniques and materials, and, secondly, attending to the evidence of the historical centre of Coimbra, called the *Baixa* (downtown) of Coimbra. The characterization of the area was conducted using data collected by expert teams from the University of Coimbra in the scope of the process of Coimbra's Downtown Renewal, conducted under a protocol with the Municipality of Coimbra. In this protocol a variety of areas were integrated, including sociology, architecture and engineering. The study allowed the collection of data on 770 buildings in Coimbra's downtown.

2.2. Coimbra's downtown

For a better understanding of the area under study, in order to assemble the system, some general characteristics that influence the construction of the model are presented, particularly concerning the measurement indicators involved.

The road structure in this area is defined by the buildings themselves; their façades are bounding the narrow and shaded streets. The shape of the buildings ranges from one to seven storeys; however 588 buildings have three to five storeys. The streets have varying widths; 50 out of the 83 analysed are 2 to 3 meters wide. Most buildings have only two exterior façades and the side walls usually border neighbouring buildings. The existence of openings is thus limited to the main and rear façade (Ramos, 2010).

Figure 3 shows an example of the type of data collected at the work of survey, including the width of the roads (Figure 3a) and the number of storeys above ground (Figure 3b). We have used several sheets that allowed the analysis of: a) the construction characteristics; b) the existing anomalies; c) the state of conservation; d) ventilation, sanitation, lighting, thermal and acoustic conditions; e) the efficiency of existing infrastructure; f) the interventions performed previously; g) the commercial areas; h) buildings in poor condition; and i) warehouses and annexes.

Figure 4 shows some images of the study area, downtown Coimbra, and allows verification of the characteristics of streets: roads strictly delimited by buildings. The relationship between height and distance between buildings is minimal, leading to shading and preventing the incidence of solar radiation.

The shape of the buildings has changed over the years, a feature identified by the use of different materials between the lower floors and the higher ones. The exterior walls are constructed of stone masonry, with considerable thickness, and the walls between buildings consist of *frontais* (Figure 5a), wooden structures filled with rocks, clay and a sand and lime mortar. Interior dividers are *tabique* (Figure 5b), light wooden structures filled with sand and lime mortar (Teixeira and Belém, 1998).

Figure 5 presents some general characteristics of the built environment. In Figure 5c is possible to observe the types of windows, originally with wooden frame. Figure 5d shows the roof, which is characterized by a coating of ceramic tiles and a wooden structure (Figure 5e, Figure 5f). The characteristics of the building affect the living conditions of users, and its advanced state of degradation produces impacts on the indoor environmental quality and on human health. In the context of sustainability, attending to the many concepts widespread, we can verify the existence of a common factor: the safeguarding of human health. The shift to the sustainable development paradigm depends on the

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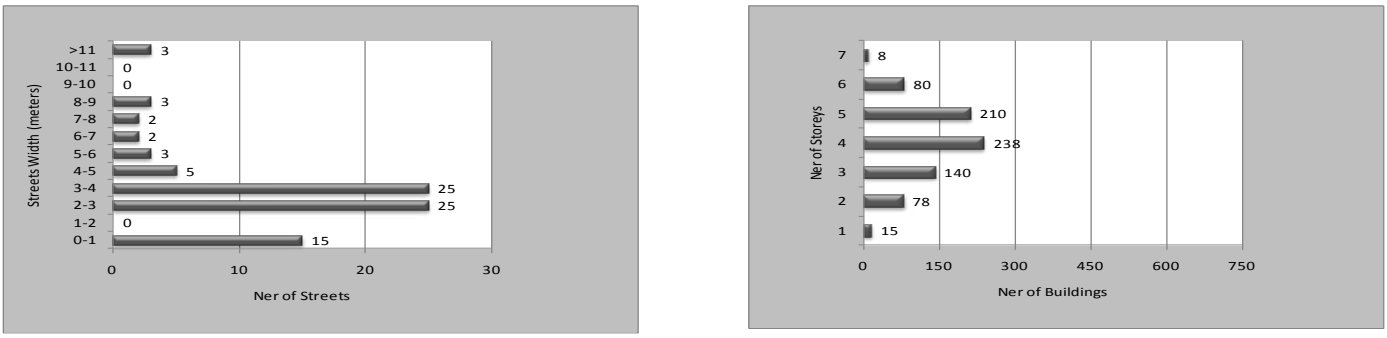

Figure 3. Examples of downtown data – a) width of the streets; b) floors above ground.

Figure 4. Narrow streets in downtown Coimbra.

ability to ensure healthy conditions, favourable to the development of healthy standards of living. In this sense, to arbitrate these built spaces turns out to be fundamental to the promotion of social welfare and improving the urban image.

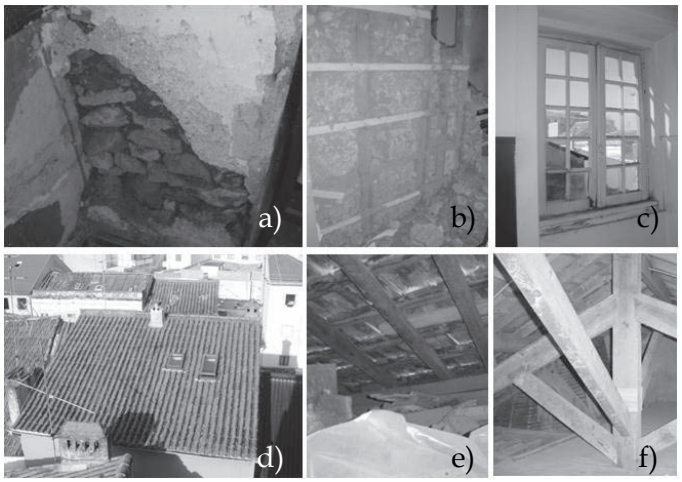

Figure 5. Building characteristics: a) interior wall, *frontais***; b) interior wall,** *tabique***; c) wooden window; d) roof with ceramic tiles; and e) and f) wooden roof structure.**

3. Sustainable Rehabilitation Assessment System

3.1. Constraints and objective

Urban sustainability involves several parameters related to the characteristics of its structure. These aspects are related, for example, to the width of the streets, the existence of green spaces, the volume of buildings or the types of occupation. Historic centres, in general, do not satisfy these aspects; they are spaces branded by narrow streets, which themselves affect traffic and circulation of people; they require specific security plans for buildings with different volumes, often inconsistent with the width of the streets; their indoor comfort is marked by lack of space; and several other features clash with what is expected of sustainability.

However, rehabilitation is an advantage to sustainability. Renewing built-up areas, reversing their state of degradation, preserving cultural and physical heritage, promoting new uses and new activities, providing better living conditions for residents and

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attracting new dwellers are key strategies for urban sustainability. It is necessary to define strategies that are intended to be implemented before the intervention, guiding all of those who operate in these urban areas: technicians, urban managers and users.

The possibility of rehabilitation is a sustainable attitude that reveals a series of favourable parameters in existing assessment systems for new construction, including land value, occupation, impact on biodiversity, landscape change, increase in construction, the possibility of recycling materials, components and structures, etc. These sets of factors, which are intrinsic to the activity of rehabilitation, are very positive aspects for sustainable development. A major objective which is hoped to be achieved in designing this system was to adapt the methodological assessment criteria to existing elements; to create a system that would be appropriate to the subject assessed and would be the starting point for improving the built and urban environment quality.

3.2. System structure

The system was designed with a hierarchical structure: Areas → Parameters → Criteria → Indicators → Assessment Levels. Each of these elements assumes the following meaning within the system scope:

- Area: the area consists of the subject under study and results from the analysis of several criteria involving the approach itself;
- Parameters: in some cases the area is divided into two parameters that characterize the input of resources or waste production;
- Criteria: these are the items addressed and are assessed according to measure indicators. The assessment of measure indicators will become the criterion assessment;
- Measure indicators: consist of the option chosen and which reverses to a given assessment.

The basis for assembling the system was the definition of nine key areas for assessment: i) local sustainability; ii) transportation sustainability; iii) sustainability in water resource management; iv) sustainability in energy resource management; v) sustainability in the management of material resources; vi) exterior environment sustainability; vii) interior environment sustainability; viii) use sustainability; and ix) cultural, economic and social sustainability. Table 1 shows an example of one of these areas, as well as criteria and indicators involved in the assessment.

The indicators are analyzed according to predefined levels. For example, the criterion SL1 has an indicator SL1.1 'inhabitants/square metres' which is assessed according to the following levels of measurement: a) increase, resulting from the volumetric change or parcelling; b) maintenance, same occupation without significant changes in size or space; and c) reduction, restructuring of spaces to allow for greater interior comfort and/or promotion of local development initiatives (new businesses) by maintaining the original occupation.

The system allows each indicator that contributes to the assessment criteria to score. The indicators are assessed on three levels: A (-3 points), which represents a poor performance; B (0 points), which represents a performance that does not harm the environment or is sufficient to comply with regulations; and C (3 points), representing sustainable performance. General indicators allow assigning 1 extra

Area	Local Sustainability							
Criteria	SL1	SL2		SL3	SL4	SL5	SL6	
	Density	Exterior spaces		Type if occupation	Exterior ventilation	Exterior thermal conditions	Impact on surrounding	Total grade
Indicators	SL.1.1(UM)	SL2.1(UM)	SL2.2 (UM)	SL3.1(UM)	SL4.1(UM)	SL5.1(UM)	SL6.1(UM)	
	Inhabitants/ m2	Green spaces/ building areas	Open spaces/ green spaces	Mix/housing/ comercial/ services	Frequency and orientation	Temperature and humidity	Control of landscape changes	
	3	3	3	3	3	3	3	21

Table 1. System Structure and Local Sustainability Area example.

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point arising from the use of new techniques, solutions and materials that reduce impact on environment. The score must be justified and consists of an assessment report that includes the final result. This result is presented in numerical, textual (report) and graphical form. The graphic allows performance in each area to be checked, showing the score achieved and highlighting their relationship against the minimum and maximum possible score.

Conclusion

Climate change produced by environmental degradation has become a reality that must be reversed in order to preserve population conditions and quality of life. Sustainable development is a goal that enables society to rethink the economic development and growth model, prioritizing issues such as social equity and resource management. In terms of the construction industry, the answer may be found in sustainable construction, a concept that brings to the building industry awareness of sustainable development objectives. Considering the impact of this industry, socially, economically or environmentally, we have noticed the emergence of several tools that aim to assess sustainability of a building at all stages of its life cycle. The rehabilitation of the built environment is, in fact, an asset for sustainability because it engages the decrease of requirements for new buildings. Promoting interventions in degraded urban areas is a key factor in renewing the urban environment and reduce its spreading.

By understanding the systems studied, it is possible to conclude that the existence of tools that are tailored to each context make the assessment task simpler and more targeted. Based on this principle an assessment system which is specific and adapted to the reality of old Portuguese city centres is suggested, a system that allows guiding the intervention of urban managers, planners, technicians and users, a dynamic system that allows assimilating changes resulting from shifting standards of living and human activity. Applying an assessment system also allows checking the performance of interventions and defining strategies for development that can meet the objectives proposed for an urban space. Taking into account the principles of environmental sustainability, strategies must also consider the three major subjects to address: environmental quality, promoting economic activity and social equity.

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Economic evaluation of the performance of cultural heritage conservation policies: some methodological and empirical issues

Ilde Rizzo

Abstract

The paper offers an overview of the main theoretical issues underlying the measurement of cultural heritage conservation activities and the evaluation of the performance of the public actors involved. Moving from theory to practice, some examples of empirical investigation of the performance of cultural heritage authorities in Italy will be provided, both with respect to regulation and to public spending, to highlight how to handle some practical issues of measurement. The general conclusion stemming from the analysis is that limitations in the practice of performance indicators in the field of cultural heritage conservation are somehow affected by its specific features (the lack of well identified objectives as well as of clarity in the identification of the cultural heritage and the multidimensional nature of the conservation output) and that the performance indicators as such must be 'handled with care' and should not be considered the 'miraculous' solution for the accountability problems of the organizations involved in cultural heritage conservation.

Keywords: performance indicator, conservation, cultural heritage, efficiency, effectiveness

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Introduction

In economic and political debate it is increasingly recognized that cultural heritage (CH) can play a relevant role as a 'strategic' resource to foster sustainable local development. However, a necessary, though insufficient, condition for such a role is that CH is properly conserved; to be an *input* of economic development CH has to be the *output* of conservation policies and, therefore, the ways in which these policies are designed and implemented crucially affect the overall economic impact of CH.

Conservation policies rely on different public tools: direct and indirect public spending and regulation are identified as the most relevant ones. The awareness of the importance of these public tools and their shortcomings is related to the functioning of the public decision making process and calls for strengthening the efforts for measuring and evaluating CH conservation activities to reduce the asymmetrical information enjoyed by the CH authorities – the bureaucrats responsible for implementing conservation policies – and to make these authorities more accountable. Surprisingly, the literature on the economics of CH has paid little attention to the definition and measurement of the output of CH conservation activities and to the evaluation of the performance of the public actors involved in the implementation of these activities.

In this paper we try to fill this gap from a methodological as well as empirical point of view: in Section 2 the features of the decision making process underlying conservation policies will be recalled; in Section 3 an overview of the main theoretical issues related to the assessment of public spending will be offered; in Section 4 the concept of performance and its evaluation will be explored; and in Section 5 some examples of empirical investigation will be provided and the main operational issues will be outlined. Some concluding remarks will be offered in Section 6.

1. CH conservation and the public decision making process

Almost everywhere the public sector plays an important role in CH conservation, even if with different quantitative and qualitative characteristics, following various patterns and using a mix of different tools; e.g. direct and indirect public spending[1] as well as regulation.[2]

Elsewhere (Peacock and Rizzo, 2008) this topic has been dealt with in more detail; here, it is enough to stress that the conservation decision making process exhibits some peculiar features that are worth noting; the size of CH sector is not well defined, especially when minor heritage is involved, but it is determined at the discretion of the decision maker, who enjoys an informational advantage because of the specific knowledge involved in CH decisions. The identification of 'heritage' is a matter of discretion and is mainly based on the judgement of experts hired by the government who may have professional disagreements about priorities concerning the extent and the type of intervention as well as historical periods and artistic styles (Peacock, 1994). In these circumstances, the scholastic and academic

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training of experts involved in the decision making process (archaeologist, art historian, architect, urban planner and so on) crucially affects the stock of CH, both in quantitative and qualitative terms, the allocation of resources in the field[3] as well as the choice of the type of conservation to be carried out. In fact, CH conservation itself is a wide concept that:

> "[...] encompasses all aspects of protecting a site or remains so as to retain its cultural significance. It includes maintenance and may, depending on the importance of the cultural artefact and related circumstances, involve preservation, restoration, reconstruction or adaptation or any combination of these" (World Bank, 1994, p. 2).

The terms included in this definition can be variously interpreted, with the consequence that highly subjective judgment underlies conservation choices. Furthermore, conservation can be also considered in a wider perspective, implying a planning strategy aimed at preventing decay (Della Torre, 2010).

The above considerations would suggest that the features of the decision making process and the asymmetrical information enjoyed by the experts crucially affect the resource allocation as well as the scope and intensity of CH conservation; from this perspective, it is interesting to stress that in many countries there is a tendency to extend the concept of heritage and that heritage lists are large and keep growing (Rizzo, 2003).[4] In the economic literature it is widely agreed (Rizzo and Throsby, 2006) that the efficiency and effectiveness of CH conservation policies, i.e. their capability to meet citizens' demands and to score the expected results in terms of 'public interest', cannot be taken for granted but crucially depend on the institutional features of the decision making process[5] and on the role of the actors involved (type of experts, stakeholders).

The economic implications are worth noting. In fact, CH conservation cannot be considered only a technical or aesthetic matter; on the contrary, it affects property rights and the possibility of using CH for private and collective purposes. Moreover, the economic impact of heritage in promoting local development – urban regeneration and tourism being usually advocated as the most important factors – is affected by the strength of regulation. This includes extending the concept of heritage to artefacts of minor importance and the range of compatible uses allowed for archaeological sites or historical buildings.

The awareness of the relevance of conservation and of the shortcomings of the decision making process suggests that measurement and evaluation of CH conservation activities are needed to reduce the asymmetrical information enjoyed by the decision maker.

2. Public programs assessment: general issues

The investigation of CH conservation performance is closely related to the more general subject of performance evaluation of the public sector. In line with the principles of the 'New Public Management' approach, it is widely agreed that public sector organizations need to create value upstream for those who provide resources and downstream for the people who use their services, i.e. *value for money*. Being the output of public activities not sold in the market, the different stakeholders cannot rely on market signals, even if they are imperfect, to evaluate public production: therefore, the need for some empirical support for measuring and evaluating public action is widely advocated. As Peacock and Rizzo point out, until very recently:

> "[...] cultural organizations were mainly subject to the evaluation of other heritage professionals as it was considered that only peer review was appropriate for their activities. More recently, however, the scarcity of public funds coupled with a changing social attitude towards the 'value for money' principle have led to a greater awareness of the need for their accountability […] The use of some form of measurement of the activities carried on by cultural organizations is increasingly advocated, though not always adequately practiced." (Peacock and Rizzo 2008, p. 164).

The assessment of public action can occur at various levels, with respect both to the decisions regarding the allocation of resources and, once a decision is made, its implementation, e.g. regarding the production of the related goods and services.

At the first level, the rationale underlying the economic appraisal of public programs is that public intervention is justified only if maximizes social welfare, depending on individual preferences. Economic appraisal, therefore, would support public decisions to identify the most efficient proposal among several competing projects, at macro level, when funds have to be allocated to the various fields (for instance, culture, health, education, etc.) as well as, within each field (for instance, assessing

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which historical building, museum or archaeological site should be chosen for investment).[6] Economic appraisal is also advocated to assess the impact of regulatory policy options in terms of the costs, benefits and risks of a proposal: the appraisal usually applies at macro level (for instance assessing the impact of changes in legislation in the heritage protection system).

Though this macro-level of assessment is outside the scope of this paper, it is however useful to recall here that in some countries there is a long standing tradition of economic appraisal of major investment projects in preservation and restoration work of historic buildings. For instance, in the United Kingdom, the Department of Culture, Media and Sports (DCMS) supports the Treasury commitment in public spending appraisal;[7] the use of cost–benefit analysis (CBA) is recommended, coupled with evaluation procedures based on 'willingness to pay', notably the use of contingent valuation (CV) to evaluate the so-called 'non-use values'.[8] As Peacock (2000, p. 194) outlines, "the growing acceptance of sensible methods of appraisal is a notable development, although it is one thing to detect agreement amongst economic analysts on procedures and another to ensure their acceptance by those affected by the conclusions, upon whom access to information may depend." On the other hand, such an effort is crucial to ensure support to CH conservation: as Stephens *et al*. (2002) suggest with reference to natural heritage, if no credible methods are put in practice to measure conservation outcomes, doubts about the quality of conservation activities are likely to arise with the result that conservation might be penalized in trade-offs against other social outcomes (such as health, education, etc.).

Shifting attention from macro to micro level, some form of evaluation is needed also as far as the production of the goods and services is concerned. In fact, such a production is carried out by non profit organizations that are not exposed to the spontaneous evaluation of their activities through the competitive market. In this perspective, great attention is paid to the construction of performance indicators as management tools for making performance-based decisions. Of course, each specific field of public intervention generates specific measurement issues. In what follows our attention will be concentrated on the CH field.

3. Performance indicators: a methodological perspective

In general terms, in the last decade in the cultural field, mainly with respect to museums and performing arts, the methodological and operational issues related to performance indicators has been on the agenda of several international conferences and meetings and has attracted the attention of international organizations as well as that of academics. Moreover, a change of attitude has occurred in cultural organizations, especially in Anglo-Saxon countries; until recently they were mainly subject to the evaluation of other heritage professionals as it was considered that only peer review was appropriate for their activities.

Performance indicators belong to the 'big family' of indicators for arts and cultural policy that has been investigated in depth in the economic literature.[9] Various classifications are provided; following a hierarchical classification according to the level of detail at which indicators are applied, Madden (2005) distinguishes three types of indicators: *macro indicators* for sector-wide monitoring and evaluation, (for instance, cultural indicators of development); *meso indicators* for regional or cross-agency policy monitoring and evaluation (for example, indicators that measure outcomes of an arts council policy) and *micro indicators* for agency program monitoring and evaluation (for instance, indicators that measure outcomes of an arts event). Within such a classification, performance indicators might be used at both mid- and micro- level, referring to the evaluation of heritage institutions as well as to specific conservation intervention, being aware that the indicators would differ in the way they are constructed and used.

The literature on performance indicators in the cultural field is a very extensive one, suggesting several aspects worth considering. Following Schuster (2001, p. 15) it is important:

- to distinguish between measuring inputs, outputs, and outcomes and be sure that there is appropriate emphasis placed on outcomes;
- to avoid the use of total performance indicators as opposed to multiple indicators reflecting various aspects of policy management;
- to consider what conceptual variable one wishes to measure, what variable can

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actually be measured, and how it is to be measured;

- to distinguish between 'red flags' – effectiveness measures, integrity measures (e.g. how well do its activities match what the institution says it is doing?), and efficiency measures;
- to identify the different uses of performance indicators, e.g. to distinguish between performance indicators to affect behaviour, performance indicators to evaluate behaviour, performance indicators to monitor behaviour, and performance indicators to infer behaviour;
- to collect longitudinal data as well as cross-sectional data so that one can make both types of comparisons.

Not all of the above issues can be considered within the limited scope of this paper and, therefore, attention will be concentrated on those which appear to be more relevant for CH conservation such as those referring to the object of measurement, the choice of methodology, the interpretation of the indicators and the design of the information flow needed for the implementation of those measures and the related costs.

What is performance? Pignataro (2003, p. 371) provides a good answer: "There is no such thing as 'the performance' of cultural institutions, or of the whole sector. There are different aspects of performance that can be evaluated also with the help of numerical indicators, but none of these can provide an exhaustive representation of the functioning of arts organizations."

The various aspects of performance range from a mere quantitative description of the size of activity – the output – to more elaborate concepts such as efficiency or effectiveness. Even the concept of output, which is apparently clear, is not easy to measure: from an economic perspective, cultural institutions are multi-product firms that transform inputs into a mix of outputs to meet certain objectives, using technology and performance indicators to capture such a complex reality. In the economic literature, attention has been devoted to museums: several outputs are identified (e.g. visits, acquisition, conservation, research, temporary exhibitions, ancillary services) and several physical as well as monetary indicators of output are proposed (e.g. number of visitors, number of days open per year, number of publications, number of restored objects, etc.), pointing out that each indicator would need to be qualified with a quality dimension.[10] While the above indicators merely represent a quantitative partial 'description' of production and consumption activities, other types of indicators with different units of measurement can be constructed to evaluate different aspects of the performance of cultural organizations such as efficiency or effectiveness. Efficiency measures factors' productivity (for instance, costs per visitor, etc.). Effectiveness refers to the outcome, i.e. to the capability of cultural activities to meet the goals of cultural organizations or, at higher level, of cultural policies.[11] In such a case, evaluation is complex since objectives are usually stated rather vaguely, and there is a qualitative dimension that is not simply related to quantity of output but also to some subjective measure. However a 'caveat' is needed: since the refinement of output indicators is virtually endless, their costs have to be taken into account as well as their feasibility, which crucially depends on the availability of reliable data.[12]

Which methodology? As was pointed out before, performance indicators can be represented as numbers to measure a specific output (for instance, number of visits), or as ratios, e.g. relation between the volume of activity and the resources employed in producing it (for instance, cost per visitor). However, this type of indicator focuses on single aspects of cultural production and consumption and, therefore, it is not suitable to grasp the complexity of multidimensional output. As Pignataro (2003, p. 369) points out, "a general evaluation of the efficiency of production can, then, be obtained only through a multiplicity of indicators,[13] which does not allow a clear-cut evaluation of the efficiency of an organization". To take into account multidimensionality, more advanced techniques, such as the method of efficiency frontiers,[14] are needed. Such a method takes simultaneously into account all the relevant inputs and outputs of the production process (provided that data are available) and constructs one single measure of efficiency. As a consequence, it makes it possible to measure relative efficiency rather than just productivity and to make comparisons across institutions.

4. Performance evaluation: empirical analysis and evidence

Indeed, the above evaluation problems are enhanced in the CH conservation case: the output is multidimensional, has marked 'public goods' characteristics and is affected by the institutional

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features of the decision making process, therefore making international comparisons difficult.

To my knowledge only a few attempts have been made in the economic literature to address such an issue. Without entering into the methodological and technical details of the research in the field, here it may be interesting to sketch briefly what the main results reached so far have been, as far as the construction of performance indicators and the measurement of relative efficiency are concerned, to offer some hints on the potentialities of empirical investigation and of its shortcomings.

Rizzo (2002) using Sicily, an Italian region, as a case study, has attempted to construct conservation indicators, taking into account the variegated nature of the output of Heritage Authorities (the Sicilian Provincial Boards for Culture – *Soprintendenze*), e.g. the public authorities in charge of conservation activities. *Soprintendenze* are run by experts (e.g. archaeologists, art historians, architects, etc.) and enjoy considerable discretion because the choice of instruments and their intensity largely depends on their autonomous technical evaluation. In other words, from the institutional point of view, conservation activities are organized according to a bureaucratic model.[15] Rizzo (2002) proposes to distinguish conservation activities in 'passive conservation' (PC) and 'active conservation' (AC); the former pertaining to the regulatory output, i.e. the number of administrative acts provided by the regulator (such as listing, demolition orders, authorizations)[16] and the latter referring to direct spending for conservation (such as archaeological excavations, restoration interventions, etc.). In principle, the number of restored buildings might be used as a measure of this output but the differences existing between them (dimension, relevance of the restoration, technical difficulties involved, etc.) would need a very complex weighting; therefore, AC is measured using capital expenditure related to restoration or archaeological excavations as a indicator.[17]

The distinction between PC and AC activities might be questioned, given that these concepts are closely interconnected (for instance, the research and study activities underlying both AC and PC) or interdependent (for example, a discovery resulting from an archaeological excavation might call for imposing constraints). Although in some cases the distinction between AC and PC activities is questionable, it turns out to be a useful approach to the analysis of heritage conservation: in fact, it recalls the above mentioned distinction between public intervention tools (spending and regulation), helps to understand the complexity of conservation activities from an economic point of view and allows for empirical investigation by introducing the possibility of devising indicators for each activity.

These definitions of AC and PC are used by Finocchiaro Castro and Rizzo (2005) to calculate performance indicators in terms of each output of *Soprintendenze*; the analysis shows a certain degree of variability across the *Soprintendenze* and, more interestingly, for each *Soprintendenza* through time. The existence of these differences suggests that there is room for a closer investigation of the performance of *Soprintendenze* from an efficiency point of view. However, more advanced techniques are needed to take into account the multidimensional nature of the output and to allow for a meaningful comparison.

The same data are used by Finocchiaro Castro and Rizzo (2009) to measure the performance of the conservation activity of *Soprintendenze,* in terms of relative efficiency. The Data Envelopment Analysis (DEA) technique[18] was applied for the first time to heritage conservation to take into account the multidimensionality of conservation output and to calculate the efficiency frontier.[19] The results of the DEA analysis show that *Soprintendenze* differ as far as efficiency is concerned and that there is room for efficiency improvements by driving the dimension of the *Soprintendenze*, in terms of personnel, to an efficient level. Looking at the different outputs, the analysis shows that, as far as PC activity is concerned, *Soprintendenze* seem to be relatively more efficient when their output is mainly demand-induced (for instance if a permission is requested by the owner of heritage). Comparing AC and PC activity, the former being the more visible output,[20] achieves relatively higher levels of efficiency than the latter. In other words, the choice of the output mix (AC and PC) is mainly driven by specialists according to their own objectives.[21] Tentative policy implications stemming from the analysis would suggest that introducing incentives to improve the PC activity would increase the efficiency of the *Soprintendenze*'s output mix. Moreover, overall, the results show that the implementation of DEA technique in this field may play a crucial role in shaping a new and appealing methodological approach to study the efficiency of heritage conservation activity.

A further dimension of performance has been explored by Guccio *et al.* (2010), who investigate the efficiency of public spending for conservation in Italy. Performance is measured in terms of *cost*

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overrun [22]and *delays*[23] in such spending activity.[24] Results show that, *ceteris paribus*, the search for quality and the expertise characterizing the CH conservation field affect the performance of spending: *Soprintendenze* tend to maximize reputation among the peers and their efforts are mainly allocated toward completion of works, with less attention to the control of costs.

Overall, though from different perspectives and referring to a different data set, the above empirical analyses reach fairly similar conclusions pointing out that the efficiency in the performance of conservation activities, as carried out by *Soprintendenze,* is affected by institutional context, severe asymmetrical information, the lack of clearly stated objectives and, therefore, of incentives. Indeed, the results suggest looking for some form of benchmarking or best practice to orientate practitioners and professionals in the conservation field and to reduce the asymmetrical information enjoyed by *Soprintendenze*. A tentative suggestion coming from the analysis points towards the adoption of standards of conservation. Though the adoption of technical standards of conservation is not agreed by practitioners, on the assumption that each piece of heritage is unique and, therefore, conservation should be carried out on a case-by-case basis, it seems that they could help better control the final total cost of conservation interventions. The above studies also offer some hints on how to handle some practical issues of measurement of conservation outputs as well such as the usefulness of using methodologies based on frontiers to evaluate various aspects of conservation efficiency.

However, the above-mentioned efficiency analysis says nothing about the quality or the effectiveness of conservation activity, e.g. its outcome, but only whether resources are allocated efficiently (e.g. with minimum cost) between different outputs or how efficiently (in terms of cost overruns and delays) public spending for conservation is carried out. The lack of a qualitative dimension (such as, for instance, how has the state of CH changed as a consequence of conservation?) is a major shortcoming of the analysis because it prevents evaluation of the outcome of the conservation activity.

A satisfactory performance evaluation analysis should include both efficiency and effectiveness investigation. However, the measurement of effectiveness in CH conservation generates several problems: as it was pointed out before, conservation is not a well-defined concept, experts may have professional disagreement about priorities concerning the extent and the type of intervention as well as on preservation strategies and, as a consequence, most of the time objectives are not very clearly stated and the trade-offs between them are not clearly specified, with outcomes that are not easily measurable and may span on several years. As Peacock (2003, p. 3) points out "the indicator must take account of quality changes but arriving at a definition of quality capable of being used as a component of the relevant indicator is essentially a subjective matter."

The ambitious task of evaluating outcomes with a qualitative dimension therefore requires that stakeholders be involved in the identification and definition of the objectives of conservation policies as well as in the process of policy changes so that the discretion of the decision maker is reduced. Different types of data – financial, physical, quantitative as well as qualitative – have to be collected on a regular basis, with an homogeneous format, both on time series and cross sectional basis to carry out the evaluation *within* the same organization through time as well as *between* organizations, with the above mentioned benchmarking approach.

Elsewhere (Rizzo 2007) the difficulties of collecting meaningful, reliable and comparable data in the cultural sector have been investigated, stressing that data are not relevant *per se* but only if they produce useful *information.* In the case of conservation, the main point is that efforts to improve data should not simply be addressed to devise better quantitative methods but to a better understanding of conservation activities, to allow for a better design of conservation policies and for understanding the impacts that measurement can have on 'stakeholders' in the CH sector. Such information is relevant to counteract the above-mentioned tendencies toward 'supply-oriented' policies[25] and to meet the increasing demand for greater public accountability, to make clear the links between policy aspirations, the output and the outcome of chosen policies. Of course, the last step is very difficult and tricky: for instance, it is not sufficient to measure the number of registered buildings or the financial resource spent in restoration activities but whether they have generated social and cultural capital, in terms of a better state of heritage, as well as an increase in visitors (belonging to target groups) and an improvement of visitors' understanding and appreciation. Such a measurement requires different types of information deriving from qualitative rather than quantitative sources, such as interviews, questionnaires, etc.,

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and, rather than being considered an alternative, can be used as a useful complement to the first type of assessment. Consultation and review procedures[26] are also a useful means for reducing information asymmetries and improving the accountability of conservation policies.

A few caveats are in order. The 'contextualization' of indicators is needed when performance indicators are used for comparing different institutions as well as for outcome indicators, since the impact on the objectives is related not only to the outputs but also to several factors, for instance institutional ones, which are not under the control of heritage institutions. Moreover, the cost of collecting data and of calculating indicators should not be undervalued and the criterion of being proportionate should underlie the information requirement of the valuation process. Furthermore, the soundness of valuation relies on accurate, reliable and good quality data which are not necessarily spontaneously produced by heritage organizations: indeed, these organizations have to be aware of the relevance of information and to understand its usefulness, this aptitude requiring specific professional training.

In the field, however, there is some evidence of efforts in calculating performance indicators also with some attention to outcome. At national level, English Heritage offers a good example of such a practice, based on quantitative as well as qualitative indicators; at international level UNESCO provides a wide array of quantitative indicators in relation to its various programs.

Concluding remarks

Far from providing clear-cut conclusions, a few tentative considerations will be developed. The awareness of the relevance of CH conservation and of the shortcomings of the decision making process suggests that the measurement and the evaluation of CH conservation activities is needed to reduce the asymmetrical information enjoyed by the decision maker. In this perspective, great attention has to be paid to the construction of performance indicators as management tools for making performance-based decisions.

The various aspects of performance range from a mere quantitative description of the size of activity – the output – to more elaborate concepts such as efficiency and effectiveness. A satisfactory performance evaluation analysis should include both efficiency and effectiveness investigation.

Empirical analysis offers some hints on how to handle some practical issues of measurement of conservation outputs as well as on the usefulness of using methodologies based on frontiers to evaluate various aspects of conservation efficiency. At the same time, it would suggest the adoption of standards of conservation to address the asymmetrical information issue affecting the CH conservation decision–making process.

Notwithstanding the development of thinking on performance indicators, their use is still not very common in conservation policy and activities. The measurement of effectiveness in CH conservation generates several problems: conservation is not a well-defined concept, experts may have professional disagreement about priorities concerning the extent and the type of intervention as well as on preservation strategies and, as a consequence, most of the time objectives are not very clearly stated and the trade-offs between them are not clearly specified, with outcomes that are not easily measurable and may span several years.

The ambitious task of evaluating the various dimensions of performance requires a sound information basis as well as the involvement of stakeholders in the identification and definition of the objectives of conservation policies as well as in the process of policy changes so that the discretion of decision maker is reduced.

Summing up, performance indicators as such must be 'handled with care' and should not be considered a 'miraculous' solution for all the accountability problems of the organizations involved in CH conservation.

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Endnotes

[1] Direct public expenditure ranges from the purchasing of goods and services (for instance, the salaries for Government experts and staff involved in heritage conservation, etc.), to investment (for instance the purchasing of buildings of artistic interest or the restoration of historic buildings) or subsidies to private institutions as well to private owners of historic buildings. Indirect support is provided through tax expenditure, in the form of tax allowances, to incentivize private financing, such as, for instance, donations/sponsorships aimed at supporting heritage conservation and private actions that preserve buildings of historic/artistic value.

[2] Regulation consists of different types of action: listing, which is a major regulatory tool in the heritage field to identify buildings, sites or areas of historical importance (Schuster, 2004); the imposition of limitations on the use of land affecting heritage; and the definition, sometimes by both central and local government, of rules to discipline the various ways of conservation.

[3] Montemagno (2002) suggests that Sicily provides a significant example: the education disseminated from archaeological schools until recently has led to undervalue Middle Age relics when compared to relics of classical antiquity and, therefore, the supply of heritage, including that for tourist purposes, has been also affected, with the city of Syracuse being an interesting case study in this respect.

[4] The same phenomenon occurs at international level as it is showed by the growth of UNESCO World Heritage List (Frey and Pamini, 2010).

[5] Different incentives are generated by different institutional features. In state-driven systems, such as that in Italy, where policy decisions are implemented by bureaucracies, the decision making process is less 'demand oriented' than in arms' length systems, such as United Kingdom, where independent agencies operate (Peacock and Rizzo, 2008).

[6] In broad terms, the pros and cons of using economic valuation methods in the heritage field are explored by a report issued by the Getty Conservation Institute (1998), questioning the capability of these methods to take into account historical, aesthetic, symbolic and spiritual values of heritage.

[7] The HM Treasury Green Book (2007) provides the techniques and issues that should be considered when carrying out assessments; assessments is the general term used in the Green Book to refer to both appraisals before decisions are made, and evaluations of decisions once made. United Kingdom offers also a good operational example of the extension of a well-established procedure such as the Regulatory Impact Assessment (RIA) to the heritage field (DCMS, 2007).

[8] *Eftec* (2005) provides an extensive overview of the methodological and practical issues involved by evaluation, as well as a survey of the studies on this topic.

[9] An extensive survey of the literature is provided by IFACCA (2005).

[10] An example of the wide array of performance indicators for museums is offered by the 1999 report prepared by Deloitte and Touche for the United Kingdom Department of Culture, Media and Sports (DCMS).

[11] For instance, if museums are assigned educational goals, an indicator of effectiveness is given by the learning achievements of children visiting the museum.

[12] See below, section 5.

[13] The potential number of indicators measuring factors' productivity, for instance, is equal to the number of inputs multiplied by the number of outputs.

[14] See below section 5.

[15] See above note 5.

[16] In counting administrative acts a weighting is introduced to account for their heterogeneity, since different levels of difficulty and effort are involved in their production and implementation.

[17] It might be argued that such an indicator is questionable; in fact, there is no guarantee that resources are used efficiently, since greater expenditure is not necessarily representative of larger or more difficult restoration. However, such an argument is weaker whenever some form of ex ante evaluation of the investment is carried out, perhaps using the above mentioned CBA (see above, section 3).

18 DEA calculates the efficiency frontier for a set of Decision making Units (DMUs), as well as the distance to the frontier for each unit. This distance (efficiency score) between observed CH intervention and the most efficient CH intervention gives a measure of the radial reduction in inputs that could be achieved for a given measure of output. In other words, DEA identifies as productive benchmarks those DMUs that exhibit the lowest technical coefficients, i.e. lowest input amount to produce one unit of output. Once these reference frontiers have been defined, it is possible to assess what would be the potential efficiency improvements available to the inefficient DMUs if they were to produce according to the best practice technologies of their benchmark peers.

19 On the grounds of the available data, the analysis is carried out using expenditure and weighted administrative actions as outputs and personnel as input.

[20] Restoration or the archaeological excavation is a testimony to the expertise of the *Soprintendenza*'s experts. Moreover, these specialists have direct interest in any AC activity that offers scope for new discoveries and historical interpretation in their field of expertise and, therefore, allows them to gain professional prestige among their peers.

[21] Finocchiaro Castro *et al.* (2010) extend the above results and investigate the determinants of performance of *Soprintendenze*

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and, among the other things, suggest reshaping the territorial design of *Soprintendenze* to reduce their costs of production.

[22] Costs overrun are the additional costs incurred by contracting authorities above those contractually expected.

[23] Delays refer to the time of completion of works exceeding the length contractually expected.

[24] The public spending for conservation is just a special case of public procurement. The analysis use data for the period 2000-05, referring to 4,997 public contracts amounting to about 3,545 million Euros; DEA technique (see above note 18) is adopted also in this case.

[25] See above, section 2.

[26] A good example is provided by *Conservation Principles, Policies and Guidance* launched by English Heritage in 2008 after extensive debate and consultation on-line.

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Spatial analysis in heritage economics

Christian Ost[1]

Abstract

Urban planners and architects consider heritage as built structures, organized in space and revealed by their own scale and perspective in the surrounding area. Preservation projects aim to improve the 'attractiveness' of the heritage, by creating new business, fostering tourism, and improving quality for inhabitants in historic cities. Spatial analysis, taken as an economic tool based on indicators, aims to identify the organization in space of heritage's economic use and non-use values. It provides a better understanding of heritage economics, and suggests strategic implications for urban management. The mapping process of economic indicators through spatial analysis provides additional insight into the understanding of a conservation project, and facilitates the implementation of site management.

Keywords: heritage values, heritage value maps, spatial analysis

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1. The Challenge of Globalization for Historic Conservation

In times of globalization and economic crisis, cultural built heritage faces the difficult challenge of conservation. The purpose of economics is to manage scarcity and nonrenewable resources. Cultural heritage is a limited resource because it cannot be replaced or substituted. Yet the need to enjoy its beauty or to use it for human activities is growing fast. According to such a definition, heritage conservation is also clearly an economic choice. 'Think global, act local' becomes the motto of market-related economics. As an immutable asset, cultural built heritage presents a perfect opportunity for local development and sustainable growth.

Most cities across the world also face the challenge of globalization, whether they are big, medium, or small sized. Part of the challenge is to attract investment and wealth. When industrial development emerged in the western countries, geographical factors were often keys to success: communication crossroads, means of transportation, access to rivers and seas, proximity of raw material and coal mines, labour resources, local skills, etc. Economic growth today does not rely as much on geographical conditions. Business can be successful in any part of the planet when high-tech, state-of-the-art communication networks exist. Compared with the industrial era, this era fortunately allows many countries in the world to participate in the major competition game, boosting economic opportunities, cultural resources and sustainable development all at once.

Historic cities are said to be blessed with the possession of heritage capital with both cultural and economic value, and potential for growth. Yet conservation expertise tended to cover objects, monuments or sites, with less emphasis on the economic and social impact of preservation projects on the city as a whole. UNESCO's initiative today is to put emphasis on historic urban landscape, as a new international instrument. Today's decision makers in historic cities are inevitably confronted with sustainable development priorities. They need information on the economic value of their heritage, and on the economic impacts of its conservation. In a competitive context of globalization, cultural goals and economic welfare must go hand in hand.

The cases of such World Heritage cities as Venice, Italy or Djenné, Mali, illustrate the intricacy and complexity of the challenges. Some World Heritage cities suffer from mass tourism, despite the huge potential for economic resources it represents; others fail to provide sound and balanced economic growth; yet others cannot afford to be on UNESCO's list, because central and local governments lack the ability and the means to cope simultaneously with historic preservation and economic development.

The opportunity of being listed as a World Heritage city is still considered by many as an economic panacea. But social and economic benefits of heritage are sometimes hard to achieve. Conflicting issues may arise between protection rules applied to heritage, and alternative economic opportunities emerging one or two decades after the nomination, in particular in times of economic crisis and increased competition between cities.

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2. Measuring economic values of heritage

Today, measuring economic values has become a common process in the economics of conservation, either for assessing the benefits of investing in cultural capital, or for evaluating and selecting projects through cost-benefit, multi-criteria, or alternative analysis.

Economic values are not necessarily apart from cultural values. They express different views of the same object. Different fields of economics have brought meaningful contribution to the definition of the economic value of heritage. Environmental and natural resource economics emerged in the 1960s as a distinct branch of economics, although many of the essential principles can be traced further back in time. To summarize, the field proposes a distinction between use and non-use values. Use and non-use values express the tangible and non-tangible aspects of built heritage. In economic terms, use and non-use values are distinguished by the marketable or non-marketable aspects of heritage. The peculiar definition of this heritage, as a commodity (a building, a monument), but with a value that goes clearly beyond the commodity itself, requires such a meaningful distinction. The measurement of use and non-use values aims to simultaneously develop quantitative and qualitative approaches to heritage preservation.

Use values are identifiable, often measurable with great accuracy and widely represented in historic cities. Use values also refer to the economic functions provided by the cultural heritage, and mostly to individual buildings or monuments. These functions are of three types:

- Functional use values existing within but independently from the heritage (housing, shops, offices, public services, etc.);
- Intrinsic use values, intrinsically related to the heritage itself (visits, museum of the monument);
- Indirect use values, generated as a result of cultural tourism (lodging, food, shops, services on site, and off site).
- Economists are also trained to measure induced use values, as a result of the macroeconomic multiplier, which create a range of benefits in the vicinity of the heritage, taken as a whole. The relevance of these values depends mainly on methodological factors, and the values are measured for larger areas only.

Non-use values are a prerequisite to use values. Because they are not marketable, non-use values are not directly measurable in monetary values. Non-use values can be identified in relation to individual monuments, objects, ensembles, public spaces, or in relation to the historic district taken as a whole. In the last decade economists have developed techniques to assess the economic value of non-market exchanges. These non-market valuation techniques are used to build indicators, and can be classified into two categories: revealed-preference methods draw and analyse data from existing market or past behaviour for heritage-related goods and services; stated-preference methods rely on the creation of hypothetical markets in which survey respondents are asked to make hypothetical choices. Most of these techniques are considered reliable today.

3. Mapping economic values

Mapping software (ArcGIS, Mapinfo, Maptitude) are useful and reliable tools for the purpose of drawing economic maps. The most common method of data creation is digitization. It provides a visual display of values or indicators. A geographic information system (GIS) captures, edits and analyses data, which are linked to specific locations. This technology of spatial data handling has developed with the growing use of information systems and personal computers.

Thematic maps emphasize the spatial distribution of economic values related to heritage. In general, a digitized map provides the base for a mapping system in which parcels, blocks, or neighbourhoods are attributed successive layers of data for individual components of economic values. They can be visualized separately or in combination. Functional, intrinsic, indirect, macro, and non-use values do not always show similar patterns, or a consistent spatial distribution. Adding them on a single map provides a comprehensive view of the economic values of the city heritage. This facilitates the identification of economic values that are distributed across the area.

The following table, Table 1, gives the relationship between types of values and mapping process.

Many heritage assessments do not require a monetary assessment. The mapping process does not need to achieve a total value of the heritage in monetary terms (as required in investment or

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Types of values	Example of values	Spatial identification	Mapping unit *
Functional Use Values	Heritage house rental	Heritage building	Parcel
Intrinsic Use Values	Admission fee to a monument	Heritage monument	Parcel, Ensemble
Indirect Use Values	Hotel income (related to visitor or tourist)	Non heritage building	Parcel
Macro Use Values	Growth of income to city residents	City as a whole	Area
Non Use Values	Option for non-residents to visit the city	Buildings, Historic district	Parcel, Ensemble, Area

Table 1. * A note on data availability: The precision of a geographic base map depends on data availability, which differs considerably among countries in the world. Digital base maps and extensive databases for economic values are often hard to find, since they depend largely on the quality and availability of national and regional or city statistics.

cost-benefit analysis). Indicators are consistently used these days as an integrated approach for measuring and monitoring cities. The use of indicators is not a substitute for the use of databases. But it is a very effective and pragmatic approach when direct surveying is costly and time intensive.

Table 2 gives examples of indicators for different types of values.

4. Spatial analysis and economic landscapes

Urban planners and architects consider heritage as built structures, organized in space and revealed by their own scale and perspective in the surrounding area. A convenient analogy would be the economic hinterland or zone coming under the economic and commercial influence of an urban, industrial or commercial centre. There is no absolute rule in tracing a hinterland: economic impacts do not necessarily propagate in concentric circles with decreasing intensity; they could disseminate further and in other directions than anticipated.

Spatial analysis aims to identify the organization in space of heritage's economic values, from the material provided by the mapping process. Spatial identification is conditioned by many factors: physical features (natural, artificial, or both), road and communication connections, urban density, etc. The analysis takes into consideration both the location of the economic values (buildings, monuments), and the impact of these values on the surrounding area (streets, public spaces, non-heritage buildings), thus arriving at the shape and boundary for each category of economic values.

The purpose is to draw areas of economic values on the base maps, and to identify the places with the highest values. Colour coded maps highlight relative values for each category. By adding up the different layers of values on a single map, the spatial analysis enhances the aggregate economic value of heritage, and visualizes an economic landscape of heritage.

Types of value s	Values in monetary terms	Example of indicators
Functional Use Values	Rental values, Property values	Vacancy rate, Housing affordability, Number of sales
Intrinsic Use Values	Admission fees, Income	Number of visitors, Monument carrying capacity, Visitor satisfaction, Number of guides
Indirect Use Values	Turnover, Expenditures, Income	Average time spent, Number of shops, Hotel carrying capacity, Tourism behavior
Macro Use Values	Income, Fiscal revenues	Jobs in cultural sector, Number of heritage-related events, Non heritage property values
Non Use Values	Willingness-to-pay, Hedonic prices	Resident's awareness of heritage significance, Status of the city heritage

Table 2. Examples of indicators for different types of values.

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Today most preservation projects include economic value assessment. Data are collected to help decision makers in site management, tourism, transportation, and local development. Estimates of use values and non-use values become available and are inserted into project evaluation model. A mapping process and a spatial analysis provide additional insight into the understanding of the project, and facilitate the implementation of site management, as in zoning or land use control.

The Djenné test case (Mali, World Heritage city since 1988) aimed to collect data to test the mapping technique, with the purpose of showing the distribution of the economic value of Djenné's heritage.[1] Survey questions were structured to roughly capture the use values of Djenné's heritage for the year 2008 (excluding the macroeconomic values). Non-use values were not specifically addressed in the survey, but are known to be significant to the city of Djenné as a whole. People all over the world care about the existence of the Old Town of Djenné, famous for its earthen architecture and pilgrimage places; many would be willing to pay something to preserve the option of visiting Djenné at some time; and it is considered as heritage to be transferred to future generations. With reference to use values, neighbourhoods (parcels data were not available for housing), historic buildings, and heritage-related business (hotels, restaurants, punt transportation, art and crafts, masons, guides) were identified on a base map.

Individual maps illustrate each category of economic values, drawn on a digitized base map (Figure 1). Spatial analysis areas were drawn on the original maps to identify places with the highest values (Figure 2, Figure 3, Figure 4 and Figure 5). An economic landscape map combines shapes of data displayed in the individual maps (Figure 6). This map reveals how overall economic values are distributed across the city, and areas of concentration.

Another mapping exercise in Djenné could reveal the economic impact of a particular project, for example the current Mosque restoration undertaken by the Aga Khan Trust for Culture. The project employs local masons, apprentice masons, wood suppliers, potters, water carriers, etc. Its teams are housed in long-term rentals or small hotels; eat at particular restaurants; hire cooks, guards, carriers and helpers. After completion, the attractiveness of the Mosque will be enhanced, at least for external enjoyment (non-Muslims are not allowed inside and this is likely to stay unchanged). If the Aga Khan network does what it did in Mopti, a community centre might be built in the city and neighbourhood of the Mosque to present and explain earthen architecture and the Mosque restoration project, thus increasing tourist traffic. Improved earthen coating developed for this project, and overall economic opportunities from this project may help masons further adapt earthen coatings for the houses.

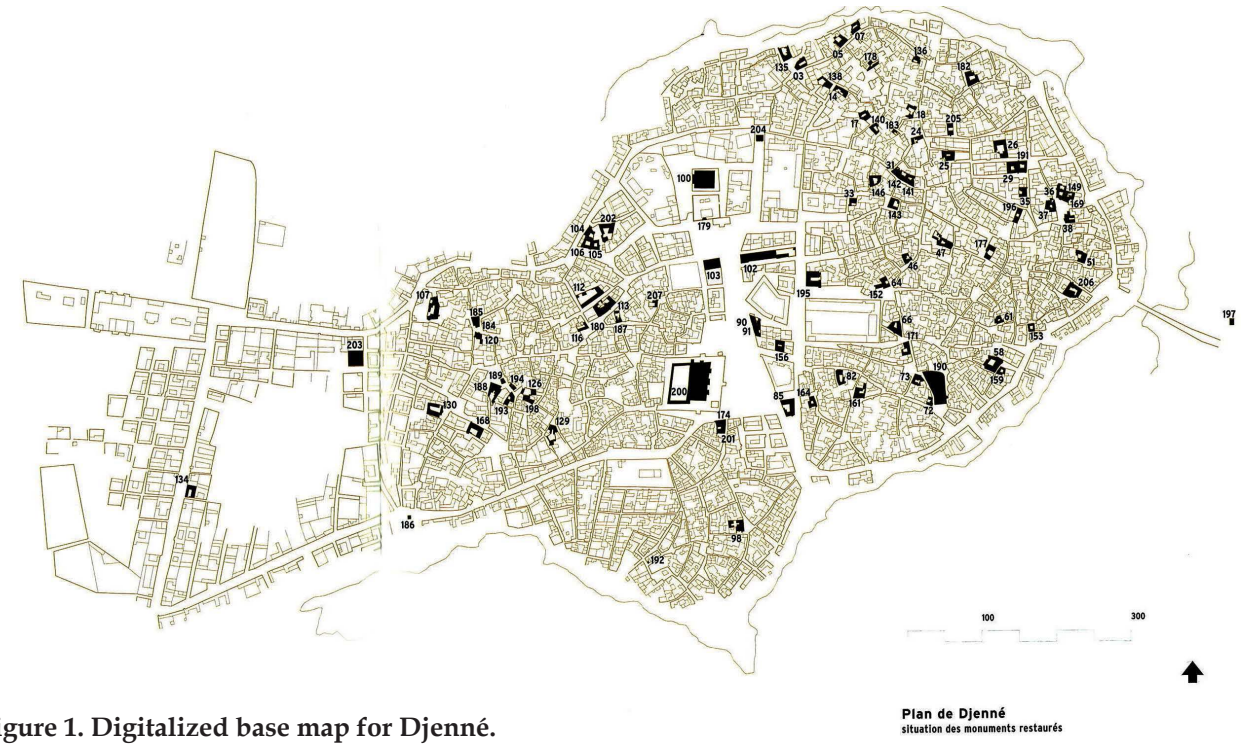

Figure 1. Digitalized base map for Djenné.

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Figure 2. Functional use values.

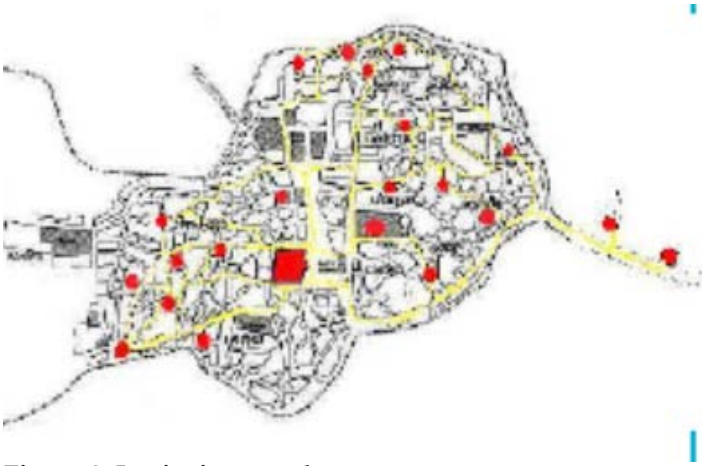


Figure 3. Intrinsic use values.

Figure 4. Indirect use values.

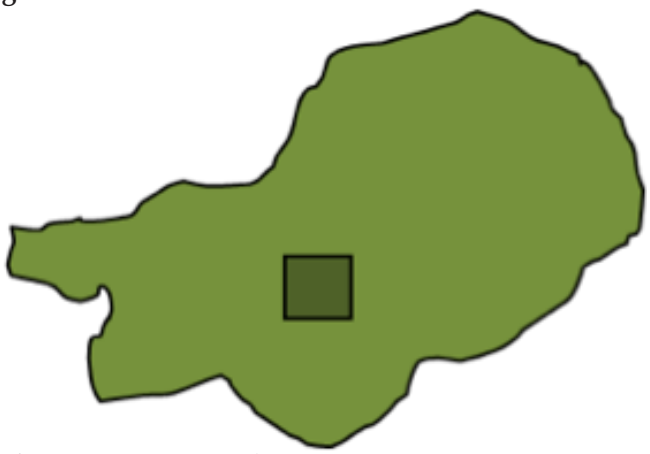
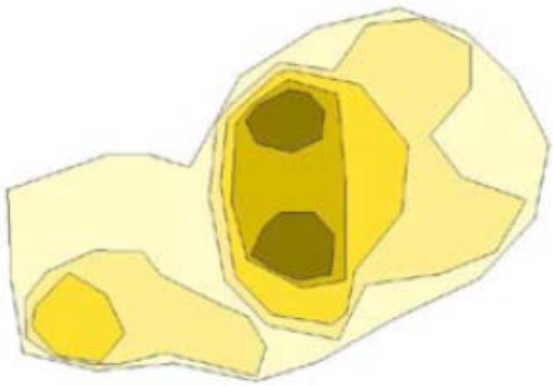


Figure 5. Non-use values.



Endnotes

[1]In 2009, a short survey was conducted by Kathleen Louw (Getty Conservation Institute, Los Angeles) in collaboration with Yamoussa Fané (Cultural Mission of Djenné).

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Revealing the level of tension between cultural heritage and development in World Heritage Cities

Molly Turner,[1] Ana Pereira Roders[2] & Marc Patry[3]

Abstract

World Heritage cities (i.e. all urban settlements with properties inscribed on the World Heritage List, located in or at the outskirts of their urban areas) contain cultural heritage that is not only of local importance, but is also of 'outstanding universal value'; that is, of global importance. Such heritage can enrich cultural diversity of urban settlements, but can also provide a source of tension for the comprehensive management of varied urban landscapes.

Three international organizations have been found periodically and systematically inventorying endangered cultural heritage properties throughout the world: UNESCO with the *List of World Heritage in Danger*, ICOMOS with *Heritage at Risk*, and the World Monuments Fund with the *World Monuments Watch*. Properties identified by these organizations are considered to be at risk as a result of varied threats, including development. However, the processes and criteria used by these organizations to determine such dangers were found to be very distinctive and inconsistent.

The goal of this paper is to propose systematic and comprehensive criteria with which to categorize the endangered level of World Heritage cities – specifically those threatened by development – and to present the resultant ranking of these cities by such criteria.

Keywords: level of tension, cultural heritage, development

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Introduction

Although the reporting process on the State of Conservation (SoC) of World Heritage properties has made some progress in recent decades, still no systematic and standardized assessment is being followed worldwide. In 1999, the World Heritage (WH) Committee did adopt the six-yearly 'periodic reporting' process, which focuses on one of 6 geographic regions annually (UNESCO, 1999). However, that process is "still being improved and information so gathered is highly variable in consistency and detail, and thus not readily interpreted for the purposes of comparative temporal or special analyses" (Patry *et al.*, 2005).

A similar pattern is to be found in the reports created during occasional site level 'reactive monitoring' missions, carried out by WH Centre and the Advisory Bodies staff, at the request of the WH Committee. These neither comply with a standard format nor are related in structure to the 'periodic reporting' process. These missions merely gather disparate information, which is no more than an "assembly of basic quantitative attributes of these sites as a group and qualitative summaries of conservation issues on a site by site basis" (Thorsell and Sigaty, 1997).

Some global initiatives, such as the 'Rapid Assessment and Prioritization of Protected Areas Management' (RAPPAM) methodology developed by WWF, the World Bank/WWF tracking tool (Ervin, 2003), have proposed the standardization of a set of criteria across World Heritage properties listed as natural heritage, allowing quantitative and comparative analyses. One other example of a similar Management Effectiveness Assessment methodology is the 'Enhancing Our Heritage' methodology developed by the WH Centre (UNESCO, 2008a). While useful, these methodologies "have been applied haphazardly to only a very few WH sites to date" (Patry *et al.*, 2005), resulting in very limited analytical uses across WH cities (i.e. all urban settlements with properties inscribed on the World Heritage List, located in or at the outskirts of their urban areas (Pereira Roders, 2010).

Despite these limitations, the WH Centre has easy access to existing information that can in fact permit the monitoring of objective indicators (quantitative and qualitative) of the State of Conservation (SoC) of WH Cities. These are respectively:

Turner, M.; Pereira Roders, A. & M. Patry. 2012. Revealing the level of tension between cultural heritage and development in World Heritage Cities. *In* Zancheti, S. M. & K. Similä, eds. *Measuring heritage conservation performance*, pp. 124-133. Rome, ICCROM.

- Indicator 1: Absolute number of WH properties including or included in WH cities on the List WH in Danger
- Indicator 2: Proportion of all WH properties including or included in WH cities on the *List of World Heritage in Danger* (number of WH cities on Danger List/total number of WH cities)
- Indicator 3: Threat intensity to which WH properties including or included in WH cities are subjected
- Indicator 4: Average threat intensity for entire WH properties including or included in WH cities network.

The first two indicators (Indicators 1 and 2) are based on WH cities' potential inscription on the *List of World Heritage in Danger*. The second two indicators (Indicators 3 and 4) are based on whether monitored conditions at individual WH cities reveal significant enough threats to be discussed by the WH Committee at their annual sessions.

The value of these indicators can be tracked over time, providing important information on trends, and allowing for a variety of practical analyses. All raw data used to generate the graphs illustrating this paper can be found available on the World Heritage Cities Programme website at: http: //whc.unesco.org/en/cities. Particularly, the methodology to determine indicators 3 and 4 can be found detailed in a piece entitled 'The State of Conservation of the World Heritage Forest Network' (Patry *et al.*, 2005). Basically, they are based on the frequency with which the WH Committee has discussed a WH property over the past 15 years (0 = minimum reports, 100 = maximum reports).

1. Results

For cultural heritage assets, and for a scale of property such as a WH city, it is a challenge to identify indicators that can provide tangible and comparable measures of the SoC of WH properties. However, much information is periodically gathered by the WH centre "through its reactive monitoring process and by way of third party information". The data so obtained is "rarely of a nature that allows for objective quantifiable analysis" (Patry *et al.*, 2005). The following data, proposed as indicators, is quantitative and available to every WH property.

When a property's OUV is threatened 'by serious and specific dangers' the WH Committee has the option of inscribing the property on the *List of World Heritage in Danger* (UNESCO, 2008b). This 'Danger Listing' serves not only to heighten concern about the property's integrity and stir up international support, but the list itself also serves as a record of the threatened state of the property.

THREAT	# Cities Facing Threat	% of all Threats
new development	11	16.42%
lack of, flawed or damaging maintenance, reconstruction and restoration work	11	16.42%
natural disaster	8	11.94%
general degradation	7	10.45%
infrastructure construction and development	7	10.45%
tourism pressures and associated development	5	7.46%
informal/illegal settlements or construction	5	7.46%
illegal or inappropriate dismantling and demolition	3	4.48%
archaeological excavations	2	2.99%
natural causes	2	2.99%
motor traffic	2	2.99%
land privatization and ownership issues	2	2.99%
lack of or insufficient infrastructure	1	1.49%
neglect	1	1.49%

Table 1. Threats affecting WH properties including or included in WH Cities on the Danger List.

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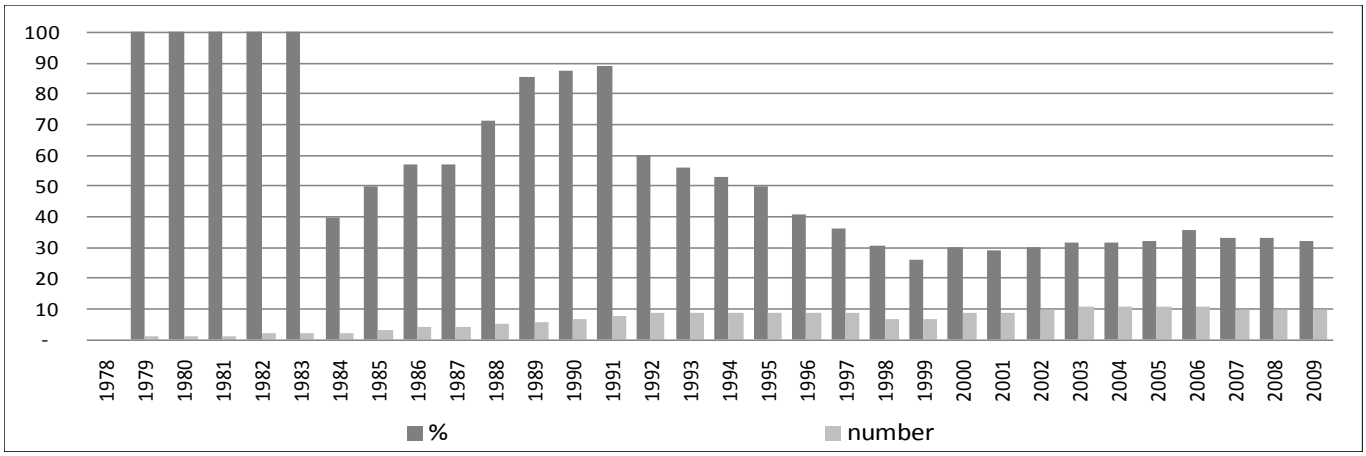

Figure 1. Number and Proportion of WH properties including or included in WH cities on the Danger List.

By 2010, 21 WH properties found including or included in WH Cities (Indicator 1) had made an appearance on the Danger List (see Table 1). An exceptional case is the WH property Dresden Elbe Valley (Germany), inscribed on the Danger List in 2006 and delisted from the WH List in 2009. As it was no longer a WH property at the time this research was conducted, Dresden Elbe Valley was excluded from this survey.

Since 1979, when the first WH properties that include or are included in WH Cities were inscribed in the *List of World Heritage in Danger*, the proportion (Indicator 2) of these WH properties on the Danger List has ranged from as high as 100% (1979-1983) to as low as 26% (1993). Ten of these WH properties still remain inscribed today on the Danger List. An additional ten properties have been delisted and still remain on the WH List. No WH property returned after delisting.

Both Indicator 1 (number) and 2 (%) can be used as a measure of the degree to which these particular WH properties were under threat worldwide (Figure 1). Although indicator 1 reveals a small sample of properties when compared with the whole population (4.4% of all 459 WH properties including or included in WH Cities), it reflects the whole *List of World Heritage in Danger*, which includes no more than 31 WH properties (3.5% of all 890 WH properties inscribed on the WH List).

Similarly, Indicator 2 (with an average of 53% along the last 32 years) lightly surpasses the proportion of WH properties including or included in WH Cities on the WH List (51.6% of all 890 WH properties). In fact, until 1997 all cultural heritage inscribed in the Danger List were WH properties including or included in WH Cities.

The list of all WH properties including or included in WH Cities having been inscribed on the *List of World Heritage in Danger* is provided in Table 2, on the following pages. Similar to the WH Forests (Patry *et al.*, 2005), a future indicator of the state of these WH properties overall might focus on the urban area of WH properties in danger as a proportion of total WH properties cover. This indicator could increase the accuracy of the assumptions reached when surveying Indicators 1 and 2. However, urban area cover values of the protection zones (core and buffer zones) of WH properties including or included in WH Cities are unreliable, making it premature to consider this indicator.

Nevertheless, it is telling to review which of the WH Cities have appeared on the Danger List, as well as the threats for which they were included. After reviewing the threats all WH properties including or included in WH cities face, it will be interesting to compare which threats have resulted in Danger Listing and which have not. A review of the nature of threats that affect those on the Danger List shows the principle threats have been 'new development' and 'flawed restoration work'. These threats affect more than half of the WH properties including or included in WH cities on the Danger List (see Table 1).

The average time spent on the Danger List for WH Cities is 10.7 years. Seven cities have remained on the Danger List for more than the average tenure. For those properties, 'new development' has been the most prevalent threat. However, for the thirteen cities with less than average tenure on the List, the prevalent threat has been 'lack of, flawed or damaging maintenance, reconstruction and restoration work'. One might therefore conclude that new development poses a more serious and longer-term danger to these properties, therefore resulting in longer tenures on the Danger List.

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WH Property	Threats*	On (Year)	Off (Year)	# Years
Old City of Jerusalem and its Walls	archaeological excavation; new development; tourism pressures and associated development; lack of, flawed or damaging maintenance, reconstruction and restoration work; neglect	1982	still on	28
Natural and Culturo-Historical Region of Kotor	new development; tourism pressures and associated development; natural disaster; infrastructure construction and development	1979	2003	24
Chan Chan Archaeological Zone	archaeological excavations; new development; tourism pressures and associated development; informal/illegal settlements or construction; natural disaster; general degradation; lack of or insufficient infrastructure; natural causes; lack of, flawed or damaging maintenance, reconstruction and restoration work; looting/theft	1986	still on	24
Royal Palaces of Abomey	natural disaster; general degradation; lack of, flawed or damaging maintenance, reconstruction and restoration work	1985	2007	22
Bahla Fort	new development; lack of, flawed or damaging maintenance, reconstruction and restoration work	1988	2004	16
Timbuktu	new development; natural disaster; general degradation; natural causes	1990	2005	15
Angkor	new development; tourism pressures and associated development; informal/illegal settlements or construction; infrastructure construction and development; political unrest/violence; looting/theft	1992	2004	12
Fort and Shalamar Gardens in Lahore	new development; general degradation; infrastructure construction and development; motor traffic; illegal or inappropriate dismantling and demolition; land privatization and ownership issues	2000	still on	10
Historic Town of Zabid	new development; informal/illegal settlements or construction; general degradation; infrastructure construction and development; lack of, flawed or damaging maintenance, reconstruction and restoration work	2000	still on	10
Wieliczka Salt Mine	unidentified threats	1989	1998	9
Old City of Dubrovnik	natural disaster; lack of, flawed or damaging maintenance, reconstruction and restoration work; political unrest/violence	1991	1998	7
Walled City of Baku with the Shirvanshah's Palace and Maiden Tower	new development; tourism pressures and associated development; natural disaster; illegal or inappropriate dismantling and demolition	2003	2010	7
Bam and its Cultural Landscape	security	2004	still on	6

Table 2. WH properties including or included in WH cities previously and currently on the Danger List. Taken from Official Reports of the Sessions of the WH Committee from 1977-2009 *Indicator 1: threat intensity to which WH properties including or included in WH Cities are subjected. Indicator 2: average threat intensity for entire WH properties including or included in WH Cities network. Continued on next page.

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WH Property	Threats*	On (Year)	Off (Year)	# Years
Coro and its Port	natural disaster; general degradation; lack of, flawed or damaging maintenance, reconstruction and restoration work	2005	still on	5
Tipasa	new development; informal/illegal settlements or construction; natural disaster; infrastructure construction and development; lack of, flawed or damaging maintenance, reconstruction and restoration work	2002	2006	4
Kathmandu Valley	new development; informal/illegal settlements or construction; general degradation; infrastructure construction and development; illegal or inappropriate dismantling and demolition; lack of, flawed or damaging maintenance, reconstruction and restoration work; political unrest/violence	2003	2007	4
Medieval Monuments in Kosovo	political unrest/violence	2006	still on	4
Samarra Archaeological City	motor traffic; security; political unrest/violence	2007	still on	3
Cologne Cathedral		2004	2006	2
Historical Monuments of Mtskheta	land privatization and ownership issues; lack of, flawed or damaging maintenance, reconstruction and restoration work	2009	still on	1

Table 2 (Cont'd). WH properties including or included in WH cities previously and currently on the Danger List. Taken from Official Reports of the Sessions of the WH Committee from 1977-2009. *Indicator 1: threat intensity to which WH properties including or included in WH Cities are subjected. Indicator 2: average threat intensity for entire WH properties including or included in WH Cities network. Continued from previous page.

As seen in Figure 1, the number of WH properties including or included in WH cities on the Danger List does not grow in proportion to the number of WH cities being added to the WH List. Again, if the Danger List were used more comprehensively it might better reflect the growing proportion of WH Cities that are endangered.

Throughout the year the WH Centre and Advisory Bodies (ICOMOS and IUCN) receive information (unsolicited and solicited) related to emerging and ongoing conservation issues in WH properties from a variety of sources. Once a year, in preparation for the World Heritage Committee meeting, the WH Centre and Advisory Bodies meets to review and discuss information gathered during the previous months and jointly decide whether conditions warrant that a particular WH property and its conservation issues be discussed by the WH Committee.

When affirmative, the WH Centre and Advisory Bodies prepare a 'State of Conservation Report' or SoC Report, which includes a brief analysis of the conservation threats for the selected properties, along with a draft decision for the WH Committee's consideration. Typically, a SoC report will be requested when the values for which a property was inscribed on the WH List appear to be significantly threatened by either existing processes (e.g. change of uses), or by potential processes with a high likelihood of taking place (e.g. plans for development).

During its annual meeting in June/July, the WH Committee, which insures the WH Convention is being properly implemented by the State Parties, discusses the SoC reports and makes decisions on specific courses of action. Generally, they request that a State Party implement particular measures to mitigate threats. Usually, the WH Committee requests that a SoC report be produced for the following year's WH Committee meeting to determine if the threats have been properly mitigated. If confirmed by a subsequent SoC report, the WH Committee usually ceases to request any further SoC reports for that particular property. Otherwise, a SoC report will be requested again for the following year's meeting.

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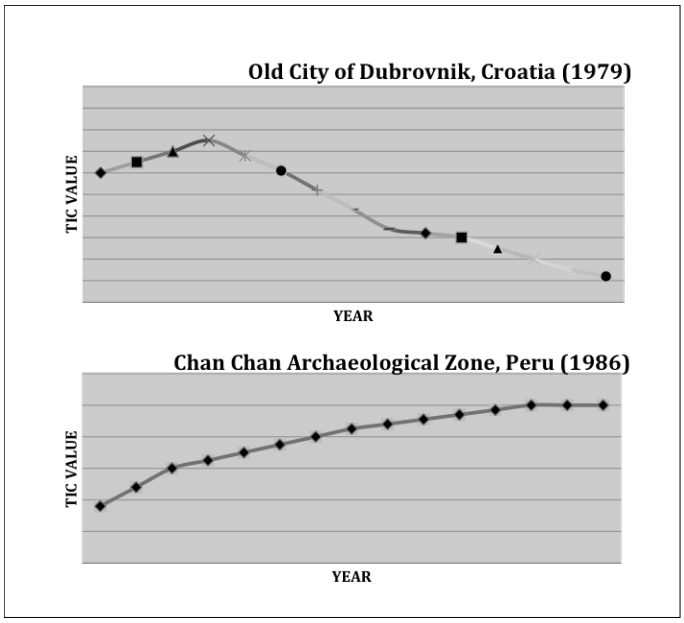

Figure 2. Sample Threat Intensity Coefficients for two WH properties including or included in WH Cities, over time.

Figure 2 illustrates the Threat Intensity Coefficients (TIC) when applied for 2 WH properties including or included in WH Cities over the last 15 years. While the Old City of Dubrovnik, Croatia (which in the past has been inscribed on the *List of World Heritage in Danger*) is decreasing its TIC year after year; Chan Chan Archaeological Zone, Peru keeps on rising, despite the many years in the Danger List.

Figure 3 illustrates the average annual values of the TIC from 1995 to 2009. The average TIC values during the last 15-year intervals are 6.7 (1995) and 16.9 (2009). These values are affected by a combination of the actual TIC values of WH properties including or included in WH Cities and the total number of WH properties.

As SoC reports for newly inscribed WH sites are rarely requested, the year of nomination has not been included in the sum. This methodological decision creates a downward pressure on the average TIC value. Another factor that also likely influences the average TIC value in earlier years is the difference in the Operational Guidelines and the requested information and focus during the Sessions of the WH Committee.

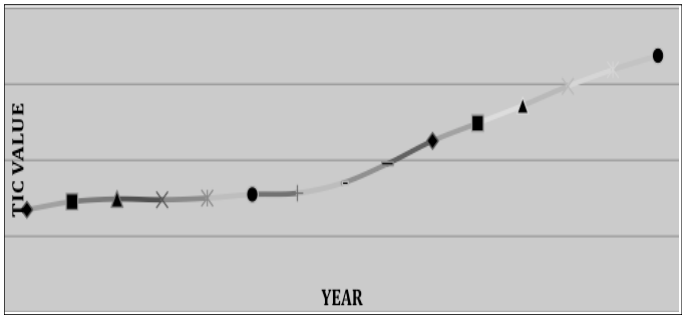

Figure 3. Average TIC Value for entire WH properties including or included in WH Cities network.

The Official Reports of the Sessions of the WH Committee mention threats facing 193 of the 476 WH properties including or included in WH Cities. Each discussed property faced anywhere from one to eleven unique threats. Therefore, all together, hundreds of unique threats emerge from the reports. For the purposes of this research we have grouped the referenced threats into 23 distinct categories. Among these, a handful emerged as most common.

The most-referenced threat represents a notable limitation of the data source: 'unidentified threats'. The reports do not detail the specificities of all threats, particularly in earlier years when reports were less comprehensive. Thirty-two percent of WH properties including or included in WH Cities face unidentified threats, which represent 27 percent of all threats. The remaining threats referenced in the reports are indeed more specific and demonstrate the prevalence of one specific class of threat: 'the development threat'.

'New development' and 'infrastructure construction' are referenced as threats to twenty-six and twelve percent of WH properties including or included in WH Cities respectively. Threats that are mentioned in reference to five to ten percent of WH properties including or included in WH Cities are 'insufficient maintenance' and 'restoration', 'tourism pressures' and 'natural disasters' (n.b. 'tourism pressures' include new development, but also no development related threats such as motor traffic and foot traffic).

In addition to 'new development', other categories of threats represent development (defined for the purposes of this research as all activities of urban planning/renewal promoting changes on the built environment**)**. Therefore, categories representing development threats are: 'new development'; 'infrastructure construction and development'; 'tourism pressures and associated development'; 'informal/illegal settlements or construction'; 'temporary events (and associated structures)'; 'oil and gas exploration and mining'; 'land privatization and ownership issues'; 'industrial construction and development'; and 'military facilities development' (see Table 3, next page). All together, these development threats represent 45 percent of the threats facing WH properties including or included in WH Cities and are referenced as threats to 54 percent of WH properties including or included in WH Cities. In comparison, 'inappropriate excavation and

Threat Category	# Properties Facing Threat	% of all Threats	% of all Properties Facing Threat*
unidentified threat(s)	152	26.67%	31.93%
new development	124	21.75%	26.05%
infrastructure construction and development (roads, airports, ports, sewers, etc.)	57	10.00%	11.97%
lack of, flawed or damaging maintenance, reconstruction and restoration work	46	8.07%	9.66%
tourism pressures and associated development	44	7.72%	9.24%
natural disaster	32	5.61%	6.72%
general degradation	16	2.81%	3.36%
illegal or inappropriate dismantling and demolition	14	2.46%	2.94%
informal/illegal settlements or construction	13	2.28%	2.73%
natural causes	12	2.11%	2.52%
lack of or insufficient infrastructure	10	1.75%	2.10%
motor traffic	8	1.40%	1.68%
political unrest/violence	8	1.40%	1.68%
temporary events (and associated structures)	7	1.23%	1.47%
neglect	5	0.88%	1.05%
oil and gas exploration and mining	4	0.70%	0.84%
land privatization and ownership issues	4	0.70%	0.84%
looting/theft	4	0.70%	0.84%
industrial construction and development	3	0.53%	0.63%
archaeological excavations	2	0.35%	0.42%
security	2	0.35%	0.42%
military facilities development	2	0.35%	0.42%
noise and visual pollution	1	0.18%	0.21%
TOTAL DEVELOPMENT THREATS	**258**	**45.26%**	

Table 3. Development-related threats referenced for WH properties including or included in WH cities. *Properties often face more than one threat, therefore, this column adds up to more than 100%.

restoration' is mentioned as a threat to only 13 percent of WH properties including or included in WH Cities; 'natural threats' are referenced for only nine percent; 'security-related threats' referenced for only seven percent and 'general neglect and degradation' referenced for only four percent. This data clearly shows development-related threats as the greatest perceived threats to WH properties including or included in WH Cities.

For the purposes of this research we have also grouped the referenced causes of threats into 19 distinct categories. As mentioned previously, not all referenced threats were discussed in detail in the reports; consequently the causes of such threats were not always given. However, those causes that were given show a majority of development-related causes (defined for the purposes of this research as the causes that led development to become a threat to these WH properties). Among all causes

referenced, the most common categories are 'insufficient regulatory frameworks', 'insufficient buffer zones' and 'insufficient enforcement of regulatory frameworks', representing 23 percent, 17 percent and 15 percent of causes respectively. These three cause categories are all mentioned in reference to development threats. Other categories mentioned in relation to development threats are: 'insufficient coordination of stakeholders', 'insufficient tourism plan', 'insufficient impact analyses', 'insufficient understanding of heritage's value', 'insufficient involvement of local population', 'insufficient design guidelines', 'insufficient political agreement' and 'population growth and economic pressures' (see Table 4, further below). All together, these development-related causes represent 83 percent of all causes and were mentioned in reference to 98 percent of all WH properties including or included in WH Cities. This data shows development related causes as the principal threats to WH properties including or included in WH Cities is development.

Conclusion

Given the absence of any framework under which a homogeneous set of indicators on the state of conservation (SoC) of WH properties including or included in WH cities worldwide can be constructed for the time being, it will remain extremely difficult to develop a highly reliable measure of how well these WH properties are being conserved over time.

Under these difficult conditions, the WH Centre must rely on indirect measures of the SoC, using the Periodic/Reactive Monitoring, the Danger Listing or the Threat Intensity Coefficient. However, based on the information so gathered, positive and negative aspects can be ascertained on the state of conservation of WH properties including or included in WH cities.

The average TIC values for all WH properties including or included in WH cities network over the past 5 years is relatively low (ranging between 12.4 and 16.9), as the proportion of these WH properties including or included in WH cities on the Danger List (ranging between 35.5 and 32.3). However, both indicators show steady growth along the years. Considering that the WH Committee only meets once a year and for a limited amount of time, the number of cases discussed cannot grow that much. Still, there is a high probability that more WH properties including or included in WH cities shall join the Danger List and/or become discussed by the WH Committee in the following years.

When comparing the results of the four indicators it was possible to conclude that the level of tension between cultural heritage and development in World Heritage cities has been rising over the last years and is varied in nature. It was also evident that the *List of World Heritage in Danger* cannot alone act as an indicator, as it does not accurately include all cases of WH properties including or included in WH cities facing development-related threats, nor their level of threat.

The root of this problem may be grounded in the politicization of the Danger List. If its use – extension of damage for a property to be listed, duration of a property to stay listed, degrees of danger and respective mitigation strategies, etc. – were to become more comprehensive and/or to be complemented by other indicators (e.g. decisions from the Annual Sessions of the WH Committee) it could become an even more useful indicator.

The changing composition of the Danger List over time is a dynamic record of the SoC of the most threatened WH properties in the world. The composition of the Danger List, both the categories of properties included and categories of threat they are included for, indicated which categories were most threatened and which threats were most prevalent worldwide. Therefore, the Danger List provides rather objective indicators for the monitoring of the category that concerns us in this research, WH Cities.

Moreover, the Threat Intensity Coefficient (TIC) was a first attempt at providing a quantitative value on the State of Conservation (SoC) of WH forests that is applicable to all WH properties, natural or cultural, though the actual utility of this indicator remains to be seen over time. Further research on rationalizing the nature of the identified threats and causes could help raise the understanding of the SoC of these and other WH properties.

This initial use of the four indicators has revealed the high degree of tension between heritage preservation and development in WH Cities. WH Cities are dynamic organisms within which pressures for modernization are not likely to subside. Therefore, it is essential to collect more detailed information about the particular characteristics of new development that threaten a property's OUV. In this regard, our analysis only scratches the surface, as it is limited by the depth of available data. Therefore, we hope this can serve as an impetus for more systematic and comprehensive monitoring of the evolving threats to WH cities.

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Cause Category	# Properties Facing Cause	% of all Causes	% of all Properties Facing Cause
lack of or insufficient regulatory framework (including management plan, conservation plan, zoning laws, urban plan, etc.)	127	22.48%	26.68%
lack of or insufficient buffer zone	98	17.35%	20.59%
insufficient implementation or enforcement of regulatory framework (including management plan, conservation plan, zoning laws, urban plan, etc.)	85	15.04%	17.86%
insufficient coordination of stakeholders or integration of respective initiatives	43	7.61%	9.03%
lack of or insufficient tourism plan	33	5.84%	6.93%
lack of or insufficient impact analyses	31	5.49%	6.51%
lack of corrective measures and their timely implementation	23	4.07%	4.83%
lack of or insufficient human, financial and technical resources	20	3.54%	4.20%
lack of or insufficient emergency, risk and disaster preparedness plan	19	3.36%	3.99%
lack of or insufficient monitoring and indicators	18	3.19%	3.78%
insufficient understanding of heritage's value and conditions of integrity	16	2.83%	3.36%
insufficient involvement of local population	14	2.48%	2.94%
lack of or insufficient funding	13	2.30%	2.73%
lack of design guidelines	9	1.59%	1.89%
lack of political agreement or support	6	1.06%	1.26%
population growth	4	0.71%	0.84%
insufficient socio-economic conditions	3	0.53%	0.63%
economic pressures	2	0.35%	0.42%
lack of or insufficient infrastructure	1	0.18%	0.21%
TOTAL DEVELOPMENT-RELATED CAUSES	**468**	**82.83%**	**98.32%**

Table 4. The causes for development-related threats affecting all WH properties including or included in WH cities.

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Outstanding Universal Value vs. zoning regulations: Willemstad as a case study

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Abstract

Even though World Heritage cities are of global importance, the management of World Heritage is often the responsibility of local authorities. The Operational Guidelines of UNESCO cover a great part of the management process for these properties of Outstanding Universal Value, but leave out how they should be managed on national and local levels.

This article aims to contribute to the enhancement of the currently implemented management practices for the World Heritage city of Willemstad, Curaçao. The documents produced during and after the process of nomination of Willemstad have been surveyed in search for the justifications on its Outstanding Universal Value. This paper aims to demonstrate that the management of a World Heritage City can be fostered by making use of the information compiled in the official documents prepared for the nomination and, if applicable, during the protection process.

Keywords: World Heritage cities, Willemstad, Curaçao, Outstanding Universal Value, zoning regulations

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Introduction

On December 4th, 1997, the World Heritage (WH) Committee decided to inscribe the historic inner city of Willemstad on the World Heritage List. They considered "that the Historic Area of Willemstad is a European colonial ensemble in the Caribbean of outstanding value and integrity, which illustrates the organic growth of a multicultural community over three centuries and preserves to a high degree significant elements of the many strands that came together to create it" (UNESCO, 1997a).

The concern of the government of Curaçao for dynamics that can negatively impact on the Outstanding Universal Value (OUV) of the historic inner city of Willemstad is not recent. The periodic report of 2006 (ICOMOS, 2006) references several threats that were affecting its state of conservation. Accordingly, even though 100 of 760 listed buildings have so far been restored, still, 8 have been lost and 90 remain in very poor state of conservation. Salt water and the humid climate is contributing to their deterioration and increased the risk for collapse. Moreover, the present state of conservation was considered 'patchy' and threatening the integrity of the urban fabric (ICOMOS, 2006).

Development projects would be a welcome complement to the fragmented state of conservation of Willemstad. However, development pressure is also a named threat to the site (ICOMOS, 2006). According to Gill (1999) the dominating historic character complicates new developments that balance on the thin line between historicization and contrasting with the site. The difficulty is to find the right translation from the historic to the respectful contemporary.

The quality of development projects is left to the skills of the 'architect'. Since the title of 'architect' is not protected on the island of Curaçao (Environmental Department, 2010), the person applying for a building permit may not necessarily hold a degree in architecture, nor be aware of Willemstad's OUV. The local authorities are charged with the assessment of whether the proposed development is successful in terms of respecting the OUV of Willemstad. This assessment was undertaken by one responsible official, supported by zoning regulations (Speckens, 2011).

The local government of Curaçao has indicated a struggle with the zoning regulations laid down in the 'Island Development Plan' (Executive Council, 1995a), which should guarantee the quality of new developments (Speckens, 2011). Despite these regulations, development pressure is threatening the OUV of the site was found. Therefore adjustments can be made to these zoning regulations to improve the protection of the OUV of Willemstad.

Speckens, A.; Veldpaus, L.; Colenbrander, B. & A. Pereira Roders. 2012. Outstanding universal value vs. Zoning regulations: willemstad as a case study. *In* Zancheti, S. M. & K. Similä, eds. *Measuring heritage conservation performance*, pp. 134-141. Rome, ICCROM.

By surveying the OUV along the official documents, sufficient information about the attributes and cultural values of the enlisted property are expected to be found to help the local authorities sustain the formulation of the Retrospective Statement of Outstanding Universal Value and respective management practices.

1. Research Aim

This paper focuses on the nomination of Willemstad as basis for its zoning regulations. For this purpose the significant attributes and cultural values found referenced in the official documents produced during the nomination and protection stages shall be identified. The purpose was to sustain enhancements to the zoning regulations, concerning the protection of the discovered cultural values and attributes found justifying the OUV.

The survey presented in this paper is part of a case study entitled 'Revising World Heritage Willemstad: Enhancing Outstanding Universal Value Assessment Practices' which aims to assist the government of Curaçao to facilitate contemporary developments in the historic inner city of Willemstad. The case study is part of a larger international research entitled 'OUV, WH cities and Sustainability: Surveying the relationship between the Outstanding Universal Value assessment practices and the sustainable development of World Heritage cities' lead by Eindhoven University of Technology, the Netherlands; and UNESCO World Heritage Centre, France. Therefore, we foresee that these results will also help other local governments around the world, struggling with similar issues.

2. Methodology: Significance Survey

In order to enable the acknowledgement of the OUV of Willemstad to facilitate management practices, the identified cultural values and attributes should be reflected in the zoning regulations. To understand these attributes and cultural values, data was collected from the official documents produced during both nomination and protection stages (Pereira Roders and Van Oers, 2010). These documents, produced by the Government of Curaçao, the advisory body ICOMOS (International Committee on Monuments and Sites) and the World Heritage Committee, included: the Tentative List Submission Form (1995), the Nomination File (1996), the Advisory Body Evaluation (1997) and the Nomination Decision (1997). The documents of the protection stage include the Island Development Plan (1995), the Periodic Report (2006) and the Retrospective Statement of OUV (2010).

In Section 3 the attributes of the historic inner city of Willemstad (Figure 1) have been correlated with the cultural values, which have been underlined. The cultural values, elaborated in Section 4, have been retrieved by methods of coding, using the eight main values (social, economic, political, historic, aesthetic, scientific, age and ecological value) to categorize and distinguish the nature of the justifications defined to guide Cultural Significance Surveys (Pereira Roders, 2007). In this article, the results of the significance survey shall be illustrated with a few examples of the process of coding the information retrieved from the official documents

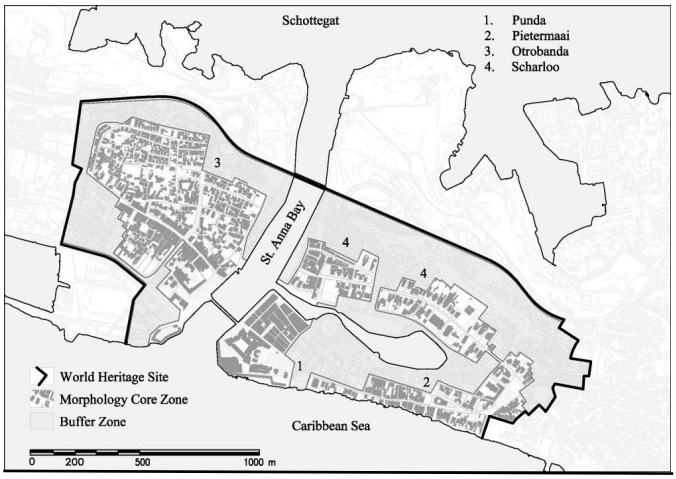

Figure 1. The listed area: the historic inner city divided in the Core area and the Buffer zone.

3. Nomination and protection stage

3.1. Tentative List Submission Form

The first step to nomination was taken on August 1st, 1994, when the government of the island of Curaçao composed the Tentative List Submission form for 'Willemstad, Inner City and Harbour'. By then, they describe that Willemstad has Dutch[1] colonial[2] architecture and town planning[3] from the period of the European expansion.[4] The residential[5] districts Punda, Pietermaai, Scharloo and Otrobanda developed in different centuries with their own urban structures and are bound to the north by a natural ridge[6] as shown in Figure 1 and Figure 2 (Kingdom of the Netherlands, 1995).

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Figure 2. The urban districts of Punda (1), Pietermaai (2), Otrobanda (3) and Scharloo (4) (Source: author).

3.2. Nomination File

In June 1996 the Kingdom of the Netherlands submitted the Nomination File entitled the 'Historic Area of Willemstad, Inner city and Harbour'. Accordingly, Willemstad is characterized as a Dutch colonial settlement founded during the period of the European expansion in the 15th and 16th century. Both St Anna Bay and Schottegat, the natural deep-water harbour, triggered the creation and further growth of Willemstad as a settlement thriving on trade and commerce, including slave trade. Willemstad has a history of immigration including Sephardic Jews from Portugal and Spain. Therefore Curaçao has been shaped by the exchange of cultural elements between the Dutch, Iberians and Africans.

The urban districts were on different flat and sloping sites separated by the natural waters of St Anna Bay and Waaigat. These natural waters link the urban districts and integrate them into an exciting townscape of colourful façades along stretches of lively quays.

The urban districts were developed subsequently, starting with Fort Amsterdam in 1634 to defend the natural deep-water harbour. It was built according to Dutch customs, just like the walled city of Willemstad emerging to the North. The houses were tightly laid out in building blocks marked by a distinct building line alongside narrow streets in a grid structure. They featured two to three storey buildings covered by a steep pitched roof.

Due to the absence of restricting ramparts, Otrobanda developed a rather unplanned spatial structure. It features an open compound layout, the yards of Otrobanda called *Kura*, and a dense alley structure. Otrobanda is characterized as a working-class neighbourhood.

The construction of the urban district Pietermaai started to the east of Punda. It features a linear urban development of stately and colourful mansions since the elite of the shipmasters and high-ranking administrators settled there.

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Scharloo enjoyed the relative freedom of space resulting in an open layout of streets lined by detached and quite often luxurious dwellings. It was a residential district of great prominence, for the greater part inhabited by Jewish merchants who owned shops in Punda.

The initial architecture of Willemstad was Dutch architecture of the 16th and 17th centuries. From the 17th century on, the architecture gradually acquired local traits as a result of the climate, the use of local materials[7] and the introduction of new architectural elements. A government act of 1817 ordered the colouring of the white lime façades, which characterizes the architecture of Willemstad (Kingdom of the Netherlands, 1996).

3.3. Advisory Body Evaluation

The evaluation of the nomination file made by ICOMOS in 1997 largely adopted the justification and description of the property. In conclusion, they deduced that the Historic Area of Willemstad is an example of a Dutch colonial trading and administrative centre during the 16th, 17th and 18th centuries that was both walled (Punda) and undefended (Otrobanda). Its urban fabric and townscape has been created by the blending of European town-planning and architectural traditions and local Caribbean influences (ICOMOS, 1997).

3.4. Decision

Subsequently, the recommendation to the WH committee was made to inscribe this property on the World Heritage List. The exact wording of the recommendation has been adopted in the decision: "the World Heritage Committee decided to inscribe Willemstad on the basis of cultural criteria (ii), (iv) and (v), considering that the Historic Area of Willemstad is a European colonial ensemble in the Caribbean of outstanding value and integrity, which illustrates the organic growth of a multicultural community over three centuries and preserves to a high degree significant elements of the many strands that came together to create it." (UNESCO, 1997a).

By 1997, the Operational Guidelines defined criteria (ii), (iv) and (v) as (UNESCO, 1997b):

> (ii) "[Nominated properties shall] exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design";
>
> (iv) "Nominated properties shall "be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history;
>
> (v) "Be an outstanding example of a traditional human settlement or land-use which is representative of a culture (or cultures), especially when it has become vulnerable under the impact of irreversible change."

3.5. Periodic Reporting

In 2006, the State Parties have submitted their first periodic report, to provide an assessment as to whether the OUV of the property has been maintained over time (UNESCO, 2008). Concerning the OUV, it repeated most of the justifications used by ICOMOS on the Advisory Body Evaluation. It starts, however, with a new brief description:

> "the people of the Netherlands established a trading settlement at a fine natural harbour on the Caribbean island of Curaçao in 1634. The town developed continuously over the following centuries. The modern town consists of several distinct historic districts whose architecture reflects not only European urban-planning concepts but also styles from the Netherlands and from the Spanish and Portuguese colonial towns with which Willemstad engaged in trade" (ICOMOS, 2006).

3.6. Retrospective Statement of OUV

Since 2005, the nominations of new World Heritage properties are required to include a Statement of Outstanding Universal Value (UNESCO, 2005). Therefore, all State Parties with previous nominations have been requested to submit a Retrospective Statement of OUV on their subsequent period reports (UNESCO, 2007) The Retrospective Statement of OUV concerning the historic inner city of Willemstad has been recently submitted and waits for adoption by the World Heritage Committee (Kingdom of the Netherlands, 2010). The historic inner city of Willemstad is found described as a Dutch colonial trading settlement with colonial town planning and architecture of the period of Dutch expansion with Afro-American, Iberian and Caribbean influences.

Moreover, the historic inner city of Willemstad stands out for the diversity in the historical morphology of its four urban districts, which are separated by the open waters of the harbour. They

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demonstrate the subsequent stages of historical development over the course of centuries by the gradual influence of the tropical climate and the social and cultural differences of their inhabitants on their layout and architecture. In more detail, Punda is mentioned as the only part of the city with a defence system consisting of walls and ramparts (Kingdom of the Netherlands, 2010).

In the most recent Operational Guidelines (2008) Criterion (ii) and (iv) have remained unchanged. Criterion (v), however, has changed: "nominated properties shall be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change" (UNESCO, 2008).

4. Attributes and Values

The historic inner city of Willemstad has been enlisted under criteria (ii), (iv) and (v), which, in accordance with the Operational Guidelines of 2008, reflect respectively social value, historic value and a link between social and ecological values (Pereira Roders & van Oers, 2011). These three cultural values are therefore required to justify the OUV of Willemstad. Still, additional values have been identified in the studied documents.

In the description of the Tentative List Submission Form of the urban areas of Punda, Pietermaai, Scharloo and Otrobanda, together with the harbour of St Anna Bay, are the identified attributes seen in Figure 1 and 2. Although the harbour has been mentioned as an attribute as well, only the urban areas have been substantiated with values. In total, the ensemble is ascribed seven of the eight values, excluding the aesthetic value. The social (Dutch), historic (Dutch colonial architecture and town planning) and ecological values (bound to the north by a natural ridge) required for the criteria have also been found referenced (Speckens, 2011).

The nomination file clarifies that the attributes are both the urban fabric and architecture of the four urban districts of Punda, Pietermaai, Otrobanda and Scharloo together with the harbour St Anna Bay (Figure 1 and Figure 2). Punda is divided into Fort Amsterdam and Old Willemstad. All eight values have been identified. Supplementary to the Tentative List Submission Form, the dissimilarities of the urban fabric and architecture of the four urban districts is found emphasized; all of them have different social (e.g. Dutch, Portuguese, elite and working-class) and historic values (e.g. grid, *Kura*, alley and linear structure) (Speckens, 2011).

No new attributes and values have been identified in the advisory body evaluation by ICOMOS. It was mainly found to paraphrase parts of the nomination file. However, in the paraphrased information, the attributes are reduced to 'the historic inner city of Willemstad'. While the social (Dutch, European, local, Caribbean) and historical values (European town-planning and architectural traditions) are clearly mentioned, the ecological value has disappeared (Speckens, 2011).

The decision adopted by the World Heritage Committee defines the ensemble of the Historic inner city of Willemstad as the attribute. With the information from the previous documents it is clear that ensemble means both urban fabric and architecture. However within this short text, which is currently the official justification of the criteria, 'ensemble' means 'entity'. Thus, again, the social (European, multicultural community) and historical values (European colonial ensemble, illustrates) are mentioned, while the ecological value is absent (Speckens, 2011).

The brief description included in the periodic report identified the urban structure and the architecture as attributes. The districts cannot be identified as attributes since no values have been ascribed. The architecture is ascribed to the social (European, Netherlands, Spanish, Portuguese) and historic values (European urban-planning concepts, styles from the Netherlands); the ecological value is still found missing (Speckens, 2011).

The Retrospective Statement of OUV identifies the urban structure and architecture of the different districts. Unfortunately, the districts have not been identified individually; only Punda has been mentioned. However, morphology and architecture are ascribed to the social (Dutch, Afro-American, Iberian, Caribbean), historic (colonial town planning and architecture) and ecological values (separated by the open waters of the harbour, the gradual influence of the tropical climate) (Speckens, 2011).

5. Zoning regulations

For a property to qualify for the inscription on the WH list, the State Parties have to provide measures to protect and manage the property (UNESCO, 2008). In 1995, during the nomination stage, the government of Curaçao provided zoning regulations concerning the conservation area. They are

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defined in the Island Development Plan (EOP) and enclose rules for restoration, renovation and new developments in the historic inner city of Willemstad. Applications for building permits are subject to provisions regarding allotment, construction height, façade width and layout, roof shape and building materials (Executive Council, 1995a).

Paragraph 4 of the zoning regulations specifies the provisions in more detail. The façade has to have evenly distributed vertical windows, plus both horizontal and vertical façade articulation. In the case of a façade wider than 15 meters, it must have a dominating vertical articulation. If the building has several floors, the façade must have dominating horizontal articulation. The building materials are limited to stone and plaster; in areas dominated by timber, wood is also accepted. All façades must be painted. The roof has to be made of tiles, painted roof sheets or other high-quality materials (Executive Council, 1995a).

However, the demands regarding the allotment, construction height, façade width and roof shape are limited to be "consistent with the existing urban fabric and architecture" (Executive Council, 1995a).

These zoning regulations are accompanied by a preceding appendix: the Island Development Plan (EOP), Part 1. Chapter 4 describes the historic, current and future development of the historic-inner city (Executive Council, 1995b). It describes four urban districts (see Figure 1) with their (former) functions (economic value), the traditions of the infilling of water (ecological value), the urban structures (historic value), important political decisions (political value) and the social identities (social value), similarly to the documents discussed in Section 3 (Speckens, 2011). However no direct link has been made between the actual zoning regulations and the appendix. Therefore the translation from the cultural values to the zoning regulations is still found lacking.

Conclusions

The historic inner city of Willemstad OUV was acknowledged by the World Heritage Committee when it was inscribed on the World Heritage List. It has been enlisted under criteria (ii), (iv) and (v), which reflect respectively social value, historic value and a link between social and ecological values. These cultural values are important to consider while developing in the historic inner city of Willemstad and should therefore be integrated in the zoning regulations.

The attributes and cultural values have been accurately defined in the nomination file. They are the urban fabric and architecture of Punda, Pietermaai, Otrobanda and Scharloo, the four districts of the historic inner city of Willemstad. These districts are linked by natural bodies of water. Punda is characterized by a Dutch urban structure and Dutch architecture, while Otrobanda is typified as a working-class area with both a *Kura* (open compound) and a dense alley structure. Pietermaai is described as a linear urban development for the social elite and Scharloo is characterized by an open street layout with luxurious dwellings owned by Jewish merchants. The initial architecture was Dutch architecture of the 16th and 17th centuries, which gradually changed as a result of the climate and the introduction of new architectural elements by the Portuguese, Spaniards and Africans.

However, the zoning regulations only mention the historic inner city of Willemstad. No distinction has been made between the districts of Punda, Pietermaai, Otrobanda and Scharloo, though the social and historic differences between them have been found emphasized in the varied justifications of its OUV.

The regulations regarding the allotment, construction height and façade width and roof shape are limited to the guidance of being 'consistent with the existing urban fabric and architecture'. Even though they do not interfere with the characteristics of the districts, they barely help in their clarification. Instead, the regulations regarding façade layout and building materials are more specific. They cannot, however, support the varied nature of the four districts since they are equal throughout the entire historic inner city. Nothing in the zoning regulations indicates that the social, historic and ecologic values that evidence the OUV of the historic inner city of Willemstad are being protected. Therefore, this leads us to the final conclusion that the current zoning regulations do not guarantee that new urban and architectural developments respect the OUV of the historic inner city of Willemstad.

Enhancements to the zoning regulations

First and foremost, the districts Punda, Pietermaai, Otrobanda and Scharloo should have their own zoning regulations. These zoning regulations could enter at length into the social, historic and ecologic values of a district without constraining

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another district. However, further research needs to be undertaken to determine the physical attributes of these distinct districts, in order to translate them into guides or rules.

What characterizes the architecture and morphology of Punda as 'Dutch'? How has the climate changed the architecture and morphology in Willemstad? What is a *Kura* structure, exactly? How dense is the alley structure? How is the elite status of Pietermaai readable in its architecture? What makes the architecture of Scharloo luxurious? To succeed on its protection, questions like these have to be answered to enable the translation between the words describing the OUV and the physical attributes of the historic inner city of Willemstad.

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Endnotes

[1] 'Dutch' is a social value; as it expresses cultural identity.

[2] 'Colonial' is a political value; as it refers to strategies and policies.

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[3] Dutch colonial architecture and town planning' are both historic values; as they are stylistic movements.

[4] 'From the period of the European expansion' is an age value; as it reflects the period of development.

[5] 'Residential' is a economic value; as it explains the (former) use.

[6] 'Bound by a natural ridge' is an ecological value; as it defines interaction between the natural and artificial.

[7] 'Local materials' is a scientific value; as it indicates skilfulness within techniques and materials.

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Designing an active monitoring system: the planned conservation project and Monza and Brianza province

Stefano Della Torre[1] & Rossella Moioli[2]

Abstract

The paper presents a theoretical discussion illustrated by a case study concerning an ongoing project. There is some research about the condition of survey and assessment, and a lot of literature about the performances of sites as assets for cultural tourism. The need is for research concerning direct and indirect impacts of investments made in built heritage. It is necessary to investigate which are the expected impacts in order to understand how to measure them. There is a trend in Europe, especially in Italy, to fund restorations under the condition that they have been arranged inside wide-area projects; the aim being to set up sustainable management plans. In any preservation program and/or development project, relevant preconditions to social and economic sustainability are the quality of conservation activities and the 'true involvement' of stakeholders. Then two points emerge: the dynamic nature of significance, understood in the frame of cultural relativism; and the strategic importance of a shift in procedures towards preventive conservation, as the old paradigm centred on restoration proves to no longer be satisfactory. A control of the full process is needed, involving local communities as well as scientific networks in prevention and maintenance in a continuous caring investigation. The case study is a development project in Northern Italy, which identifies culture as a catalyst for innovation, and encompasses a set of different actions, including the setting of a 'front office' for planned maintenance and monitoring of buildings and sites, implementing a multi-level and multi-user information system. The project involved from the very beginning architects, restorers and builders. Implementing the experience developed by *Monumentenwacht Vlaanderen*, an information system is adopted to monitor the state of conservation of built heritage, as well as identification of a set to monitor the stakeholders' involvement and the dissemination of new paradigms.

Keywords: local development, significance, preventive conservation

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Identifying what has to be measured and monitored

There is a trend in Europe, especially in Italy, towards funding restorations under the condition that they have been arranged inside wide-area projects, the aim being to set up sustainable management plans, taking into account the economic performances of restored sites seen as belonging to territorial systems. This tendency is generally proposed because of increasing scarcity of resources, calling for scale economies producing more efficiency in keeping the benefits given by expensive restoration works. The trend has been reinforced also by the diffusion of management plans for sites inscribed in World Heritage List (Feilden and Jokilehto, 1998). This may be an important step towards the dissemination of integrated conservation paradigms, as well as towards a long-term vision in conservation. Moreover, in this way managerial culture enters into preservation practice, as a management plan requires a monitoring plan; that is, a clear set of targets, indicators and timetables.

This paper is focused on the theoretical premises to be clarified before measuring the performance of regional development projects that include actions of conservation of built cultural heritage. The first problem is to identify the expected impacts, as currently these wide-area projects are designed with different visions and aims. It is necessary to discuss in depth those that are targets and their nature, in order to understand how to make them measurable.

The most obvious impacts could be expected in terms of enhancing the state of conservation of heritage buildings, and there exist experiences and scholarly debate about condition survey and assessment, so that there is a background for the evaluation of the performance in terms of material conservation. Condition assessment is meant as the first step to diagnosis: the use of a medical language reveals the way of thinking. Medicine is a popular metaphor for restoration (Schueremans *et al.*, 2007;

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Treccani, 1996). For example, a staging system has been proposed based on analogy between the approach to condition assessment and conservation of stone structures and the classification and treatment determination of cancer patients (Warke *et al.* 2003).

It is worthwhile to notice that, from an economic point of view, pure conservation is no longer deemed to be a good reason to spend public money; many arguments show the high cost of restoration, the always increasing demand for funding, the often arbitrary definition of values and priorities and the uncertainty of having sufficient revenue to cover costs of maintenance and property management (Benahoumou, 1996). Nevertheless a general acknowledgement can be observed, in economic literature as well as in public policies, that built heritage assets, environmental assets and cultural activities produce social benefits: identity, cohesion, inclusion, openness to innovation, etc. Grant programs are still justified by a set of arguments, focusing on increased economic value (income creation, job creation, regional economic growth, forces for innovation) and referring to non-market values (aesthetic, cultural, and social value through to existence value), sometimes recalling the notion of monuments as merit goods, sometimes appreciating wide-area projects as experiments of devolution and subsidization in which minor or ethnical heritage is valorized along with local economic resources.

There is already a lot of literature about the performance of sites as assets for cultural tourism. Nevertheless, scholars suggest that there is a need for further research (Mäntysalo and Schmidt-Thomé, 2009) concerning direct and indirect impacts on the local and regional economy and of investments made on built heritage. Impacts go far beyond tourism, and strategies need to be complex and to implement a set of tools (Schuster, 1997).

Nevertheless in many cases development projects have proved to have poor vision, targeting (highly uncertain) direct income, and incapable of taking into account the quality of conservation activities and the 'true involvement' of stakeholders. Underscoring 'true involvement' we mean that it ought to entail a change in attitude and in mind, and this change is one of the most relevant preconditions to social and economic sustainability of any preservation program and/or development project.

The 'learning region' model has been implemented to understand this kind of intangible impact of projects focused on tangible heritage. In *Regional Economy:*

> "the complexity and systemic nature of innovation […] entails that learning is an interactive process. Put otherwise, learning springs from cooperation and interaction between firms and the local scientific system, between different functions within the firm, between producer and customers, and between firms and the social and institutional structure" (Capello, 2007, p. 201).

In *Economy of Culture* the shift is from projects exploiting only tourism as a way of boosting heritage potential as value generator, to the implementation of models in which culture gets a new role as a catalyst of innovation. Although projects of this nature require a very long time to be developed, some experiences and lessons learned can already be cited (Putignano, 2009). Two points seem to emerge: a) the dynamic nature of significance, and b) the strategic importance of a shift in procedures towards preventive conservation.

In our experience, a conservation project implies a free and deep revision of knowledge of the significance of a property, an urban sector or a site. The task of restoration is not to confirm established values, but to discover new meanings, and it often gives the floor to different and relative interpretations. Conservation itself is tasked with lending to future generations the integrity of cultural heritage in order to make possible different understandings. The fact that significance may be understood in the frame of cultural relativism is powerful in driving preservation out of old schemes and putting it in the forefront of activities that work for change. It may sound paradoxical, but people in conservation know very well how much openness and creativity is required to solve technical problems.

Furthermore, continuous investigation entails methodical doubt regarding the presentation of sites; in other words it requires, as a necessary consequence, a rich production of new studies calling the attention of different kinds of people. This flexibility in presentation is required to get people involved, thus creating social inclusion through heritage, and this deserves to be underlined as well. Therefore research is needed to design functional indicators of these dynamics, seldom acknowledged as the key impact of preservation actions.

Given these theoretical premises, the old paradigm centred on restoration (that is, identifying conservation with just repair and works which, in the case of architecture, include adaptive reuse) proves to

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no longer be satisfactory. Control of the full process is needed, including prevention, maintenance and a continuous caring investigation, or curious care. The shift from restoration to preventive (or planned) conservation is the answer to this need.

The point is that measurement of conservation performances is not to be considered complete after one measurement activity, as what matters is the trend achieved by changing policies. That is why it is not enough to collect data through an external measuring agency, and the necessary monitoring system has to involve players (local communities as well as scientific networks) and to create the conditions for continuous care. That is, the monitoring system must be 'active'.

The best-known examples of such 'active systems' have been set up by *Monumentenwacht* organizations in some European countries (Cebron Lipovec and Van Balen, 2010). These experiences have a relevant output in terms of condition assessment practices and information management, but what is more relevant here is the strategy of getting people involved. The Netherlands as well as Flemish Provinces show impressive figures, demonstrating an increasing number of private owners who join the program, increasing networking at national and international level, increasing research, and even the setting of the UNESCO Chair of preventive conservation, monitoring and maintenance of architectural heritage at the Catholic University in Leuven.

Among the issues heralded by this movement in the scientific community, we want to underscore the dissemination of an attitude to risk management, and in general to a long term and integrated vision. In the past, up until recent times, restoration was addressed to the past, not to the future; condition assessment was not carried out thinking in terms of processes, but of 'state'; namely the 'state of conservation'. Behind the priority now given to prevention, monitoring and maintenance there is a deep change of philosophical references 'from being to becoming' (Della Torre, 1999).

The shift from restoration to 'planned conservation' has relevant economic outputs, as the new paradigm entails scale economies and cost reduction, and, above all, it moves investments to more qualified activities (survey, monitoring, diagnostics, data filing, information management, research, communication, etc.). A discussion concentrating on the reduction of preservation costs would be very complex and perhaps misleading, because it would put aside many relevant dimensions of heritage preservation. The objective is rather to focus on using given resources in a way that yields the maximum of positive outputs in a local development process: that is, economic impact and local growth, but also externalities oriented to catalyze innovation attitudes. Planned conservation entails process management, which contributes to harvesting these positive externalities and strengthening the attitude to innovation of the regional system (Della Torre, 2010).

As a provisional conclusion we can say that cultural heritage conservation activities give performances on a double level: there is the direct output, to be measured in terms of significance and of preparedness to risk, and an outcome, including positive externalities, to be measured in terms of preconditions to innovation. The bulk of our thesis is that 'monitoring conservation performance' (i.e. saying attention should be paid at any time and by everybody to the quality of conservation activities), produces the best contribution heritage sector can give to endogenous development.

1. The case study

In the case study we deal with a development project in Northern Italy, namely in the new 'Monza and Brianza' province: a part of Milan province that has ultimately assumed administrative autonomy because of its size and particularity. To avoid making mistakes, it is worthwhile to explain the meaning of 'development' in this case. It is less a problem of job creation and income recovery, and more an issue of improving the quality of the local system and building new attitudes. Monza and Brianza is an already quite rich province whose current development model risks forgetting or misusing a rich and meaningful territorial heritage. Monza, well known worldwide for car racing more than for the Imperial Villa and its historic park, is located in the centre of a territory whose economy produces wealth by means of a network of small industries, while the beautiful landscape is threatened by uncontrolled sprawl. The greatest strength of the territory was deemed to be innovation in design, but in few years rapid changes in the global scenario came to threaten the very extent of the local system. The need is felt for new tools to strengthen local identity and to make the development model more stable and sustainable.

The Monza and Brianza Cultural District project, developed following the system-wide model proposed by Pier Luigi Sacco (Sacco *et al.*, 2008)[1], is one

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of the 11 projects funded by the Cariplo Foundation within the matching-grant program 'Cultural districts, economic wheels for the territory'. The call asserted that:

> "the enhancement process, which is based on restorations of buildings at risk, or of buildings which need a functional adjustment, will be conditional on the way those restorations will be realized and presented […] Therefore, it is important that the districts choose course of action suitable to guarantee a continuous impulse towards choices of high profile, in order to maximize the interventions on built cultural heritage so as to the growth of human capital, to the production and dissemination of knowledge, to the update and the strengthening of individual and collective sensibility, to the implementation of more up-to-date methodologies for the protection of Built Cultural Heritage (Planned Conservation)".

A dialogue with stakeholders has been started, aiming at involving them in the matching grants process: the particularity of the proposed strategy was to set up practices making the conservation sector able to give a performance as a catalyst for innovation.

Four buildings have been selected to have their restoration and reuse financed: Palazzo Borromeo Arese, Cesano Maderno; Ca' dei Bossi, Biassono; Castello Da Corte, Bellusco (Figure 1); and ex-Filanda, Sulbiate. They have been chosen according to a set of specific criteria. Some of these criteria are almost obvious: location and accessibility, typological variety, economic feasibility, quality of management plan, or functions profitable to designed territorial system. Not so obvious is the idea of privileging the quality of the restoration process (the program, the project, survey, the diagnostics, the procurement, etc.), the direct commitment of public officers, an innovative maintenance plan or an educational plan to be developed together with the restoration work.

Figure 1. Bellusco (MB. Italy), Castello da Corte (Source: photo Rossella Moioli).

The project has an original approach as it valorizes not only the benefits offered by reused properties, but the externalities produced by restoration works as they are being carried on. The important matter is to acknowledge and to manage positive externalities, like new capabilities disseminated among players and officers, or the exemplarity of best practices in restoration techniques and soft solutions for energy efficiency in existing buildings. Perhaps the most relevant issue will be the attitude to networking between the administrative system, entrepreneurs, cultural associations, research institutes, and the educational system (Canziani and Moioli, 2010).

Among the designed actions, very prominent is the proposal of setting up a business unit named 'Front Office for Planned Conservation', offering to the territory services for planned maintenance and monitoring of buildings and sites and implementing a multi-level and multi-user information system in which information relevant to heritage building conservation can be stored and shared. This 'Front Office' has to play an active role in promoting a change in the attitude of stakeholders. In order to achieve this target, the project was born not as a top-down initiative, but involved from the very beginning architects, restorers and builders, and the organization of educational programs, programming meetings and guided tours.

The core business of the 'Front Office' is the maintenance of historic buildings, starting from the ones restored within the project, and offering consultancy and services for maintenance to public and private owners, according to a logic of voluntary enrolment stimulated by scale economies and emulation. Inside the 'Front Office' structure, the Building Entrepreneurs Association (*Assimpredil-ANCE*) will organize educational programs for workers, and will also make available its own legal office to prevent procurement problems as this can be very hard in Italy especially in work concerning heritage buildings (Guccio and Rizzo, 2010). The *Istituto per la Storia dell'Arte Lombarda*, a highly influential institution at international level, recently transferred from Milan to the small village of Cesano Maderno, and will feed the catalogue of heritage items and educational activities offered to the public. Therefore different stakeholders such as contractors, art historians, public administrators are forced to come

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closer and work together. This may lead to forms of mutual cultivation and cross fertilization which up until today have scarcely been practiced, giving culture the role envisaged by the project, that is to promote exchange and innovation.

Implementing the *Monumentenwacht Vlaanderen* practices (Stulens and Meul, 2010; Verpoest and Stulens, 2006), the 'Front Office' adopts an information system to monitor the state of conservation of built heritage, but it also identifies a set of indicators to monitor the involvement of stakeholders and the diffusion of new paradigms, as the project vision has recognized which are the real drivers for an improvement of preservation practices in the direction of sustainability.

The indicators have been chosen referring to a list of seven targets: 1) growth of human capital; 2) development of innovative skills in the conservation sector; 3) dissemination of a culture of preventive and planned conservation; 4) creation of a new sector in the market; 5) increase of the quality in restoration and maintenance works on built cultural heritage; 6) implementation of advanced techniques (diagnostics, monitoring, ICT, skilled workers, project organization, etc.); and 7) networking between municipalities – research institutes – enterprises. The main functions carried out by the 'Front Office' are related to one or more targets.

Mentoring municipalities, architects and contractors on restoration projects and maintenance plans, for example, can be linked to targets 1 and 2 (with quantitative indexes given by the number of customers and the amount of investment for conservation-related activities), as well as to targets 3 and 7 (with qualitative indexes expressed by means of questionnaires).

Cataloguing built cultural heritage contributes to target 6; these activities can be monitored both by quantitative indexes (number of forms filled) as well as by qualitative evaluations (quality of information management, public availability of data).

Educational activities will be very important in the strategy, working towards all targets. Quantitative indexes (number of people involved in the activities, number of people who implemented acquired competencies on their jobs) should measure the impacts relevant to targets 1 and 2; it should be possible to monitor the more qualitative effects related to the other targets by means of questionnaires.

By monitoring the number of events, attendance, the number of related news items (in the press, media and internet) and the number of publications issued, it will be possible to evaluate the contribution given by the 'Front Office' towards achieving targets 1 and 3; target 5, expressly devoted to 'quality', needs a more qualitative approach, evaluating contents and inquiring how efficiently they are communicated to stakeholders.

Behind this monitoring system, the information system created and managed by the business unit will work as a tool for measuring social impacts as well as for working directly to update condition assessments. Additionally, the information system is relevant to targets 3 as a tool for dissemination (so that the number of contacts and the amount of data will be significant indices), and to target 6 as it contributes to make people in conservation more accustomed to advanced techniques: this qualitative impact should be measured as a kind of 'customer satisfaction'.

As at the time of writing the project has just had its kick-off; we cannot yet speak of lessons learned in the monitoring phase. Nevertheless, it is worthwhile to remark that already in the early stages of developing the project it has proved to be definitely useful to express targets. Furthermore, all involved stakeholders have reached a better understanding of the process thanks to the set of indicators, and developed their own awareness knowing that the project will be monitored along with its impacts.

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Endnotes

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Methodology for monitoring the surrounding area of historic gardens

Inês El-Jaick Andrade[1]

Abstract

In the face of growing environmental problems it has become important to debate and seek out new perspectives for the planning and management of urban vegetation in cities. Through the analysis of the concepts of visibility and ambience, the article studies the impact that surrounding areas play in historic gardens and proposes an investigation methodology. The proposed methodology advocates the incorporation of diagnosis, forecasts and monitoring of impacts.

Keywords: historic environment, historic sites, preservation

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Monitoring and preventive conservation: applied principles in urban conservation

Throughout the development of the preservation discipline for historical and artistic monuments, the surrounding vicinity of the protected property already played a distinct importance and took different names. Recognition of the relevance of the vicinity of the heritage property is still very recent in Brazil, with regard to the comprehension of its influence and its respective management. Initially this has been due to the cultural context of implementation of our 1937 cultural legislation. The first federal listing by the *Instituto do Patrimônio Histórico e Artístico Nacional* (IPHAN) was not introduced with a definition of polygonal delimitation of the surrounding area, but there has prevailed the distinct expression, attributed to Lúcio Costa, that the surrounding area would be 'as far as the eye can see'.

There are few good examples that exist which incorporate this disposition, except for in the case of historic cities, but in practice, their delimitation by polygonal fields is based simply on visual fields and height measurement templates that have proven to be inefficient. It must be recognized that spatial and social contexts contribute to shape a particular urban and architectural identity for each site, that is, its unique ambience.

In order to not jeopardize the preservation of heritage value, it is necessary to establish clear guidelines for the management tools for the surrounding area, to be applied daily by the competent agencies for historic heritage. Thus, we propose a methodology for identifying and performing actions in the area surrounding the historic garden, that considers the impacts on the environmental dimension of the heritage property, their legibility and their historic ambiance. To assist in the impact investigation research methodology, this study supports the importance of the role of scientific inventory.

Inventory is a research method that – because it is based on systematic, comparative analysis and levels of distinct detail – is not restricted to a simple registration function or classification. It is a useful tool to analyze the property in terms of historical, aesthetic, artistic, formal and technical aspects. When done accurately, it allows a more detailed reading of the property and its transformations. It is argued that this documentation provides the ability to construct a general framework of the state of conservation and preservation of the property, and therefore it should be performed as a routine practice that precedes and follows any intervention on historic heritage.

1. Role of the surrounding area and the paths taken for its normalization

In Brazil, until the mid-twentieth century, the term 'neighbourhood' was used to refer to the surrounding area of federal landmark properties. The application of the term was officially incorporated in the 18th article of the *Decreto-lei* nº25/1937, which was to ensure visibility for the property landmarks in the area of its neighbourhood.[1]

Thus, the concept of neighbourhood, then confined to the views from the protected site and the bordering roads and neighbouring blocks, closely following the concept of 'immediate environment' covered under the principles of scientific restoration, as stated in the 1931 *Athens Charter*, and that influenced specific European legislation for the protection of specific assets of artistic and historical

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interest. The maintenance of good visibility of the property is a chosen attribute considered essential to safeguarding its historical and artistic value.

Over time, the concept of neighbourhood has been replaced by the use of the term 'surrounding area'. In Brazil this was coined by the technicians of *Instituto do Patrimônio Histórico e Artístico Nacional* (IPHAN) around the 1970s and consolidated in the 1980s. It was officially adopted by the Federal Government in *Portaria* nº5/1981.[2] Together with the technical term change there was included, in addition to visibility, another attribute: the preservation of the historic ambiance of declared historic sites. The international normative documents[3] were essential in this construction of the identity of the surrounding areas. Currently, the cultural institutions of the different spheres of influence use the new term and its attributes; however, few use standardized instruments for delimitation of polygons of surrounding areas of heritage property. Overall, the cultural legislation focuses on punishment rather than defining and delimiting the role of the surrounding areas in the preservation of heritage property.

1.1. Importance of the surrounding areas for historic sites

The choice of subject matter, historic gardens, was made because it stands out among the categories of urban environmental heritage. It presents aspects including natural heritage and its close ties with the quality of life in the city. Thus, the degradation of urban green spaces represents not only losses to environmental quality and urban environmental quality (micro-climate), but also gaps in our historical past and commitment to our patrimonial heritage.

Within the history of the ideology of preservation, the definition of separate guidelines for conservation and restoration of historic gardens date back to the end of the 1970s. The *Florence Charter* (1981, Art.3) identifies that the historic garden is one 'living monument', composed of both perishable and renewable materials. It is well known that, when designing with vegetation, it works in "direct complicity with living beings that grow and develop through the passage of time, creating and recreating spaces for each new season" (Macedo, 1982, p. 17). Thus, the site is essentially moving harmoniously, as much in relation to its time as to its space (changes in its surrounding areas). Even the most constant elements, such as its soil (and subsoil) and hydrography, undergo gradual changes related to the evolution cycle.

The conservation of the aesthetic and physical integrity of the garden is essential for the correct reading of history, that is, recognition of the historic site as provided by cultural significance. Visual intrusions outside of the garden reduce the enjoyment of the historic site; however, the greater commitment is to the scenic view from inside to the outside of the garden. Degradation is not, therefore, only the loss of area or the substance of the historic garden but also its decontextualization – an occasion when its relation to the historic environment is ignored. The hollowing out of context directly affects the quality of legibility and of ambiance. Thus, the environment must ensure the physical protection (ambiance) and the significance (legibility) of the monument.

1.2. Visibility and Ambiance

The method for studying impact and its causes restricts itself to historical surveys, morphology, and sensory perception (soil and topography, winds and climate, vegetation and wildlife, light, sound and water) combined with the identification of pathologies that compromise the identity and integrity of the site of historic interest. Measurement and utilization of quantitative indicators were discarded because there are still no studies focused on the investigation of impact indicators with reference to their preexistence (Romero, 2005); so it is necessary to produce them.[4]

The study of cognition and the perception of space have a long tradition in psychology, having been introduced in studies of urban architectural environment by Kevin Lynch (1999) and by Gordon Cullen (1983) in the 1960s. Cullen's theory about the 'art of relationship' of the urban environment argues that each fragment in the built environment can intrinsically present visual characteristics that play a fundamental role toward the construction of the identity of the 'local' (or mental image) of the urban site. The factors that contribute to the creation of an environment will range "from the buildings to the announcements and the traffic, passing through the trees, through the water, throughout all of nature and, ultimately intertwining those elements in such a way to arouse emotion or interest" (Cullen, 1983, p. 10). Without a thorough examination of those visual characteristics, these potentially might be overlooked and destroyed by urban interventions. This investigation of the relationship between environmental elements contributes to the definition of the current ambiance and of maintenance actions or intervention for the construction of the ambiance that should be perpetuated.

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The concept of legibility, proposed as a substitute to the usual concept of 'visibility', is the attribute of visual quality, that is to say, the ease with which the components can be recognized and organized into a coherent pattern (Lynch, 1999). This attribute can be easily interpreted as the concept of preservation of integrity of the heritage property in its context of urban setting. From a favourable visual framework (visibility) and contextualization (signalling and accessibility) of the heritage property it can be possible to have a spatial reading of the site, that is, to put forth an assessment of the state of preservation of the historic site inside its respective urban environment.

The replacement proposal for the term is grounded in the usual application of 'visibility'. This tends to be simplified and does not accomplish its ultimate goal – access to the monument testimony. The content of the 'visibility' has already been discussed in *Decreto* nº25/1937, and it was closely linked to the visual pollution caused by signs, banners, billboards, and bright or vibrant colours incompatible with the neighbourhood context. In the past, to ensure the integrity of the heritage property, the monuments were 'released' on the urban environment through open spaces. Currently, the visual relationship between the monument and the immediate vicinity is itself based in the identification of significant heritage values to therefore define visibility requirements and enjoyment of the monument reading. For this reason, it is proposed to change the terminology to encompass not only the question of visual intrusion, but also the integrity parameters of the declared heritage in its site.

2. Proposed methodology for monitoring of the surrounding areas of historic sites

2.1. Identification and characterization of the environmental dimension

The objective of this first step of the proposed study is to analyze the attributes of the site of historic interest. This corresponds to a general analysis of historic development of the zone area where the property is located, its cultural significance (historic mark on the city and local memory) and the importance of urban planning that relates to both the integration of heritage property with the landscape, as well as to aesthetic perspectives (landmarks and skylines). For this it is necessary to investigate the basic components of the environmental dimension of the site of the historic garden.

It is understood that the basic components of the environmental dimension are legibility and ambiance. To identify them it is necessary to conduct architectural and historic surveys; including the collection of iconographic and cartographic material (registration of the garden materials, aerial photographs and maps), surveys of legislation in the area (land use and restrictions), identification of civil society groups that operate in the area (to understand the cultural significance of the historic garden and also identify for partners to its preservation) and study of current photographic documentation. Additionally, it is advocated to prepare inventories that use urban environment visual analysis from the site of the monument as a conceptual tool from the surveys and study of the surrounding areas of the sites of historic interest.

2.2. Criteria for the delimitation of the surrounding area

In the second step of the study, there should be a survey of the physical environment of the site of historic interest, based on three variables: biotic, landscaping, and socioeconomic. The biotic variants are the climate, the geology, geomorphology, soil and subsoil, the water cycle, vegetation, wildlife, scenic resources, and noise. Socioeconomic variables are the use and the exploitation of the territory, as well as service infrastructure, accessibility, sanitation, air quality and the transport system. Already, the landscape variables are linked to the qualitative aspect of the place, that is, the recognition of the heritage value of the designated cultural property.

The methodology presented for the impact on the surrounding area proposes to create a file, similar to studies already conducted by IPHAN (2007), that seeks to identify the boundaries of the surrounding area and establish preventive measures and control of alterations that interfere with the environmental dimension of the declared historic site. The structure of this assessment method proposal is based on an integrative approach to landscape planning, in which the surroundings form part of the ecosystem of the declared historic site.

As a starting point, theoretically, is the proposal to use the conventional distance of 500 metres to define the close surrounding area, not as an area of tutelage, but as an area for study. For the delimitation of the surrounding area it is essential that the positive and negative charges imposed on the declared

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historic site are studied using the urban pathology inventory identified in the sites of historic interest. The importance of demarcating a polygon of the vicinity in the declaration, at the time of registration of heritage property, is stressed so that, in the short term, the correct perimeter based on these studies proposed by the methodology is ratified. Combined with this, one should choose to review this at the time of a new intervention in the surrounding area.

To inventory the conditions of the area surrounding the heritage property it is necessary to conduct direct observations, preferably supported by impact indicators, seeking to collect data on the state of conservation and preservation of the historic site. The existence of negative impacts is evidenced by the alteration of the typological traits of the heritage property, either by alteration of its structure or its components. Generally, the impacts are the results of project implementations in the historic site vicinity that overtax current conditions in three variables: (1) biotic, through the impact of excessive sealing of the land (soil and subsoil), height measurement templates (projected shadow), the increase of temperature and humidity (climate), the change in ground water (water), increased atmospheric pollution (air), the increase of resonance pollution (noise), the reduction of illumination (vegetation) and the migration of local wildlife; (2) the landscape, by physical, aesthetic, and sensory impacts on the ordination of the urban landscape; (3) economic and social variables, through the overload or under-utilization of public facilities.

It is not sufficient just to identify the impacts, but it is important to identify the causative agents of degradation and contamination. Along with these we should perform an assessment of its magnitude, for it is this that will indicate if the impact is very significant or if it can be ignored due to its minor significance. What characterizes the impact is not any change in the environment properties, but the changes that could inhibit equilibrium of the fundamental relationships of the environment, and that exceed the environment absorption capacity.

For the analysis of biotic variables, the urban landscape can be divided into six components: wind and climate; vegetation; water; topology and subsoil; sound; and light. Among the pathologies directly related to wind and climate that indicate changes in urban spatial thermal structure, there are: temperature changes, directional and intensity changes in the winds, and increased local precipitation. Some of the most usual pathologies of impact on the landscape and subsoil of the sites are an increase in soil acidity altering its fertility, and a change in drainage capacity of ground water.

These changes may be caused by land reshaping (land cutting and landfill), soil erosion on hills, pollution and contamination of soil by toxic waste, the reduction of permeable areas in the immediate vicinity area and by the mass movement caused by excessive vibration due to vehicles on traffic routes in the immediate vicinity, as well as air routes and by excessive vertical load exerted by the building foundations in the surrounding area of the historic garden. Among the water-related pathologies are increase in flooding, silting of lakes and rotting of individual plant roots. These can be the consequence of urban infrastructure projects for correction and channelling of water courses, underground construction in the immediate area that degrades and pollutes the groundwater or, in the same manner, by the pollution of waterways, groundwater for sewers, and untreated water used in production.

Among the biotic variables, the study of noise level – inside and outside of the garden – is very important, although its application is not usual. The reduction of background noise propagation depends on the capacity of sound absorption material, the quantity and the arrangement of vegetation and topography. The vegetal mass serves as an acoustic barrier, diminishing its intensity as a result of sound absorption by the leaves. The vegetation reduces the intensity of sound when it is in its path, but although a good absorber it is a bad insulator. It is necessary, therefore, to have a great mass of trees for isolation. Monitoring the impact of urban noise caused by vehicle traffic, along with studies of airborne (suspended) pollutants, can contribute to the implementation of a policy of sustainable urban mobility, that is, in the restructuring of the local road system.[5]

The amount of light is not as important in public spaces as quality. Light – whether natural or artificial – plays an important role in the formation of sensory data of the landscape. The plant height and plant age, time of year, type of foliage of the tree species, and disposition of vegetation coverage, as well as the area of visible celestial dome, are the variables that modify the illumination above the urban district (Mascaró, 1996; Romero, 2001). Shadow has a decisive role in the perception of urban districts;:those that give rhythm (shadows that differ in sizes), or emphasis (shadows highlighting elements) or contrast (shadows with multiple tonality).

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In the city of Rio de Janeiro, the *Decreto* nº 20.504 of 13/09/2001 regulates the Law 47 of 01/12/2000 regarding the criteria for analysis and maximum permitted limits for shading of buildings on the municipal beaches.[6] Although this law is restricted to the beaches, the simulation of shaded areas is important also to identify the level of solar illumination blocking in the historic garden. In this study of shadows, the decree in its 3rd article establishes that the documentation submitted must contain graphic projection of the building in the strip of beach sand on the spring equinox (September 23) and the summer solstice (December 22) at the following hourly intervals: 6, 7, 8, 9, 10, 15, 16, 17, 18 and 19 hours. The decree also notes that the shading of buildings when they are included in the shadowed areas of any topographical accidents or of buildings regulated by the municipality will not be taken into account. This study of shadows can be used to identify the causes of pathologies in the historic site, but also to assess the introduction of changes to the area height limit template and its impact on the garden.

The process of urbanization also causes violations in the landscape – the landscape variables – in two categories: visual and functional violations. In the visual landscape variants there are intrusive visual elements at the heritage property like commercial signs, walls and trees that jeopardize their own fruition. At an advanced stage, the impact of visual intrusion can be perceived in the skyline. Therefore, it is necessary to preserve the panoramic views of the historic garden.

However, it is not always easy to predict visual intrusion, because beyond being restricted to few cases, the study of visual axes is based only on studies of measurement templates (elevations) and serial visions. The studies of recent visual axes, of historic ones such as Ouro Preto (located in the state of Minas Gerais, Brazil), have used the resources of geoprocessing for the management of urban and architectural heritage (Moura, 2002). Those studies, which follow principles of the theory of perception and spatial cognition, use topographical and digital resources to generate a digital model of the study area. On the basis of the choice of significant points of the urban configuration and of the greatest visual reach that contextualizes the protected property, axes are mapped out, analyzed and summarized with scenic values. The resource permits information to be obtained in two natural forms: for the urban planning and for the management of historical, architectural and landscape heritage.

Still influencing the landscape variables, the functional violations are related to urban ordination and signalling (visual programming) in the surrounding area of the site of historic interest. Disorientation through inefficient signalling or through little perceptive content – obscure or disintegrating links with the surrounding area and the site – can reflect negatively on morphological identity and the allocation of importance to the urban image of the protected property.

It must be observed in these violations the requirements of the historic garden derived from the relations of the historic reading or user-population culture: the green space qualification. The application of illumination also echoes in this variable, since it can serve to encourage appreciation and stimulate heritage perception by means of nighttime lighting, prioritizing the distinction of shapes, colours, volumes, and textures of the historic site, or, in excess, cause damage to the development of wildlife and vegetation of the garden.

Finally, among the socioeconomic variables, there are common cases where the surroundings present problems like social and urban degradation. Some of the dangers that jeopardize the preservation of the site are related to inappropriate use of buildings in the vicinity, which can cause explosions and fires (properties used for mechanical, chemical or industrial activity) or atmospheric contaminants. The proximity of roads that have intense traffic flows compromises the site because mechanical shocks and air pollution at the border of the (historic) site could occur. Also, with the growing requirements of the city space, the area designated for vehicle parking is an issue that is difficult to solve.

It should be noted that for the study of the components of the site of historic interest, the land should be divided into blocks in accordance with both the dimension of the site and its visually perceptible characteristics. The separation into quadrants will facilitate taking measurements. Another precaution to be observed is proximity to the 'frontier edges' (Romero, 2001), understood as buffer zones of the site. The larger the site area, the more the measurements at the frontier edges will differ from the interior of the site.

In the identification of the causative agents of degradation and contamination in the surrounding areas of the historic garden the general prohibition of activities in a particular space does not resolve or ensure the preservation of the historic site, because it is not possible to rapidly quantify the interferences

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of the atmosphere and the underground (subsoil). For this reason it is necessary to monitor the changes experienced in the surrounding area to seek to anticipate (as a preventive measure) consequential damages to the property (remedial measure). The principle of periodic review and adjustment, present in the methodology of the *Instituto Brasileiro de Meio Ambiente* (IBAMA, 2002), is incorporated in the proposed methodology as a very important preventive measure.

2.3. Instruments for the mitigation of impact: monitoring and interventions

The third step, the criteria to operate in the surroundings, should be based on the analysis of the site inventory – diagnosis of the causes of identified pathologies – and will be able to indicate the degree of integrity compromised at the site (vulnerability), including potential, eminent, or immediate danger. In accordance with the impact intensity, there should also be an assessment of the necessity to act – forecasting – through landscape and urban instruments, in accordance with the municipal governments and environmental agencies. The preventive operation should be performed, even if significant impairment of the historic garden is not identified, through monitoring of the surrounding area. The actions defined in this step do not start just from assumptions of restriction but also from provisions designed to adequately protect the environmental situation and improve the urban environment.

After having identified the high vulnerability of the site of historic interest it is necessary to seek appropriate solutions to avoid increasing its impacts. The legal instrument of the surrounding area as applied in cultural legislation is not sufficient to protect the necessary references for the comprehension of declared monuments and properties. It is essential that these studies are incorporated into municipal master plans, in such a way that allows control of the elements that can interrupt the protected property's perspective, and establishes normalization of the volumetric conditions, materials, or new building types in the immediate area of the property. In accordance with the tutelary condition specific to the historic garden, studies must be performed for urban or landscape interventions.

Fulfilling a psychological and landscape role, the introduction of new green spaces in the vicinity of the declared property – buffer zones – constitutes an important component in the preservation of historic sites: absorbing impacts of biotic and socioeconomic variants. This zone cushioning should, preferably, be forested, since the tree mass contributes to reducing the negative effects of urbanized environments.

Also actions should be studied to increase the legibility of the protected site, through the establishment of information and visual integration of the historic garden into the surrounding landscape. However, the goal of the visual axes in the surrounding area are not to create new views, but to maintain respect for 'visual participation' (Ruiz, 1997) of the protected site in its surroundings, or in its surrounding landscape. For this it is important to choose the historically consolidated visual points to prohibit the placement of any element that can interfere with the direct view of the site, substitute aerial cabling with subterranean cabling, select furniture linked to the site and develop the information support necessary for the appropriate indication for visiting and understanding the protected site.

Conclusion

It is the understanding of environmental variables (ambient and legibility) of the historic garden, combined with the physical demarcation of the surrounding area or vicinity, and the monitoring of changes in the vicinity, that plays a crucial role in the preservation of urban public green heritage. The monitoring, interventions and actions in the vicinity have the objective to anticipate or reduce the negative impact of urbanization on sites of historic interest.

The immediate surroundings built in urban environments significantly influence the historic reading of the property as in the climatic performance and development of plant and wildlife of the urban enclosure. Once the substrate is moulded and composed mainly of live material, it is clearly sensitive to disfiguring and destructive actions. The identification and delimitation of buffer areas is essential to contribute to absorption and lessen the impact of ownership. Nevertheless, these actions still occur randomly, and this conservation tool is not part of preventive measures for conservation planners and heritage specialists.

Thus, other institutions with diverse technical staff (surveyors, geophysicists, archaeologists, traffic engineers, biologists, among other specialties) related to urban and environmental management must contribute to the construction of indicators for

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assessing impact variables and monitoring sites of historic interest.

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Endnotes

[1] **[trans.]** Without prior authorization of the *Serviço do Patrimônio Histórico e Artístico Nacional*, it will not be allowed, in close proximity to the declared item, to do construction that prevents or reduces visibility, nor to place announcements or large posters, under penalty of being ordered to destroy the work or withdraw the object, imposing in this case fine of fifty percent of the value of the same object' (Decreto-Lei nº25, Art.18, 1937).

[2] This gatehouse is in the Imperial City of Petrópolis.

[3] *Venice Charter* (1964), *Amsterdam Manifesto* (1975), *Recommendations of Nairobi* (1976), *Burra Charter* (1980) and *Xi-an Declaration* (2005).

[4] It should be noted that although the proposed method indicates the need for impact indicators to measure for the variable biotic, these indicators of bio-climatic urbanism are still few and are not specific to the heritage property.

[5] Although trees along the streets do not reduce the noise level, they reduce the residence duration time of noise in the street.

[6] With the decree, approval became conditional for the project study analysis of shadows for the *Secretaria Municipal de Meio Ambiente* (SMAC).

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Conservation of urban heritage and monitoring tourist impact: an integrated approach

Heleni Porfyriou[1] & Marichela Sepe[2]

Abstract

The negative impact of mass tourism on the conservation of urban heritage and the depletion of traditional civic values in historic centres is evident and has already been noted in European and international reports. However, planning and conservation policies in many European historic cities continue to be fragmented and short sighted as they are mainly interested in the short term economic advantages of tourism.

The aim of this paper is to propose an integrated methodology able to study the impact of mass tourism on historic centres, by introducing two complementary approaches. One is a survey consisting of a systematic collection and planimetric representation of data relative to uses of the buildings, the occupation of public space and the state of conservation of building façades. The other is a dynamic urban analysis and design approach that identifies the cultural resources and the identity of places and consequently projects interventions for their conservation.

More specifically the paper's aim is threefold: 1) to monitor tangible and intangible transformations related to increased tourist presence; 2) to evaluate the effects of increased tourist flow on the monuments' material and historical connotations; and 3) to develop techniques for mitigation and control of tourist impact and risks, having as a final aim the development of recommendations for a sustainable fruition. The case study of the Trevi-Pantheon itinerary situated in the historic centre of Rome will exemplify this methodological approach and its results.

Keywords: monitoring tourist impact, place making, historic centres, urban conservation, intangible heritage

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Premise

The negative impact of mass tourism on the conservation of urban heritage and the impoverishment of central places from their traditional civic values is evident and has already been noted in European and international reports (Council of Europe, 2000; Drdácky and Drdácky, 2006; ICCROM, 2005; ICOMOS, 2002). However, planning and conservation policies in many European historic cities continue to be fragmented and short sighted as they result mainly from interest in the short term economic advantages of tourism. Similarly, the enhancement of cultural heritage has direct consequences on the conservation of artefacts, in so much as it increases fruition, which implies a greater risk of decay due to the greater numbers of visitors and their interaction with the artefacts and the environment in which they are located. The so called 'human risk' is still not comprehensively studied and one can observe a lack of methodological approaches able to monitor the state of conservation of urban historic sites. In the meantime the increased mass tourist pressure in these sites alters their characteristics and inherent values (Boissevain, 1996; Frers and Meier, 2007; Gunn 2002; Haldrup *et al.*, 2004; Urry 1995).

Starting from these premises, the aim of this paper is to propose an integrated methodology still missing from relevant literature and to approach the issue from a complex point of view. The methodology elaborated and experimented uses two complementary approaches. One is a survey consisting of a systematic collection and planimetric representation of data relative to uses of buildings, occupation of public space and the state of conservation of building façades. The other is a dynamic urban analysis and design approach, which identifies the cultural resources and the identity of places – also introducing visitors' participation through questionnaires – and consequently project interventions for their conservation (Appleyard, 1981; Hague and Jenkins, 2005; Lynch, 1960; Massey and Jess, 1995; Sepe, 2009).

The case study of the Trevi-Pantheon itinerary situated in the historic centre of Rome will exemplify this methodological approach and its results.

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1. The Trevi-Pantheon area and its history

The case study area has a very long history going back to the Roman Empire when the Pantheon was built by Marcus Agrippa as a temple in the first century BC; later in the 7th century it was consecrated as a church. Also included is Hadrian's temple, situated along the itinerary, which was built by a Roman emperor in 145 AD and later transformed in the 17th century by the famous architect Carlo Fontana into the *Dogana di Terra*. Only the Trevi fountain is of a more recent origin. In fact it was completed in 1762, and gives the small square in front of it a fascinating and uniquely scenic image.

Both Pantheon square and the one in front of Hadrian's temple have been used through the centuries as market and civic spaces where commercial and public manifestations were held. The urban form of this old part of the city has not been changed as the Nolli map of 1748 shows when compared with the Pio-Gregorian urban cadastre of Rome in the 1820s.

In these squares community life has taken place, through the centuries, consecrating them as places of cultural, artistic and historical importance and as places of collective identity and civic pride, where a sense of belonging grows and takes root.

In 1991 the municipality of Rome announced a competition for the 're-qualification' of this central part of the city. The aim was to close it to vehicular traffic and create a pedestrian itinerary (Figure 1) connecting Pantheon square with the Trevi Fountain – two of the most famous and visited monumental sites of the eternal city.

Furthermore, another experimental project was proposed for the same area: the pedestrian itinerary had to be specially equipped for blind people (with pavement, infrastructure, and appropriate signs). The project was supported with special funds from the 2000 Jubilee and had finished on time.

Since then, in the last 10 years, the numbers of tourist in Rome (and in Italy more in general) has grown at an exponential rate. More than 30 million people per year are calculated to visit Rome (on the basis of hotel statistics), which means that on a daily basis 100,000 tourists are present in the historic centre. The Pantheon square and Trevi fountain, together with the Colosseum and the Vatican area, are probably the major attractions of the city. Connecting Trevi to Pantheon with a pedestrian street (initially specially designed for blind people) implied creating a privileged itinerary especially attractive to tourist groups and flows; who in fact immediately adopted it as the only real, direct connection between these two monumental spots of the city. It is amazing that nobody in the municipality offices (where this project was conceived) seems to have thought of it and no one considered monitoring its effects, which, as our research shows, have been devastating for the area.

2. Research and outcomes

2.1. The method

At this point our aim was to study the impact of mass tourism on historic centres, namely on their conservation in physical and functional terms as well as regarding their inherent intangible values. More specifically our aim was threefold:

1) to monitor the tangible and intangible transformations, along the itinerary, related to the increased tourist presence;

2) to evaluate the effects of increased tourist flow on the monuments' material and historical connotations;

3) to develop techniques for mitigation and control of tourist impact and risks, having as a final aim the development of recommendations for a sustainable fruition.

The method elaborated for monitoring the Pantheon – Trevi area utilized two complementary approaches: one static, the other dynamic. The first approach consisted of three interrelated surveys mapping changes and transformations with respect to: the uses and functions of the buildings along the itinerary, the state of conservation of their façades,

Figure 1. The Pantheon — Trevi itinerary in the historic centre of Rome, Italy.

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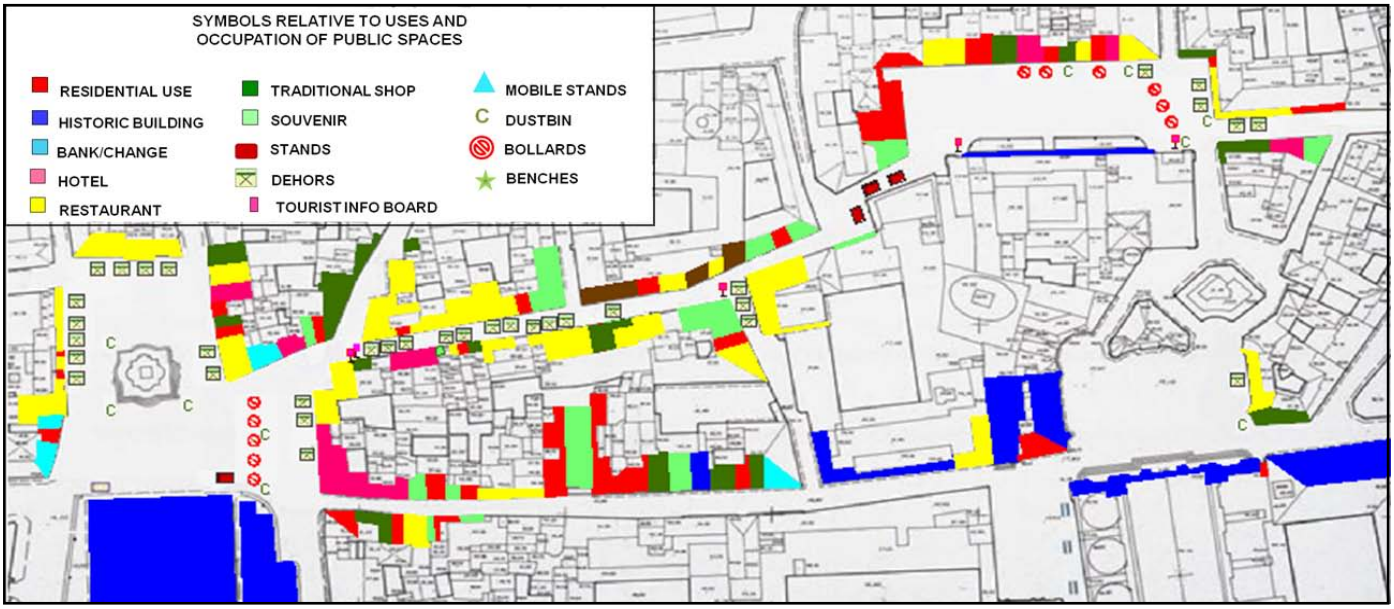

Figure 2. Planimentric representation of uses and occupation of public space, along part of the Pantheon – Trevi itinerary.

and the urban quality of the places (Porfyriou, 2010a).

In other words a systematic collection of data along the itinerary was undertaken for each building using two forms created for this purpose. The first one documented the uses and the occupation of public space directly related to the building's pertinence. The second one documented the state of conservation of the building's street façade, particularly in relation to the various changes of uses the ground floors were undergoing.

This documentation was then utilized in order to create three thematic maps representing: i) the uses and functions of all buildings along the itinerary; ii) the occupation of public space, both legal and illegal along the street (Figure 2); and iii) the state of conservation of the façades of the buildings along the itinerary. Finally a contextual representation of the buildings' state of conservation in relation to their functions and to the use of public space of their pertinence summarizes all three thematic maps (Figure 3, next page).

The second approach of the integrated methodology presented here, the dynamic urban analysis and design, consists of the application of PlaceMaker. PlaceMaker is a method of urban analysis and design that gathers processes and reconstructs the data deriving from nominal, perceptual, graphic, photographic and video surveys, and compares these data with those provided by an analysis of expectations, an analysis of traditional cartography and a questionnaire administered to local inhabitants.

PlaceMaker comprises eight phases; five of analysis and three of design (Sepe, 2007). The first phase of PlaceMaker is devoted to anticipatory analysis aimed at a primary investigation of places. After the preliminary choice of the city and of the part(s) to be analyzed, ideas about that particular area can be described using any type of instrument or tool of expression, using the information known prior to the first inspection. The second phase is that of the five surveys. The first survey, the denominative one, consists in collecting data regarding constructed elements, natural elements, transportation mode and people. The second survey is perceptive, carried out on smell, sound, taste, touch and visual sensations, and of the global perception, focusing on the localization, type, amount and quality. The third survey is graphic and consists of sketching the places according to a visual-perceptive standpoint. Then photographic and video surveys of the whole study area are carried out, taking care to record facts rather than an interpretation of the places. The third phase involves the analysis of traditional cartography of the selected sites in the city at the urban and territorial scale. The fourth phase is that of the questionnaire administered to visitors to the area in order to gain an idea of the place as perceived by those who are not involved in the study and are not specialists in related fields, but only perceive the site as users, at various levels: the inhabitant, the passer-by, the tourist. Then we have the last phase of analysis, that of assembling the collected information. In this phase, we test the maps produced and the congruence of the various collected data,

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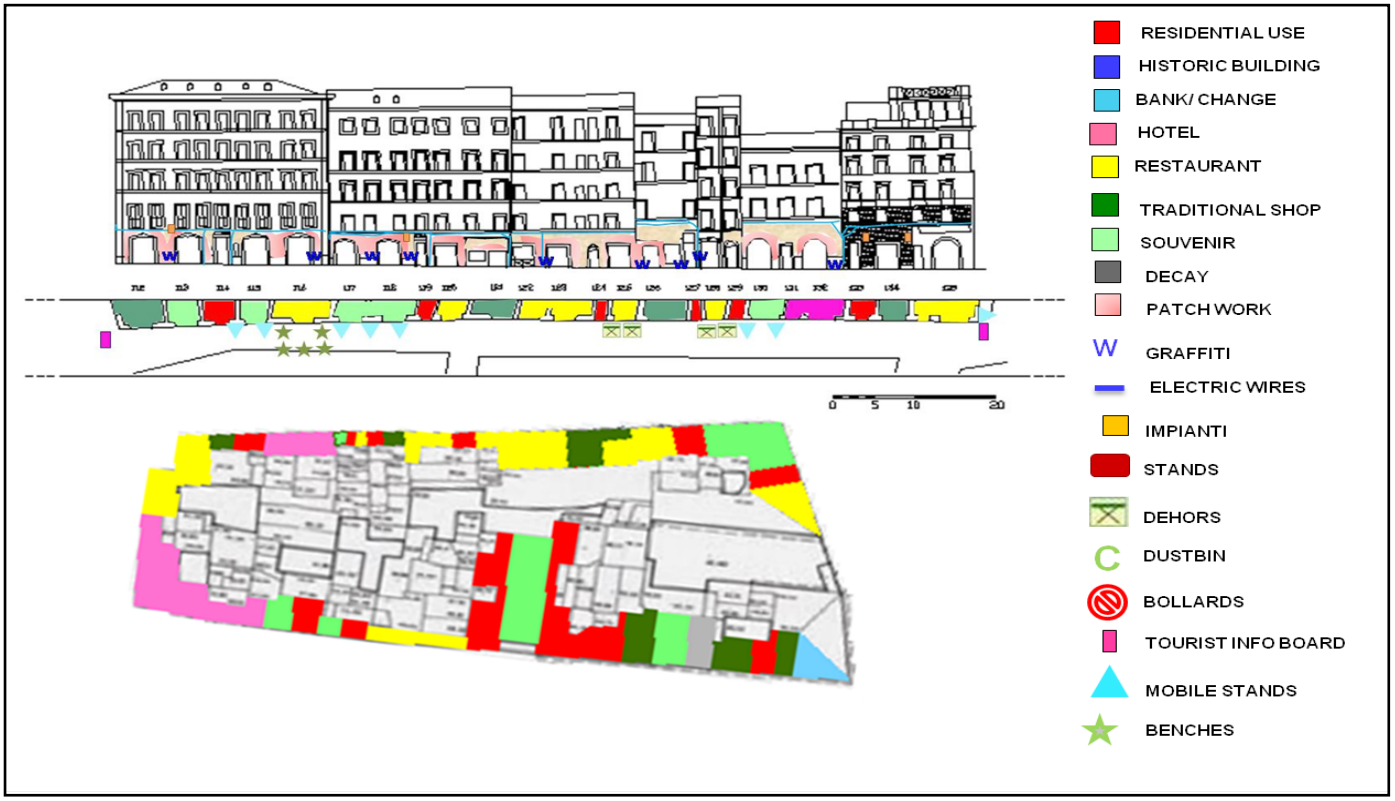

Figure 3. Contextual representation of buildings' state of conservation in relation to their functions and to the use of public space of their pertinence.

choosing the useful elements to construct the final map of analysis.

We thus have three design phases. The sixth phase is devoted to surveying identity resources in the study area. The sixth phase is realized through three measures: the identification of the identity potential, the identity problems and the identity quality. In this phase the identity resources available for the project are represented: a sort of map of intents, the first step for the construction of the complex map for the identity project in question.

The seventh phase is the survey of the identity resources by users of places, locals, passers-by and tourists, in which a questionnaire designed to elicit information emerging from the previous phase will be administered. The last phase consists of an overlay of data collected during the previous phases and identification of the project proposals, represented in a complex project map. This map is the last step in the design process, where the information contained in the complex map of analysis, after being filtered and transformed into resources, gives rise to proposals for the construction and enhancement of a sustainable place identity.

2.2. The results

The first aim was to confront and analyze the different maps with the original situation of the area before the realization of the re-qualification intervention by the Municipality (by monitoring the tangible and intangible transformations).

With respect to 'tangible' elements, the outcome of this comparison shows that: commercial activities, specially restaurants and bars, have been greatly increased, often substituting for previous commercial activities related to residential needs, such as shops for fruit and vegetables, bakeries etc., or other neighbourhood services. Most souvenir or commercial shops no longer sell local products but instead products of a global market, often made in China.

Furthermore the commercial activities related to restaurants, bars, gift shops, souvenirs etc., gradually increased their occupation of public space (both in legal and illegal terms), with tables, umbrellas, stands, benches, dustbins, fences, flower vases, etc. (see Figure 2). The increased presence of tourists also attracted other itinerary activities, such as street actors and street sellers, taxi and carriage parking, gladiators, police cars, etc., all of them occupying the public space in a savage way.

We also observed that tourist masses increased in an exponential way along this street, destroying the new pavement put in by the municipality when it re-qualified the area. The urban decay of all spaces along the itinerary is quite evident, both in material terms (graffiti, occupation of public space, bad

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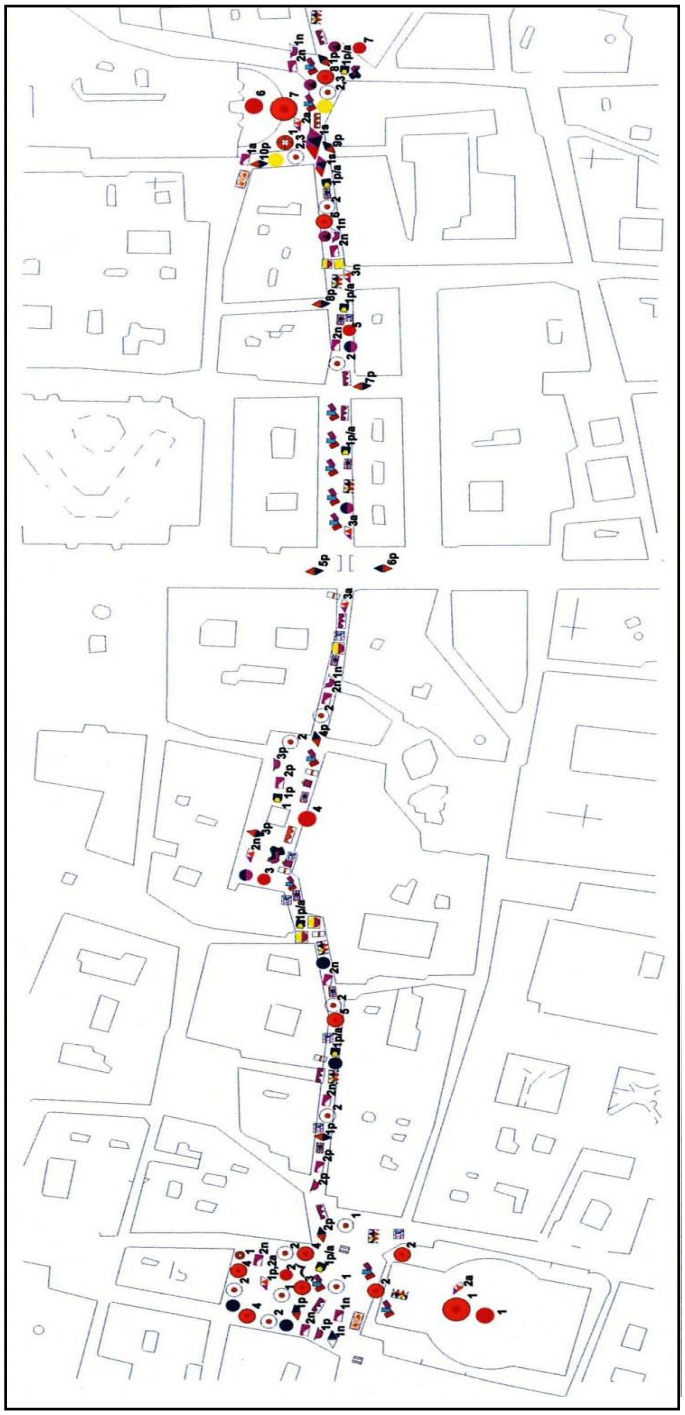

Figure 4. Place Maker, complex map of analysis and legend.

pavement, congestion), social (expulsion of residents and related functions) and civic terms (civic activities have less space to be expressed as they have to share with mass tourist presence). The street has in fact changed from a residential to a tourist one with overcrowding, filth, unqualified occupation of public space, and disproportionate increase of commercial activities.

As regards the observation of the 'intangible' elements of the place – as noticed in the complex map of analysis (Figure 4) – the route links two major monuments located in two piazzas, Piazza della Rotonda and Piazza Trevi, and we might characterize it as a (musical) piece of the city that leads from the sacred (point) to the profane (counterpoint). The most significant break along the route comes in Piazza di Pietra, which in historical terms is no less important, but which has to some extent escaped having the magnetism of a tourist, cultural and commercial attraction. In spite of its impressive appearance, the Hadrianeum is less of a tourist draw, so that passers-by may pause here briefly but then go on to visit other monuments. By contrast, the break represented by Via del Corso is merely an interruption rather than a change in pace on the route. The streets linking the piazzas constitute a sort of recurrent motif with similar characteristics. Via di Pietra, Via dei Pastini, Via delle Muratte are primarily thoroughfares with several possibilities for eating and souvenir shopping. Along the sides the paving is in porphyry and down the centre special paving has been laid for the blind.

There are also some modern stelae made of burnished metal which recount the history of this route of Hadrian in Italian, English and Braille, with a plan of the itinerary (see the complex map symbols indicating the stelae and special paving for the blind). In some points there is graffiti on the façades. The most striking perception of the whole area is the noise of the water cascading in the Trevi fountain (see the complex map symbols indicating sound perception). Even before you reach Piazza di Trevi, you catch sight of the scenic Trevi fountain in white marble with ramps and the statue of Oceanus as its centrepiece. The fountain is built against one side of a building. There are flights of ramps both inside and outside, giving different perspectives and encouraging people to linger. Walking into the piazza you feel you are taking part in a scene or an event rather than merely arriving somewhere. The scene is made up of the spectacular fountain but also the enormous quantity of people (see the map symbols indicating high concentrations of people) who throng the piazza observing, admiring, listening, taking photographs, throwing coins into the water, eating ice cream or a sandwich, sketching, taking it easy, dangling their feet in the water, or buying souvenirs. There are hawkers selling souvenirs and other goods, a water seller, men dressed up as gladiators who tourists can be photographed next to, living statues, cripples begging (see the map symbols indicating hawkers and living statues).

The paving is in porphyry cubes, the urban décor street lamps and litter bins in decorated metal, and

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there are angular iron benches around the fountain. The tactile perceptions involve: the paving material and slight differences in slope, probably due to the constant tramping; the materials and sculptures of the fountain; the water in the fountain, which people often use to cool down. The visual perceptions include the churches of San Vincenzo e Anastasio and Santa Maria a Trivio, and the aedicule at one corner of a building. The acoustic perceptions include the predominant noise of running water, and the voices of the people who throng the piazza. The perceptions of taste and smell concern the products of the cafés, ice cream parlours and fast-food outlets, which hang in the air without being oppressive (see the map symbols indicating perceptions). The pace is slow.

Although it has different elements, Piazza della Rotonda appears comparable to the Trevi fountain. It is a typical location for traditional socialization; its conformation, the extraordinary beauty of its monuments, and the pleasant atmosphere ensure a constant throughput of people. The first element that catches the eye is the Pantheon, an ancient religious edifice, circular in shape, which dominates the scene and somehow embraces it. The voices of visitors and the noise of the constant tramping of feet constitute a strong acoustic perception (see the map symbols indicating transient sound perceptions). Not only those who come to visit the monument but also passers-by often pause for a while outside the monument, sitting at the foot of the columns or on the perimeter walls, chatting or having a snack, creating a scene which gets rather chaotic, as some respondents remarked.

A large nondescript throughput of people ebbs and flows in front of the Pantheon, which invariably includes hawkers, perhaps selling concert tickets dressed in historic costume, or souvenirs or miscellaneous goods. In front of the Pantheon a fountain with an obelisk and dolphins forms a focal point that not only characterizes the piazza and adds to the overall scenario but becomes a place of socialization for many visitors and tourists. The steps around the fountain encourage many visitors to pause or stop for lunch, photograph the fountain and the Pantheon, read a guidebook or feed the pigeons. The ground floor of the buildings is occupied by bars and restaurants with outdoor tables that are always thronged with people. From one of the restaurants emanates the unmistakable smell of fast food, while smells of food and coffee colour the atmosphere. A grocer selling local products on one side of the piazza attracts many tourists. In spite of the large throughput, the overall pace here is moderate and tranquil (see the map symbols indicating pace). The urban décor comprises old-style street lighting, litter bins and round metal bollards marking off the concourse; the paving, in small porphyry cubes, slopes at different angles and makes for a pleasant tactile perception.

Regarding our second aim to evaluate the effects of increased tourists' flows on the monuments' material and historical connotations, we identified two major approaches.

Through the analysis of the state of conservation of the façades of the buildings along the street (see Figure 3) one observes numerous interventions of maintenance and of external improvement of the façades, often realized by commercial activities occupying the ground flour of historic buildings of minor architectural prestige, which give a fresh colour to the façade of the new activity they open; a plaster, often of slightly different colour with regard to the original building colour, thus resulting in a patchwork which contributes negatively (instead of improving) the appearance of the whole area.

In parallel, important historic buildings are restored. These interventions are often related to buildings bought by tertiary or commercial activities, such as hotels or banks, which want to add prestige to their investment, and at times look exaggerated in their restoration or pose questions regarding the colour plan or conservation regulations of the city (as for example in the case of the building in Piazza del Pantheon which turned from ochre to light blue after its recent restoration).

Finally, as regards the third aim, development of recommendations for a sustainable fruition, at least five kinds of interventions – explained in the complex map of project (next page, Figure 5) – were identified.

These interventions, which supported the project hypothesis, were also proposed to visitors (all tourists aged between 28 and 65 years from Australia, U.K., Belgium, the Netherlands, Luxembourg, Czech Republic and Italy) through a double questionnaire. The first aimed to understand whether the visitors had seen only the elements of outstanding interest of this place or also the problems. In the second, we asked questions concerning possible interventions aimed at improving both the usability of the route, decongesting it, and the perception of its identity.

The first proposed intervention is differentiating and restoring traditional activities. This intervention

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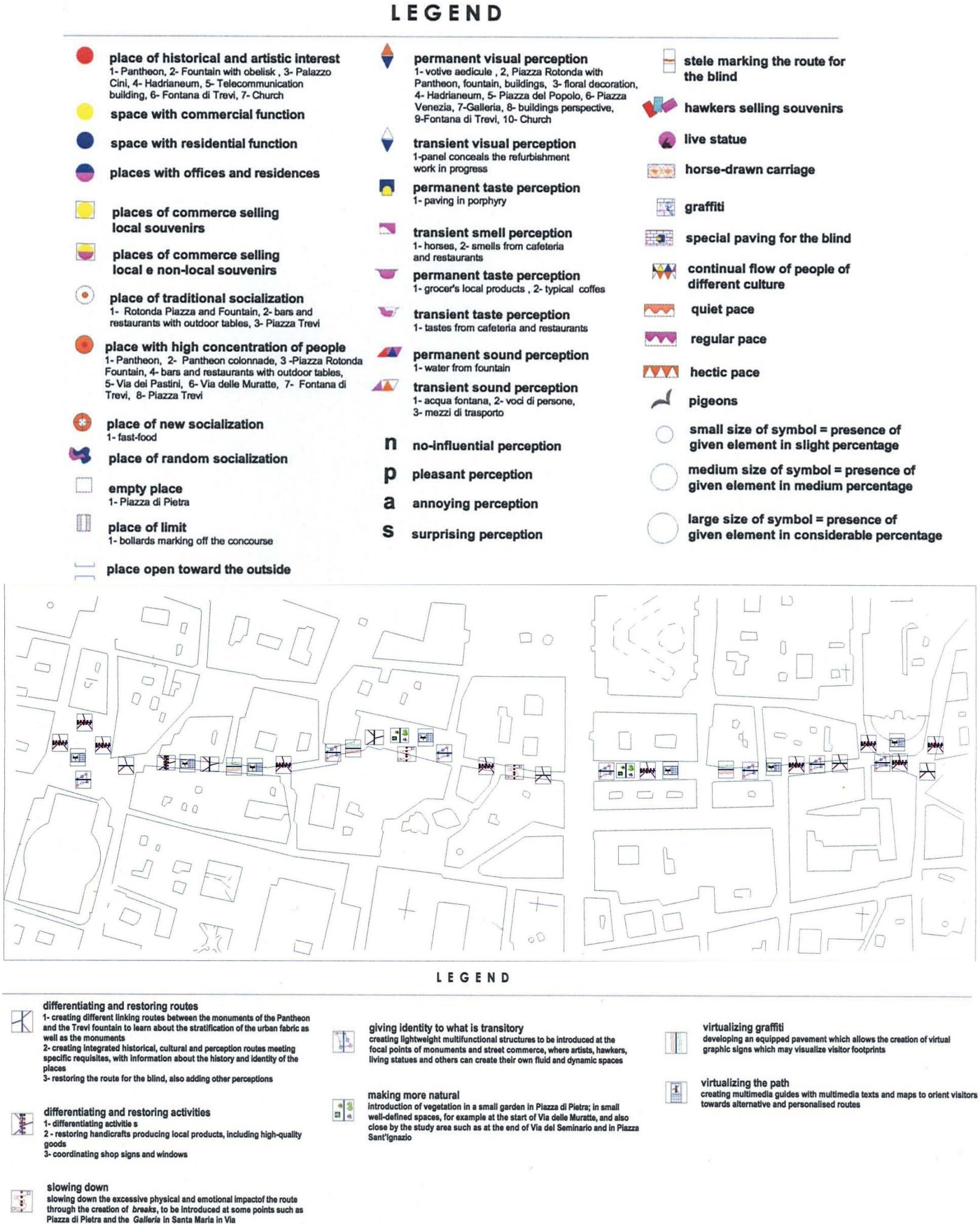

Figure 5. Place Maker, complex project map and legend.

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might include restoring handicrafts producing local products, including high-quality goods, so as to reduce the commercial confusion in these streets and rescue vanishing skills. Furthermore, we suggest the design of a coordinated project for shop signs and windows, above all as regards the streets that connect the squares, and eliminating graffiti on the façades. In this way, redesigning the critical points would ensure greater balance in the setup of spaces and organization of the various activities, act to discourage additional fast food outlets and pressure those already in place to conform.

The second is the differentiation of routes. This might involve creating different linking routes between the monuments of the Pantheon and the Trevi fountain: a short route (Hadrianeum), and a longer one featuring the stratification of the urban fabric as well as the monuments; creating alternative routes focusing on the elements of perception – this solution may well prove both educational and sustainable as it would show visitors how pleasing perceptions can be easily blotted out by unpleasant ones. The route for the blind should be restored – perhaps adding other perceptions. Integrated historical-cultural-perception routes meeting specific requisites should be created by introducing routes featuring the sound of water playing in the fountains, the ancient materials found along the route, admiring religious icons, buildings, churches, architectural features which pass unobserved in a hasty visit, sampling local produce, and breathing in the scents of Rome.

A third intervention designed to reduce the excessive physical and emotional load is the creation of breaks, to be introduced in several locations. Piazza di Pietra is currently the only true moment of relaxation, where one might build, for example, a little conceptual garden, also serving an educational function, where people can pause and indulge their perceptions and then proceed into the central space of the Hadrianeum. The Galleria in Santa Maria in Via, currently under-used and not strictly on the route but close by, could serve as a break with the inclusion of exhibitions, featuring the route of Hadrian for example, and other functions.

A fourth intervention consists in giving identity to what is transitory by creating lightweight multifunctional structures to be introduced at the focal points of monuments and street commerce, variable in extension and dimension, opening and closing;,where artists, hawkers, living statues and others can create their own fluid spaces within a dynamic, light grid which nonetheless constitutes a framework. This form of urban décor can be equipped for various functions including multimedia.

A fifth intervention involves virtualizing the graffiti and the path. In the first case, at some points, where there are more graffiti and the historical pavement has been replaced by a recent one, a special pavement could be inserted which allows the creation of virtual graphic signs which may visualize the steps of visitors. In the second case it involves going online with the creation of multimedia guides. The various routes can be presented and made more user friendly by means of multimedia guides via satellites accessible for example from cell phones. In this way visitors can be oriented towards alternative personalized routes that they can follow with the help of multimedia texts and maps (Sepe, 2010).

Conclusions

Reassessing, we recognized a twofold anthropic load on this route: a physical and an emotive one. The problem is not the mere concentration of mass tourism that affects many areas of cultural interest. Here visitors find themselves emotionally involved, and this must be a fundamental consideration in any operation promoting sustainable enhancement and fruition. Two other fundamental issues underlay the project phases and the entire experiment: the complexity of analysing sites with a deep-rooted historical identity, and the massive presence of tourism, currently on the increase in all heritage sites, creating overcrowding, chaos and gradual degradation not only for the works of art but also for the image of these sites.

In particular, from the results of our monitoring we can say that human risk and the impact of mass tourism on the state of conservation of buildings is relatively low, while the impact on urban morphology is totally absent, as revealed by a comparison between historic cartography and today's urban form. The urban form of this antique part of the city has not in fact changed at all, as one can see when comparing the Nolli map of 1748 or the Pio-Gregorian cadastral map of 1820 with a contemporary Google map. On the contrary, what is significant is the impact of mass tourism on the quality of life in the area and on the quality of these places, considered as symbols of collective identity.

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The outcome of our investigation therefore sounds an alarm, and highlights the following:

1. Conservation policies should not only regard the restoration of a building or a fountain, but also the historic centre in its complexity, comprising both tangible and intangible heritage.

2. Enhancement policies (or re-qualification ones) devoid of a comprehensive vision and lacking impact monitoring may produce negative results and be counterproductive, as the case of Trevi – Pantheon has shown.

3. Human risk has more influence and a negative impact on the vitality of a place, on its quality of life and on the identity of places stratified through centuries – in other words it conditions the 'city of people' more than the 'city of stones'.

The case of Rome is not unique, as we all know Venice (Montanari and Muscarà, 1995; Van Den Borg and Costa, 2004) and many other European historic cities (Porfyriou, 2010) are besieged by the constant increase of mass tourism and are being depleted (of their traditional civic values) and degraded (growing occupation of public property, disproportionate increase of trading activities, filth, bad smells, overcrowding). The situation in many other countries, for example in China, however, is similar (Anderson, 2005; Cina, 2005).

Therefore, if we wish to safeguard the places of collective memory, we must immediately commit ourselves to finding ways to reconcile the needs of the tourist industry with those of life in historic centres and the conservation of their monumental cores. In this respect the final recommendations resulting from this research are: the need to introduce coordinated urban policies instead of fragmented ones, to diversify tourist offerings instead of simply increasing the incentives of demand, and to promote monitoring of enhancement policies and tourist impact instead of repeating an urban policy without testing its results.

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Using sequential mixed social science methods to define and measure heritage conservation performance

Jeremy C. Wells[1]

Abstract

There is no agreed-upon definition for heritage conservation performance, but it is possible to borrow ideas from the natural resource conservation field to inform this concept. Dimensions of performance can include economic, technical, and sociocultural and experiential indices. Because heritage conservation ostensibly benefits people as its primary goal the values of most stakeholders ought to play a role in defin ing performance. Most of these values are subjective and represent sociocultural and personal meanings and tend to differ dramatically from the positivistic, fabric-centred value system of conservation experts. Measurement implies quantification, yet many sociocultural values are based on qualitative meanings that defy direct attempts at quantification. One solution for this predicament is to employ a sequential mixed-method approach where qualitative meanings are gathered from stakeholders and then these meanings are used to inform the development of a quantitative method, such as a survey instrument. In this way, while the qualitative meanings are not being directly 'measured' as such, aspects of the phenomenon behind these meanings can be measured, quantified, and subjected to statistical techniques. A brief representative case study is presented as an example of how social science methodologies can help define and measure performance.

Keywords: heritage conservation performance, mixed-method social sciences

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Introduction

As we move into the twenty-first century, the practice of heritage conservation has become increasingly multidisciplinary as it subsumes responsibilities for sustainability, economic growth, and quality of life. While it is easy to recognize the need to increase the relevance of heritage conservation in everyday people's lives, it is increasingly difficult to determine the degree to which its practitioners are achieving success in their endeavours. This situation has led to a growing interest in determining how conservation performs over the long-term as a way to identify best practices and modify techniques that are not effective. There are, however, a number of important questions that need to be asked for which are no clear answers, such as: what is the nature of 'performance' as applied to the acts of heritage conservation? How does one define various conservation acts as 'beneficial' versus 'detrimental' to the heritage object, site, and region as a whole that consider contemporary social, cultural, and personal values as well as traditional objective criteria? Who gets to create these definitions? The answers to these questions are important in trying to understand what should be measured in order to define the nature of heritage conservation performance.

If we make the assumption that heritage conservation must, at some level, benefit people, then it is essential to understand people's values in relation to heritage to a greater extent than is now commonly practiced. The focus on the fabric of buildings and places without consideration of the values of most stakeholders is a commonly accepted practice due to limitations imposed by epistemological traditions within the discipline of heritage conservation. If part of the goal of defining performance is to include a fuller range of stakeholder's values, then social science research methodologies will become an essential tool for the heritage practitioner. This paper will therefore explore the nature of heritage values and how they are related to potential performance characteristics, such as authenticity, followed by an assessment of mixed-method social science research approaches that can be used to define and measure heritage conservation performance. Lastly, a case study will be presented as an example of how this mixed-method approach could be applied to assessing conservation performance.

1. What is conservation performance?

The concept of conservation performance (or conservation indicators) is relatively well known in the area of natural resource conservation, but is a fairly new idea to heritage conservation. Even in natural resource conservation fields, however, there is a

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lack of a consensus on which indicators are more effective than others in measuring performance (McDonald-Madden *et al.,* 2009). Such measures have typically included economic indicators, reduction and/or sustainable utilization of resources, biodiversity, and, in some cases, social and cultural measures. Conservation performance can also include measures of the technical performance of a system, such as the ability of an intervention to conserve water, or in the case of heritage, the ability of a grouting system to stabilize a masonry wall. Another approach is to base measures on the overall 'health' of ecosystems and the ability of performance measures to direct ways to 'heal' deficiencies (Salafsky *et al.,* 2002). Implicit in conservation performance measures, is that they should go beyond simple description and provide ways "to systematically examine interventions [with] the ultimate goal of adaptive management […] to learn to improve an ongoing project or intervention" (Stem *et al.,* 2005, p. 297). In these assessments, the assumed beneficiary of the measures is the environment (or building) itself, which leads to easier quantification of items such as number of acres of land conserved, number of species protected, etc. The 'soft' aspect of subjective social and cultural values – in other words, the benefits offered to people via conservation – are usually not part of the picture due to the difficulty in quantifying these aspects of 'performance'.

While few formal heritage conservation measures appear to exist, there are a couple of examples from the United Kingdom and the United States. The 'Conservation Performance Indicator' (CPI) developed by the National Trust in the United Kingdom is an objective measure of the performance of specific features present in heritage buildings and their environment (Cassar, 2009, p. 9). The criteria are contextually developed on a case-by-case basis and prioritize the significance of the property, what happens if conservation of the site is neglected, and the overall importance of interventions. Specific areas that are addressed include benefits related to material conservation, social factors (primarily related to being able to access the site), natural environment conservation, and economics. The end result is a numerical score, known as the CPI Index, which is assessed on an annual basis for each property. In the United States, the National Park Service (NPS) partnered with the National Academy of Public Administration to define measures to assess the National Historic Preservation Program (Trudeau *et al.,* 2009). The outcome of this project was a list of objective, quantitative measures of items such as the number of properties inventoried, evaluated, designated, protected, etc.; the number of federal undertakings with a finding of no adverse impact on historic properties; and the number of visitors to historic preservation web sites. No attempt was made to understand and potentially measure the more subjective elements of conservation practice, such as the impact on authenticity that interventions may have or how conservation practice impacts people's quality of life.[1]

When developing a heritage conservation performance measure or indicator, it is important to first ask to what end should the measure be directed. Should it benefit the fabric of buildings and places? Should it benefit local economies? Should it benefit people directly – i.e., add to quality of life and human flourishing? Or perhaps some combination of the above? While some measures are likely to overlap, the basic argument is that heritage conservation should, first and foremost, benefit people unlike natural resource conservation, where the implicit primary beneficiaries are ecosystems. In heritage conservation, there is already a reasonable dimension of conservation performance to assess, which is the degree to which historic environments retain their authenticity.

2. Whose values? To what end?

Through education and practice, heritage conservation professionals are trained to view their own value system, predicated on the idea that meanings are contained within historic fabric (Muñoz Viñas, 2005, p. 86), as scientifically grounded fact. This paradigm has origins in the rise of scientific approaches to the practice of history and archaeology in the early twentieth century. With enough diligence, accuracy, and objectivity, the purity of the past could be revealed to the researcher through 'scientific accuracy and impartiality' (Williams, 1904) in a methodology driven by the acquisition of facts (Matson, 1957, p. 273). Moreover, this 'science' of "substantial accuracy and perfection" should be the sole responsibility of experts in achieving historical authenticity (Kimball, 1935, p. 359). The rise of technological methods, such as photography, which ushered in a "revolution [...] in regard to scientific observation and treatment" (Michaelis, 1908, pp. 303-304), helped to establish the objective, positivistic outlook of today's conservation practitioner. In this period, during the early twentieth century, the idea that the building itself is a container of meanings developed, which could be read to reveal its

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true historical character (Peers, 1917, pp. 65-66) in order to authentically guide restorations (Appleton, 1919). Thus, the building's fabric could present more accurate, or truthful, evidence than could any other method, and was perceived as a more accurate way of determining a building's significance than the difficult process of trying to understand people's 'personal opinions' (Brumbaugh, 1950) and emotional attachments to place (Campioli, 1964, p. 28). It is these latter concepts in particular that early conservationists strove to eliminate from their practice by establishing international conservation doctrines that survive to this day (Wells, 2007).

Before embarking on the challenge of defining conservation performance it is essential to understand the epistemological limitations of this dominant paradigm in the field. Salvador Muñoz Viñas (2005, p. 43) explains that "conservation is what the conservator recognizes as such. Thus, it is defined as it is performed, and its use and repetition is what allows us to know and understand it." Muñoz Viñas' idea is that because there is no formal theory of conservation, 1) conservators define their work through their previous work and 2) engage in interventions as "truth-enforcement" operations that are justified through the scientific method (*ibid.*, pp. 43, 91). Moreover, "no relevant theoretical effort has been made to justify the validity of this approach" because the scientific method is always thought to be good and proper (*ibid.*, pp. 71, 79). As much as practitioners may be reticent to acknowledge, however, the dominant objective values of conservation professionals are in fact a cultural belief system and not a scientifically grounded, objective endeavour (Muñoz Viñas, 2005, p. 86; Waterton *et al.*, 2006, p. 347). If we begin our understanding of conservation performance with the knowledge that heritage conservation is based on antiquated 'self referential' arguments (Smith, 2006, p. 11) substantiated under the guise of scientific objectivity, we can formulate a more effective approach to defining the nature of what 'performance' should be. Moreover, perhaps the idea of performance should be more inclusive of values from a wider array of stakeholders.

Laurajane Smith (2006) has conveniently packaged the values that heritage conservation professionals traditionally have for heritage places into the 'Authorized Heritage Discourse' (AHD). Specifically, the AHD dictates that "the proper care of heritage, and its associated values, lies with the experts, as it is only they who have the abilities, knowledge and understanding to identify the innate value and knowledge contained at and within historically important sites and places" (*ibid.*, p. 29). The AHD assumes that the meanings behind historical significance are an innate part of the fabric of buildings and places (*ibid.*, p. 349) and that these meanings can be deciphered through a hermeneutical process to reveal the 'true' way in which the historical object should exist (Wells, 2007, p. 11); in other words, significance is literally assumed to be contained *within the heritage object* instead of *within the meanings* that people ascribe *to* the object. This perspective is a natural outcome of the scientific approach that pervades heritage conservation practice, which relies on distancing the observer from the phenomenon. In addition, these claims of scientific objectivity help to "cement the authority" of the discipline's epistemological claims (Smith, 2006, p. 278). According to Muñoz Viñas (2005, p. 81), "scientific conservation actually emanates from an elliptic but overwhelmingly powerful set of principles: it is guided by the unspoken material theory of conservation which is, in turn, based upon the need to preserve the object's material 'truth', and the belief in scientifically grounded knowledge." One way in which the so-called true nature of heritage objects is conserved is by directing the differentiation of new from existing building fabric as found in item 9 in the *Venice Charter* (ICOMOS, 1964) along with numerous national doctrines, such as the Secretary of the Interior's Standards in the United States (NPS, 1995). This directive has no empirical evidence to substantiate its ethical claims and has more in common with the modern-era architectural movement's ethical principles of 'honesty' than of protecting a supposedly naïve public (Pendlebury, 2009; Wells, 2010b). Heritage conservationists are therefore charged with preventing the 'false images' of the past from proliferating by reifying this so-called true nature of heritage buildings and places (Cliver, 1992, p. 177) and eschewing any dalliance in 'illusion' (Huxtable, 1997).

What about the values of the rest of humanity – those individuals that are not professional heritage conservators and represent the majority of stakeholders? Their values are typically subjective and difficult, if not impossible, to relate to objective criteria; in fact, 'objectivity simply doesn't compute' in determining "the social and cultural values that people ascribe to aspects of their natural and cultural heritage" as Thomas King (2009, p. 165) explains. Mason and Avrami (2002, p. 25) uncomfortably reveal that "there is no simple, technical, objective way to make decisions about what heritage gets preserved and how," which makes the goal

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of objective conservation performance measures a seemingly difficult proposition at best. Indeed, basing conservation performance definitions on subjective sociocultural and personal values may lead us "into a relativistic morass" where there is no potential for a consensus on what is, and is not important (Gibson and Pendlebury, 2009, p. 9). Even recognition that a less extreme, pluralistic approach to defining heritage values plunges most conservation professionals into "deeply uncomfortable territory" (*ibid*.) because they do not have the training to understand values outside of their own expert, objective perspective (Clavir, 2009, p. 13).

Like experts, conservation performance for most stakeholders is related to the degree to which the authenticity of historical places is conserved, or in some cases enhanced.[2] Through this lens, it is immediately apparent that authenticity is not a universal concept; indeed, there are many dimensions of authenticity as I have explored in detail elsewhere (see Wells, 2010a) and which will be summarized briefly here. At a basic level, authenticity describes what is 'real' and what is 'fake'. Heritage conservation professionals traditionally define authenticity through the objective analysis of extant building or landscape fabric. Authenticity can also be constructed from sociocultural and personal meanings and experiences, however. In this sense, authenticity is not fabric-centred, it is idea-centred or meaning-centred as Jamal and Hill (2002) have shown. Thus, it is possible to have fabric-based authenticity, sociocultural authenticity, and experiential (or personal) authenticity, with the latter concept rooted in individual's experiences of being in historic environments that can be examined through a phenomenological reduction. Place attachment – an emotional and cognitive bond with place – is a key element of both sociocultural and experiential authenticity and without it, place is not authentic from these perspectives (for more details, see Wells [2009]).

How then, is it possible to reconcile the objective, expert values of professionals with the subjective values of most stakeholders? Such an endeavour is crucial to defining conservation performance if we wish to incorporate the perspective of the majority of those who use and value historic places. I am, however, under no illusion that this paper could possibly tackle this issue in a concise way; it is therefore at least sufficient to acknowledge the plurality of values (see Table 1) inherent in any historic place, from both the professional's and everyday person's point of view. As a first step, this practice is essential in gathering as many values as possible that are associated with an historic place. Once these values are known, the process of prioritizing which values are more important than others can begin. Gibson and Pendlebury (2009, p. 9), for instance, suggest a logical place to start is to address values that are in clear conflict with each other. By focusing on these dichotomies, an initial, context-dependent definition of conservation performance for a particular site may emerge.

3. Moving toward 'evidence-based' conservation with mixed-methods

If the goal is to understand conservation performance from a pluralistic perspective, tools to understand social, cultural, and experiential values associated with historic environments are required. This intersection of social science research and the built environment is well represented by the field of environmental design and behaviour research that has typically been used to consider human factors in architectural and landscape design (e.g., Groat and Wang, 2002; Zeizel, 2006). In a simplistic sense, environmental design and behaviour research looks at how human-modified and 'natural' environments

	Heritage expert	Most stakeholders
Experience of the world	Intellectual	Physical
Perspective	Objective, detached	Subjective, emotional
Epistemology	Fixed, doctrine-based	Varies, indeterminate
Basis of authenticity	Intact fabric from certain times	Sociocultural and personal meanings
Nature of significance	Fixed through lists	Varies depending on context
Temporality of significance	Significance resides in the past	Significance resides in the present

Table 1: Comparison of the values of experts and the values of most stakeholders.

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influence people's perception, valuation, and experience of and reaction to place. For instance, 'evidence-based design', typically used to design health care facilities, utilizes post-occupancy evaluations in an effort to identify design elements that contribute to positive patient outcomes. Designs that work are carried forth to new iterations, while failed ideas are modified or eliminated. In this way, a natural evolution of design takes place through slow, incremental improvements driven by research rooted in human values and perception. In a similar sense, the search for what constitutes 'good' conservation performance should be an endeavour in which the researcher seeks evidence to substantiate claims as to what is, and is not, acceptable performance with empirical evidence based in social science research. While currently not used to a large extent in heritage studies, environmental design and behaviour research offers a ready set of methods with which to explore people's valuation of heritage places.

There is, however, no single, universal procedure that can be used to collect, analyze, and then utilize sociocultural and experiential values to define heritage conservation performance in balance with the expert/objective values of professionals. In general, there are few publications that address the use of social science research methodologies in assessing heritage values outside of the anthropological/archaeological discipline (for some examples, refer to Sørensen and Carman [2009]). In the past few decades, the field of heritage studies has been built from what are principally ethnographic research methods. An example is Setha Low's (2002) adaptation of existing ethnographic methods for the purpose of assessing heritage values. Low developed her 'Rapid Ethnographic Assessment Procedure' (REAP) to "help conservation professionals and managers understand the complexity of social relations and cultural dynamics at play in the conservation planning and development of heritage sites" (*ibid.*, p.31). While framed in ethnographic traditions, the REAP approach also includes other social science methodologies including phenomenology and the historical/interpretive methodology. The methods utilized include physical traces mapping, behavioural mapping, transect walks, individual interviews, expert interviews, impromptu group interviews, focus groups, participant observation, and the use of historical and archival documents (*ibid.*, pp. 37-38).

While meanings that people have for places have been assessed by both qualitative and quantitative methodologies, it is widely acknowledged that qualitative methodologies have characteristics that make them better suited for an initial step of gathering meanings because they make fewer assumptions about the nature of reality, are explicitly aware of context, and are interested in understanding processes rather than determining relationships between cause and effect (Guba and Lincoln, 1994). Moreover, qualitative research approaches phenomena from the *emic* or internal perspective of people, rather then the detached or *etic* perspective of the researcher as Clifford Geertz (1973) relates in his well-cited description of the meaning behind a wink; a purely quantitative description – length of a wink, its frequency, etc. – cannot convey the meaning behind the action of one person winking at another. Thus, without a prior qualitative stage to gather meanings, the phenomenon that is being 'measured' with a survey instrument, for instance, is based on the *etic* meanings of the researcher and is not necessarily representative of the meanings of the population being studied. An example would be a survey that asks respondents if they like the use of basalt as cladding on buildings; if targeted to a population that has never seen basalt on buildings, what exactly is being measured? This example is complicated by the fact that many people may not even know what 'basalt' is. A prior qualitative study could establish the meanings and understandings behind stone cladding on buildings, including the language and terminology used by a particular population. In this case, the survey instrument could then be modified to ask people if they like buildings made of 'black stone'. It is therefore important that the meanings that inform quantitative methods, such as survey instruments, not only measure phenomena from the respondent's perspective, but also use language with which the respondent is familiar.

The measurement of conservation performance implies that a quantitative methodology is necessary, yet collecting and understanding the types of values that are being measured requires a qualitative methodology; in other words, it is not possible to directly measure values. How then, is it possible to move from qualitative meanings to actually measuring characteristics that are associated with conservation performance? A sequential mixed-method approach offers a way of addressing this sort of research problem in a holistic way that allows for improved internal validity (i.e., a valid cause and effect can be established through independent and dependent variables) and the reduction of measurement error for quantitative methods, such as survey instruments. A sequential mixed-method that

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begins with a qualitative methodology followed by a quantitative methodology provides a pragmatic way of conducting applied research through induction and deduction that is well suited for the study of people and behaviour (Creswell, 2007, p. 10). Moreover, using a qualitative methodology followed by a quantitative methodology, in this order, provides a number of unique benefits, as Alan Bryman (2008, p. 262) describes, including:

- Triangulation: using results of one method to help corroborate the results of another;
- Complementarity: using one method to complement another to provide greater clarity or coherence of the results;
- Development: the use of results from one method to inform another;
- Initiation: the use of different methods to explore novel positions;
- Expansion: broadening the nature of the research and increasing its depth.

In sum, the importance of using a mixed-methodological design comes from pairing weaknesses with strengths; the weakness of qualitative research is that it cannot be generalized, while the weakness of quantitative research is that is cannot produce meanings. By first generating the meanings that provide an interpretive context, the results of a later quantitative study can be more fully understood an interpreted. The end goal, therefore, is to increase the validity and reliability of the entire research design through this pairing of weaknesses and strengths.

4. An example of a mixed-method study that could be applied to performance measures

Place attachment can be used as a measure for conservation performance by relating variations in emotional attachment to place with various types of interventions. If attachment is maintained or increased, it can be said that the treatment was a success and therefore would be contributing to a positive performance by either maintaining or enhancing authenticity. A case study I conducted of historic Charleston, South Carolina, USA (Figure 1) examined residents' emotional attachment to their historic neighbourhood through a sequential mixed-method approach (Wells, 2009). While the aim of the research was to determine the relationship between place attachment and the physical age

Figure 1. Historic Charleston, South Carolina, USA (Source: author).

of the neighbourhood, the types of meanings that were revealed and the place attachment measures that were generated lent themselves to helping define heritage conservation performance.

The study began with a phenomenology – a qualitative methodology based on Merleau Ponty's (1962) approach to understanding the experience of being in certain places – that incorporated informants taking photographs of any object, scene, or place of any scale that were particularly meaningful to them. I purposefully selected informants for their propensity to regularly walk in their neighbourhood; all informants took their photographs while engaging in such walks. Upon taking all 24 exposures, the informants mailed the film back to me for development. The informants then used these photographs to guide the interview. The meanings collected from this process were then used to inform a web-based survey instrument that measured four dimensions of place attachment: general attachment, place identity, place dependence, and 'rootedness'.

The qualitative phase of the study revealed that residents defined experiential authenticity through emotional attachment catalyzed by the experience of what I term 'spontaneous fantasy'. Spontaneous fantasy is similar to the 'vicarious experience' described by Robert Riley (1992) where the patina, or decay, in historic environments catalyzes an impromptu vision of the past in the mind's eye that is neither premeditated nor based in historical fact. Accompanying this experience is a series of strong feelings that help to attach residents to their neighbourhood. What is perhaps most interesting is that the qualitative phase of the research revealed a potential relationship between the appearance of patina in the environment and attachment catalyzed

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by the experience of spontaneous fantasy that was later confirmed via statistical analysis of the survey data. Spontaneous fantasy is also present at the cultural level, which I discovered in a case study of a downtown 'Main Street' program in Anderson, South Carolina, where the ability of the built environment to engender spontaneous fantasies became part of the community's sociocultural definition of authenticity (Wells, 2010b). In this latter case, however, authenticity was not based on the presence of physical decay in an environment, but rather by the ability of new construction and modifications to the existing historic environment to present the appearance of historical homogeneity, in deference to conservation doctrine that dictates the 'old' must be differentiated from the 'new'.

Both of these studies reveal usable meanings and measures that can define and measure heritage conservation performance. For instance, if the authenticity of historic Charleston is defined by its residents through the presence of masonry patina, then interventions should seek to retain this patina, and even allow it to grow over time. Moreover, the measure of performance in this case could be defined by the degree to which these interventions maximize place attachment for residents. Thus the quantitative phase of the study, which measured place attachment, could serve as a proxy not only for experiential authenticity, but also for measuring heritage conservation performance.

Conclusion

While developing definitions and measures for heritage conservation performance is an important goal, there are many questions left to be answered. This paper presented the argument that unlike natural resource conservation measures, the explicit benefits of heritage conservation measures should be the stakeholders who ultimately reap the benefits of an historic environment that retains its authenticity. The values of most stakeholders, therefore, should be considered in the process which defines and implements performance measures and this process can be greatly informed through the use of social science research methodologies that can integrate both traditional expert/objective values along with these subjective values. Each approach has its advantages in different contexts, but ignoring the sociocultural and experiential dimensions of authenticity in assessing conservation performance will likely lead to misunderstandings and the creation of a schism between the experts charged with maintaining heritage places and the everyday people who live, work, and recreate in these places. The key, however, is to understand *what* needs to be measured before engaging in a campaign to measure conservation performance.

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Endnotes

[1] It is worth noting the irony in the stated aim of the report that promises 'more meaningful performance measures', but fails to deliver an approach to understanding the meanings people ascribe to historic preservation. The report relies instead on traditional, positivistic approaches to measurement and fails to provide much in the way of understanding qualitative meanings.

[2] Heritage conservation doctrine dictates that authenticity, or historical integrity, cannot be 'made' – it only exists; therefore the conservation professional can only prevent its loss, but not necessarily create more of it. This situation is, however, not the case for sociocultural and experiential authenticity where modifications can be made to the built environment that may, in fact, enhance the perception of authenticity.

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Green areas and urban climate: evaluating instruments for the conservation of natural urban heritage

Fátima Furtado[1] & Karina Barros

Abstract

This article presents the results of research that aimed to assess the effectiveness of an urban conservation initiative, called Protection of Green Areas Estates (IPAVs, in Portuguese), in Recife, the capital of the State of Pernambuco, in north-eastern Brazil. This tool, developed by the city administration in 1996, seeks to ensure the protection of the vegetation within private lots or those that are state-owned, with public but controlled access. The article discusses the connection between urban green areas and the mitigation of climate change, local and global. It is based on the understanding that the conservation of such structures is an instrument to face intra-urban climate issues and to mitigate the city's contribution to global warming. It shows that the instrument has a significant potential for urban conservation, since its objectives were achieved in approximately 70% of the cases, in a context of great pressure on land prices and problems with the management of the protected estates. On the other hand, the loss that happened during the time horizon of the study is associated with the failure to capture a substantial tonnage of carbon dioxide (CO^2) emitted into the atmosphere by the city. Additionally, the work points out some characteristics associated with a high degree of conservation of vegetation in the IPAVs, stressing the important role it plays in the drainage of the city, prone to floods and landslides. Finally, the article emphasizes the importance of developing tools and methodologies for monitoring and evaluating policies, projects and actions that aim at urban and territorial conservation.

Keywords: urban environment, urban climate, monitoring, urban conservation

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Climate change and cities

In recent years, the world has suffered many tragic events caused by acts of nature, which have generated hundreds of thousands of deaths, major economic losses, and which tend to influence important decisions, such as national energy matrices and the planning of cities. Decision makers and populations across the globe have been mobilized, as environmental disasters with unprecedented intensity and location, have been increasingly frequent. This broad set of phenomena has been analyzed within what has been named *climate change*. Literature and the press are filled with a large number of trends and facts tracked since the late 1990s in several places in the world which are consistent with the theories about climate change. These phenomena have various forms, characteristics and temporal and spatial variety. Although causes are still the subject of dispute, the main studies increasingly suggest the establishment of a global climate change as a real fact. The most important issue in this controversy is the influence of man on these phenomena.

Among those authors who believe this influence to be significant, many, like Dow and Downing (2007, p. 15), suggest changes in land use, including urban land use, as one of the man-made processes that contribute to these disasters. The increasing urbanization of the world population, therefore, puts cities at the centre of the current climate challenges. The scientific community believes that the so-called global warming is caused by the concentration of greenhouse gas (GHG) emissions in the atmosphere, and that cities are major sources of these gases. They are where the majority of the population (over 70%) live and where things happen. The climate challenge will only be overcome through cooperative work. Therefore, the planning and management of cities, guided by the notion of sustainability, should prioritize environmental conservation measures.

There is a set of conservation instruments that are used to ensure the quality of life in cities, but the same cannot be said about tools and processes for the evaluation of these policies and actions. One of the areas of territorial and urban conservation that needs to be further developed covers precisely the instruments for monitoring and assessing the levels of effectiveness of urban environmental conservation measures. Urban managers need to be informed about the performance of projects and actions towards environmental conservation, notably in relation to the emission of greenhouse gases. Among them, the conservation of urban green areas has a central role, since these areas contribute

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significantly to mitigating the negative effects of cities for local and global climate, because they help to purify the air, alleviating intra-urban climate problems and fighting the formation of *urban heat islands (UHIs)*.

In Brazil, there are few and tentative initiatives for prevention and mitigation of changes in temperature that cause climatic events, reducing the quality of life in cities. It is clear that cities must be prepared to face extreme events and their disastrous consequences for the population, but this should not reduce the importance of prevention and mitigation actions. In fact, the rationality of sustainable urban planning considers them as important. This is not yet on the agenda of the Brazilian municipal administrations generally.

1. Urban vegetation and climate

Conservation of urban vegetation is relevant not only to deal with adverse urban climate phenomena, but also as a tool for mitigating its effects, which will be felt by present and future generations. Some of the urban green areas are under public domain, but a considerable part is located within private lots, and both are important for the environmental quality of the city. Ensuring the conservation of these areas, private or public, is fundamental to the sustainability of each city and to the global climate, and this can only be achieved through monitoring and evaluating conservation instruments. Hence the importance of the present research, which has evaluated the pioneering initiative taken in Recife to protect green areas through the definition of what have been named Green Areas Protection Estates – GAPEs (*Imóveis de Proteção de Áreas Verdes* – IPAVs, in Portuguese).

Recife is the central city of a metropolitan region (*Região Metropolitana do Recife*), with approximately 3.5 million inhabitants. There, as in many other metropolitan regions in Brazil, the interference of climatic events in the everyday urban life is significant, affecting the population's quality of life and the region's economic dynamism. Events such as heavy rains, flash floods, landslides and urban heat islands (UHI) are examples of such phenomena that its population is forced to face. Human actions, together with the local climate and geography, cause this situation.

Freitas (2008, p. 78) emphasizes the great importance of vegetation for the local climate, stating:

> "[...] the local vegetation greatly influences the urban environment, perhaps being the main contributing aspect in the formation of a specific microclimate, as well as in the mosaic of ecosystems, verified in intermediate scales."

Despite being small green patches, scattered in an extensive urban fabric, vegetation plays a crucial role in the climate of cities and regions. Mascaró (2005, p. 32) expands the understanding of the environmental functions of urban green areas and states:

> "Vegetation affects the urban micro-climate and contributes to improving urban ambience in many aspects: it reduces solar radiation in the hot season and modifies the temperature and relative humidity through shading which reduces the heath to buildings, vehicles and pedestrians; it also modifies the speed and direction of winds and acts as an acoustic barrier; when in large quantities, interferes with the frequency of rainfall and, through photosynthesis, reduces air pollution."

The phenomena most often linked to the loss of green areas in cities are the formation of heat islands, increased soil impermeability, and air pollution. Vegetation acts positively on the temperature through photosynthesis, which purifies the air, and the process of transpiration, when plants release heat into the atmosphere. In fact, this whole process is a cycle: the vegetation influences the temperature, modifying the local climate, and temperature influences the vegetation, with the same purpose. The specificity of these urban sub-spaces rests primarily on the use of the land, characterized by a low constructive density and by the presence of vegetation, two of the main elements that interfere in the urban climate.

Lombardo (1985, p. 77) states that "urbanization, considered in terms of built space, significantly changes the urban climate, considering the increase of surfaces for heat absorption, impermeable areas, changes in vegetation, concentration of buildings that interfere with the winds and contamination of the atmosphere through the emission of gases."

UHIs are associated, on one hand, with increased rainfall and modified wind currents in urban areas, and on the other hand, with the land use and meteorological variables. The increase of impermeable areas and buildings and the decrease of permeable areas covered with vegetation cause local heat storage, provided by a greater intensity of solar radiation and increase in temperature. Also, the emission of gases into the atmosphere, particularly GHG, is

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a characteristic of large cities, where motor vehicles and industrial equipment abound.

Urban vegetation should be treated as a system, since its parts interact. It should be protected as a totality that includes public gardens, parks and squares, private gardens and backyards, street trees, green roofs, etc., since their functions are always interrelated and interdependent.

In addition to those relating to climate, some other urban vegetation functions must be stressed:

(i) *definition of the ambience of a place*, by composing the landscape and urban design;

(ii) *aesthetic enjoyment*, contributing to economically enhance spaces;

(iii) elements of *thermal comfort and well-being* of citizens, because it minimizes the aridity of the landscape and psychologically extends public space;

(iv) *conservation of the memory of the place*, as living monuments of the city, many of them with lists of trees protected by specific rules, as in Recife;

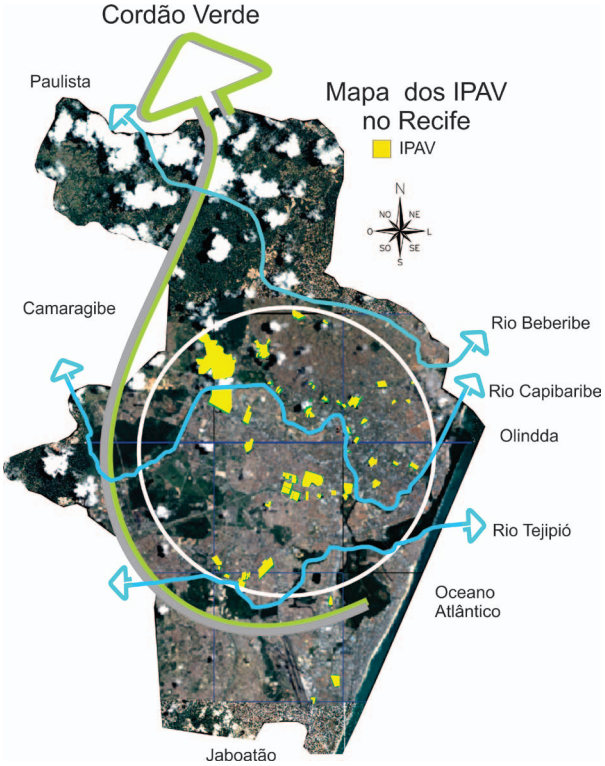
(v) *protection of slopes and water bodies*, once they stabilize soils, avoiding landslides and helping to conserve riparian areas. Acts as a soil water filter for the formation of aquifers and watersheds, as natural rainwater drainage. Also contribute in natural drainage, functioning as a reserve for the excesses of torrential downpours;

(vi) *assists in the protection of biodiversity*, directly, when acting as urban wildlife habitat and, indirectly, in the regularization of the climate.

2. GAPEs in the city of Recife

In 1996, aiming to enhance the conservation of the city vegetated areas in public and private properties, the local government selected 63 real estate properties that had continuous green areas, significant for climate regularization and landscape quality, and it then defined them as Green Areas Protection Estates, whose maintenance meets the interests of the municipality and the wellbeing of the population. This pioneering initiative was inspired by the experience of the so-called *green sectors* of Curitiba, capital of the State of Paraná.

GAPEs are properties – isolated or grouped – measuring 2,000 square metres or more, with arboreal or other significant vegetation. Their green areas were registered on images of 1986 and their owners were obliged to preserve at least 70% of the registered green area. These estates are scattered around the central areas of the city, mostly in the vicinity of the Capibaribe River, as shown in Figure 1 and Figure 2, below.



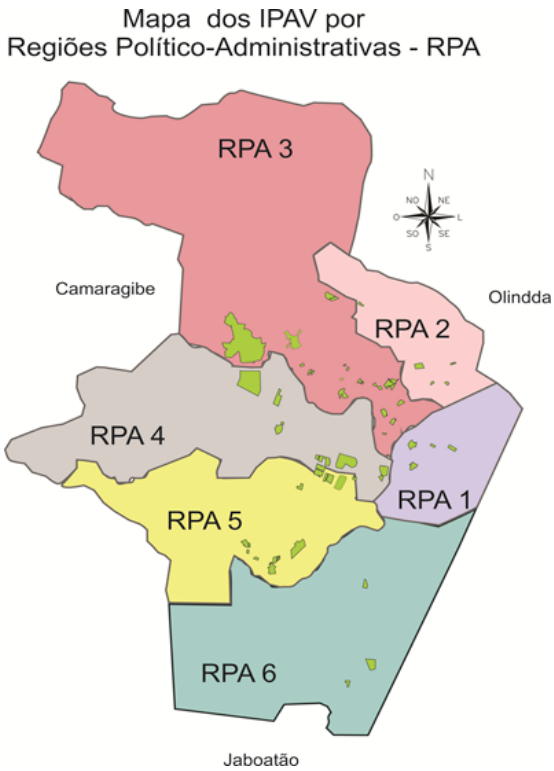


Figure 1 (left) and Figure 2 (right). Location of GAPEs in Recife, 2011 (Source: DIRMAM/SEMAM – PCR).

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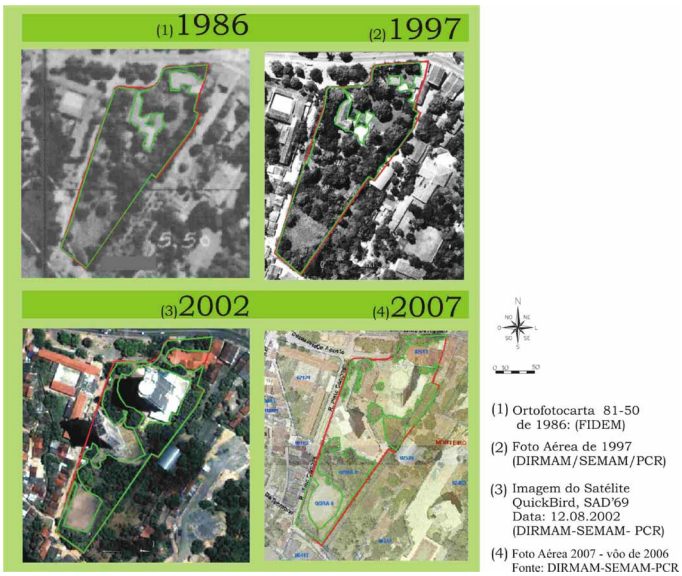

Figure 3. Evolution of GAPE #4 green area (Source: Barros, 2011).

3. Analyses

For the evaluation of the GAPEs' effectiveness, analyzes were developed, based on images of 1986, 1996, 2002, and 2007, obtained from official sources of the metropolitan and municipal management bodies (FIDEM and the City of Recife). Using AutoCAD 2010, four maps were produced of each of the 63 existing GAPEs, as exemplified in Figure 3, showing their green areas (herbaceous, shrubby, and arboreal), plotted on the PCR's UNIBASE images (1: 1,000) already containing the launch of the geodetic coordinates. This allowed the comparison of the green areas extension in each date and the quantification of the losses or gains. The results showed the number of GAPEs in accordance with the law (minimum of 70% of green area preserved).

A second study sought to identify the level of association between certain variants of the GAPEs and the level of conservation of its green area, in order to better understand which aspects are relevant to their effective conservation. Conservation levels achieved in GAPEs were measured, ranked, and crossed with the following aspects: *ownership, size, usage, and location* (administrative region).

As already pointed out, Recife has morphological characteristics that, combined with an inadequate and precarious drainage infrastructure and insufficient housing policies, lead to problems related to floods and landslides. This informed the decision to make a third analysis to assess the significance of GAPEs to its surrounding region in regard to urban drainage. Based on previous studies in São Paulo (Lombardo, 1985) and in cities of the United States (Gartland, 2010), five types of urban land use were set out:

(i) built areas, constructions that influence directly in the micro-climate of the city, predominantly in the process of formation of UHI;

(ii) paved areas, parking lanes, and other impermeable floors;

(iii) permeable areas, open areas, soccer fields, and unpaved streets;

(iv) wet areas, bodies and watercourses, such as rivers, ponds, streams, etc.;

(v) green areas, lawns, herbaceous, shrubby, and arboreal areas.

These areas were measured within each GAPE and in 25 ha of its surrounding region, in the years 2002 and 2007, as shown in Figure 4. Calculating the percentage of each of these areas, with and without those inside the GAPEs, allowed the quantification of their level of contribution to the drainage of the region where they are located.

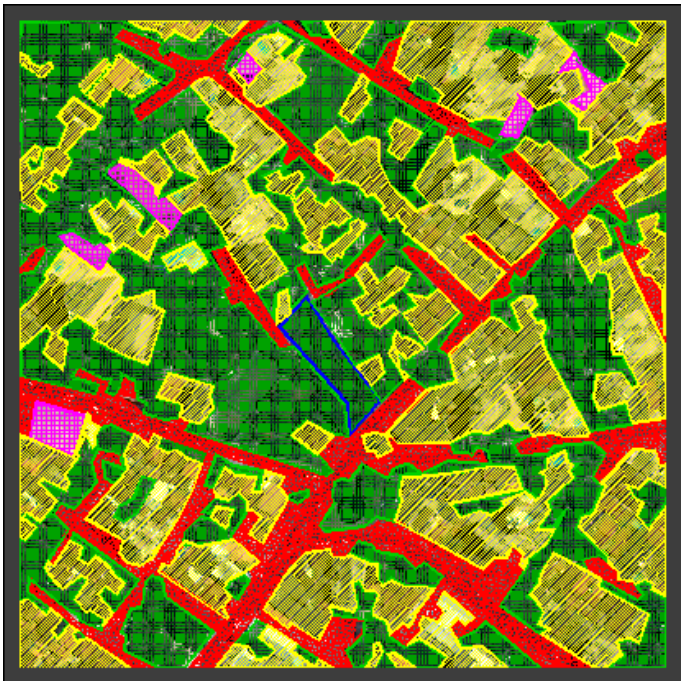

Figure 4. Example of an area of study around GAPE #4 (Source: Barros, 2011).

4. Results

4.1. Effectiveness of the instrument

The effectiveness of GAPEs as tools for the conservation of urban green areas was measured by level of compliance with the law. The results showed that, after 21 years (1986-2007), in 19 out of 63 cases the

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level of conservation of the registered green areas was below the 70% defined by law. In other words, in 2007, 69.84% of the GAPEs complied with the law, as shown in Figure 5.

The percentage of well protected GAPEs, approximately 70% of the total, should be considered unsatisfactory, but, once the difficulties in the management of these estates is considered, particularly in terms of monitoring and supervising what occurs within private lots, and the high level of pressure on the price of land in the region where GAPEs are located, the instrument shows a high potential

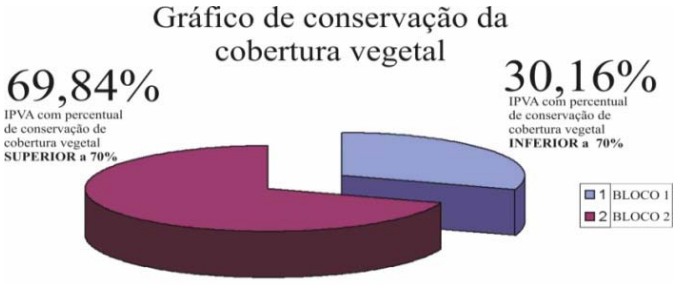

Figure 5. Percentage of GAPEs in accordance with the law, 2007 (Source: Barros, 2011).

effectiveness, strengthening the need to a better municipal management of these properties.

4.2. Levels of conservation

Ranking GAPEs by level of green areas protection shows that in 15.87% of them, only 50% of the vegetation has been conserved, a percentage categorized as *insufficient protection*. For example, in nine of the 63 GAPEs more than half of the green area that should have been protected was lost. This shows a clearly unsatisfactory situation. In ten GAPEs (14.29%) the percentage of protection was between 50 and 69%, categorized as *deficient*. This means that in almost one-third of the properties protection was *insufficient* or *deficient*. The level of protection was *good* or *excellent* in 58.73% of the GAPEs, and *regular* in 11.11% of them, as shown in Figure 6.

These percentages show that, although green areas have environmental functions essential to urban life, currently, they present a worrying level of vulnerability, in Recife. Figure 7 shows the percentage of conservation found for each of the 63 GAPEs.

Even considering the GAPEs as instruments for the conservation with great potential effectiveness, the municipal management, in Recife, has not exploited this capacity. When established, the 63 GAPEs contained 3,397 925.00 m² of green area. In

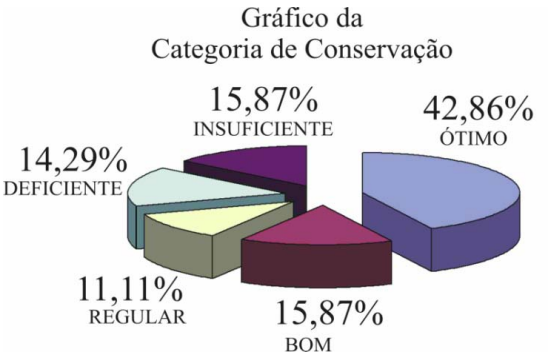

Figure 6. Level of vegetation conservation in GAPEs, 2007 (Source: Barros, 2011).

2007, only 2,999 697.50 m² of these areas were found. Thus, the absence of an effective monitoring and active supervision resulted in a total loss of vegetation as large as 398,228.00 m², equivalent to nearly 100 soccer fields. According to some authors such as Solari (2010), this loss implies that over that period, approximately 39.72 tonnes of CO2 released into the atmosphere ceased to be captured annually. Figure 8 (next page) illustrates the loss of vegetation.

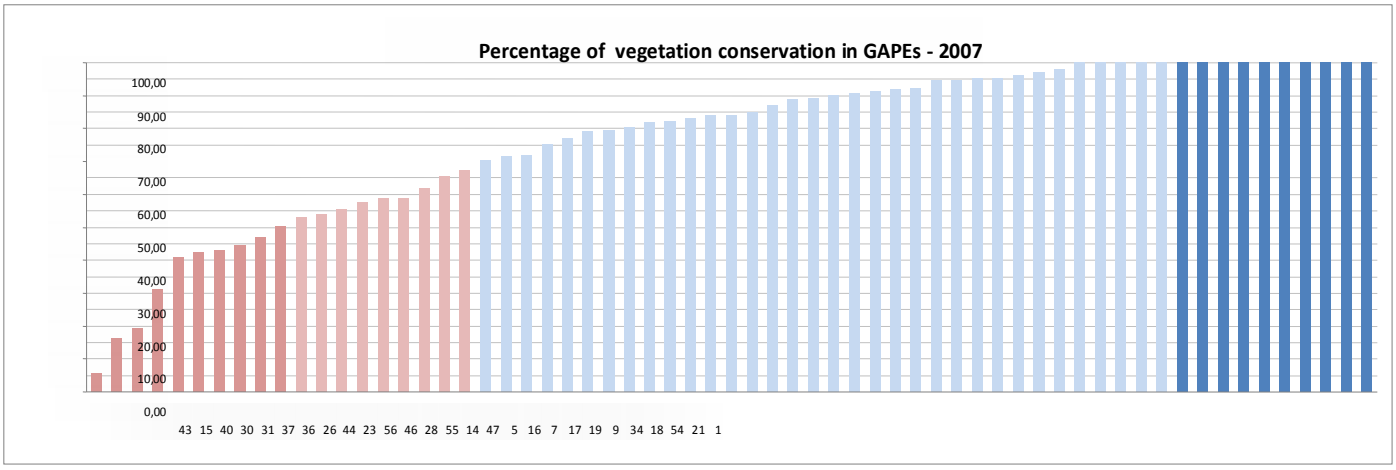

Figure 7. Percentage of vegetation conservation in GAPEs, 2007 (Source: Barros, 2011).

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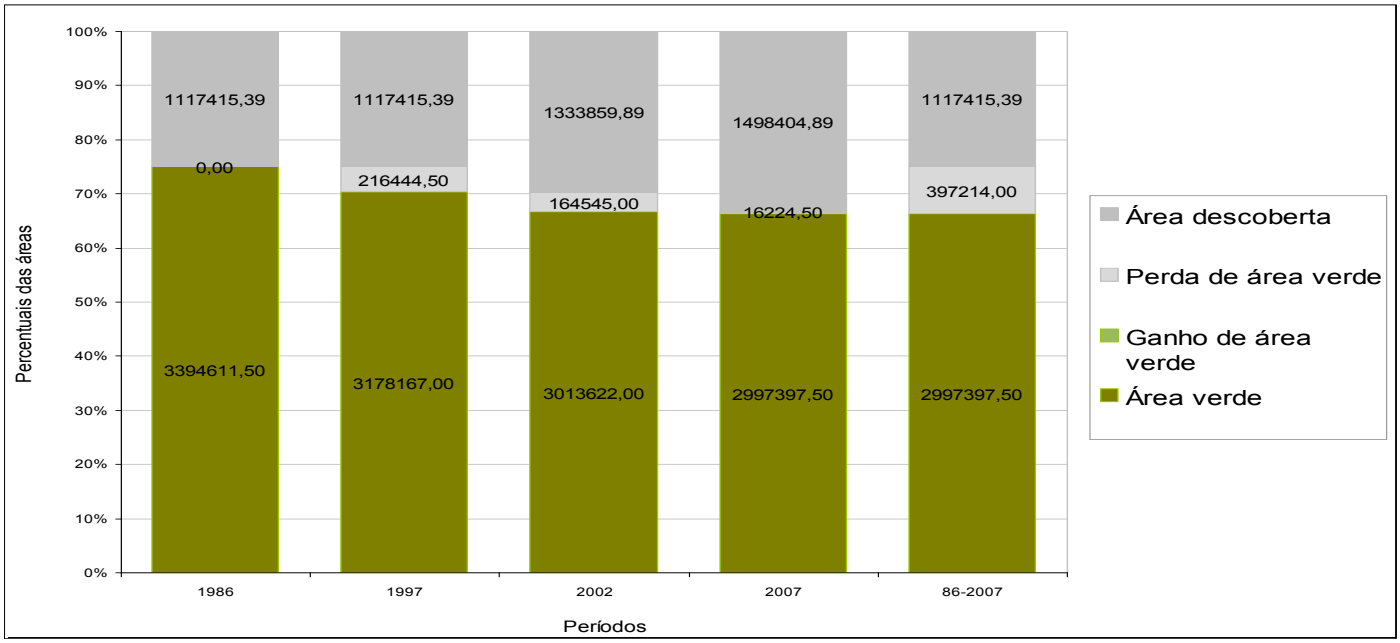

Figure 8. Extension of green areas, 1986 to 2007 (Source: Barros, 2011).

Obviously these values are not significant enough *per se* to the total emissions of Recife, but they certainly have relevance when we consider that the reversal of the damage caused by the cities to the global climate must be addressed through a set of policies and actions, public and private, across the world.

4.3. Characteristics of GAPEs and level of conservation

As for the results in relation to the association between the level of conservation in GAPEs and their main characteristics, the following has been found:

Location: the location of GAPEs refers to the administrative region (RPA) to which they belong. This analysis provided conclusions related to the quality of the GAPEs' monitoring and supervision in each RPA, and conclusions related to the neighbourhoods with greater losses of vegetation.

The best-preserved GAPEs are in RPA 3, which comprises 60% of those GAPEs with smaller vegetation losses. In the northern part of the city, RPA 3 contains 29 districts, predominantly residential and with middle and upper class populations. There is a strong pressure on land price in these areas, but in 2001, Law No. 16,719 established the Area of Urban Renovation (ARU), completely inserted into RPA3 and comprising 12 neighbourhoods. Among the requirements of this law, there is a general restriction on increasing impermeability of the soil, varying according to stipulated sectors. The less preserved GAPEs are in the southern part of the city, a worrying result since this region has very few public green areas already.

Property: it was found that 32.65% of private GAPEs are among the least preserved. Since monitoring green areas inside private properties poses difficult problems, the research concludes that, in such cases, conservation instruments should be less coercive and give more incentive to owners.

Use: the results showed that 50% of the most preserved GAPEs are institutions of higher education and/or research, health services, and social and soccer clubs.

Size: the size of GAPEs varies between 2,416 m² and 470 m². The analysis showed that there is a tendency of the biggest GAPEs to have higher percentages of conserved vegetation.

In Recife, the level of green area loss is very significant, including economically, due to the above-mentioned characteristics of the city. As highlighted by Mendonça and Monteiro (2003), soil impermeability and suppression of vegetation lead to a lower pluvial waters infiltration capacity, one of the central urban factors for the occurrence of disasters, with continuous human and material losses.

4.4. Contribution of GAPEs to urban drainage

The research showed that GAPEs have a strong contribution to the city's drainage, since ensuring the amount of permeable areas is a fundamental point to reduce the problems. Between 2002 and 2007, in the areas of the ten best-preserved GAPEs, there was a decrease of impermeable areas and an

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increase in green areas, despite the severe land price pressure that occurred in this period. In areas where the GAPEs were poorly preserved, the permeable areas presented a decrease in relation to impermeable soils, during the period.

Final remarks

Barros (2011) points out some improvement measures for the management of GAPEs, varying from the implementation of a permanent monitoring system to policies of incentives for the owners. The author also emphasizes the need for a categorization of GAPEs, considering their different types of vegetation, since they have distinct functions in the urban environment.

Additionally, she suggests the creation of new GAPEs, particularly in areas under strong land market pressure, areas that have great relevance for the drainage of the city, and at-risk areas. Finally, she recommends that the new estates follow the green belt of the city, thus guaranteeing ecological corridors between Natural Conservation Units.

To summarize, the survey showed that the municipal and metropolitan administrations would benefit from the development of regular evaluations of their policies, projects, and instruments for the conservation of the natural heritage. However, there is a lack of simple and effective tools for monitoring and of evaluation methods which can easily be incorporated into the everyday management of cities. Such instruments are fundamental to guiding and supporting the decision making processes that enhance citizens' quality of life through conservation of the patrimonial structures, natural or built.

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Construction of an informatics model of the São Luís historical centre buildings and methodological proposal of a risk map: case study – Giz Street

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Abstract

The physical, functional, and economical obsolescence of historic city centres and the lack of public and conservation policies have generated consequences that are deteriorating historical structures and creating serious risks to their integrity. The project intends to provide a methodological proposal of a risk map with the application of contemporary technologies for the heritage management, its protection, preservation and conservation.

Keywords: heritage, risk map, informatics model, technology

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Introduction

Many historical structures have been driven to degradation and even to ruins because of the total obsolescence of their historic city centres. It is indispensable to mention that historic city centres represent living ancestry and the marks left by them in traditional traces of construction, material, textures or architectural expressions which are indelible. These circumstances have been regrettably affected by the lack of economic and educational policies as well as the massive increase in automobiles. It is because of this panorama that the many historic centres of Brazilian cities exhibit similarities with many Ibero-American and European cities.

Nevertheless, in recent times, these cities have regained value within their central spaces, so the task is to achieve an active and coordinated policy to safeguard the historic centres is a straight road. But to obtain it, the full integration of the government, councils, private sector, and most importantly, the participation of the citizens is necessary.

The artistic, architectural and the historic value that comprises the historic centre of São Luís, Maranhão were decisive factors in deciding to develop a methodology that proposes the use of contemporary technologies for cultural heritage management. It is important to note that this method will explicitly and intimately contribute to the conservation of the existing set of artistic objects and ornaments in the historical buildings of this Brazilian city, as well as many other historical cities in the country.

For this methodology, it is important to specify that its sources offer a partial record concerning the real consistency of the historical buildings and the existing set of artistic objects and ornaments that are located on the street chosen for this work.

The bibliographies and files about the historical buildings chosen for studying the centre of São Luís do not give enough information to help in estimating real risks. Above all it is a shame that in many governmental departments the archives are obsolete, with old maps and technical drawings stored, and worse yet, deteriorating, in malfunctioning confined spaces. This confirms the necessity of an updated management system that will be presented in this work. The use of modern digital tools is very helpful because of the technology used. It stores, maintains, updates and the most important of all, interacts with other kinds of technologies.

1. The urban structure and its risks

Urban structures are very close to risk issues, specially the hazards derived from nature and direct actions caused by man. The evolution of urban history has taught us about the relevant changes in the structure of cities, despite their size. The process of city development has created irretrievable loss in cultural heritage. Nowadays, powerful chains are emerging in a globalized economic context and the result can be seen in the changes in cultural heritage. Many historical cities are facing risks caused especially by man's greed. Urban growth exerts pressure

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on natural and environmental resources. Land occupation and its patterns, urban production, lack of accurate planning procedures, and severe faults in basic infrastructure, combined with the rapid increase of underprivileged populations in cities, lead to exposure to different risks such as natural hazards, air and water contamination, floods, land occupation, collapsed structures, and so on. According the ICOMOS 2000 Monuments and Sites in Danger Report, risks are derived from natural processes, economic development, collective social behaviour and conservation security net weakness.

Risk can be defined as a probability of social-economic loss due to the occurrence of a dangerous phenomenon (Díaz *et al.*, 1997). For Lavell (1996), the risk concept, in its simplest definition, refers to the probability of a population of facing something hazardous and destructive. Risk, to the author, is a consequence, latent or potential, and its level depends on the intensity of the hazard and existent levels of vulnerability. Social process derived from development global patterns increases the vulnerability of groups and urban communities and may power the human impact of physical risk factors naturally or humanally generated.

Risk according to Baldi (1991) is defined as the possibility of an undesired happening that can damage something with an attributed value. Risk derives, therefore, from a combination of three different elements: the value of the objects that constitute cultural heritage; its behaviour in the face of damage, i.e. its vulnerability; and the presence or probability of hazard factors. Those factors that are related to the environmental-air-domain are defined by the author as the aspects of the surface; the static-structural domain is defined as the constructional and static-structural characteristics; and the human domain for use and safety. Nevertheless, decision making concerning the safeguarding of cultural heritage can be taken and to corroborate this it is necessary to respond urgently.

The method presented in this work has its basis in the concept of the risk map, specifically the Italian principles of the Risk Map of Cultural Heritage (Maris) and the uses of criteria of a Geographic Information System (GIS). The GIS Risk Map developed in Italy is a system of alphanumeric and cartographic databanks with the capacity of exploring, superimposing, and processing information concerning potential risk factors posed to Italian cultural heritage. The organization of the Italian Risk Map is articulated in three different stages: the overall and theoretical appreciation of the deterioration factors which will lead to the hazard thematic maps compilation; the real occurrence of factors causing deterioration, which will determine the vulnerability levels definition; and the synthesis of the preceding stages in the development of the risk map.

The Italian project was an important piece of research for the completion of a Spanish thesis whose methodological approach to the historical centre of São Luís. Both are fundamental sources that enrich the current paper. It is of great importance to clarify which aspects of the Italian project and methodology of the Spanish thesis were used for São Luís.

One of the most important elements and part of the methodology for this work was the development of a databank. The databank as a dynamic tool allows the constant input of information related to natural events and human acts. The information can be stored, used, updated, and accessed throughout the world. The methodology that is proposed here is also intended to plan the organization of an inventory for all interested in conservation and preservation. With this information, along with the use of GIS and an informatics model, it is possible to store, translate, and interact with data from the São Luís historical scenery. This can be disseminated to possible management plans and other projects of conservation and preservation.

GIS is defined as a hardware and software system and elaborated procedures that facilitate the acquirement, management, manipulation, analyses, modelling, representation and output of spatial data. Barredo (1996) defines the elements of GIS as: the input of information, spatial data and thematic characteristics, e.g. several sources and formatting; data management concerning the aspects of the organization of spatial and thematic data in the database; transformation and data analysis, the potential operative, its definition, use and the spatial problem being solved through GIS; and finally the output data. The Geographic Information System is a complete informatics package (physical and logical support), created to manage capturing, storing, editing, manipulating, analysing, modelling and generating graphic spatial data output with the objective of addressing planning problems using complex resources. The applications of GIS are innumerable. GIS is a fast response to questionable spatial matters and it is beyond ancient and traditional databanks. Its effectiveness and productivity maximize the ability to carry out territorial and spatial

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analysis. This system can be used in the planning of several models of development and management.

2. São Luís, Maranhão

Although founded by the French in 1612, and also occupied by the Dutch for a short period of time, the city of São Luís was re-conquered in 1615 by the Portuguese and remained as a markedly Portuguese city. It has the largest example of colonial Portuguese architectural from the 18th and 19th centuries. The richness and beauty of the São Luís' historic centre is the result of many aspects including its culture, its peculiarities, surroundings, and most of all, its history.

The historic city centre's architectural and urban lots are divided into two significant urban zones, as declared by federal jurisdiction protection. It has approximately 1000 buildings with historical and landscape value in a 90 hectare area, and 2500 buildings with historical and artistic value in 160 hectares of area protected by state law in an Historical Preservation Zone (Maranhão, 1998).

The buildings are inserted on an orthogonal road network that determines regular drawing disposition and placed in lots according to topography, taking advantage of the area. It was possible to build big structures using a considerable amount of area making a good use of the corners of the streets. The typology of the constructions are 'L', 'U', 'O', 'C' and rectangular shapes. The façades are symmetrical and uniform. The big buildings are known as *sobrados* and *solares* and the single-storey houses are given specific names based on the number of windows in their façade: *Morada inteira*, *Meia–Morada*, *porta e janela*.

In general the buildings are composed of architectural elements adapted to the local climate. These adaptations were made in the Portuguese style. Their disposition presents many architectural aspects. Because of the tropical climate it was necessary to make some arrangements to deal with the heat and humidity. The results can be seen through the sash windows and doors with the *venezianas*, signs of Arabic influence during the Iberian Union. It is quite often present in internal patios in the *sobrados* and *solares* as well as in the *varandas* that surround the upper floors of the interior of the buildings. In fact, all of these arrangements were made to face the long sunny days throughout the year. Although sunny, the rainy season in the city is important due to the amount of rain that falls and a very wise solution was the use of tiles to cover the external façades as protection from the rigorous weather and also to reflect the solar rays. It is important to mention that these buildings have a traditional construction system, e.g. stonework and lime, and with the heavy rain season the water sweeps strongly against those walls. Thus, they offer a combination of aesthetic value, thermal comfort and protection. The tiles in the buildings of São Luís were widely used in the 18th and 19th centuries; in those times the State of Maranhão was experiencing its best economic cycle due to the cotton industry and manufacturing, and received from Portugal a very considerable amount of imported tiles. Because of that, the city is recognized as 'the city of the tiles'.

A combination of geographical, historical, and economic factors made it a significant architectural heritage site.

3. Deterioration of the buildings in the historic city centre of São Luís and its elements

The research that has been made in the area of the São Luís historic city centre has shown many deteriorated buildings and the situation has lately worsened; it is currently possible to see the degradation of a significant group of buildings in different streets.

The intense rainy season has added to the lack of maintenance in structures such as roofs, walls and flooring has caused humidity damage to them. The relative air humidity in the island of São Luís, Maranhão can reach 82%. The humidity factor produces other deleterious factors like rottenness in the wooden components, weakness of walls, ruptures in the stonework, lime structure, and so on. It is necessary to also mention the serious problems that are caused by biological factors: microorganisms and plants. Humidity is the main factor in the majority of the physical and chemical deterioration process in the façade materials. In this situation, there are also human actions that increase the problem of deterioration, similar to any other historic city centre. The list is very extensive; constant traffic that causes contamination, vibration, noise, etc.

The streets in São Luís´ city centre are paved with old stone bricks (raw granite) known as '*paralelepípedos*'. Its irregularity and the strong traffic flow cause vibrations. The historic city centre has narrows streets, typical in an ancient urban structure, and they are not prepared for intense circulation

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of automobiles or heavy trucks. The old building structures are fragile and vulnerable to excessive movement and vibration caused by heavy traffic. The vibrations cause fissures and fractures in materials of oscillating temperature and humidity. They can also contribute to fatigue of constructive materials.

Human action is a relevant factor concerning the preservation of historic sites, monuments, and constructive structures. Human behaviour can accelerate the process of deterioration. Bad planning of tourism activities, no control of visit intensity, or placing objects and ornaments within reach can lead to damage or destruction. Elements such as pictorial coats, stones, and ornaments are generally very fragile.

Also many transformations and circumstances have taken place that directly affected the way of living in the historic city centre. The interrelation of conditions between the social and economic reality and the settlement of groups in the area have generated serious problems in the urban area. There has been a loss of the original function of the structures, as the buildings were constructed for the bourgeoisie class in the earlier centuries, and now accommodate new groups with differing economic levels, many of whom have come from the interior of the state. In the buildings of the area, groups from the same family and groups of different families living in the same building can be seen. In addition to working-class inhabitants, a large part of the population are elderly and living in a state of poverty. Among the residential groups there is a neuralgic problem concerning the maintenance of the buildings. Those who rent cannot afford the expenses of maintenance, nor can the owners. It is an eternal battle to determine who is responsible for the expenses. Evidently there is also a weak response from the state in dealing with these matters. This is a serious and problematic situation that contributes to the degradation of the historic buildings and also to the growth of structured risks (Figure 1).

Figure 1. The deterioration in the buildings of the historic city centre (Braga, 2004).

The examples discussed here are complicated and this is a long-term matter. The list is extensive, however, and it shows the importance of identifying and evaluating risks and giving subsidies that can help in the development of new technological tools to manage new strategies to set back or to impede procedures that in many times are badly executed in historic city centres. The discussion above allowed for the development of the methodological proposal in this study, which can help in decision making concerning the management and safeguarding of cultural heritage sites.

4. Giz Street

Giz Street, located in the historic city centre of São Luís, was the street chosen as the object of this study since it belongs to the architectural collection listed by UNESCO as part of the cultural heritage of humanity. The street will exemplify the methodological proposal in this work. Giz Street is oriented east-west, with its northern limit at Nazaré street and southern at Jacinto Maia; it is paralleled to the west by Estrela Street and to the east by Palma Street. Its length is approximately 500 metres, covering 12 blocks of the area (Figure 2).

The architectural styles present in Giz Street are the Portuguese traditional *sobrados*, *solares* and the typical single-storey houses mentioned previously. The typology of building façades presents a regular form, a symmetrical span composition with balconies whose bases are of calcareous limestone.

The information collected for the organization of the work includes the use, the state of conservation, and the architectural style of Giz Street.

5. Method and proposal development

The compilation of information included the state and typology of the buildings settled at Giz Street,

Figure 2. Giz Street in São Luís´ historic city centre (Moreira, 2006).

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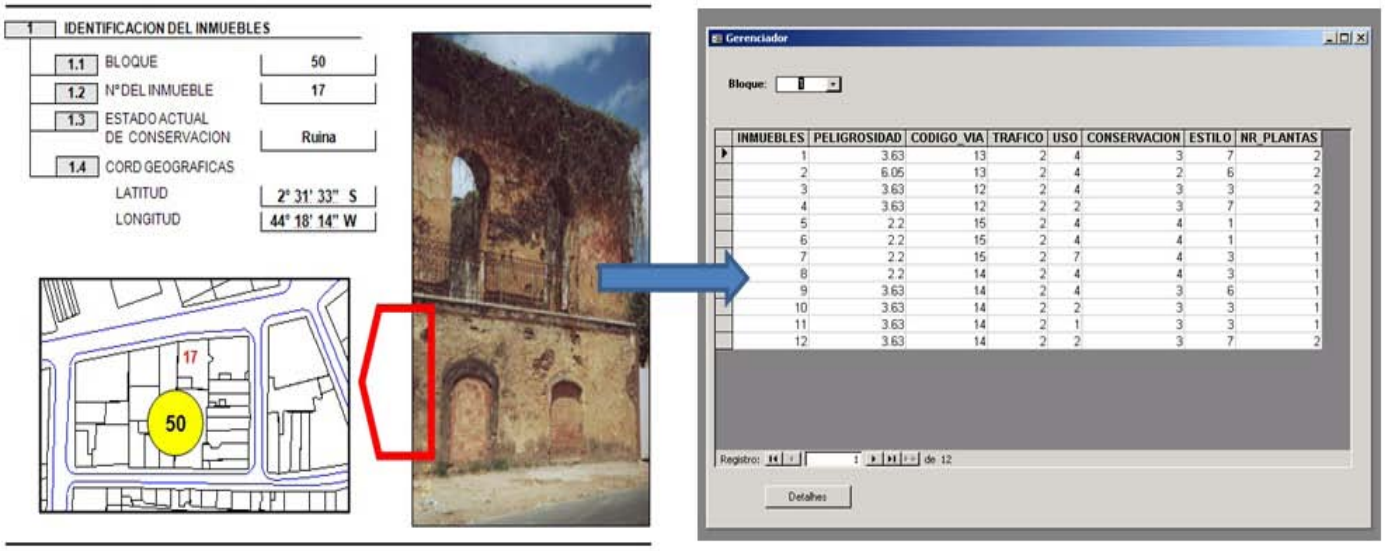

Figure 3. Cadastral files with databank - methodological proposal model (Braga, 2004).

as well as the delimited space, street identification, blocks, and spatial location done through investigation of urban plans, architectural archives, bibliographic references, local knowledge and *in situ* consultation. Information has also been collected by the Research and Planning County Institute (formerly IPLAM) and by the state government through the *PRAIA GRANDE/REVIVER* project. The information collected includes the use, state of conservation, and degree of conservation and has been evaluated according to the scales of intensity and extension of the damages and pathologies as well as the architectural styles and the number of floors. Subsequently, all the data compiled was organized in catalogue charts that include a photography survey and interviews.

For the development of the methodology proposal two stages have been elaborated, one for the construction of the informatics model and one for the risk map. It is important to mention the use of different software. Two statistical units were established: the buildings from Giz Street as the vulnerable element; and the territorial district where Giz Street is located with the traffic flow as the danger factor.

For the risk map the references from the Spanish thesis presented by Braga (2004) whose investigation resulted in the following methodology were used. The methodology for the thesis has helped with the information regarding in its first stage the organized and compiled data of the cadastral files of the buildings in the street chosen for this work. This includes the use, the state of conservation, the architectural style and the number of floors according to files from IPLAM (1998); georeferences for the buildings processed by the Microstation software and cartography data and thematic maps; determination of the building vulnerability levels based on the evaluation of the information gathered in the files for the several states of conservation: ruin, bad, regular, and good (IPLAM, 1998); determination of the traffic danger flow in the street; identification of the databank codified and defined components and the organization of all information, along with the migration of the MS Access databank system. For the second stage all the files have been spatially compiled in a GIS environment, with the use of ArcView developed by ESRI (Environmental System Research Institute, Inc). The software was chosen at the time for the ease of conversion to CAD (file suffix .dwg) and Microstation (file suffix .dgn) files. The third stage consisted of the development of the risk map and with this map it is possible to interact with different levels of interface among users of the system, including ArcView and other digital tools (Figure 3).

The methodology has adopted the following criteria for the evaluation of damages and pathologies in the several levels of the state of conservation already mentioned (ruin, bad, regular, and good); the intensity scale of damage and pathologies were defined in relation to the extension of those and the vulnerability level of conservation was measured mathematically. The human danger level was identified as a territorial variable, as the area where the buildings are situated and where the information has been captured by the vehicle flow data. The information regarding the state of conservation of the buildings in Giz Street were added the vulnerability and danger factors and in addition to risk factors. Automatic

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cartography faces different kinds of hazards then the application of an evaluation model with the use of the ArcView (Figure 4 and Figure 5).

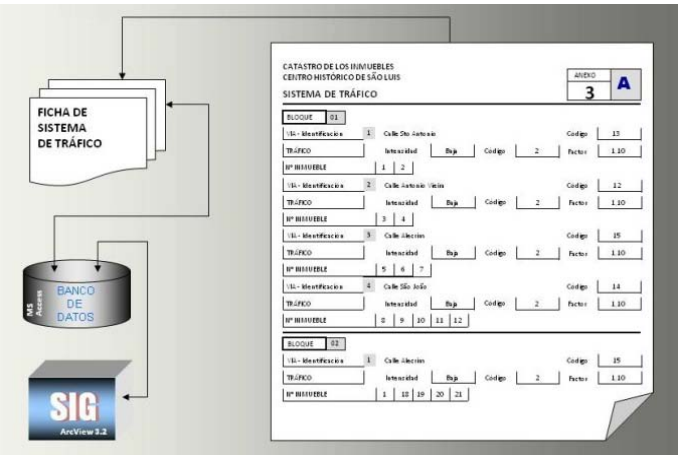

Figure 4. Methodological Development Model (Braga, 2004).

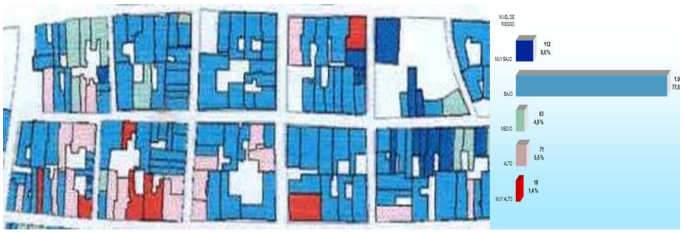

Figure 5. Risk map of Giz Street. The dark blue colour represents low risk; the blues, very low risk; green, medium risk; magenta, high risk; and red, very high risk (Braga, 2004).

6. The method applied to the construction of the informatics model

The development of the proposed model has been possible because of the information gathered concerning the cadastral file of the typology, architectural plans, and the topography of the street. With the research, archives, and information compiled the modelling and construction of the informatics model was started. The software AutoCad (AutoDesk) reproduced the accurate measurements of the architectural elements such as spans, balconies, gratings, and columns.

For the virtual walk, the modelling was imported to the BS Contat software that allows the visualization of the walks in a simple and interactive way, where the user has control of the walk orientation in the graphic environment designed space (Figure 6).

The proposal covers the reproduction of environments with a considered level of realism through

Figure 6. Square at Giz Street and the design for the virtual walk (Cordeiro, 2006).

rendering; nonetheless this procedure requires a high standard of hardware and production, for example the 3Ds Max (AutoDesk) software.

Cultural heritage in a broad sense refers to all the expressions, attitude, places, artistic objects, and all significant traces of human civilization. Its safeguarding is indispensable. This work is determined to spread awareness of the preservation and conservation of historic sites. It is expected that the proposed methodology in this work will collaborate in the management, control, and prevention of the factors that deteriorate not only Giz Street buildings but also all the historic buildings of the city of São Luís, Maranhão.

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Monitoring of the state of conservation in the context of the Edinburgh functional system

Krzysztof Jan Chuchra[1]

Abstract

The complexity of the process strongly depends on the organization of a site's functional system and political relations between the key stakeholders. The level of complexity affects monitoring methodology and the scope of monitoring indicators. One of the main challenges is to balance monitoring to ensure it provides high quality analysis for both the World Heritage Committee and the site's management.

Keywords: monitoring indicators, functional system, politics, management cycle

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The case of Edinburgh: overview

This analysis is mainly focused on the case of the Old and New Towns of Edinburgh World Heritage Site, inscribed on the World Heritage List in December 1995. The inscription followed the International Council on Monuments and Sites (ICOMOS) recommendation that the property meets criteria (ii) and (iv) of Outstanding Universal Value.[1] The area of the World Heritage site covers the city centre of the vibrant capital of Scotland (Figure 1). The management strategy and state of conservation have been subject to regular monitoring since its inscription, and so the analysis is based on solid experience. The analysis provides examples of solutions based on monitoring processes.

Monitoring the state of conservation of a World Heritage site is an obligation of inscription on the United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage List. Every six years, the World Heritage Committee requires State Parties to submit a report on the application of the *World Heritage Convention*. At the local level, annual monitoring reports form part of the *management cycle* and evaluation, and are focused on

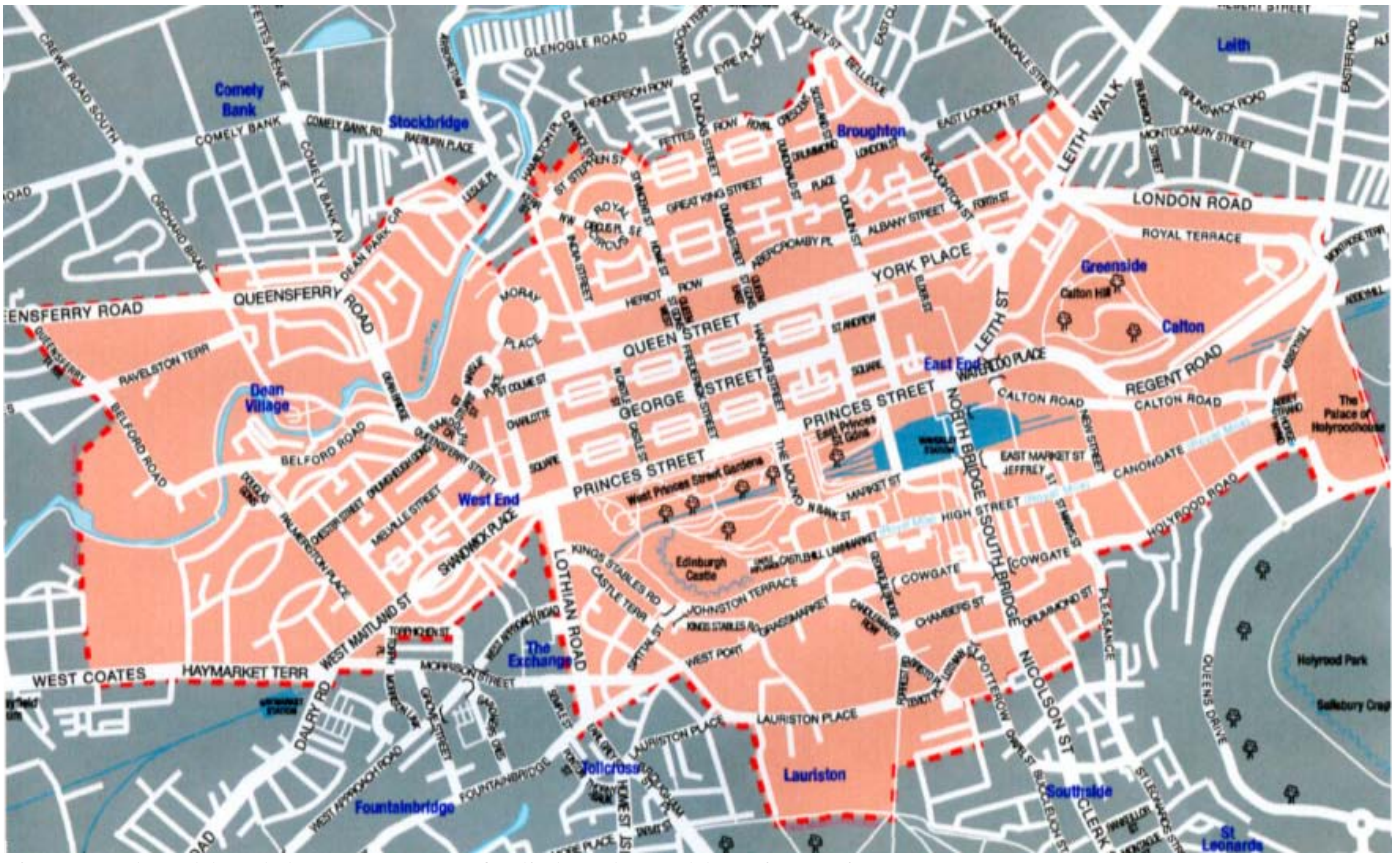

Figure 1. The Old and the New Town of Edinburgh World Heritage Site.

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providing an evaluation of the state of conservation. Outcomes from the monitoring are incorporated in an Annual Action Plan, which breaks down the Management Plan objectives into actions. Appropriately carried out, monitoring is critical to the decision making process of the World Heritage Committee, the site's management and to anyone with an interest in the site. It is critical to carry out ongoing monitoring to identify trends and effectiveness of strategy over a long period of time.

Although this approach is fairly standardized it should be borne in mind that the compilation of the monitoring report itself is a subject to functional implications. This depends on the structure of the site's management. Often the issue is about balancing the use of monitoring reports in the context of scarce resources, being available to dedicate to compilation. This leads to a question of to what degree the scope of analysis should be orientated on international or local expectations. There is no straightforward answer to this question because each World Heritage site is different in terms of its attributes, values and, most importantly for this analysis, organization of the functional system.

Methodology (scope of indicators, data collection, and analysis) is the main *technical* issue related to the compilation of the monitoring report. In practice, the scope of monitoring indicators is a subject to an agreement of key stakeholders dictated by the scope of objectives in the Management Plan and projects of the Action Plan. The information and statistical data are relatively accessible (however broad the range of subjects and interests producing it), and are then gathered, analyzed and compiled in one report. In the case of Edinburgh, the methodology has been developed over the years from inscription with only minor changes. The current review of the Old and New Towns of Edinburgh World Heritage Site Management Plan gives an opportunity to optimize the monitoring mechanism for the new strategy. Finally, responsibility for the monitoring should be led by the principle of objectivity and ideally held by the coordinating body.

1. The functional system: politics of management

In Edinburgh, the key roles in the implementation of the Management Plan and protection of the World Heritage site's Outstanding Universal Value are fulfilled by Edinburgh City Council, Edinburgh World Heritage Trust and Historic Scotland which form the core Steering Group; and Edinburgh World Heritage Partnership (Steering Group + Essential Edinburgh and Scottish Enterprise).[2] The Edinburgh Old and New Town World Heritage Site is a complex urban World Heritage site covering the capital's city centre and seven conservation areas.

It is a place where numerous different interests meet and, in some cases, collide. Therefore management of the World Heritage site is *indirectly* influenced by a larger number of organizations, lobbies, community and interest groups. Usually these groups have an interest in the management of the *city centre*, not *the World Heritage site* per se, hence their influence on the integrity and authenticity should be perceived as *indirect.* The set of various bodies and interests, taking in the existing relationships and interactions between them, is referred to by the author as a *functional system* (Figure 2).

It should be noted that the presented functional system does not reflect all the subtleties and exceptions and rather presents an ideal state of managerial efficiency. For instance, an interest related to the site's management coming from *CG* is articulated directly to *CEC or HS* and then redirected to *EWH.* This dysfunction may demonstrate low public understanding/awareness on the function of the key stakeholders. Ideally these types of issues should be subject to monitoring with the aim of understanding and improving functional relations between key players (stakeholders).

Understanding direct and indirect implications within the functional system is fundamental not only to monitoring but to the entire cycle management. Knowledge of who participates in the management

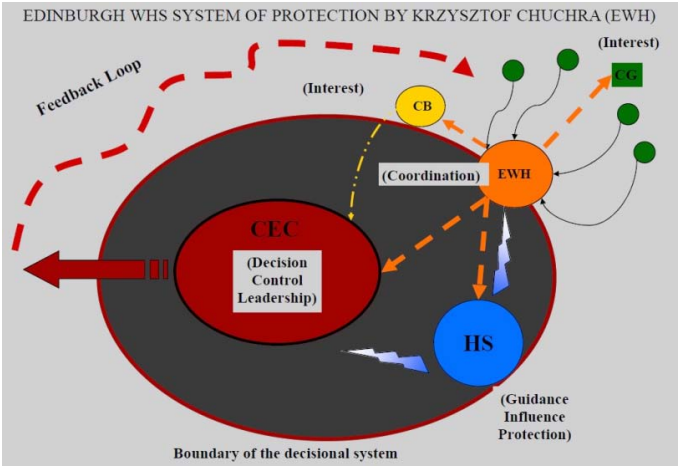

Figure 2. Edinburgh functional system of protection. Respectively: CG — community groups, EWH — Edinburgh World Heritage, CB — Cockburn Association, HS — Historic Scotland, CEC — the City of Edinburgh Council (Source: author's elaboration).

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should be utilized at the stage of scoping and data collection, ensuring bodies, which influence the system make research informed decisions. Therefore, not only impact of the decisions but also data used should be of interest for the entity responsible for monitoring. It has to be indicated that significant data is usually held by *large* players such as the local authority, government or developers. Decisions and influence made by, for instance, community groups, although important, mainly has a reactive character.

1.1. Local and external engagement

This functional system focuses on the local (Edinburgh) residents and experts. This approach results from the organization of British monument protection, which forms a part of the planning policy framework. The policy emphasizes an early community engagement in the decision making process at the local level. It obliges local authorities to consult local residents and experts with an interest in the city management of environmental issues. Advanced decentralization allows local communities to take ownership of place, including its historic assets, and shifts responsibility for the management onto the public by placing the local authority in a facilitating role. From the functional analysis point of view, Edinburgh is a particularly good example because of its capital status, as a centrally located and large World Heritage site in relation to relatively small area of the entire city[3], and high community interest in the city management.

However, World Heritage status is not about private interest but is about the common good. From a pragmatic point of view the opinion of local experts is important in decision making although not central, depending on the case; for instance, a reactive monitoring mission caused by exceptional circumstances. Often, the local experts are close to particular issues related to a site's management, playing an active role in the functional structure. It can be assumed that the best results are achieved if opinions of local experts are verified by external experts, given that the latter have the authority of broad experience and objectivity. When it comes to monitoring, the opinion of both external and local experts is equally important. Local experts are a good source of information about the state of the site, particularly in a situation when monitoring requires specific, expensive research such as on thermal efficiency of historic buildings.

In 2008, energy efficiency and fuel poverty issues were recognized as some of the main issues affecting state of conservation and quality of life in the Old and New Towns of Edinburgh World Heritage site. A case study and monitoring exercise took place, the outcomes of which can be found in Energy Heritage report published by Changeworks in collaboration with Eaga Partnership Charitable Trust and Edinburgh World Heritage.[4] In 2009 the report-based guide entitled 'Renewable Energy'[5] was published. The functional response to this was development of the Energy Efficiency Officer post funded by the Climate Challenge Fund. The project aims at raising awareness among local residents of the importance of energy efficiency and sustainability issues, and to promote the use of green routes and activities throughout the city.

Certain information related to residency in the World Heritage site can be important for monitoring and evaluation because it provides the management with information, which can be critical for the strategy, such as reasons of residency, short and long term residency-based perception on the site, and the social and demographic structure of the community. For instance, long-standing residents often have better knowledge about the area, especially about its intangible and social attributes than, for instance, students arriving on a one-year exchange. On the other hand, new residents can provide monitoring with useful information over a period of time relating to the reasons for moving to the city.

Monitoring should provide information on how interpretative, educational, and outreach projects should be targeted in order to address the highest number of residents that could benefit from taking part in the cultural life of the City. It was recognized in the last Monitoring Report[6] that higher consideration should be made to targeting residents who live outside the boundary of the World Heritage site. Some of them, especially those living in relatively deprived areas, have never visited the site, which covers most of the city centre. In consequence, Edinburgh World Heritage is developing an outreach strategy coordinated with The City of Edinburgh Council's social inclusion work.

1.2. Functional system and monitoring

The functional system is also a subject to monitoring in the context of effective management and protection of the site's integrity and authenticity. This approach is considered as critical in countries with advanced democracies because public support and understanding of the issues tips the scales in decision making processes. Edinburgh World Heritage

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site experienced a crisis point as a result of accumulated development pressure, which would have affected the state of authenticity and integrity. This resulted in UNESCO-ICOMOS reactive monitoring mission in November 2010. However, the crisis was largely averted by public objections deriving from a broad understanding of the place's value.

It is important to recognize that values change over time and ensure that the site's management is responsive, bearing in mind that values provide justification for the conservation of the material objects. In the case of Edinburgh, minor structural changes and inter-organizational relations within the functional system in general do not require significant formalization. However, their accumulation over time are monitored and reflected in a flexible management structure and the Management Plan, reviewed every five years. For instance, in the last two years the role of the World Heritage Site Coordinator was moved from Edinburgh World Heritage since the organization itself is largely responsible for coordination and promotion of World Heritage projects. In 2009, the City of Edinburgh Council appointed a World Heritage Officer within the planning department to raise awareness of the World Heritage site within its own structures and to ensure that the planning decision making process is better informed at early stages. The effectiveness of this functional change will be monitored in order to achieve effective protection of the site's components.

1.3. Monitoring functions

There are several functions of monitoring, which have to be considered in the context of the management of the site as factors of improvement.

1.3.1. Improvement s to strategic planning by the city management

World Heritage site protection is a significant part of the city management strategy, reflected in the Edinburgh City Local Plan.[7] Although the monitoring exercise is a World Heritage Committee requirement, it should also be of use to the city's management because the latter makes the main decisions affecting state of the site. Monitoring should ensure that those decisions are research-informed, rational, justified, and in consequence internally consistent.

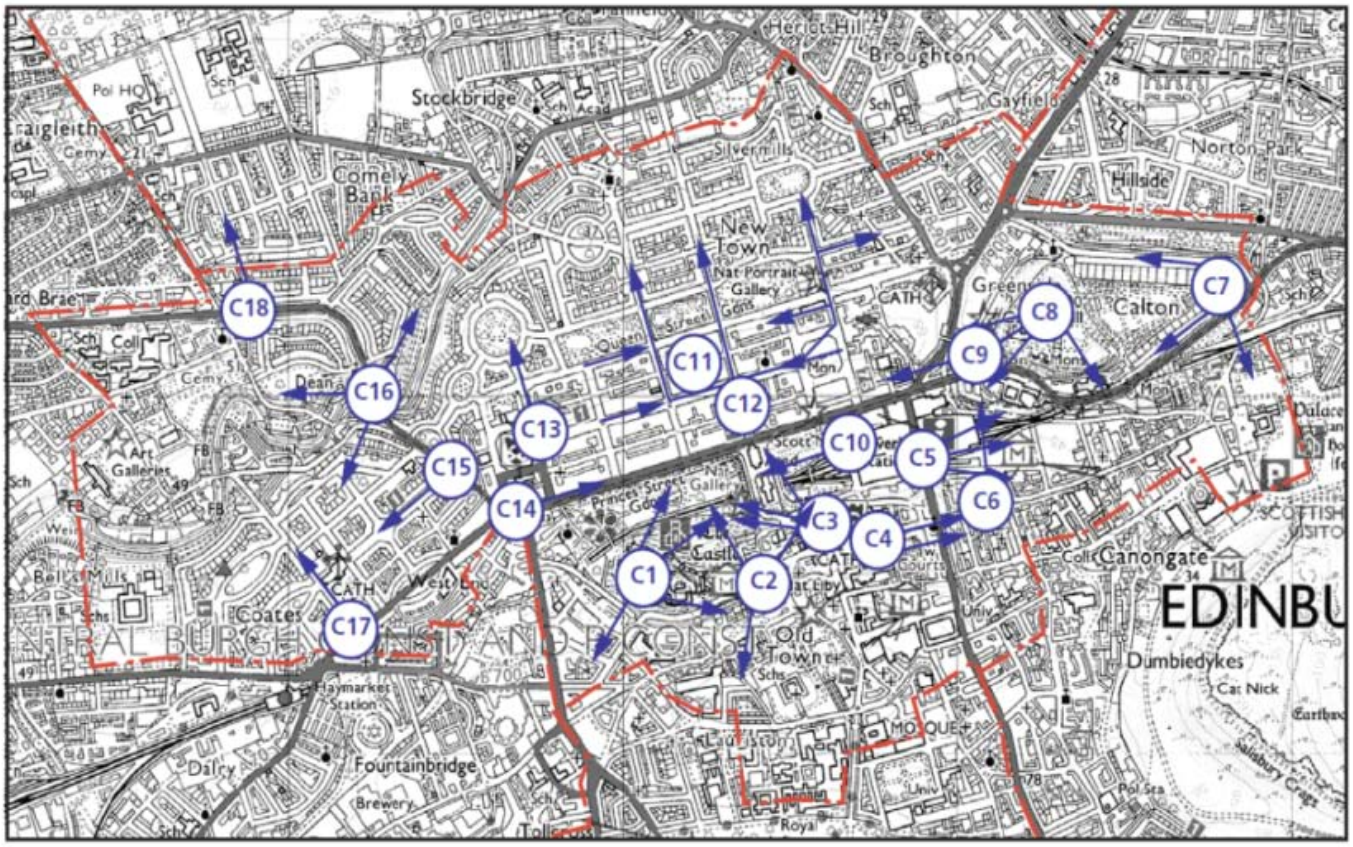

Figure 3. View cones from and within the World Heritage site 1 (Source: the City of Edinburgh Council). The proposed key views have been numbered to give each view cone a distinct number and to make views more readily identifiable. The city has been divided into five sections; Central (C), North (N), East (E), South (S) and West (W). The map extract shows the viewpoints from the World Heritage site. Individual sheets detailing each view are also available.

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This should guarantee that any resources that follow them are effectively allocated. A good example of this approach is the implementation of the *Guideline for the Protection of Key Views* across the Edinburgh World Heritage site (see Figure 3). The need for this was recognized shortly after the inscription on the World Heritage List. The high building policy was reviewed and informed by a study, which provided the site with a protective planning policy[8] (adopted by the City of Edinburgh Council in 2008). This well informed decision provided additional protective policy, which provides a basis for further improvements to the site's existing setting protection measures as a part of the review of the Management Plan. One of these measures is currently being considered by the Steering Group in relation to the buffer zone; the potential implementation of which was analyzed by another study. [9]

1.3.2. Improvements in implementation

This function is particularly critical to the site's management because it focuses on the quality of the implementation of the Action Plan, along with its projects deriving from the Management Plan's objectives. These projects, as results of past monitoring recommendations, may have a broad range of aims such as the implementation of a protective policy within the Local Plan, compilation of a promotion strategy, or even the restoration of an important historical landmark, etc. The progress of implementation of the projects is monitored in order to improve the management of the Action Plan, its structure and efficiency. Outcomes from the monitoring form new recommendations for improving the Action Plan. One of the main issues related to this function is the efficient balancing of the scope of indicators focused on state of conservation with effectiveness of project management (implementation).

1.3.3. Improvement of partnerships and collaboration

Monitoring does not have a direct role in this function; however, often its effectiveness is dependent on the quality of partnership between key stakeholders. In case of Edinburgh, the scope of monitoring (see Table 1, next page) has to be agreed by the key partners (the Steering Group). Some issues and projects may require assistance from other bodies. Ideally, these should be identified through monitoring and engaged at the compilation of the Action Plan. As a consequence, partners should be activated and involved in the dialogue — for instance, those located outside *the decisional system* but showing an interest in constructive participation.

Effective operational collaboration between the key partners is critical to the quality of implementation. This is perhaps best achieved through selection at the stage of preparing and application for World Heritage status, along with clear definitions and understanding of roles of each partner. Later on, as indicated above, the partnership may be reshaped in order to meet changing strategy. Any problems in this part of the *functional system* should be identified and prioritized as a serious dysfunction.

Improvement of understanding

Understanding processes and factors that influence the effectiveness of the strategy and its implementation define the success of that strategy. Monitoring itself should aim for improvements in terms of its accurate analysis, recommendations, and scoping. This should form a base of knowledge on good practice, which can be verified and adopted externally, for instance at other World Heritage sites. In this sense, the function also has an educational angle.

1.3.4. Evaluation of effectiveness

Finally, monitoring should provide the public with an evaluation of effectiveness of implementation of the strategy. In most cases, the *management cycle* of the World Heritage site (State Party) is funded from public resources, hence the monitoring should guarantee transparency of the process to ensure legitimization and public support to the decision making.

2. Scoping methodology

The managers of the Old and New Towns of Edinburgh World Heritage Site Steering Group have developed the monitoring methodology over the years since inscription. This experience contributed to the development of the International Council on Monuments and Sites of the United Kingdom (ICOMOS United Kingdom) Toolkit for World Heritage Site Monitoring Indicators.[10] The toolkit became an important background document informing the process of monitoring scoping *sensu stricto*, however, it has to be complemented by functional analysis in order to be responsive to the site's managerial needs.

The monitoring methodology strongly depends on the complexity of the functional and environmental qualities of the World Heritage site. The latter are particularly important in the United Kingdom,

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STATUTORY PROTECTION	CONDITION OF BUILT ENVIRONMENT	CONDITION OF THE NATURAL ENVIRONMENT	DEVELOPMENT AND CHANGE	CONSERVATION	EXISTING USES, ECONOMIC AND SOCIAL VALUES	LEARNING AND OUTREACH
The Management Plan	Conservation areas and listed buildings	Environmental policies in the local plan	Policy context	Edinburgh World Heritage Conserva-tion Funding Programme	Demographic background	Promotion
The Development Plan	New listings	Gardens and designed landscapes	Commercial development	Major conserva-tion projects	Institutions	Learning
Edinburgh Plan-ning Guidance	Archaeology	Sites of special scientific interest	Development pressures in conservation areas	Projects to enhance the World Heritage site	Tourism	Activities in 2007-2009
Buffer Zone	Buildings at risk	Sites of special scientific interest		Enforced works	Visitors' experience	Conservation skills and training
Guideline for the Protection of Key Views	Public realm	Local nature conservation sites				
	City centre footfall	Local landscape designations				

Table 1. Scope of monitoring indicators of the Old and New Towns of Edinburgh World Heritage Site Monitoring Report 2007-2009.

where Outstanding Universal Value is protected through the planning system, and not solely reliant on separate monument protective legislation.[11] This means that monitoring recommendations may aim to influence the planning policy framework in order to achieve maximum effectiveness in protecting the site's integrity and authenticity.

One of the main issues indicated in Annual Monitoring Report 2006/07 was lack of World Heritage policy in the Local Plan, which it was felt would significantly improve the site's recognition within local planning policy framework. The Steering Group and the City Management considered the issue and as a result of much quiet negotiation and wider consultation on the Edinburgh City Local Plan (finalized on 28th January 2010)[12] includes a new Policy ENV 1, which specifies the following:

> "Development which would harm the qualities which justified the inscription of the Old and New Towns of Edinburgh as a World Heritage site or would have a detrimental impact on the site's setting will not be permitted."

In addition Policy ENV 1 in para 4.6 gives recognition to the World Heritage site Management Plan:

> "The management plan may itself be a material consideration for decisions on planning matters. The Outstanding Universal Value of the Edinburgh World Heritage site, as agreed at inscription, including its authenticity and integrity, is a key material consideration when decisions are taken on application for planning permission and other relevant applications, either by the Council or Scottish Ministers."

There are two main benefits from this change: the policy guidance should, if necessary, refer to the new policy and planning applications for major developments have to be considered in the context of potential impact on the site's OUV as well as authenticity and integrity.

3. Monitoring material and immaterial components in the context of authenticity and integrity

The interpretative part of the Statement of Outstanding Universal Value[13] provides an assessment

of the World Heritage site's attributes, both tangible and intangible. The majority of the statement focuses on tangible heritage; hence annual monitoring reports following inscription reflected this through the scope of *monitoring indicators*. The analytical side of these documents also provided recommendations focused on physical change within the boundaries of the World Heritage site.

Integrity is an essential quality defining the structural character of a site. Moreover, it also defines the site's uniqueness embodied in a combination of material (such as historic buildings, monuments or even elements of landscape) and immaterial (knowledge, beliefs or symbols) objects.[14] Material objects, such as historic buildings and monuments, form an integral part of urban environment. They can exist in people's (residents, workers and tourists) minds and perception as unique landmarks or as a natural place of shelter. Places hold values, which philosophically overlap or generate immaterial objects (such as stories around a historic building). This mutual dependency is an inspirational mechanism for interpretative projects related to conservation or restoration projects.

Edinburgh World Heritage runs monitoring specifically focused on buildings of historic interest that are strategically important to the site's integrity. This monitoring is separate to the national exercise, focused on 'A' listed buildings (the most highly protected) at risk. This approach ensures an efficient approach to targeted grant aid for conservation projects.[15] Potential projects identified through this monitoring are considered holistically, including interpretation and education actions. These actions aim to raise public awareness of the conservation project, World Heritage status, while engaging with the local community and educating *sensu largo*. Broad public support (feedback) is usually critical in fundraising strategies for projects as well as functional coherence.

Structural authenticity is the factor that defines the attractiveness of a site – the more authentic the site is the more interest it potentially gathers. Damage to the historic fabric erodes the site's authenticity and lowers its integrity, which in consequence leads to lowering its value in the same way as with any other property. Accurate monitoring of physical change within the site provides information for assessments of resources that the management needs to have available to it for conservation. Edinburgh, with 19% of the national stock of 'A' listed buildings[16] in the entirety of Scotland, 1660 listed buildings on an area of 4,5 square miles, has a great challenge to face when it comes to conservation and maintenance (Table 2).

Conservation Area	A listed	B listed	C(S) listed	Total
Old Town	114	274	68	456
New Town	520	505	60	1085
Dean	7	22	2	31
Coltbridge and Wester Coates	1	0	0	1
West End	11	19	18	48
Marchmonts, Meadows and Bruntsfield	2	4	0	6
Southside	4	25	4	33
Total	659	849	152	1660

Table 2. Number of listed items in conservation areas within the World Heritage site in April 2009 (Source: the City of Edinburgh Council).

At the national level, the Scottish Government has established the National Performance Framework. It contains a National Indicator for the historic environment to *improve the state of Scotland's historic buildings, monuments, and environment.* The aim is to decrease in the percentage of 'A' listed buildings recorded as 'at risk' on the Scottish Civic Trust Buildings at Risk Register. In addition to this, different organizations with an interest in investing resources in conservation of Edinburgh's historic environment undertake their own monitoring, depending on its particular areas of interest. From a functional point of view, it is desirable to coordinate these efforts in order to focus outcomes, reduce repetition and reduce the drain on limited resources. The World Heritage Site Monitoring Report is an attempt to achieve this despite the formal limitation of the boundary of the World Heritage site. Any change in this situation would require structural changes to the *functional system* as the report is currently compiled by Edinburgh World Heritage on behalf of the Steering Group.

Immaterial objects are crucial to cultural identity, especially in urban environments where this factor can be easily eroded or even vulgarized. History, whether real (or more controversially, invented), and place are inseparably linked. There might be a presumption that material objects define the immaterial but none of them should be diminished or favoured in the context of the sustainable conservation of the

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World Heritage site. The 'House Histories' project is a good example of an interpretative project deriving from an idea of linking material and immaterial objects. The project was based on a behavioural scoping indicating that non-specialist visitors to the Old and New Towns of Edinburgh World Heritage site are interested in stories about people and historic buildings from a perspective of their occupants through time.[17]

The significance of immaterial objects in the context of authenticity depends on their character and utility. On the one hand authenticity is essential to an accurate intellectual understanding of a site. On the other it is an identified potential in the promotion of a site, public education through entertainment18 or even leverage in raising public awareness. Authenticity has less significance for the wider public and tourists looking for attractions, such as popular stories related to an event that happened in the past.

The Edinburgh World Heritage Site Monitoring Reports contains indicators focused on the intangible heritage of the site. In the last few years monitoring proved that stronger emphasis should be put on this aspect of the site's management. It is reflected in increased number of indicators and data, which can be provided on issues such as the number of events, interpretative solutions, educational resources, public awareness dedicated to the World Heritage site's intangible values. This should ensure growing public support (legitimacy) to the *functional system*.

4. System of data exchange

An efficient system of data exchange between key stakeholders is essential in achieving well-informed decision making. Effective monitoring requires an ongoing collection of data for analysis and interpretation. In case of Edinburgh, a well-established system is already in place; however, it is limited to the key stakeholders and requires further development. Improvements can include unification of IT databases, rationalization of the existing *monitoring indicators* in order to minimize overlapping, ease accessibility to the system, and IT training. Efficient implementation of improvements would result in the creation of a system, in which data would be regularly updated and re-scoped. The system requires formalization with the aims of achieving better coordination, high quality information, flexibility in scoping and security with minimal investment of additional resources in the process.

The level of flexibility, however, has limitations because certain types of indicators19 related to the state (universal value, authenticity and integrity) should be understood as fixed (long-term) due to their ideal character. Indicators such as those related to pressure (threats to asset) and response (management and public use of asset) have a dynamic character (short-term); therefore the indicators status should be reviewed from a functional point of view in order to achieve sufficient level of responsiveness to the changing system's environment.

The process of establishing effective data exchange has a teleological character in the context of improving partnerships and collaboration function. Its formulation has to be preceded by a dialogue where each partner presents the type of information already being collected, any additional information that could be collected and finally whether existing data collection arrangements can be changed to contribute to the site's monitoring. This approach might be particularly important for newly established managerial structures, which involve a monitoring unit.

Conclusion

The monitoring exercise should not be limited only to Reports on the State of Conservation (Annual Monitoring Reports). The process should be flexible enough to react to the rapid changes affecting a World Heritage site's attributes of special interest by *ad hoc* operational monitoring of specific issues through small scale monitoring projects. An ideal way to achieve this would be a well organized and efficient *functional system* where the roles of all players are clearly defined, resources are accessible over a relatively short period of time and monitoring is recognized as a utilitarian and essential stage in the cycle management.

At the operational level monitoring should be a flexible exercise, which ensures that issues and attributes are addressed through the scope of *monitoring indicators* in a way that is useful to the decision making processes of both World Heritage Committee and site's management. One of the main functions of monitoring is found in the potential for establishing and improving existing partnerships and collaborations between directly and indirectly influencing bodies. This can be achieved through technical (e.g. unified system of data exchange) or non-technical solutions (e.g. formal agreements, public consultations).

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[1]The Old and New Towns of Edinburgh World Heritage Site Management Plan, 2005. Available at: www.ewht.org.uk.

[2]Ibid.

[3]Edinburgh total - 102 square miles, Edinburgh World Heritage Site — 4,5 square miles.

[4] Available at: www.ewht.org.uk .

[5] Available at: www.changeworks.org.uk .

[6] Old and New Towns of Edinburgh World Heritage Site Monitoring Report 2007/8 and 2008/9. Available at: www.ewht.org.uk .

[7] Available at: www.edinburgh.gov.uk .

[8] Colvin and Moggridge Landscape Architects, 2005. City of Edinburgh High Buildings Policy Review.

[9] Masson F. 2010. The buffer zone concept critically examined. An analysis of setting protection mechanisms for World Heritage Cities (unpublished), Edinburgh World Heritage.

[10] ICOMOS-United Kingdom. 2007. Toolkit for World Heritage Site Monitoring Indicators. Available at: http://www.ewht.org.uk.

[11] Chuchra K. 2009. Polish and Scottish systems of monument protection, (unpub).

[12] Available at: www.edinburgh.gov.uk

[13] The Old and New Towns of Edinburgh World Heritage Site Management Plan. Op.cit.

[14] These are actual components of Outstanding Universal Value even if not recognized at the inscription or being an effect of later social or architectural evolution.

[15] The strategy prioritizes main routes to the World Heritage Site, buildings at risk, and areas in need of regeneration.

[16] Buildings of the highest national or international importance. Other two listing categories in Scotland include 'B' listed buildings — regional importance, and 'C' listed — local importance and small architectural integrity and authenticity.

[17] Hicks, D. 2010. Interview with Edinburgh World Heritage Communications and Interpretation Manager. Information on the project available at: www.ewht.org.uk.

[18] Such as Doors Open Day organized in Edinburgh every year by the Edinburgh City Council, Historic Scotland Cockburn Association, Edinburgh World Heritage, National Trust for Scotland and others. Many important historic buildings are open for free to the public. Some of them hold themed events, which engage visitors of every age.

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One hundred years of hindsight: conservation of Mumbai caves from 1899 to 1999

Brinda Gaitonde Nayak[1]

Abstract

When Buddhist monks and Hindu ascetics first carved caves in Mumbai, more than 1500 years ago, little did they know that these fantastic enclaves full of sculptural imagery and exquisite architectural forms would be competing for survival amidst pressures of urban congestion and rapid degeneration due to climatological factors. Excavated into the rock-face from the 2nd to the 6th century AD, these monasteries were relatively near ancient townships in order to be accessible to devotees, but at the same time at a distance for the reclusive meditation of the monks. Now in the 21st century, unfortunately, these are cheek-by-jowl with urban settlements and a sprawling metropolis, spiralling out of control due to concerns of a growing population and inadequate infrastructure. In addition to these quintessential issues of urban decay are inherent problems of friable rock and natural weathering. To combat these and other issues has been a constant challenge for the conservators of these sites, aided by the unique architectural genre of these monolithic rock-cut art monuments. This paper examines the changing conservation methodology at these cave sites from 1899 to 1999, oscillating from the purist stone replacement approach to the pro-cement era and to the preservation of authenticity of material slant of recent times. This 100 year spectrum provides some interesting insight into the thought process of the conservators as well as their changing attitudes, in addition to gauging the impact of each conservation decision.

Keywords: Buddhist caves, archaeological survey of India, Mumbai rock-cut architecture

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The Buddha and the Gods

The foray of Buddhism into the western region of India coincided with one of the most poignant periods of architectural excellence that the country has ever witnessed. That it was spurred by the new religion with fresh spiritual insights and stimulating potential for building is a well-documented fact. However, these exciting prospects needed several factors to be in place, chief among which was a strong patronage or economic backing and good building material. The latter was easily resolved as the western region is known for its dense stone. Since the monks preferred reclusive enclaves for meditation and repose, these became perfect areas for excavating modest shelters in the form of rudimentary caves. It was while carving these that the monks evolved one of the most singular forms of early corporate industry of being 'at the right place at the right time'. And the way in which they achieved the correct balance between promulgation of their faith, with firm roots in charity and righteous conduct, along with building up a corpus for building and monastic purposes is an excellent study of management mechanisms in today's scenario of grant writing.

The topography of the western region of India is such that massive mountain ranges (the Western Ghats or Sahyadris) separate the plains (the Deccan) from the sea, thereby resulting in a landlocked peninsular zone that is not conducive to trade. Trade links to the sea and beyond to Persia and Europe were established via passes in the mountain ranges. It was at these crucial points of entry and exit that the monks established their abode; a strategic and planned move towards securing patronage for cave building and sustenance of the monastery. For the traders passing through these routes, fearing for the safe passage of their goods, pledged fabulous donations to the monasteries that they passed through. Numerous inscriptions at the caves carved at these transit points are testimony to this and act as travelogues from ancient times.

1. From timber to stone: evolution of rock-cut architecture

Now that sustained patronage was ensured the next step was the establishment of a unique architectural

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idiom for building. Staying in reclusive enclaves away from the populace for meditative calm but relatively close to foster daily alms seeking (required of a Buddhist monk) and visits by laity, was already a norm. Fashioning shelters within rock-sides were early examples of such types, which with philanthropic overtures gradually started shaping into actual architectural compositions. Details were added and guidelines laid out for excavating prayer halls and residential cells; the two major components of a typical Buddhist monastery. Gradually these compositions took on more ambitious forms and proportions, perhaps to cater to the growing faith and leave a mark – quite literally – in stone. However, the local masons unaware of this peculiar form of building or what has often been called 'sculpture on a grand scale' showed initial hesitation towards complete adoption of this type of monolithic carving of an entire establishment in the hillside. Hence early examples portray correct but structurally redundant copies of timber joinery in stone and often combination of timber with stone, observed at the caves near Pune such as Bhaja and Karla where the stone vaulted ceilings are 'supported' by means of timber joists dovetailed into the stone masonry. The masons, used to working in stone masonry of regular courses, were puzzled about the structural stability of high ceilings and large spanned halls without masonry support, not realizing the stability of the entire mountainside acting as a crucial fulcrum. Soon however, such hankerings for timber joinery were abandoned when the true potential of monolithic architecture was realized. Ranging from the delicate details at Bhaja to the monumental carving of Buddha figures at Kanheri and progressing to the sculptural imagery (followed with an overlay of exquisite paintings) at Ajanta; Buddhism, through its rituals and the principles of the religion, had evolved one of the most enduring architectural typologies of the world. The prototypes were soon adopted by other pre-eminent and existing religions such as Hinduism and Jainism, with monumental examples of their own genre.

In addition to steady patronage and a unique architectural form, availability of good quality building material was essential for the progression of the faith. This was found in multitude and of excellent quality in the hill ranges of the Sahyadris, leading to a concentration of cave sites in the western part of India with over 1200 caves (or more than 80%). Exquisite examples of excavations are seen spread across this terrain from the World Heritage sites of Ajanta and Ellora in Aurangabad to the large monasteries of Junnar near Pune and Kanheri near Mumbai. Although the genre of architecture is the same with the basic premise of being monolithic in form, each of these examples are distinct, with a spiritual and architectural vocabulary of their own that inspired the remark:

> "Rock sculpture and rock architecture have been practiced in many countries in the past. But in none of these instances did the art of the rock-cutter show so wide a range or such audacity and imaginative power as in India, where some of the most original examples of architecture produced in this manner may be seen" (Brown, 1965).

2. Mumbai caves: a rhapsody of glory and the despair of ruin

Excavated in dense to medium grain rock over 1500 feet above sea level, the caves at Kanheri in Mumbai present the most complete example of a monastic establishment in the country, provided with cells, prayer halls, a burial gallery, an excellent rainwater harvesting system for each cell and the oldest dam in the region. Although nearly devoid of wall paintings, the sculpture and over 50 inscriptions tell a most poignant story of splendour and glory. The monastery at Kanheri, apparently a teaching school for young Buddhist monks, reached its peak in the 2nd century A.D. and continued to influence nearby centres. In close proximity is the Buddhist site of Mahakali, which although much smaller in capacity, boasts of the oldest cave in the region. With its peculiar hut-like enclosure of the inner wall, the cave at Mahakali is similar to the Sudama caves in the Barabar hills of Orissa. *Shaiva* sites such as those at Mandapeshwar and Jogeshwari continued to grow unabated despite the resurgence of the new religion.

Jogeshwari comprises the longest cave in the country, which formed the core of the idea for the excavation of the later World Heritage site of Elephanta, cited on an island off the coast of Mumbai. Although these sites are within the jurisdiction of Mumbai city they are not on par with the World Heritage sites of Ajanta, Ellora and Elephanta; but they are significant in their own right and individually deserving of merit. Unfortunately due to inherent issues of weathering and proximity to the city making them prone to problems of urban decay and visitor pressure, these caves are fast facing extinction, unless intervention in the form of informed conservation decisions are initiated.

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3. Early preservation: trials and tribulations

Preservation and preservation laws are not new to India. It has in fact one the oldest preservation laws of the world, when in 1904 the *Ancient monuments and sites protection Act* was installed on the basis of the earlier established (1862) Archaeological Survey of India. Since then, it has been the sole caretaker of listed monuments in the country. Challenged with a completely new architectural typology, early forays into conservation of these cave sites were limited to recording, listing, and documenting these sites. Chief among such architectural records are those by James Fergusson, a historian, and James Burgess, a trained architect, who single-handedly compiled a series of drawings and texts on the western Indian sites. Their combined and individual writings are even now an authentic source of information about these then little known monuments and between them they mapped, produced drawings, enclosed woodcuts of sculpture and copied inscriptions, making detailed recordings of the cave temples. They were responsible for firmly entrenching cave sites within the historic gene pool of Indian monuments.

Some of the earliest conservation works on the cave sites were limited to maintenance works such as mending of fences, clearing of centuries of accumulated dust and debris, as well as acquisition of the monuments under private holding. However, lack of surveillance at these sites led to a routine rifling of burial mounds by laymen and Orientalists under the guise of archaeology. Some of the known cases of such plundering of mounds known to contain valuable relics are recorded by both Fergusson and Burgess, who spoke and wrote vociferously against such acts and carting away important epigraphic evidence, thereby losing context to the primary site and eventual loss of material. Many archaeological expeditions were undertaken at Kanheri and Jogeshwari, chief among which was the excavation of a brick *stupa* in front of Cave 3 by Dr. Bird in 1839 (a copper plate found at this site is missing and the text provided is erroneous) and the detailed analysis of the work on the *stupa* burial gallery by E. W. West in 1853 at Kanheri. The later part of the 19th century was restricted to understanding the monuments, as the custodians had never come across such sites of composite imagery and monolithic forms. A *Cave Temple Commission* was formed expressly for this purpose and attempts made to decipher the inscriptions and debate upon the evolution of the architectural forms.

Though the listing of monuments was carried out in a detailed manner throughout the sites, actual preservation at the caves in Mumbai was only initiated in 1903,[1] when at Mahakali and Kanheri routine maintenance measures such as removal of fencing and vegetation were undertaken along with attempts at cleaning graffiti and soot. This propensity towards minimal work could be attributed towards concentration of restoration works (and a major chunk of the measly annual budget) at the prominent site of Elephanta. Unfortunately, the sites continued to languish in their ancient rubble of despair.

Carved in friable volcanic tuff in a low-lying mound, the cave at Jogeshwari is inherently prone to issues common to soft rock, with the presence of salts and deleterious effect of water movement active within the strata. The porous nature of the rock has led to the near disintegration of the pillars of the cave and degeneration of the sculpture, leaving only stubs of capitals and bases, with entire shafts missing or reduced to thin membranes. Although the rock at Kanheri is appreciably stronger than that at Jogeshwari, centuries of neglect and an influx of visitors has led to its gradual deterioration. Excavated in the sheer mountainside, the erosion of the pillars in most of the caves at both these sites do not pose a structural problem so much as an aesthetic one, due to their monolithic nature. But evidence of collapsed ceilings in wide spanned halls indicates the need to stabilize these pillars. The premise of minimal or no intervention in the early conservation days at the sites was not going to work for long.

4. A mammoth task: how to conserve a mountain?

In order to supplement the structural issue the pillars needed to be strengthened. However, replacing entire column shafts with like material in conformity with the monolithic nature was improbable due to availability of material and prohibitive costs. Hence, in the early 1920s, deteriorated columns were carefully hewn to accommodate pillars fashioned in regular courses of stone masonry. The material used was similar but the effect of coursing was jarring and not synonymous with the unbroken lines of monolithic carving. The same repair methodology was adopted for cave sites across the country extending from the Bagh caves to Ajanta. Although not pleased with the aesthetic perception, the sites were stabilized until a new solution presented itself.

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The 1950s announced the advent of Portland cement in the country and it slowly percolated into historic sites, initially as combination mortars used in tandem with lime and then in widespread use for conservation works. For monolithic sites it was a timely intervention, as repairs with reinforced cement concrete afforded the un-coursed and joint-less face that could not be provided by stone masonry. In addition to that, it also ensured that not much of the historic material needed to be hacked out to dovetail details into the rock face, a requirement for stone replacement. Overjoyed at its flexible use and the dexterity it afforded for use in inaccessible rock-cut enclaves, Portland cement was uninhibitedly used across the sites. It seemed as though cement concrete was here to stay. However, one key issue surfaced: the action of salt. Presence of leaching salts within cement accelerated issues of water retention and salt crystallization causing corrosion of the reinforcement bars within the repaired matrix and eventual spilling from original stone fabric within a decade. For this too, the conservators had a ready reply that in any case a new intervention was supposed to have a limited lifespan and be reversible. Cement was fast finding popularity.

Preservation of sculpture and inscriptions was undertaken simultaneously. These ranged from reductions of local fruit to seemingly quack remedies such as 'Szerelemey's Liquid' to the eventual appearance of polyvinyl acetate as a consolidant. A finding published in the annual report of the Archaeological Survey of India in 1916 on the usefulness of the stone preservative mixture 'Szerelemey's Liquid' applied in 1914 states that the effect of the liquid, applied to the front part of Cave No. 3 at Kanheri was not yet perceptible. There seemed no difference in the appearance of the stones, which had received a wash of the solution and that the difference could not be marked in such a short span of time, i.e. two years. Szerelemey, a Hungarian resident in England, who had brought out a successful invention for the preservation of ironwork, had turned his attention to the perishable nature of stone and had patented a process. The underlying principle was to protect the face of the stone after it had undergone the Kahlmann's process (coating of stone surfaces with alkaline silicate soluble in hot water that on slight decomposition gave to the previously porous stone a surface in no degree permeable to moisture) or a similar process for a certain time, and thus give the soluble glass an opportunity of hardening. The second or protecting coat was a solution containing bitumen and most of the ingredients of common paint. According to analyses, the preparation contained 22.28% of organic matter, the remainder being silica, oxide of zinc and traces of lime (in fact the Bombay Builder stated in its publication that it placed very little confidence in the process!). While the preservation techniques seemed experimental, the quest for arriving at suitable solutions was ongoing as the medium was far different than anything the conservators had ever dealt with, clear from a lucid comment in one of the journals: "As is inevitable in dealing with such rock-cut non-structural monuments comprehensive measures of repair are scarcely possible, and the recommendations put forward must be, in some degree, tentative and experimental" (Archaeological Survey of India, 1916). The question that had left the custodians scratching their heads was, *how do you conserve an entire mountain?*

Cement repair of primary members also percolated to preservation of sculpture and at several instances liquid cement was gravity grouted from the top of the rock face at Jogeshwari in order to seal the dripping crevice seeping onto historic sculpture. It is interesting to note that when last recorded in 2008, the exact spot was found to be still susceptible and prone to leakage. Cement just would not adhere to the natural stone and water continued to find its way out much to the downfall of the sculpture. As part of the chemical preservation exercise, in 1950, wet paper-pulp was applied to the affected sculptures for the elimination of injurious salts and subsequent preservation with a thin solution of 'Gelva' – polymerized vinyl acetate resin. However, all these measures and more were not enough to curtail the accelerated deterioration, further compounded by the surreptitious implantation of a few houses near the top of the cave (these few houses numbered over a thousand shanties when surveyed in 2009). After much soul searching, a conservation chemist in 1954 recorded that "it is felt that no amount of chemical treatment will arrest the action of gypsum on the sculptured surface, and it has therefore been recommended that the sculptures should be detached and removed to a museum before it is too late" (Archaeological Survey of India, 1956). The final judgement for extinction of the site at Jogeshwari was announced, as removal of the sculpture would mean a complete loss of context, albeit resulting in preservation of these historic artefacts in a controlled environment. Fortunately, a series of interdepartmental upheavals meant that the motion was temporarily shelved and Jogeshwari granted a slight reprieve.

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5. Heritage education: the new mantra for old sites?

Over the years the rock-cut sites of Mumbai have been periodically conserved and treated. However, they continue to display the same issues and accelerated levels of degeneration observed through photographic comparisons and reporting. Loss of material is evident and rapid increase of urbanization and visitor pressure palpable. Vandalism and rifling through historic material (especially at the burial gallery) at Kanheri is rampant, while at Jogeshwari and Mahakali, slum settlements rule the roost – quite literally. Public interest litigation was filed by a local foundation at the Mumbai High Court depicting the plight of these monuments. The High Court issued a succinct directive to the custodians to look into the repairs and renewal of the caves, recommending the preparation of a conservation report as well as establishment of an expert committee. A conservation plan was prepared by the author in 2006, and the author was then subsequently inducted into the experts' panel (a hark back to the one formed in the late 1900s, although seeking to achieve different objectives). Armed with the additional powers bestowed by the High Court, the officials of the Archaeological Survey of India have managed to initiate several conservation actions, chief among which has been better manning of the sprawling site of Kanheri within a designated National Park and removal of layers of debris from the roof top of the Jogeshwari cave, yielding more than seven truckloads of rubble and rubbish. It was the first time in decades that such positive action was effected at the cave sites. The next step was educating the visitors at Kanheri in the form of informative brochures and signs. In the case of Jogeshwari, the settlement directly affecting the monument needs to be necessarily removed. But this would take time as the settlement has political backing, making it almost impossible to relocate. In early 2010, some of the most critical houses, directly affecting the monument were removed and work on the redirection of rainwater away from the monument continues. The gradual process of educating the people of this living shrine has started with the acknowledgement of the need for preservation by the local community. Ranging from understanding of the sites to preservation and moving onto educating about the sites, it has been in a sense completion of a full circle for the Mumbai caves, hopefully in a better direction.

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Inclusivity, interconnections and overlapping stakes: challenge to a static evaluation criteria

Sonal Mithal[1]

Abstract

Heritage tradition and modernity are strategic political positions, not fixed or essential qualities of sites or cultural practices, much less of individual identities. When there are several stakeholders on one site, each with clashing notions of heritage 'value' and managerial foci, a single or uniform notion of authenticity is hard to establish. There is no identity or existence of the site itself, except for its values recognized by its users and stakeholders. Having 'authenticity' and 'value' as the primary criteria for World Heritage evaluation thus becomes problematic. This paper examines how ICOMOS monitoring, while ticking a box for 'authenticity', falls into the trap of its self-created bias for material preservation of tangible heritage resources. In the process, World Heritage status becomes oppressive to the stakeholders and local community of the site who are the real guardians of the site but now have to comply with World Heritage Committee ideologies. Critiquing the evaluation report of Champaner-Pavagadh Archaeological Park, inscribed as a World Heritage site in 2004, and examining the nomination process and requirements, this paper argues for a paradigm shift in evaluation from monitoring how well the site has been preserved to ensuring how well the site can live on as an integral component of development process. Apart from being limited to a mere evaluation of a nomination dossier, the evaluation parameters need to integrate monitoring of interconnections and fluid boundaries of apparent heritage components, the dialectic between the tangible and the intangible, the inclusivity of overlapping ownership-usage realities and so also the open-endedness of *ad hoc* decisions.

Keywords: fluid heritage boundaries, overlapping stakes, ad-hoc decisions

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Introduction

In these days of globalization of western notions of heritage, control of heritage is a matter of political urgency. Every country's aspiration to have a site listed on UNESCO's well-reputed World Heritage list shows the inclination of nations to pursue western ideals of relating heritage to temporality and constructed identity (Choay, 2001, pp. 138). It is problematic as in this process every nation seeks a validation of a cultural identity by conforming to already established notions of heritage only to later reveal its deviance from the same. At the same time, by seeking recognition from a global, but essentially western, organization each country reinforces the power vested in the western countries which already have self-proclaimed power.

As stated in the abstract, this paper examines how ICOMOS monitoring, while ticking a box for 'authenticity', falls into the trap of its self-created bias for material preservation of tangible heritage resources, i.e. monuments and sites. In the process, the World Heritage status becomes oppressive to the stakeholders and local community of the site who are the real guardians of the site but now have to comply with World Heritage ideologies. This paper argues that the evaluation parameters fall short of a methodology to encourage a process for living heritage to age, fade and renew itself in harmony with a healthy, humane habitat. The argument is to shift the paradigm of evaluation from monitoring how well the site has been preserved to ensuring that the site can live on as an integral component of urban development process.

1. Why 'authenticity' and 'value' are problematic evaluation parameters

UNESCO's charters and ICOMOS documents show that heritage is driven less by theory than by consensus. Given this lack of a critical apparatus to determine a value of heritage, gauging 'authenticity' (UNESCO, 2005b) has become the most agreeable practice for World Heritage evaluation. It is ironic that authenticity has become extremely precarious in the discipline of heritage conservation; especially when most often it's neither the nation nor the state that can claim absolute right in matters of deciding authenticity for a site let alone the World Heritage Committee. The *Nara Document on Authenticity* was conceived to ensure protection of

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cultural diversity and resist standardization of societies and environments; thereby suggesting a multiplicity of specific cases which are not comparable to each other (ICOMOS, 1994). Art-historian and scholar, Dede Ruggles reasons that acknowledgement of impermanence and renewal in the *Nara Document* (see Article 11, *ibid*.[1]) is in favour of the human being as being integral to the construction of meaning and ongoing creation of material culture. Article 12[2] of the *Nara Document* contradicts the previous article in the sense that if value of culture is based on interpretation and stakeholder interest then it is erroneous to universalize 'truth'. The World Heritage Nomination Dossier requires documentation that adequately presents a 'value' of the heritage site. Value is deemed necessary to construct a reference framework for the site that would lend the site its historical significance. Thus, the value is 'constructed' to specifically highlight temporal linearity of a history that can be conserved. The appendix to the *Nara Document* by Herb Stovel[3] brings up yet another impediment to outlining a definitive authenticity. If the value that makes anything authentic is constantly changing then this means that the authenticity is also changing, which subverts the very nature of authenticity.

Another contention of this paper is that there is no identity or existence of the site itself that is devoid of values unless recognized by the users or the stakeholders. In cases where there are several stakeholders managing a site and, each one's viewpoint clashes with that of the other, a single or uniform notion of authenticity is even harder to establish. The stakeholders may have good intentions but a rather limited purview of action and vision. Even if the stakeholders come to a consensus about how to conserve the site, the consensus will still be in the best interest of all the stakeholders or the site itself. The site endures abuse while its stewards are busy negotiating their agendas to come to a consensus about its 'authenticity' that can serve the least conflicting management attitude for the site. In this light it is imperative to answer who decides the value which judges a site to be 'authentic'.

Having professionally worked in identifying the tangible and intangible heritage components at the recently inscribed World Heritage Site of Champaner-Pavagadh Archaeological Park in India, the author finds it to be the site best suited for such an examination because it is at present managed by seventeen stakeholders, belonging to central government, state government, local administration, private groups and religious bodies. The historic structures fall under the purview of the Archaeological Survey of India while the Forestry Department owns 93% of the land, making it the largest stakeholder with respect to sheer size. Temple trusts and ashrams (sectarian establishments) are other institutions that own shrines and temples and facilitate pilgrimage by providing boarding and lodging facilities.

2. Champaner-Pavagadh Archeological Park

Champaner-Pavagadh Archaeological Park (Figure 1 and Figure 2) was declared a World Heritage site by UNESCO in 2004. Its designated Core Zone spreads over an area of approximately 14 sq. k.m. (1,328.89 ha) and its Buffer Zone over an area of 30 sq. k.m. (2,911.74 ha), see UNESCO documents (2004a; 2004b). This is the only example in India, so far, to have gained World Heritage recognition as a site, rather than as a city or a group of monuments. The site has been inscribed under the following selection criteria:

> **iii)** to bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared;
>
> **iv)** to be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history;
>
> **v)** to be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change;
>
> **vi)** to be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance.[4]

The hyphenated name of Champaner-Pavagadh denotes the split identity between Pavagadh as a landscape characterized by plateaus, mounds and streams studded with ninth century Rajput ruins along with the abode of a Hindu goddess, and its foothill Champaner as the remains of a 16th century medieval Sultanate capital city largely buried beneath a thick forest cover (Ruggles and Sinha, 2009, p. 79). Complementing the obscure Rajput and Sultanate structures, buried city and temples are myths and legends that have been passed down for generations through traditions of Bhavai

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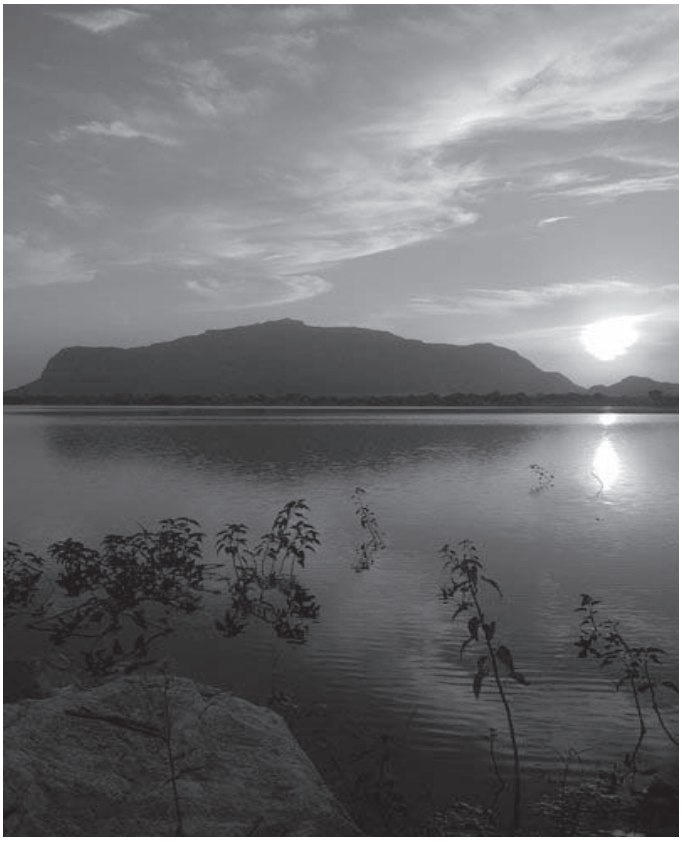

Figure 1. Champaner-Pavagadh Archaeological Park: Pavagadh Hill (Source: Rahul Gajjar).

Figure 2. Champaner-Pavagadh Archaeological Park: Beyond the Jama Masjid, the 'authentic' Sultanate city buried underneath forest (Source: Rahul Gajjar).

enactments and *Garba* dances. The Hindu Goddess Kalikamata Temple at the summit of Pavagadh is believed to be one of Shakti Peeths, which attracts millions of pilgrims to this site every year.[5] Today a village of 2,000 families (UNESCO, 2004a, p. 71)[6] is completely dependent on the pilgrim industry and agriculture constitutes a major component of stakeholder statistics. The overgrown forest has practically left the pre-Mughal Sultanate evidence almost absolutely untouched, which makes the buried part of the site uniquely 'authentic'. This authenticity makes it a very significant knowledge resource. But, there is an irony here. The site was unknown and so the sultanate ruins retained their completeness; a community came and settled here and rendered the site an extended embodied meaning of spiritual and spatial experience. When the buried site was discovered the 'authenticity' defined by the past and untouched took precedence over the 'authenticity' of experiential and bodily engagement with the landscape.

3. Overlapping stakes

The complexity of ownership issues is such that any steps towards an integrated development and conservation of the site are leading to, more often than not, the status quo. The biggest owner is the Gujarat State Forest Department, which administers the site under the *Indian Forest Act*, *1927* [Act 16 of 1927] (Ministry Environment and Forests, India, 1927).[7] It has under its purview a large area of the site, mainly the Pavagadh Hill and the buried Sultanate city. Archaeological Survey of India (ASI) is another powerful stakeholder. It is the state representative to UNESCO as the official custodian of heritage in India. Although there have been 114 structures identified by ASI, a mere 55 receive protection by ASI under the *Ancient Monuments and Archaeological Sites Act*, *1958* (Ministry of Scientific Research and Cultural Affairs, 1959). ASI policies focus too narrowly on monuments resulting in a several islands of protected territories created within the entire Archaeological Park. It is ironic that although ASI nominated Champaner-Pavagadh as an Archaeological Park to the World Heritage Committee; it is bound by its own legislation in its inability to protect anything beyond the 300 metre fenced boundary.

Another important group of stakeholders are field-owners. They have been farming for over 200 years. Farming, due to its irrigation and ploughing requirements, has already resulted in an unintentional loss of important archaeological evidence. Heritage preservation measures that aim to forbid these practices highlight the tension between issues of human sustenance and academic conservation ideologies that weaken the case for an unbiased management of a heritage site. In similar vein, the residents of Champaner village (Figure 3) who stay within the ASI protected Royal Enclosure cannot upgrade their houses. ASI laws remain stringent, prohibiting any addition to its precincts; which means not even restrooms can be constructed. In cases like these the concern for heritage conflicts

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Figure 3. Champaner-Pavagadh Archaeological Park: Royal Enclosure housing Champaner Village (Source: Rahul Gajjar).

Figure 4. Champaner-Pavagadh Archaeological Park: a Jain Temple (Source: Rahul Gajjar).

with basic human needs of health and hygiene. Upton regards academic conservation practices as an "emotional investment in authenticity [which] locates authenticity in the realm of identity, defined by difference and validated by culture" (Upton, 2001, p. 303). Authenticity is then merely a pleasure of the intellectual. The conflicts between ASI and local residents reveal the irrelevance of framing heritage in terms of authenticity of choice of traditional values, authentic forms and undiluted identities.

Nomination procedure insists on a systematic presentation of a site to tourists for the sake of knowledge dissemination about the heritage value of the site. This results in institutionalized objectification of the site for consumption. At the same time, choreographing the landscape leads to tourists losing freedom of interpretation and liberty to experience the site as they wish. Meaning occurs in the dialogue between the audience and the object. Photographic documentation and verbal description are just a biased medium of a professional or interest group. Several instances of graffiti on walls by tourists have led to a communication system that is often seen as obscene and detrimental to heritage. But if the monument is a human expression, so is graffiti. Why does the removal of graffiti conform to preservation of heritage? Why does preservation of one supersede the other? Do we really need the fake (constructed memorization) in terms of documented evidence of the original works for evaluation? The Tourism Department at Champaner-Pavagadh is merely concerned about provision of public conveniences in the absence of any specific tourism policy for the site. Most of the visitors to Champaner-Pavagadh are pilgrims (e.g. Figure 4) and they are unaware of the buried Sultanate Historic City. World Heritage status expects the site to be educational and interactive, with participatory modes of tourism to convert the pilgrims into tourists. The expectation is to mediate the site to the visitors via special effects and audio-visual commentaries, including re-enactment of imaginary historical or mythical scenes. Instead, the evaluation should insist on a system that can help visitor to avoid these interferences and to be able to engage in non-mediated dialogue with the site.

The site is exploding at its seams, providing infrastructure to pilgrims far beyond its bearing capacity. It is especially ironic that as the visitors are a major source of stable economy the local residents make great efforts to please them, and often the ensuing resource constraints of the site are overlooked in the process. With the exalted status of the site, the Authority is meant to control the rampant economic activity that the local community wants to indulge in but in the process of controlling rampant development, all development is curtailed. Ironically, there is not much cultural tourist flow to the site that can specifically harm the site but since the World Heritage nomination tourism strategies aim at 'converting' the pilgrims to tourists and also to attract tourists to appreciate the site's historical and natural heritage. This is leading to more aggressive institutionalized exploitation of site to provide infrastructure resources that are detrimental to the sustainability of the site. Again because of the international status, the site is made to pretend to be touristy when it is better off simply sustaining itself as a purely pilgrim site.

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4. Overlapping stakes become mutually exclusive for World Heritage Site Management

Considering Art Historian Dell Upton's conviction that "it might be fruitful to understand heritage tradition, and modernity as strategic political positions, rather than as fixed or essential qualities of sites or cultural practices, much less of individual identities" (Upton, 2001, p. 303). it is critical to question whether the site under scrutiny is really benefited by the UNESCO WH-status – or is it being denied its right to urban development? The evaluation report for Champaner-Pavagadh strongly states that today the site is being managed through *ad hoc* decisions (UNESCO, 2004) and that there is urgency for a comprehensive management plan but its emphasis is still on the built environment. Champaner-Pavagadh provides the opportunity to study the interrelationship of architectural, urban, and landscape features in a complex historical settlement together with local communities. The site of Champaner-Pavagadh, and this holds true for many sites, cannot be limited to a specific historic moment and cannot be stabilized with fixed forms and meaning. Instead, it is a dynamic and interactive environment that is both a physical entity and an ongoing process. The Archaeological Park comprises a network of interconnected systems – pedestrian movement, water flow, habitats for vegetation and animals, a living village – that are hard to contain within a quarantine model of preservation within fenced enclosures (Ruggles and Sinha, 2009, p. 88).

In 2006, the Government of Gujarat, with the constant persuasive efforts of the Heritage Trust,[8] published an act popularly known as the 'Authority'[9] to "provide for constituting and establishing of an Authority to manage and ensure integrated conservation of heritage and natural environs, preservation of historical and cultural entity and also for preventing uncontrolled development and commercial exploitation of the Champaner-Pavagadh Archaeological Park and for matters connected therewith and incidental thereto." The Authority came up as a first step to managing the site with multiple and complex ownership. But it is still a long way before various stakeholders open up their constricted vision and cooperate towards coexistence. Convenient misinterpretations of the Authority by implementing officials are leading to several bottlenecks in development procedures. There were numerous instances of misuse of the document as an excuse to not work by the government officials and at this point it is worth acknowledging that the misrepresentation and misuse happened because the Authority failed drastically in being effectively communicated to people at all levels of stakeholder representation. Also, the local community had been responsible until this date for the effective management of cultural and natural resources for its economic sustenance and also for the intensification of tourism and pilgrimage industry on the site. So, it is essential to justify why the outside more powerful Authority can take over the 'responsibility' of managing the site.

The Authority was instituted partially to also meet the UNESCO requirement of a "management regime and comprehensive planning" (UNESCO, 2004b), the absence of which was the major reason for deferred nomination result in March 2004. As a subsequent response to the Authority the site was declared a World Heritage site. This is particularly important as several problems arose on site between the local community and the district administration, after the issuing of the Authority, as the role and intention of the authority was never communicated to the people. The evaluation team seemed convinced by the proposed management as long as long as there was a top-down bureaucratic management system in place, even though the site needs an equitable and social approach, entrusting responsibility to the people who actually manage things on site.

There are multiple levels at which the Authority can hinder the integrated process of heritage management. First is the lack of availability, or inaccessibility of complete information regarding various issues for each stakeholder. Secondly, vast amounts of cultural resources lie unclaimed and hence are unattended by the agenda of any stakeholder. Thirdly, pilgrim/tourist oriented opportunities make the site economically self-sustained but also highly vulnerable. Lastly, aspirations of the residents of the village for a better lifestyle are being marginalized in the name of retaining historic authenticity. The Authority only encourages development of a heritage zone: actors who are 'authorized' to take decisions about development work are from the field of "heritage, archaeology, tourism, environment co-opted by the authority on the recommendation of the chief executive officer" (Authority, 2006; Sec. 5, Part G). The Authority nowhere mentions the safeguarding of intangible heritage. The Authority is exceptionally stringent and bureaucratic about the development rights of

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the community. In the absence of any set criteria it is completely on the discretion of the Authority to approve of development work (Authority, 2006; Sec. 3). The authority was introduced with the intention of prioritizing actions to reduce conflicts among stakeholders, if not eradicate them. The question remains unanswered whether reduced conflicts can help retain the authenticity of the site as well as benefit individual ideologies.

5. Make space for non-representational heritage, its fluid boundaries and ever-emerging ad hoc decisions as evaluation parameters

Some of the problematic highlights of ICOMOS Evaluation process (ICOMOS, 2009) are firstly, it insists on main interaction with State Parties and secondly, it is the dossier that is being evaluated. UNESCO's inability to negotiate with any bodies other than the nation-state, i.e., no direct contact/ conversation with local communities is one of the serious shortcomings. The dossier is a one-time document that represents a site in accordance with the World Heritage Committee format, which is biased towards strict linear-history and the 'material culture' of the site. Anthropologist Thomas Eriksen finds the UN as "undecided about the relationship between culture as artistic work and culture as a way of life" (Eriksen, 2011, p. 131). If culture is a way of life then the dossier is expected to read as a catalogue of human activities. If culture is an artistic production then again it is a cataloguing of the representational. Eriksen insists on "what are spoken of as cultural rights in Our Creative Diversity, […] to be seen as individual rights" (Eriksen, 2011, p. 142).

The format furnished to State Parties for nomination dossier itself is very limiting. It encourages a temporal description of a commensurable physical property. An inherent bias is obvious towards the oldest while the contemporary is the seen more as a shift of 'original' values. The format of the dossier is inadequate to encourage applicants in presenting the intangible heritage. Champaner-Pavagadh has invaluable associations with its living intangible heritage of the earthly stories of the Goddess Kalikamata resonating in its mysterious forests (see Figure 5). These associations were one of the major criteria for its inscription into the World Heritage List. The myths and legends of Champaner-Pavagadh are not just restricted to the Kalikamata but are equally expressive about the wealth, grandeur, bravery and religiosity of the Rajputs. The

Figure 5. Champaner-Pavagadh Archaeological Park: temporary shrines along pilgrim path (Source: Rahul Gajjar).

stories tell us about the generosity and far-fetched vision of Sultan Mahmud Begarha and also about the poignant crumbling of his affluent empire into ashes before the ambitious ravage of the great Mughals. The *Garba* played during the Navratri festival throughout Gujarat celebrates the day when Kalikamata was enchanted at Pavagadh by the mesmerizing dance of her devotees and chose to take on a human aspect, joining them in their revelry. As the devotees enter the forecourt of the Kalikamata Temple at the summit of Pavagadh Hill this festive night comes alive in front of their eyes. The pilgrim path is lined with small shops selling ritual objects and collectibles related to the stories of Kalikamata. *Garba* songs and *Bhavai* music is played on CDs and cassette players in the wayside shops all along the path. The *Garba* is a dance form that the devotees perform in order to achieve the goal of spiritual unison with the divinity. With the *Garba* songs playing on their pilgrim path; the devotees are able to remain in that transcendent state with which they would want to appear before the goddess when they reach the temple.

The evaluation report does not recognize this live and festive quality nor does it evaluate/notice the absence of proposed strategies of how the continuity of practices of intangible heritage will be ensured at this site. Is the silence on this topic a way of silent acknowledgement of a practice that is best left to itself to thrive or is it a way of institutional indifference to its presence. Again there is an instance of

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an inherent contradiction between World Heritage Nomination requirements and evaluation. The *Nara Document on Authenticity* acknowledges cultural landscapes are dynamic in nature, and the goal of management to guide change (Mitchel *et al.*, 2009, p. 58). To do this effectively, determinations need to be made on the impact of proposed modifications to the landscape resources and values. Certain types of change may be acceptable, while others would diminish the site's integrity. Nomination Dossier insists on proper inventory (Mitchel *et al.*, 2009, p. 27) of the site, but how important is an inventory if the value of the heritage component lies in its quality of constant change. The need is to define levels of acceptable change or thresholds for potential concern and also parameters to assess those definitions.

Geographer David Lowenthal opines about the two approaches to perceive heritage: one that is identifiable through objects and the other through awareness of 'organic change' (Lowenthal, 1979, p. 108). These two approaches lead to bipolar attitudes of conservation, i.e., preservation versus appreciation of decay which allows to "remould it to our desires" (*ibid.*, p. 116). In this case, the desires will keep changing with time and hence every effort at integrated conservation is itself insubstantial because it is particular to one specific moment in time. There is no need for a concept of culture to respect local conditions in development work. What is at stake in development work is not cultural authenticity or purity, but people's ability to gain control over their own lives. Mystifying the ideologically charged cultural concept has to be discarded to create global ethics system. The evaluation parameters should integrate the monitoring the interconnections and fluid boundaries of apparent heritage components. The dialectic between the tangible and the intangible, the inclusivity of overlapping ownership-usage realities and so also the open-endedness of *ad hoc* decisions are important agendas that need further consideration in evaluation systems. We could do better than mere institutionalized exploitation of cultural resources in the name of 'authentic' conservation.

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Endnotes

[1] "All judgments about values attributed to cultural properties as well as the credibility of related information sources may differ from culture to culture, and even within the same culture. It is thus not possible to base judgments of values and authenticity within fixed criteria. On the contrary, the respect due to all cultures requires that heritage properties must be considered and judged within the cultural contexts to which they belong."

[2] "[…] it is of the highest importance and urgency that, within each culture, recognition be accorded to the specific nature of its heritage values and the credibility and truthfulness of related information sources."

[3] "Efforts to update authenticity assessments in light of changing values and circumstances [are needed]."

[4] UNESCO. Champaner-Pavagadh Archaeological Park. UNESCO World Heritage Centre. Available at: http: //whc.unesco.org/en/list/1101.

[5] Industries Commissionerate. Panchamahals. Available at: http://www.vibrantgujarat.com/documents/profiles/panchmahal-district-profile.pdf.28. It attracts about 2,000,000 (20 lakh) visitors every year and has shown a growth of 10.92 % in the inflow of tourists in 2005-06.

[6] The District Census (1982) states that a population of 1,856, comprising 392 households, lives in 387 houses in Champaner. Out of these, about 200 are located in the main settlement within the royal enclosure.

[7] A reserved forest denotes forests accorded a certain degree of protection. Land rights to forests declared to be reserved forests or protected forests are typically acquired (if not already owned) and owned by the Government of India. Reserved forests and protected forests are declared by the respective state governments. Rights to all activities like hunting, grazing, etc. in reserved forests are banned unless specific orders are issued otherwise.

[8] An NGO, based in Vadodara, Gujarat and working for the protection and Integrated Management of the site since 1986.

[9] In this paper this act has been referred to as the *Authority* for purposes of convenience and also because that's how it is popularly known among the stakeholders.

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Exclusion and efficiency in measuring heritage conservation performance

Saptarshi Sanyal[1]

Abstract

This paper argues for the need to have an adequately efficient monitoring approach for cultural resources in order to be apace with factors that undermine their value. By discussing real examples reflecting empirical knowledge and hindsight, fewer but more pertinent monitoring indicators are found by a process of exclusion, rather than collection of information. These indicators would be only the most relevant for a concerned property, rather than compilation of exhaustive data sets dictated by purely academic ideals or rule of thumb. A brief literature review is also seen to corroborate the need to have efficient and professional approaches. The lessons learnt in live cases, processed through logical reasoning, help us to advance a theoretical construct: a heuristic algorithm, presented within this discourse on measuring heritage conservation performance.

Keywords: information management, indicators, efficiency, exclusion

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Utopia, the practitioner's dilemma and need for efficiency

With steady advance in operational concepts of heritage management in recent times, monitoring aims to objectively assess and evaluate the conservation action after it has been initiated. In several cases, it helps to continuously keep threats under observation and develop requisite strategies to dispel them (Art. 169-176 of UNESCO, 2008). The prevailing monitoring approaches largely advocate collection of a comprehensive body of information related to the cultural resource being managed. This is considered logical, as a direct corollary of exhaustive data collection is thought to be an accurate picture. In an ideal world this would definitely stand true. However, for the peculiar constraints of heritage conservation practitioners or managers in fast developing, urbanizing and culturally homogenizing societies[1], collection, processing and working with exhaustive data is not unlike a distant utopia. The exhaustive approach to collection of information for monitoring presents a limitation rather than opportunity in such cases.

To appreciate this contrast between theory and practice more deeply it is necessary to look at conservation and heritage management practice in the developing (eastern) world more closely. In general, within such contexts, the practitioner in the heritage sector is continuously confronted with questions related to priorities of stakeholders and their representatives; as well as important actors in the conservation and management process, such as policy or decision makers. Numbers and role limits the professionals, who are usually very far down in the hierarchy of decision making. To make matters more serious, in these regions, heritage resources are numerous and diverse; while the pressures on heritage due to pace of industrial or urban development, very fast. The latter pressures may often undermine value of heritage through rapid urbanization, cultural homogenization, land use transformation or material and structural stress. These changes do not slow down to suit the pace of the decision makers' or conservation professionals' convenience and any idealistic need for collection of comprehensive amount of information for monitoring. The 'exhaustive' approach often results in on-course correction of conservation and management action becoming obsolete by the time it is implemented on the ground. This occurs due to time-lapse in comprehensive data collection, analysis and consequent decisions, in relation to faster paced external conditions. The contradiction between time-cycle of monitoring and the expected comprehensive approach essentially constitutes the practitioner's dilemma in a developing context.

The above dilemma necessitates the need for modifying our monitoring approach to make it applicable to developing societies. For this, the process would need to be extremely efficient as a prerequisite, to enable speedy yet effective implementation. This does not undermine the validity of the theoretically ideal international principles. They are possibly very practicable in societies that have relatively more evolved monitoring systems. However, without a major re-examination, application of such approaches has significant limitations in contexts where notions of heritage and conservation are nascent or markedly dissimilar from internationally

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accepted ideas. It may also be submitted that a departure towards efficiency in monitoring processes would benefit the overall pool of ideas for selection of indicators. This aspect of efficiency in monitoring is critical to the ultimate aim of making the measuring of conservation performance objective in approach and substantive in contribution. To understand limitations of the 'exhaustive' approach, the following section illustrates the need for efficiency through some select but highly relevant cases in the Indian context, where the author has directly been involved.[2]

1. Hindsight on literature and live cases to reflect on monitoring challenges in practice

The standpoint adopted in this paper is that perceived and recorded value of heritage resources is the key yardstick for measuring conservation performance. It is also generally accepted that value is not a fixed attribute.[3] It changes and evolves with knowledge about the site. This section focuses on specific issues regarding monitoring observed over time and based on empirical knowledge. Extremely compelling questions emerge in cases that represent how the dimension of time taken in monitoring is decisive.

Before we move into elaboration of examples and consequently the final theoretical framework being advanced here, it is important to provide due accreditation to literature that has previously alluded to the need for efficiency, which forms the core of our argument. John Ward (1995), in discussing the Periodic, Systematic and Comparative approach to monitoring, emphasizes the importance of inculcating professional methods into practice. Herb Stovel, in his reference to World Heritage (cultural) sites (Stovel, 1995), has iterated the need for robust systems to be in place for their monitoring. Walter Jamieson, with regard to necessary innovations, lists the selection of fewer monitoring indicators and a weighting system noting the large number of factors and parameters that exist in managing Cultural tourism (Jamieson, 1995). Scott Cunliffe (1995), builds upon Ward's indication of the need for professionalism by iterating that accountability of concerned individuals as well as of organizations is indispensable. Even these select texts show that the need for efficiency is not entirely unprecedented in professional discourse. Here, within available scope, we attempt to illustrate the same through some live examples.

Three important heritage sites in India are discussed below. These are only representative examples but nonetheless; contain a significant diversity of elements that contribute to heritage value. The three cases discussed below include two inscribed World Heritage sites and one tentative World Heritage site; the latter being in UNESCO World Heritage Committee's evaluation cycle at current date. In such choices for our discussion, we find opportunity to view the measurement of conservation performance in an adequately broad manner in the context of international principles, national mechanism, and local conditions.

1.1. The Sun Temple, Konark

The Sun Temple is a pinnacle of Indian temple architecture. It merited inscription on the World Heritage List (1984) based on its representation of a unique artistic achievement (criterion i), an outstanding testimony to the 13th century kingdom of Orissa (criterion iii) and as a link in the diffusion of the Tantric cult of Surya (Sun) Worship (Criterion vi). Its Outstanding Universal Value (OUV) is embodied predominantly in physical form through rendition of concept, architecture and sculpture. It was inscribed in its partially surviving state, with a long history of repair and conservation measures that had already been carried out and many more being in progress.

This structure, however, presented some unprecedented challenges in structural and material conservation. More importantly, some major conservation issues persist to date and are not independent of earlier repair attempts made. The two most important ones shall be highlighted here with respect to monitoring. These relate, firstly, to filling up of the surviving *jagamohana*[4] space, which continues to cause structural distress on the surviving monument. Second, the progressive deterioration of the elaborately sculpted exterior is another major concern. Both these factors of stress have profound impact on the OUV as they are related to the physical fabric. It may also be mentioned here that the understanding and interpretation of value of this monument has evolved greatly beyond the physical aspects since the original inscription. Being outside the scope of particular discussion on monitoring here, they are not discussed in detail subsequently. Before we proceed further, it is important to briefly surmise the history of discourses regarding the aforementioned conservation problems.

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With the inscription bringing this monument in international focus, its very serious conservation issues began to be debated and discussed widely. Many renowned experts have contributed over time to ongoing dialogue.[5] Their recommendations supplemented those by the already existent Konark Temple Committee (formed in 1954), which was responsible for sanctioning and approving repair and conservation work. Officially, the structure was under the custodianship of Archaeological Survey of India (ASI) since 1915, which was also involved in structural and material conservation works. So elaborate and numerous have the (largely un-executed) recommendations been that their content alone has resulted in a compilation volume of over 200 pages (Chauley, 2006). Upon review of this enormous body of literature on recommendations, the latest efforts to arrive at a conclusive direction[6] has revealed the following issues in spite of ongoing conservation efforts:

- The superstructure, which was sealed in with masonry filling from the interior (executed under British rule in 1901-07) is at risk due to lateral thrusts on the structural walls (ascertained by tell-tale indicators); at the time of writing, the investigation of the interior is pending, resulting in only speculative knowledge on state of conservation and actual structural stability to guide further action (Figure 1);
- It was recently ascertained from historical photographs, field study as well as chemical constitution of the material (khondalite sandstone) that deterioration of fabric has possibly been exacerbated due to ongoing chemical conservation work of half a century; cleaning and paper-pulp treatment of exterior removes the very protective, chemically inert, crust layer from the sculptures and this causes loss of fabric in every annual cycle, in addition to natural factors like its constant exposure to sea-breeze (Figure 2).

In spite of the above two critical factors, which endanger the very stability and fabric of the monument; most recommendations made over time have insisted on carrying out detailed investigations and significant amount of (time-consuming) documentation and analyses. While these are certainly very relevant as long-run measures, it is important to consider the consequences of deferring planned action, which as been the unfortunate case for over three decades now. As a priority, it may be sufficient to monitor the state of the fabric (measurement of surface loss) by suspending chemical conservation work for at least two annual cycles, and investigating and monitoring condition of the interior to address structural stress.

Should further planned action on the structure be suspended as second priority in sequence till exhaustive documentation (which can happen simultaneously and non-destructively) is completed? And should the monument be allowed to continue in its current trajectory of deterioration, when just two factors are crucial to monitoring *vis-à-vis* the preservation of its key values? These are very relevant questions in approaching a practical monitoring apparatus for the Sun Temple.

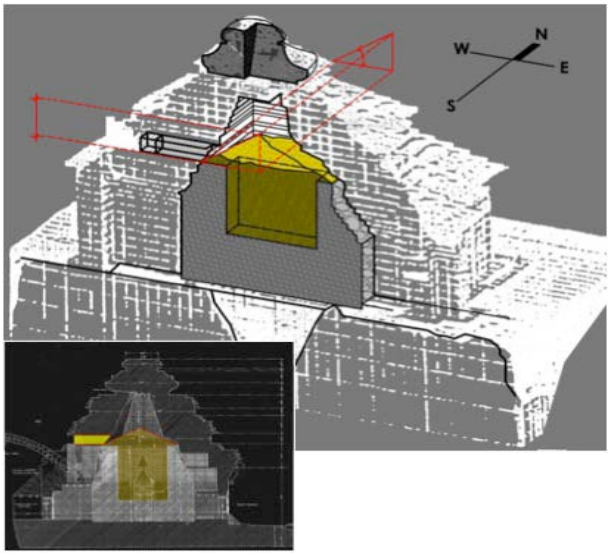

Figure 1. Structural stresses on superstructure of Sun Temple (Source: author, for ASI).

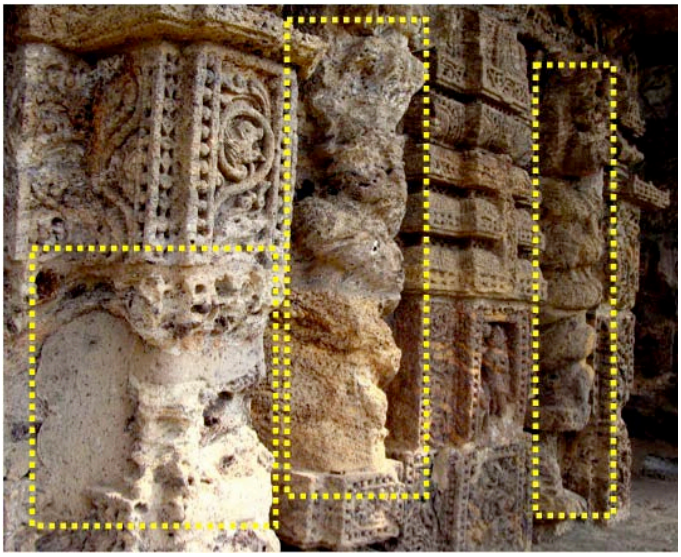

Figure 2. Deterioration of fabric of the sculptural surface (Source: author, for ASI).

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1.2. Hampi World Heritage Site

Hampi is widely acknowledged to be the erstwhile capital of the Vijayanagara Empire in southern India and preserves some of the finest specimens of monumental architecture, town planning and art. For these reasons, it has been inscribed in UNESCO's list (1986), for being a masterpiece of human creative genius (criterion i), being an exceptional testimony to a civilization (criterion iii) and an outstanding example of a building, architectural ensemble and landscape illustrating significant stages in human history (criterion iv). As a single site, Hampi's values are represented through possibly the most types of heritage resources. These extend from monuments, to partially and fully buried archaeological remains, prehistoric shelters, historic networks and water systems that are partially surviving and in use, as well as remains of an elaborate defence system, along with several sacred and living associations within an extensive cultural landscape; just to name a few (see Figure 3). Since inscription, continuing work has greatly contributed to an enhanced understanding of the values, level of sophistication in original design of the capital and complexity of the site as it is today.

Figure 3. Monuments within the Hampi landscape (Source: Prof. Nalini Thakur, for IMP).

There has been a flipside of this enhanced understanding of the site's complexity as well. While knowledge has been gained significantly at international academic and research platforms, the same understanding possibly failed to permeate into the perception of the site's custodians, decision makers, managers and other actors at the ground level. This led to serious shortcomings in the management approach until very recently. Confusion prevailed about whether the inscribed area was to be managed as an ensemble of monuments, a cultural landscape or just another development entity. The above confusion in value representing elements, both as entities as well as spatial, caused the construction of a colossal modern bridge through the inscribed property (site), thereby putting it in the List of World Heritage in Danger in 1999. It is interesting to note that the aforementioned bridge did not officially violate any legal protection in the national system, which was effective by design only within a limited area around each monument.[7]

The Integrated Management Plan (IMP, 2007-8) for Hampi was initiated in 2005. This attempted to address the above problem by integrating conservation and development priorities in a unified framework. Recognizing that the IMP was moving in the right direction to sustain the site's values and the government had suspended construction of the bridge, UNESCO removed the site from the endangered List in 2006.

The process of preparation of the IMP and the simultaneous dialogue with various actors has helped in achieving significant milestones in Hampi, albeit much is left wanting. For instance, the formation of a single regulatory authority for a World Heritage site and the legal status of Hampi World Heritage Area as a spatial mechanism for protection and development control in the Indian system are unprecedented. UNESCO Mission to Hampi lauded the same in 2007 (Kammier and Finke, 2007). It is also to be remembered that the IMP reaches a hitherto unparalleled benchmark in management plans in India for a complex site, which is the reason for significant amount of time being taken in its preparation. Its operational side, however, has made insufficient progress for the time expended. One of the key reasons for this has been stated to be the lack of comprehensive information such as mapping and documentation of both tangible and intangible heritage on the ground. Both UNESCO as well as the IMP have strongly insisted on carrying out this activity and undertaking studies based on it to inform future action. In must be noted that a direct outcome of this is the delay in operationalization. This occurs because a consensus on what constitutes 'comprehensive' information for effective heritage management with regard to Hampi is still required in the national framework.

The other major issue highlighted in implementing the IMP is lack of actual and mutual integration in the multitude of sectors that have a stake in the site. It is of major concern that there is very little check on the trajectory of development which is largely moving according to its pre-IMP days, as

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operational goals and specific targets are lacking in the concerned departments as per IMP recommendations. The net result is a loss of heritage value over time due to excesses in tourism and unplanned development (see Figure 4). What then, could be possible indicators to *efficiently* monitor the state of conservation and management progress, *vis-à-vis* the IMP for Hampi?

- The site itself being extensive and managed by multiple parties, the foremost activity to be observed or measured would have to be the level of integration achieved with respect to the site's heritage aspect across sectors of planning (infrastructure, transport, housing), development (community facilities, health, education) and tourism (activity, sites, accommodation). All of these sectors, at current date, have disparity in budget allocation, targets and objectives; they are yet to recognize that the IMP is the overarching system in Hampi within which, their goals have to be unified and made conflict-free. This is not an easy task but the level of progress is easily measurable in objective terms: integration either being present or naught;

- Protection is still inadequate, as per current enhanced understanding of the values and extents of the site. To prevent undermining of any value-contributing element, the entire set of heritage resources need to be legally protected as a priority and the progress made herein can be gauged by the number of protected and unprotected heritage entities and their level of protection;

- The IMP has recommended major staffing upgrade and the supplementation of different departments, including the Management Authority, with well-qualified technical staff; the numbers and nature of duties of the new recruits are easily identifiable, specifiable and hence, their progress is measurable;

- The most important aspect, which is noted in the IMP is the very lack of a monitoring system to gauge progress of implementation with high level of expertise in-house from different specializations engaging in a common dialogue; as a priority, the establishment of this system itself can be monitored simultaneously from national and international platforms.

Figure 4. The advent of guest houses for tourists (Source: Prof. Nalini Thakur, for IMP).

The fundamental question posed here is thus, whether action and its consequent monitoring are absolutely essential or necessarily dependent on exhaustive information in a sequential process. Is it necessary to postpone action *until* all information is made available? The information is undoubtedly required, but would take significant amount of time to be obtained in full for a complex site like Hampi. Is it not possible to implement planned action and its systematic and objective monitoring based on fewer but stronger indicators? This is particularly of concern as the site, which is meant to be dealt by a management plan that is a accepted as a model of excellence for India,[8] is continuously falling prey to *ad hoc* developments taking place due to lack of operational status of the former. Can the fewer parameters not provide a holistic measure of progress of management and conservation action at this site?

1.3. Santiniketan

Santiniketan is a heritage site of modern history. It embodies the creative ideas of Rabindranath Tagore, India's first Nobel Laureate and a leading literary and cultural figure in the 20th century. This place is characterized by its distinctive living practices, art, architecture and landscape, in addition to the spiritual and other associated values related to the highly revered founding personality (Figure 5). Physically, the site is testimony to the efforts of the alternative educational environment created in colonial India, with the help of many enlightened Indian and international collaborators. This endeavour took place within a man-made landscape that was created as an *ashram* for Brahmo followers. The Brahmo Movement was a very important religious and spiritual

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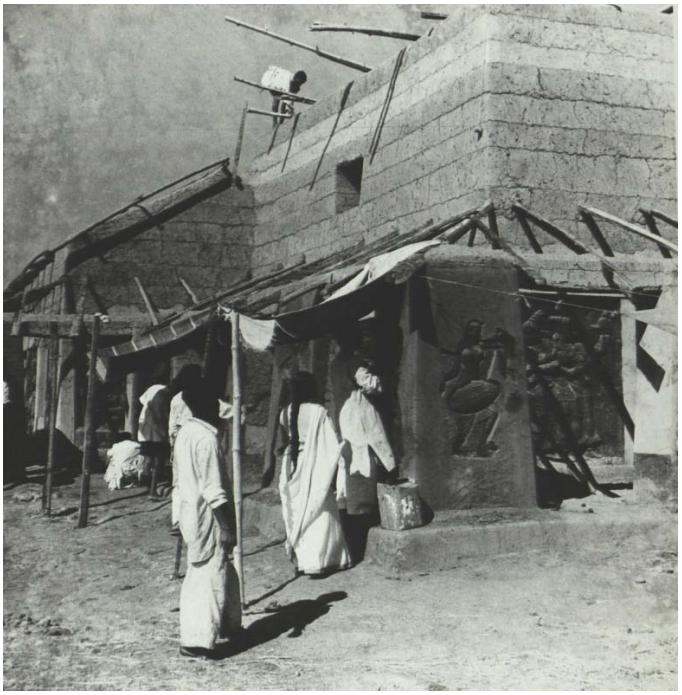

Figure 5. Archival image showing active engagements of students and faculty in construction and artwork (Source: Rabindra Bhavan Photo Archives acc. no. 14867H).

revival movement in the history of modern India, and represented the shift from religious dogmatism to liberalism and universality of cultures. As both a living institution (Visva Bharati) as well as a man-made landscape, the Nomination for Santiniketan justifies the OUV by the site's representation of an important interchange of cultural values between the east and the west (criterion ii), its bearing a unique testimony to several cultural practices in the plastic and performed arts (criterion iii) as well as its being tangibly associated with Rabindranath's beliefs and values such as internationalism, universality and creative unity in the arts in addition to his literary and artistic works of immense significance such as *Gitanjali* (criterion vi). [9]

The primary reason for including this example for our discussion on monitoring is that it presents the challenge of managing living intangible practices that are integral to the physical fabric's survival and value. The management approach for Santiniketan respects and applies the fact that surviving practices are inextricable from the physical environment.[10] However, in this case, the educational vision is currently guided by the priorities of the Ministry of Human Resource Development in India. Thrusts in development are generic and reflect the need for growth and modernization as a contemporary educational institution. Over time, they have caused a discord with the cultural values that are embodied in the place as it was originally conceived. Additionally, efforts for conservation, until very recently, have attempted to freeze the physical fabric of the nominated property in isolation from the intangible component, causing disconnect between the physical aspect and the spirit of place. This has been reflected in several structures, which fell under neglect due to lack of use. Moreover, it must be recognized that originally, its users themselves managed the site, rather than any specialized outside agencies, in the active years under Tagore.

Another major issue is the impact of ongoing development and urbanization that has an impact on the very important rural setting for the site, which is equally significant in representing its value (Figure 6). Being a popular vacation destination coupled with expansion in population of the hinterland, the suburban built-up area has significantly increased.

Figure 6. Students display handiwork at a festival (Source: author).

This adversely affects the rural character, which was a decisive factor in the genesis of Santiniketan.[11]

The conservation progress in Santiniketan is at a very nascent stage, only recently coming under active care and management of Visva Bharati as the institution for managing the cultural practices and landscape and Archaeological Survey of India for building conservation respectively. The murals, artworks and objects of collection are managed by multiple agencies under the leadership of Visva Bharati and the Minstry of Culture. Current management system for Santiniketan: the Property Management Plan has strongly recommended a mechanism to integrate educational content into the site conservation and heritage management activities, rather than 'one-off' conservation projects. Thus, in the monitoring of progress in future *vis-à-vis* values of Santiniketan, the following questions would arise:

- Is it enough to monitor the state of physical entities alone, or should the active engagement of students and staff of Visva Bharati, which is declared as an institution of national importance, be monitored as well;
- Whether the educational policy for Visva Bharati which, as per Enactment of the Parliament of India, is different from any other institution, be developed specifically with respect to its original ideals;
- To what degree are students and staff contributing to the management of the site; or is it a top-down approach of authorities with the users only having a passive engagement;
- The setting, which forms the buffer to the nominated property, is equally important: what is the status of adoption and implementation of development controls in order to respect its original rural character.

The monitoring of physicality alone would not reflect whether the values of Santiniketan are effectively being sustained or not. Furthermore, such an exercise runs the risk of looking at the site only partially, rather than in its entirety. It would also consume more time and therefore, lack efficiency. To make monitoring more efficient, as well as effective, the few but important indicators described above are considered more critical to observing the progress of conservation action, rather than monitoring individual entities' physical state. If the mechanism is in place and is functioning correctly, resulting action would systematically result in more meaningful conservation progress at ground level. It would stem from a broader change in approach to policy and practices.

2. The dimension of time in monitoring: need for a paradigm shift

The underlying challenges in all the cases discussed above are those of indicator selection and time-lapse. Continuing issues with the Sun Temple, Hampi and Santiniketan make it quite clear that monitoring indicators need to be fewer and more pertinent. They should be defined clearly and measurable in time frames that are at par with adverse pressures. They also illustrate that comprehensive data collection is time-consuming, requires consensus of many parties and therefore, cannot solely dictate initiation and operation of a monitoring process.

This situation demands that we seriously re-examine our current approaches to monitoring without any biases: in other words debate on a paradigm shift that would be relevant to developing contexts and perhaps, the entire body of knowledge on monitoring. A paradigm-shift, by definition, is required when the normally accepted process of problem solving presents limitations or fails to answer the questions posed, as observed in the live examples above. The former is not necessarily a linear addition to the existent body of knowledge (Kuhn, 1970). Advancing a shift in knowledge also requires clear articulation of the limitations and contradictions identified. These are presented briefly in the analysis below:

2.1. Academic versus commercial interest

The quest for perfect knowledge is very different in nature from the pursuit of profit. The primary drive for selecting monitoring indicators by professionals is arriving at a total picture while the entrepreneur in real estate or tourism is motivated by maximum returns in minimum time. This disparity is implicitly known but has rarely been spelt out in heritage management literature or theory. To address the dimension of time, it is therefore, crucial to move at a comparable pace by proactive heritage management. This can only be brought about by being aware of this fact and rendering of concrete innovations in the professional forums of heritage management discourse.

2.2. Monitoring physical versus operational

Largely physical observations and taking measures to mitigate them risk being equivalent to *ad hoc* treatments of symptoms rather than solving the root of problems. The former is indispensable for conservation works, but for monitoring systems, there should be a focus on observing the systemic aspects that lead to issues, and addressing the source of the problem, rather than outcome. Even through the cases discussed, we have seen a lack of accountability, which can only be solved if the responsibilities are clearly spelled out.

2.3. Bureaucratic versus professional

While professional heritage conservators and managers are responsible for pre-action studies and overseeing implementation of actions, very rarely are they also in the role of decision maker. An

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uncomfortable truth to be accepted is that the latter are largely administrators or bureaucrats who seldom have time to examine all assessments in detail before taking a decision. This is not to their discredit per se but it must be remembered that their responsibilities are mostly widespread rather than focused in our systems of governance. From the experiences discussed above, it is also questionable to what degree they are advised by technically competent and professionally expert in-house staff in reality; that too occurs within a developing context. This condition also demands that the indicators be fewer but more pertinent.

2.4. Exhaustive versus exclusive information

The aforesaid limitations culminate toward this very important point. They indicate that vital to monitoring apparatus is a mechanism to critically exclude information in the selection of indicators, rather than exhaustive collection of information. The latter also tends to become a mechanical exercise, resulting in mostly quasi-professional or non-specialized personnel being engaged to carry it out. We are not failing to recognize that all changes, however small, have an impact on the heritage resource. It is, however, adequate to include only those that critically endanger the key values of the resource whose treatment is being monitored. The exclusion of the others is, thus, a necessary process that essentially informs the paradigm-shift in monitoring.

3. Towards practice of efficient monitoring through an exclusion algorithm

We have sufficiently articulated the limitations in trying to implement exhaustive monitoring systems meaningfully in practice, thus arguing the need for a new paradigm to address these issues. Such a paradigm would need to follow the principle of exclusion of information. It would need to be heuristic, which depends largely on specific empirical information about the site or resource in concern. Implicitly, this means that the degree of professional involvement would need to be very high. Particularly individuals or organizations with deep knowledge about the site would be required to contribute, rather than experts on theory. The latter may be consulted only on requisite occasion.

The actual framework within which an efficient monitoring system can be evolved in practical application is advanced as a heuristic algorithm.[12] Heuristic means that the use of empirical knowledge of site takes precedence over exhaustive data collection.[13] For this reason, the construct elaborates the method for exclusion of information in selection of indicators. At this juncture, it must be remembered that exclusion is not an end in itself. It is being proposed only as we are convinced of its importance in measuring conservation performance by making it more efficient and meaningful.

In characterizing the algorithm, which is our theoretical construct, it would have to be sufficiently abstract for adoption within a wide range of situations. It would also have to allow for accommodation of both qualitative and quantitative indicators. Another important attribute is that it would need to be proscriptive rather than prescriptive in nature. This means that within the parameters of heritage value and the time frame available for monitoring, it would be a mechanism to exclude, rather than to include. The time frame would be dictated by weighting by the pace of growth of adverse pressures on the particular resource or site. Therefore, if we start with the superset of all possible monitoring indicators for a particular site or heritage resource, the algorithm would take shape in the form presented below:

1. Identify key value representing elements of the site or resource.
2. Exclude any indicators that are not related directly to the above.
3. Identify the major threats to value and estimate their pace of growth.
4. From step 2, eliminate indicators that are not related to threats identified in step 3.
5. Identify responsible parties for monitoring of indicators short listed in step 4.
6. Identify any gaps in professional capacities in responsible parties above, and supplement with training or recruitment to set up professional monitoring system.
7. Set-up time frames of monitoring by responsible participant for every indicator, based on rate of development of threat factor in step 3.

The above algorithm, even in its basic form, constitutes the critical apparatus for efficient monitoring. It follows a sequence of identification of key factors and elements both intrinsic in the resource, its mangers as well as external factors that may have

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adverse effects, while excluding the residual indicators. In this manner it addresses the dimensions of values, time, threats as well as professional capacity to constitute the monitoring system.

Though the above system may be regarded as sufficiently robust, while also radically different from the current methods of practice, certain important considerations need to be stated in concluding. First of all, the algorithm above does not make any claims to be foolproof for universal use, and is presented as a theoretical model for discussion and debate only. Though it is considered suitable for practical use, it is likely that it has much scope for improvement, enhancement and refinement in continuing discourse prior to its permeation to actual use for heritage sites and resources. Thirdly, and most important, the algorithm is a professional tool only and several decisions and choices in its application can be made by trained and expert professionals in the heritage sectors alone. There is no substitute to expertise on either the subject in concern or the site. With its correct and well-directed use, the immense potential of a process of exclusion in selection of monitoring indicators for efficient heritage management may be realized meaningfully in future practice.

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Endnotes

[1] Psychologies and cultural ambivalence of Indian middle-class society have been discussed and the priorities of heritage are not seen to be very high in the prevailing mindset, the time and attention spent on heritage and conservation is therefore, not very substantial.

[2] The author has been responsible for studying the previous analyses related to the Sun temple, Konark to arrive at an action plan in current capacity as Conservation Architect in ASI; he has previously been an active part of the Integrated Management Plan team for Hampi World Heritage Site from 2007-10; for Santiniketan, the author is currently a member of Heritage Committee for implementation of the ongoing Management Plan, for which he was previously Consultant; in addition, he has authored two articles (2009, 2010) about the values and significance of Santiniketan in national heritage journals.

[3] The *Burra Charter* of Australia ICOMOS is an important document in this regard as it recognized the aspect of values evolving with knowledge about a place.

[4] The Jagamohana is the porch or entrance space of the Orissan Temple and is the principal surviving element of the Sun Temple which is partially ruined.

[5] Prof. R. Lemaire, Mme. M. Tabasso (1979); the late Sir B.M. Feilden, Prof. P. Beckmann (1989); Prof. (Ing.) Giorgio Croci (1997) and Dr. Pratima Rani Bose (2008), respectively.

[6] The International Seminar on Conservation of the Sun temple (March 2010), brought together expertise on how to tackle the pressing issues of conservation and the author was responsible for preparing the action plan which is currently underway.

[7] The *Ancient Monuments, Sites and Archaeological Remains Act of the Parliament*, in its rules, provides for 100 and 200 meters respectively as prohibited and additional regulated zone around every protected monument.

[8] ICOMOS in its last assessment of the site about removal of Hampi from the World Heritage List in Danger and review of the IMP, stated this in the report to the World Heritage Committee

[9] *Gitanjali* is Rabindranath Tagore's most acclaimed work of poetry, for which he was awarded the Nobel Prize in Literature in 1914.

[10] Important practices like the annual rain festival, where trees are planted, help sustain the natural environment, while the arts school's sublime faculty members and students are responsible for creation of the unique artistic environment through murals and sculpture in the landscape; in Tagore's lifetime, several of them had an important role to play in the construction of what are today heritage buildings as well.

[11] It is learnt through Tagore's writings that Santiniketan chosen as the site for his educational experiment as it provided the perfect natural environment, away from city life, to inculcate the qualities that were necessary in the principles of his school and (later) University of Visva Bharati.

[12] Algorithms are sets of specific instructions or sequence of steps to achieve a particular task or objective.

[13] Heuristic refers to experience-based techniques for problem solving, learning, and discovery. Heuristic methods are used to speed up the process of finding a good enough solution, where an exhaustive search is impractical. These are experience-based techniques for problem solving, learning, and discovery. Heuristic methods are used to speed up the process of finding a good enough solution, where an exhaustive search is impractical.

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A participatory action research framework for managing cultural heritage: a new approach to documenting, interpreting, and conserving the cultural landscape of Nantucket, Massachusetts

Morris Hylton III[1] & Jocelyn Widmer[2]

Abstract

Heritage conservation is at an exciting juncture today. The establishment and maturation of the discipline comes with new challenges as heritage is redefined to embrace more of the cultural diversity and nuances that give it significance. Heritage is no longer viewed as static, as evident in the practice of cultural heritage management. This is the case on Nantucket, an island and U.S. National Historic District located in the Atlantic Ocean off the coast of Cape Cod, Massachusetts.

Since 1972, University of Florida's Preservation Institute: Nantucket has used a service-learning pedagogy to work with local stakeholders and engage outside experts to identify and record Nantucket's built heritage, as well as devise strategies for its conservation. Over time, the focus of cultural heritage conservation on the island has evolved from the initial documentation and intervention at individual sites to the management of the multifaceted forces impacting the long-term conservation of Nantucket as an urban and cultural landscape.

In 2008, the University of Florida's Preservation Institute: Nantucket (PI: N) implemented a new, Participatory Action Research (PAR) framework for managing the diverse heritage resources that comprise the cultural landscape of Nantucket. Based on a dynamic research approach that involves a range of stakeholders and employs mixed methods, the PAR-based model developed by PI: N and its partners elevates the significance of cyclical, long-term management of the island's heritage.

This paper briefly presents the evolution of the University of Florida's Preservation Institute: Nantucket and explores the implementation and initial outcomes of the new Participatory Action Research-based management model. A goal of the evaluation is to identify and articulate those components that need to be considered when potentially replicating the framework in another context.

Keywords: cultural heritage management, participatory action research, service-learning, cultural landscapes, scales of heritage resources

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Introduction

Heritage conservation is at an exciting juncture today. The establishment and maturation of the discipline comes with new challenges as heritage is redefined to embrace more of the cultural diversity and nuances that give it significance. Heritage is no longer viewed as static, as evident in the practice of cultural heritage *management*. This heightened awareness toward management begins to embrace the changing nature of cultural heritage resources as they, among other complexities, exist at different scales (from materials and objects to monuments to cultural and urban landscapes), are addressed from a multi-disciplinary approach and hold different meanings for a diverse range of stewards.

At the international level, the World Heritage Committee has led the way by committing to the management of heritage resources as they exist across a range of scales in tangible and intangible form (Bandarin, 2007). U.S. national, state, and local heritage managers are increasingly embracing the efforts by the World Heritage Committee to diversify their understanding of cultural heritage and thus more effectively manage the changing nature of these resources. This is the case on Nantucket – an island, town, and U.S. National Historic Landmark District (established in 1966) some 48 kilometres off the coast of Cape Cod, Massachusetts (Figure 1).

For nearly 40 years, the University of Florida's Preservation Institute: Nantucket (PI: N) has collaborated with local stakeholders to document and conserve the island's built heritage. Since 2008, the

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Figure 1. View of Nantucket from harbour by Morris Hylton III.

University has collaborated with local partners and led an effort to implement a new *Participatory Action Research* (PAR) framework for managing the cultural heritage of Nantucket, Massachusetts. This paper briefly presents the evolution of the Preservation Institute: Nantucket and explores the implementation and initial outcomes of the new PAR-based management model. A goal of the evaluation is to identify and articulate those components that need to be considered when replicating the framework in another context.

1. History and evolution of Preservation Institute: Nantucket

During the summer of 1972, University of Florida faculty and students began to research and document the built heritage of Nantucket as part of the U.S. National Park Service Historic American Building Survey (HABS). These efforts contributed to a larger private-public initiative to restore the island's historic environment, encourage tourism and leisure-based businesses, and reverse an economic decline that had impacted the island for over 100 years. The social and economic (and subsequently, built) environment of Nantucket went into a dormant period following the collapse of the whaling industry ca. 1850.

Originally occupied by two Wampanoag Native American tribes, the island of Nantucket was settled by the English in 1659. After early, mostly unsuccessful attempts to establish an agrarian economy, the English settlers, initially instructed by the Native Americans, began to hunt Right, then Sperm whales. The whale oil was processed as fuel for lamps or made into candles in factories established along Nantucket's urban waterfront. By the early nineteenth century, the island, then a community of some 10,000 residents, was the whaling capitol of the world, with local captains and crews making three- to five-year voyages to the Pacific to hunt Sperm whales, returning to Nantucket to process the oil, and deliver it to Europe. The wealth and cultural-exchange made possible by the whaling industry, coupled with a strong social influence exerted by the Quaker religion, helped shape a distinct society and culture (Philbrick, 1993). Despite some success in promoting the island as a tourist destination to replace whaling beginning as early as the 1860s, Nantucket remained in a period of economic and population decline until the mid-twentieth century when cultural heritage conservation and tourism were used as tools to revitalize the historic environment and economy of the island and presumably, improve the quality of life for its residents. The research and documentation of the University of Florida's Preservation Institute: Nantucket proved invaluable to this endeavour.

At the invitation of local stakeholders, the University, after the first program in 1972, returned each year for approximately 10 weeks to continue the hands-on documentation of the island's historic architecture and urban environment. The typical product of each season was a Historic Structure Report (HSR) documenting the history, recording the existing conditions (including measured drawings to U.S. government standards), and proposing conservation recommendations for one or more historic buildings or sites. This work was augmented with independent research studies undertaken by students addressing a variety of issues impacting the sustainability of Nantucket's historic resources. The research and documentation produced each season was submitted to the Historic American Building Survey and Nantucket Historical Association to ensure the products were archived and made accessible to scholars and other interested parties. In addition to informing the conservation of Nantucket's historic built environment, the experiential learning approach of the Preservation Institute: Nantucket helped fill a void during the initial development of cultural heritage conservation (historic preservation) education in the United States.

In the decade that followed the adoption of the United States Historic Preservation Act in 1966, which encouraged and necessitated the training of experts, only a limited number of institutions of higher learning offered course work, including Columbia University, Cornell University, University

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of Virginia, and University of Florida. Nantucket afforded many of the nation's first cultural heritage conservation students – from the University of Florida and eventually other institutions – their first opportunity to apply classroom-acquired knowledge in the field while helping complete the research and documentation needed to restore the historic architecture of Nantucket's urban core.

The Preservation Institute: Nantucket (PI: N) was formally established in the mid-1980s as a graduate-level, service-learning program where students meet prescribed learning objectives while helping address the needs of a community (Speck and Hoppe, 2004). Over the last two decades, PI: N faculty and student participants collaborated with local, national, and international partners and experts to help identify, record, and conserve the heritage resources of Nantucket. However, over time, with the goal of conserving the island's heritage and reversing its economic and population declines, the focus evolved from the documentation and intervention at individual sites to the evaluation and management of the multifaceted forces impacting the long-term sustainability of the diverse resources that make up Nantucket's cultural and urban landscape. In 2008, PI: N began the process of refining the research model and realigning the curriculum to more fully integrate concepts of heritage management at different scales of resources. The first step in the planning process was to assess the: 1) successes, limitations, and opportunities of the PI: N program; 2) emerging directions in cultural heritage conservation practice and education; and 3) new challenges threatening the heritage resources of Nantucket.

After consultation with key heritage groups both on and off island, PI: N faculty proposed working with local partners to explore the potential nomination of the Cultural Landscape of Nantucket to the World Heritage List. The efforts toward a World Heritage nomination is viewed as a vehicle for identifying and bringing together as many stakeholders as possible to explore and better understand Nantucket's diverse resources and develop and institutionalize – across the entire island – the processes and tools for managing them. To help achieve this goal, a *Participatory Action Research* (PAR) approach was adopted.

2. Participatory Action Research Framework

PAR derives from the identified need to involve a range of stakeholders in the research process as well as to employ a more dynamic research approach that incorporates mixed methods through an iterative scheme of delivery and evaluation (Stringer, 2007). The participatory action research model is predicated on a cyclical process with four phases (Figure 2): 1) planning, 2) action, 3) observation, and 4) reflection (Genat, 2009). PI: N's adoption of PAR draws upon the theoretical and practical applications of the model. In looking toward precedence studies where PAR has been successful, PI: N has been better able to apply the four phases in a move that has greatly influenced the evolution of the program's research strategy and has helped create a framework for managing the island's heritage resources (Friedman and Rogers, 2009; Kidd and Kral, 2005).

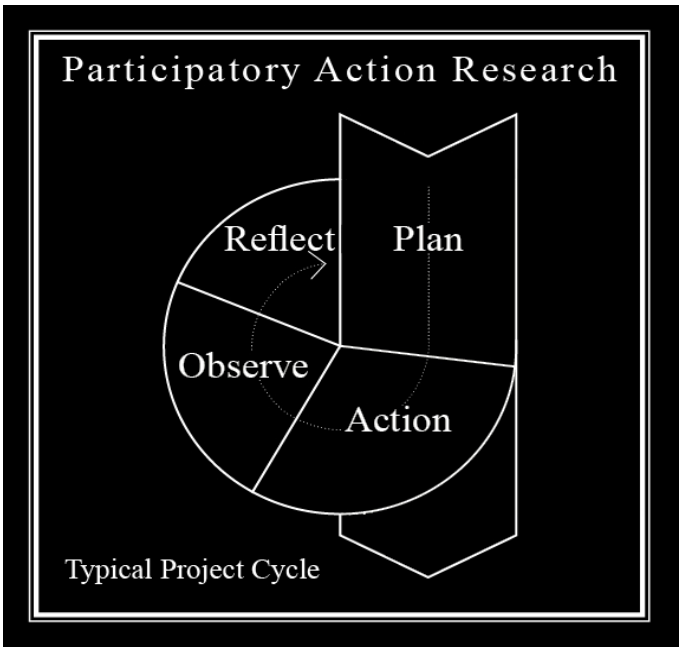

Figure 2. Participatory Action Research Project Cycle by Jocelyn Widmer.

Participatory action research has become an increasingly recognized form of research that necessitates a dynamic relationship between the researchers and the research context in which the research is embedded. An important distinction to make, then, is that PAR looks to *effect* change in society rather than to *measure* change. The overarching goal of PAR becomes to improve that context by engaging the issues and stakeholders that give meaning to the context. PAR builds on the critical pedagogy put forward by Brazilian educator Paulo Freire over fifty years ago. Freire and his early twentieth-century predecessors considered participatory action research an isolated learning conduit for the researcher. Today, participatory action research is intended to address specific issues identified by the

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participants themselves (Sillitoe *et al.*, 2002). The adoption of the PAR model has been organic insofar as PI: N has always sought the input of the community intrinsic to the heritage resources of Nantucket.

The precedence of PAR's application on Nantucket is two-fold. From a theoretical perspective, the four phases of PAR are critical to experiential learning. From its onset, PI: N's pedagogical mission has been to provide an educational opportunity for students to practically apply the most current conservation techniques and technologies. Using the PAR model aligns with PI: N's efforts to set the pace and the direction for future conservation techniques and technologies. In addition to the pedagogical precedence, the PAR model also enhances what PI: N faculty and students have been benefiting from for years – the very engagement and dialogue with the dynamic community on Nantucket and its changing stakeholders. Without this relationship, PI: N would not have sustained the longevity of the program as it considers the potentials to grow under the newly-applied PAR model.

While there is clearly precedent within PI: N's pedagogy and outreach over the life of the program, the more formal adoption and application of the PAR model began at the fourth phase of the model (reflection stage) by considering the opportunities and challenges associated with nominating the Cultural Landscape of Nantucket to the World Heritage List. Moving then toward the planning phase, and in consultation with various stakeholders, the decision was made to explore the island's heritage from a range of scales rather than the traditional monument scale. Doing so necessitated breaking down PI: N's structure into three distinct research tracks that began to consider the varying scales of Nantucket's heritage resources. While these heritage resources exist on a continuum, PI: N has identified cultural landscapes, architecture and interiors, and materials and technologies to be the three scales of more refined exploration. A hallmark of the PI: N track structure is to distinguish the characteristics of resources at these distinct scales. However, the track structure recognizes the concentric nature of these three scales. Thus, the cultural landscape scale serves as the foundation, and gives further meaning in support of the built heritage on Nantucket.

Panning out to the cultural landscape scale, this track aims to identifying the island's systemic relationships that have evolved between the built and natural resources. Investigating how and why the built and natural heritage layers onto the physical landscape reveals different land and resource uses over time that have evolved with the character of islanders and their needs at the architecture and interiors and the building and materials scales. At the architecture and interiors scale then, we are now exploring the social sphere by identifying and better understanding stakeholder values, changing uses, and user needs. Traditionally, the documentation and research undertaken by PI: N faculty and student participants has focused at this scale, yet by engaging the social elements that accentuate the meaning of this scale of resources, we can begin to embrace a more holistic approach to the island's heritage. Finally, at the materials and technologies scale, we are helping to address acute needs on the island as the loss of authentic historic materials and the skills necessary to apply these materials poses a challenge to future management of historic structures on the island. This track has arguably become the most visible of our efforts to investigate the island's heritage, insofar as the stakeholders that repair and maintain Nantucket's buildings have enthusiastically collaborated with PI: N faculty and students through public demonstrations and sectional repairs of the highly visible buildings on the island. These buildings, along with the selection of sites for the other two research tracks, become critical as it is the application of the track pedagogy at specific sites around that island that substantiate the rational for a participatory action research approach to heritage conservation on Nantucket.

With PI: N providing the research expertise to thoroughly explore the breadth of the island's resources, site selection becomes a process that balances the needs of the island's private organizations with PI: N's focus at the three distinct resource scales. Selection of sites is based on three criteria: 1) representing the range of resources on the island; 2) embodying the myriad of issues impacting stewardship and management at different scales and types of resources; and 3) broadening the scope of stakeholders involved by identifying new ones and engaging them in the process. The logistics of accessing and researching the site are also taken into consideration. This criteria allows PI: N to collaborate with the island's key decision makers so that PI: N's research augments the on-going efforts by Nantucket's heritage resource managers, while at the same time establishes the metrics for consistently selecting sites across the range of resource scales.

In addition to establishing the research framework for investigating resources of different scales, the PAR model facilitates the introduction of a social

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dimension to what has traditionally been limited to physical assessments. Considering the social characteristics of a site and its resources requires a balance between the involvement of outside expertise and local stakeholders (Aas *et al*., 2005). The social dimension also served to unite the site selection and three distinct research tracks to identify island-wide what some of the social issues are with heritage conservation at a range of scales. Inherent to each track objective is the social and cultural factors that not only give meaning to the resources at different scales, but also reveal the relationships that exist among these different scales to better manage and sustain these resources as the cultural heritage of Nantucket. By definition the PAR model excites a participatory or social component. Yet at the same time, the challenges and potential conflict that arise as a result of this community engagement stands to push the scope of PI: N's reach and developing role as both a stakeholder and a facilitator in the island's cultural heritage management.

At a macro level, PI: N has implemented one cycle of the PAR model, beginning with this initial reflection stage, and aligning the identified opportunities and challenges through planning for and implementing research at the three distinct research tracks. Thus, the action stage has been further explored at a micro or track level, where PAR also serves as the research model to add value to how dynamic the track research is at the three distinct scales, as well as how dynamic the research model is itself. Finally, the outcomes of the three distinct tracks, as identified through the observation phase, contribute to the macro-level planning phase for future iterations of the model. PAR established the research framework for integrating resources of different scales, incorporating a social dimension to what has traditionally been a physical assessment, adapting the direction of the heritage pedagogy, and balancing the involvement of outside expertise with local stakeholders. While the outcomes and considerations associated with each of these four components are immense, what PAR ultimately does is set in motion a cyclical rhythm to the research process that can be built upon and improved as outcomes are assessed.

Outcomes and Considerations

As we come to the second round of reflections after one iteration of implementing the PAR-based framework for heritage management through the three-track research approach, it is appropriate to critique the process, assess the outcomes, and identify and explore the principle attributes of the new model. This is particularly relevant if the framework developed for PI: N and Nantucket is to be considered for replication, either partially or fully, in another context. Eight *components* are considered critical to the PI: N model and its potential replication: common goal, catalyst, facilitator role, social dimension, different scales of heritage resources, stakeholder identification and engagement, iterative process, and expert participation (Table 1).

PRESERVATION INSTITUTE: NANTUCKET PARTICIPATORY ACTION RESEARCH FRAMEWORK
Eight Components for Consideration
Common Goal
Catalyst
Facilitator Role
Social Dimension
Different Scales of Resources
Stakeholder Identification and Engagement
Iterative Process
Expert Participation

Table 1. Components of PI: N model by Morris Hylton III.

Regardless of focus (natural resources, built environment, intangible aspects of society and culture, etc.) and target audience (year-round citizens, summer residents, visitors, university students, etc.), education is central to the missions of the public agencies and, especially, non-governmental organizations focused on conserving Nantucket's heritage, including the University of Florida's PI: N program. United through a *common goal* of education, a loose coalition of these various groups formed to explore, as previously noted, the potential of nominating the Cultural Landscape of Nantucket to the World Heritage List. The coalition views the research and planning needed to prepare a World Heritage nomination – particularly the requirement to demonstrate how the island's resources will be stewarded long-term – as a *catalyst* for encouraging a holistic approach to management that integrates individual, often overlapping interests and efforts.

Due in part to the history of the PI: N program and the well-established institutional relationships and collaborations with other heritage groups (such as

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the Nantucket Conservation Foundation, whose mission is to conserve, maintain, and manage the island's natural resources) a common, unifying goal was easily identified and agreed upon. However, choosing a catalyst proved more difficult. The catalyst needed to be an initiative with the potential to involve and mutually benefit all stakeholders. The World Heritage proposal for the Cultural Landscape of Nantucket has galvanized the key stakeholders by affording them the opportunity to use their distinct expertise in researching and planning for the nomination. However, beyond the core group of heritage groups, many stakeholders seem less knowledgeable of the World Heritage program. Communicating the benefits and possible negative impacts of World Heritage listing to the public is essential as the initiative moves forward.

Based partly on the neutral, apolitical position of an institution of higher learning, PI: N became the *facilitator* of the research and planning for the World Heritage nomination and the consolidation of efforts to develop a management framework for the island's heritage resources. The three-track structure (cultural landscape, architecture and interiors, and materials and technologies) was created as the principle vehicle for achieving these goals. The track approach allows PI: N to engage and collaborate with a variety of agencies and organizations dedicated to conserving the island's diverse heritage. Multi-year projects at different heritage sites (nature conservation areas with cultural aspects, house museums, historic buildings used by public agencies and non-governmental organizations, etc.) provide the opportunity to explore and study the multitude of challenges and opportunities for conserving Nantucket's *different scales of heritage resources*. The greatest challenges to the track approach have proven the limited time frame imposed by seasonal research and the communication of information between tracks and stakeholders.

In addition to addressing the scales of resources, the track projects also assist with *stakeholder identification and engagement*. This interaction with a greater range of stakeholders has helped heritage researchers and managers expand the *social dimension* of the heritage documentation and research, inherent to the PAR model. However, this approach presents a series of challenges. Among these challenges is communicating the intent of the process-oriented approach to heritage conservation on Nantucket. The heritage management on Nantucket that PI: N has been fundamental to has traditionally focused on the island's prominent built resources. We are posed with the challenge of communicating PI: N's evolving approach to heritage management that is now based on a participatory approach. The program's greatest ambassadors to the community on Nantucket are the students. However, the skill set that students come to the program with is more traditional in nature. Communicating how the social methods must be combined with traditional documentation methods to work toward cultural heritage management poses a pedagogical challenge to PI: N faculty and visiting experts that now include social scientists as well.

It follows that a third challenge of the PAR model is the two (sometimes conflicting) roles that must be embraced by PI: N (as a University of Florida program): both a facilitator of the heritage management process as well as a stakeholder in the heritage resources on the island. These seemingly divergent roles stand to challenge the rigor of the research (as the researcher is embedded in the research context) and question the neutrality of PI: N in the face of future heritage management decisions.

The *iterative process* established by a PAR-based approach has helped elevate process over product by establishing a cyclical rhythm where research is advanced and refined from year to year. For example, the conditions of a specific site are monitored annually and, depending on the outcomes, the monitoring approach can be adjusted to accommodate new observances. Students are asked to work closely with key stakeholders to develop a process for communicating this information. As necessary, research is also expanded to include new layers of information that enrich understanding of Nantucket and the forces impacting its heritage and the potential World Heritage nomination. The outcomes of seasonal research are evaluated as part of the reflection phase of the iterative PAR process. How these outcomes are then used to help inform and expand the research at the same or a similar site the following the year is critical. The goal is continuity, which has been achieved to date largely through extensive debriefings and planning sessions with collaborators where the outcomes of the projects are reviewed and potential next steps are outlined for further consideration and development during the intervening months.

Expert participation is the last significant component of the PI: N model. Based on the needs identified by PI: N in consultation with local partners, specialists in various aspects of international cultural heritage (cultural landscapes, archaeology, intangible

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heritage, tourism, materials conservation, economic development, etc.) are selected to participate as guest instructors or lecturers. These specialists work directly with students on track projects (cultural landscape, architecture and interiors, and materials and technologies) and consult with key stakeholders, helping enhance collective understanding of the island's resources and the changing forces impacting its management and conservation. These specialists also help connect the Nantucket stakeholders and their work with a larger network of expertise. One obstacle has proven the integration of experts into the inclusive, PAR approach without diminishing the role or contribution of local stakeholders.

Conclusion

With future efforts to adapt and apply this new Participatory Action Research approach, the scale of identified cultural heritage resources must be comprehensive and representative of the resources that actually contribute to the heritage of a place. The stakeholders and stewards of these cultural heritage resources should collectively commit to harnessing the opportunities and embracing the challenges associated with a comprehensive approach to cultural heritage management *and* this collective commitment should be directed toward realizing these opportunities and facing these challenges. A common goal and catalyst, such as education and the proposed nomination of the Cultural Landscape of Nantucket to the World Heritage List, can help achieve this collective commitment. Finally, this process necessitates the role of a facilitator. PI: N has embraced this role, while recognizing that as a stakeholder itself, PI: N does not always act with neutrality. PI: N's commitment to exploring new directions of cultural heritage management have set the model in motion. The adoption of the PAR approach will enable PI: N to facilitate a rigorous research agenda that more closely approximates the scale and scope (both tangible and intangible) of the resources that give life to the deep-seeded cultural heritage on the island of Nantucket today. The outcomes and generalizations of the new PAR framework developed by PI: N and its partners will hopefully offer lessons that can help inform the management of other cultural landscapes and urban-scale heritage sites.

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Brasilia: preservation, ambiguity and power

Frederico de Holanda[1] & Gabriela Tenorio[2]

Abstract

One of the main issues concerning the preservation of Brasilia as a World Cultural Heritage site is the absence or, to say the least, the ambiguity of the parameters that preside over the city's monitoring policies. The results are arbitrary and unpredictable decisions related to each and every urban episode. There is a paradox in which: 1) measures that imply damaging the cityscape are approved because they are not perceived as such by the preservation agencies; 2) measures that would benefit the city's configuration and its appropriation by the people are prohibited because they are seen as damaging the site. Thus, more measures are approved and more are prohibited than should be, simultaneously. Moreover, in both cases (permissions and restriction) an elitist ideology is revealed; one that benefits the city's appropriation by the upper-income layers. Measures grant more space for the individual car even in the most central areas (e.g. North Commercial Sector); while there is an aggressive repression of informal commerce in public spaces and more popular land uses in buildings, in important avenues. Such is the case with informal traders in the Road Platform; the TV Tower weekly fair; and the appearance of cheap hostels on the W-3 South Avenue. Brasilia's preservation policies do not take into account recent trends in similar policies around the globe, which give pride of place and cultural importance as a central aim concerning heritage preservation. Policies ignore the strengthening of urbanity as a crucial objective related to city's form by means of the valorization of public space; the opinion of the more popular social actors involved is disregarded and they do not succeed in countering official outlooks towards the city and in managing the implementation of alternative solutions which would benefit not only themselves but the city at large.

Keywords: Brasilia, World Cultural site, preservation policies, planning power, political ideology, political power

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Introduction

One must distinguish between discourse and actual fact in any aspect of reality. This includes urban configuration. Perhaps in Brasilia contradictions between discourse and fact are most acute. Since the city's inception, proposals pointed to one direction and the actual city's construction to another. There are many aspects in which we can analyze the configuration of a city. In this paper a choice is made, one which privileges relations between the city's spatial organization and the deployment of social classes in the ground, both concerning places of living and the daily use of the public realm. Relations between social classes *x* and their deployment in space present particularities according to place, but the same basic rule is noticeable everywhere: a constant struggle for widening the social spectrum in each area and the contrary movements that dominant ideology and power try to impose on them.

A particularity of Brasilia plays a central role here: it is a World Cultural Heritage site. Not surprisingly, the needs for preserving it as such provide a backcloth for the arguments concerning its spatial order, legitimately or otherwise. The site considered as cultural heritage contains the nucleus of the original project proposed by Lucio Costa in 1957, but even some of its original boroughs stay outside the site's limits, e.g. the individual family houses by the lake shore. Moreover, although constituting the largest protected urban site in the UNESCO record, it is a small part of the present metropolis: 116 km^2 out of the 5,802 km^2 of the Federal District. Still, it includes the four main types of urban configuration that constitute the metropolitan core. These four spatial types came to be called, perhaps rather inadequately, 'scales' of the city. They are urban configurations that have specific attributes concerning their open space structure and their building types, but they do not coincide exactly with certain parts of the city: some attributes can be found in places of diverse nature. And yet, they provide a useful framework for the text to follow.

Brasilia's four scales (henceforth without italics) are: 1) *monumental*; 2) *gregarious*; 3) *residential* and 4) *bucolic*. The monumental scale concerns the

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most emblematic spaces of the city, those in which the buildings related to its primary function – a national capital – are located: the Plaza of the Three Powers, the Esplanade of Ministries, and its elongation towards the west. The gregarious scale concerns the 'centre of civil society', where offices, hospitals, hotels, shopping centres etc. are located. The residential scale concerns Brasilia's main type of residential space: the superblocks. Finally, the bucolic scale concerns the surrounding areas that are more sparsely occupied, in which, for example, the embassies and the University of Brasilia are situated (Figure 1).

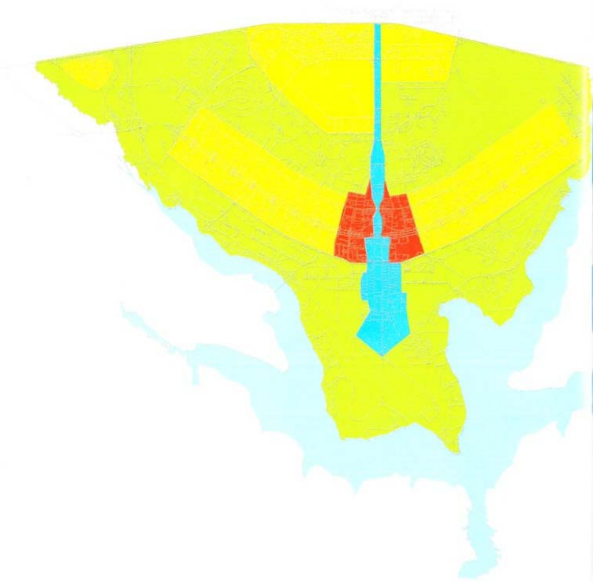

Figure 1. Brasilia's four scales. Monumental (blue); gregarious (red); residential (yellow) and bucolic (green) (Source: adapted from IPHAN, 2007).

Now, we shall not discuss the scales at large: this has been done in various other instances (e.g. Holanda, 2010; Ferreira & Gorovitz, 2009; Leitão, 2009). Rather, the aim will be to characterize politically and ideologically the *tensions* that show in each one of them, tensions that are related, as suggested above, to the way people of various social layers appropriate the city. Tensions are related to competing ways of categorizing and using the city and, in the last instance, to the quality of its organization to fulfil the fundamental city role, namely the opportunity for seeing and interacting with the Other. That is to say, its *urbanity*.

1. On the monumental scale

Some aspects of Lucio Costa's blueprint have never been realized; this is the case for every scale, in varying ways. The Esplanade of Ministries and Plaza of the Three Powers are the main elements of this scale; they constitute the tract of the most symbolic places in the city. Here we find the headquarters of the republic's power: executive, legislative and judiciary. It is thus a place for civil servants, although it includes the Metropolitan Cathedral and two 'cultural sectors' in its western end. Still, even here, Costa proposed a richer cityscape than the one we find today: his first sketches indicate a low building that connects the individual ministries, among them along the east-west dimension of the Esplanade. The building would provide complementary activities to the state bureaucracy. As it was never done, activities as small restaurants and snack bars, newspapers and magazine stands, places where people fill in forms concerning lottery prizes (very popular in Brasilia) etc. began to appear in very similar locations as the ones indicated by Costa in his sketches.

These activities add to the formality of the place a different and interesting atmosphere (Figure 2). Without them, public space would be deserted, bar the moments in which people arrive at work in the morning or leave it in the afternoon (and also when they leave the buildings – when they do so – to have lunch elsewhere). With them, presence in the public open space is enhanced, particularly with people from lower social strata. A count of people has been made on both sides of the Esplanade on a sunny workday, from 7am to 5pm: in the busiest track of the place 4,602 people have been noticed, quite a figure. Use of public space is three times more intense when kiosks and street vendors are present. Instead of being inspired by this interesting *indiscipline of the ordinary man* (Certeau, 2000), by which common people contribute to the popular use of the place, the government represses the initiative. Time and again stands are removed by the 'forces of order', only to come back a bit later; in March 2010, the local newspapers registered 39 vendors, in six different spots (note that the Esplanade is 1 km long). After their subsequent removal, they returned. In September (same year), our inquiry detected 33 vendors in almost the same six spots). The argument is a recurrent one: it contradicts preservation rules. It is never stated in what terms it might be in accordance with those same rules, or if different solutions would be acceptable. Costa's original proposal, as usual, is not considered.

Brasilia's monumental space is what we have called, in another opportunity, an *exceptional space* par excellence: a place specialized for the superstructural political or ideological instance of society (Holanda, 2002). This is no novelty in history, but it has the same implications as ever: a place in which

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Figure 2. One of the busiest tracts of the Esplanade on a weekday (Source: authors).

only a specialized fraction of society works daily and which, to the common people, functions more *expressively* and to be seen from *outside*, than *instrumentally* and to be lived from *within*. Public policies in Brasilia, consciously or otherwise – it does not matter which – reproduce the strategy. The result is the weakening of the role that monumental spaces in Brasilia play in the minds and in the practical life of people. Despite this, the Esplanade is the first and foremost symbol of the Capital (and it is often referred to as one of the most powerful Brazilian symbols). If the space were incorporated into the life of people by improving its instrumental role, its symbolic importance would improve, not otherwise.

2. On the gregarious scale

The crossing of the city's two main axes is the material basis of its gregarious scale. This is where the bus station and a group of mono-functional non-residential sectors are located ('north' and 'south' commercial, hotels, amusement, etc. sectors), surrounding a large 'platform' that connects them – a fascinating building complex designed by Lucio Costa himself (Figure 3). The 'Amusement Sector' is depicted by Lucio Costa as a mix of Piccadilly Circus, Times Square and the Champs Élysèes. With these references of urbanity, it would appear that, by design, the urban core would support a thriving public life. This is not the case. The sectors function as islands, and access routes among them are often difficult, unpleasant and unsafe. They are places that lack shadow and inviting public plazas; open spaces are car dominated and poorly lit.

Nevertheless, hundreds of thousands of people come every day from all over the metropolitan area to work in the city centre – where 40% of all jobs are situated (or 82% of the formal ones). On a sunny workday, from 7am to 7pm in the most bustling section of the platform, over 60,000 passersby were counted. The emergence of informal trade along the paths came as no surprise.

Informal trade contributes to shorten distances and enhance urban life to the city centre by adding new uses to public spaces and making people linger a little bit more in them. But, again, they are not seen as a contribution to the city, but as a menace; instead of using this social practice as a design input to improve poor public spaces and increase diversity in the gregarious scale, governmental power uses its force to eradicate it.

In May 2008 street vendors were given free stalls in a 'popular shopping' area located in a place where no one passes by. The governor himself declared that the idea was to keep the centre *clean*, from that moment on. We now see the result of this action:

Figure 3. The platform before the street vendors removal in 2007 (Source: authors).

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stalls that remained most of the time closed due to the obvious absence of clients were little by little being illegally sold to entrepreneurs. A local newspaper tells the story of a firm from another Brazilian state buying twenty stalls for USD 150,000 to establish a lingerie store. Meanwhile, vendors are returning to the streets, despite the strong repression they suffer.

In general, there is little concern about the quality of public spaces in the city or whether they have appropriate design to attract and shelter urban life, but in the gregarious scale this attitude is most acute. There are two 'plazas' on the Road Platform which are poorly designed, one of them located between a very successful shopping mall placed at street level and the National Theatre. It is 6,200m² and behavioural mapping has shown that the average occupancy, during a sunny workday, from 10am to 6pm, is no more than fifty people, out of which 67% are men (studies show that a great percentage of women in a public place is a good indicator of its success [Whyte, 1980]). Meanwhile, on the sidewalk along the shopping mall's façade one can easily count more than 1,400 pedestrians hourly, in the same period and kind of day. The fact that this 'plaza' is so unsuccessful does not seem to bother anyone, and changes in its structure are, in what concerns the preservation instances, forbidden.

On the other hand, debates on the lack of parking lots in the gregarious scale are frequent, and the car-oriented urban design prevails, e.g., in the North Commercial Sector. It is filled with isolated buildings with blind façades, lots of barriers, discontinuities, surrounded by parking places. In other words, a 'landscape of objects' instead of a 'landscape of places' (Holanda, 1984) with inexistent public realm – naturally, street vendors cannot be found there. On the other hand, in its older symmetric brother, the South Commercial Sector, spaces are scaled to human dimensions, there are continuous paths for pedestrians, places in which people easily gather, shops on street level, gentle slopes, etc. In other words, it is a 'landscape of places', where public life can happen.

Absurd as all such urban events and developments may be, they boil down to one and the same recurrent phenomenon in Brasilia, particularly in its most central bits: preventing the appropriation of public space by more popular social layers. To 'clean' and 'organize' the centre means to void them of people in informal activities, people who do not have jobs in the formal sectors of the economy, and returning the 'reconquered' spaces to an exclusively expressive function or for the car, in terms of more parking spaces.

3. On the residential scale

Perhaps the most blatant contradictions between discourse about the Capital and its plain reality concern the residential scale. Lucio Costa has proposed only two types of residential space: buildings six stories high in the superblocks and single-family houses by the lake shore. He imagined that the houses and a variety of apartment plans would respond to the varied income layers of Brazilian society at that time. This proved far from the truth. Our research has revealed that there is a close relationship between building types and income layers, but that the variation obtaining here is much wider than the one envisaged by Costa; it ranges from individual houses by the lake shore, through flats in six storey high buildings over *pilotis*, to flats in three storey high buildings (some without *pilotis*) and a highly varied configuration of urban blocks, streets, form and size of plots, in which various building processes take place, including self-construction of the home or self management of the building process.

The close relationship between such varied solutions and the deployment of social layers in space is detectable in Brasilia. But one has to pay attention to something more than what is revealed by the average cityscape. On average, it is true that the closer we are to the city centre, the richer people are. However, there are many instances of non-conforming phenomena: for various reasons, here and there we find enclaves that include poor families in otherwise rich parts of the city; e.g. in three stories apartment buildings without *pilotis*, located in the middle of the South Residential Wing of the Pilot Plan – a very affluent place indeed. Among all, the Vila Planalto is the most telling example.

Vila Planalto is only 1,500m away from the Plaza of the Three Powers. It dates from the beginning of the construction of the city. It had its origins in a firm building camp that provided housing for the company employees of all layers – architects, engineers, technicians, manual workers. It was quite varied concerning plots, houses, blocks, streets, alleys, sidewalks etc., according to the respective social categories therein. Today (2010), fifty years after the inauguration of the city, such variation is still clearly printed in its configuration. The average plot size is very small (143m²) and 46% of all plots have less than 100m² of area. Some streets are so narrow that

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they almost prevent cars from passing through. And yet the Vila presents an income stratification that is very close to the stratification of the Federal District as a whole – it is almost, as it were, a microcosm of the entire metropolis: there are a few more rich people in the FD (10.4% in the Vila, 11.9% in the FD), medium strata are also larger in the FD (49.8% in the Vila, 57% in the FD), and there are circa 7% more poor families in the Vila than in the FD (39.7% in the Vila, 32.5% in the FD). There has been some gentrification. The picturesque character of the Vila, as well as its privileged location, has attracted middle class intellectuals, some of them teachers at the University of Brasilia. The best houses are suitable to adaptations that correspond to middle class expectations and are situated in streets that allow generous parking space. But such houses are a minority. The larger part of the Vila's architecture and townscape is not fashionable to medium strata, let alone the rich. Thus, gentrification seems to be reaching a limit, imposed by architecture of the place and by the impossibility, enforced by law, of changing some of its fundamental characteristics. More than four decades after the Federal Government moved to the Central Plateau of Brazil, market forces were not powerful enough to expel low-income families from the place. When Brasilia was decreed World Cultural Heritage by UNESCO (1989), the Vila was included in the perimeter of the area thus considered. Henceforth it was no longer possible to make transformations that implied changes in the fundamental traits of plots, houses, blocks, streets and squares. This has further contributed to slowing down of market pressures upon the building stock of the Vila and implied the permanence of the lower income families. Architecture has spoken louder as an independent variable.

And yet, the Vila's example does not inspire new urban experiences currently being carried out in the Federal District. There are still unoccupied areas quite close to the metropolitan centre in the Pilot Plan, within or without the area declared Cultural Heritage. Predominantly residential new boroughs are being incorporated, the most recent of them – the Northwest Borough – for 40,000 people. The place is homogeneous concerning the building types, and it will be socially homogeneous as well. Buildings resemble those of the traditional superblocks but are much more sophisticated. We have seen the film: it will be an exclusive place for the extremely wealthy.

Why should this be so? Why should we not strive for new boroughs as microcosms of the whole metropolis? Members of our research team have made some speculations. Careful attention has been paid to the parcelling of the land and the restrictions of building in them, in order to guarantee the local variation that will respond to different social classes' buying power. A wide spectrum of architectural types has been considered, the extremes of which being high towers for expensive flats, on the one extreme; plots for single family self-produced houses on another; and a varied collection of other types in between. A reasonable hypothesis, based in the knowledge of the real Brasilia, as it exists today, suggests that it is highly probable that such a borough would be physically as well as socially heterogeneous, realizing the fundamental attributes of urbanity. For example, we have compared the *Setor Noroeste* (a new borough westwards of the Pilot Plan's North Wing) as it is being incorporated now, with the same borough with an expansion doubling the present size (there is available space in the site). The expansion would have different building types according to the argument put forward above. The result is telling (Figure 4). Notice how the second scenario, based in real, similar boroughs of the city,

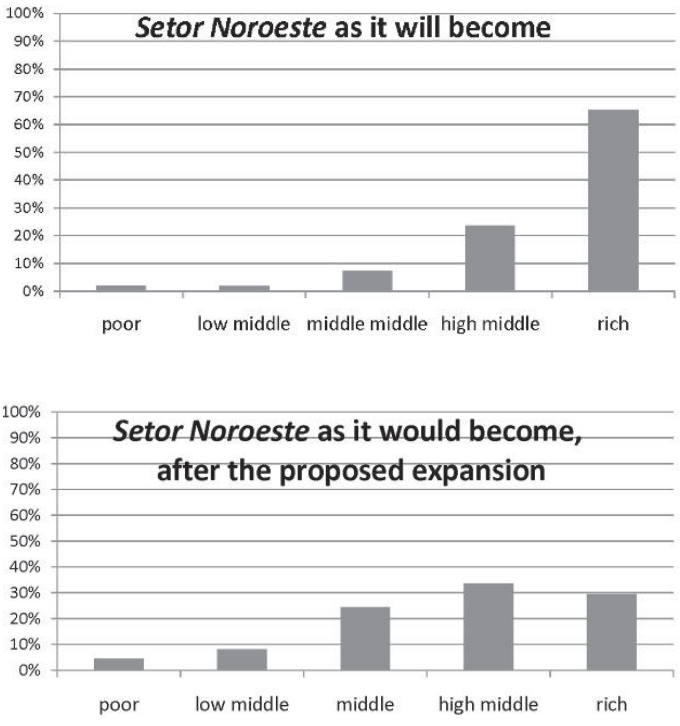

Figure 4. Graphs of income layers of Setor Noroeste as it will become, and as it would become after our proposed expansion. Rich families decrease from 65.2% to 29.4% while all other income layers increase: poor families rise from 2.1% to 4.5%, low middle from 1.9% to 8.2%, middle from 7.2% to 24.4% and high middle from 23.6% to 33.5% (Source: Tenorio and Santos Júnior, 2010).

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is varied in terms of families' income layers: built variety = social variety = urbanity.

The residential scale is not exclusively constituted by the housing stock: the diverse services therein – education, health, public security, religious, post offices, commerce, lodging etc. – are included in the scale. Unfortunately, the same gentrifying logic presides over the monitoring of such spaces, repressing transformations arising from bottom-up strategies of building the city. In one of the most important avenues in the Pilot Plan (South W-3 Avenue) various services have developed aiming at a poorer clientele. Cheaper hotels and lodging houses have appeared, replacing the previous exclusive residential use in the west side of the avenue. The purported reasons for *not* allowing such processes are not morphological but concern land use: they contradict preservation rules. But, again, there is nothing in the legal documents that confirm this. The transformations maintain the essence of the preservation, namely the *scale* of the area. But, it is argued, these are non-conforming uses, and a special place should be defined to house such functions; naturally, far away from sight…

4. On the bucolic scale

The bucolic scale makes the transition between city and countryside: a predominantly green landscape, with sparsely constructed buildings of low height. Here are located the embassies, the University of Brasilia main campus and some other institutions. In the immediate periphery of the Pilot Plan the scale is, to the east, in the areas between the residential wings and the lake shore and, to the west, in two large urban parks. But the city's 'bucolism' is in the presence of greenery everywhere, in greater or lesser extent (Figure 5).

Figure 5. The bucolic scale is constituted by the predominantly green areas seen in the image, immediately below the residential wings of the Pilot Plan, but generous green areas within the superblocks and other places of the plan are also considered elements of such scale, intermingling with the others (Source: authors).

Sadly enough, the city turns its back to the lake. The problems concerning the occupation of the lake shore have their origin in the relation between city and lake and in the mode of occupation of the lake's fringes suggested since the blueprint. Lucio Costa proposed that only clubs and tourism hotels should be situated here, but these were allowed to privatize the shore on which they were situated. In the end, 'tourism hotels' became permanent residences in the form of 'flats' (they are 'hotels' as well, are they not..?) and huge convention centres have appeared. Progressively, these flat complexes have transformed themselves in actual gated communities for the very wealthy. This is one more instance by which the central bits of the metropolis – namely the Pilot Plan and its immediate vicinity – are progressively occupied by higher income layers.

On the other hand, there have always been large distances between the residential wings and the lake (despite the fact that the original plan has been dislocated circa 500 meters eastwards, following the competition jury's recommendation). Embassies' plots of land (many of them empty so far), the university campus and other institutions occupy only a small part of it. There are large tracts the occupation of which is ill defined; or they are simply unassociated land. Also, there are still large bits of the lake margins themselves that have never been occupied.

No wonder the pressure concerning this vacant land is increasing fast. Proposals have been made concerning four large sophisticated hotels by the lake shore. The argument is that there will be a corresponding demand because of the Football World Cup to take place in Brasilia. For their headquarters, the embassies have progressively chosen to rent large houses in the South Lake Region (the richest administrative region in the Federal District) instead of building specific edifices in the places destined to them (the latter option is too expensive, they argue). In these plots, the TERRACAP (the land agency of the Federal District) suggests that buildings for services and commerce might be the case.

One way or the other, it is the same old story: gentrification of the most central and privileged parts of the metropolis that have not so far been gentrified. In the case of the remaining tracts of the lake shore, the tradition of maintaining whatever *public* margins of bodies of water in Brasilia should be rescued, instead of building expensive hotels. The tradition was surprisingly broken by Lucio Costa's

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plan, who otherwise had enormous sensibility for keeping other traits of the Brazilian urban tradition alive in his project (Holanda, 2010). Public space for leisure close to the lake is very much admired by people (particularly the lower income layers) who, despite problems of accessibility, come to the few remaining bits in holidays. The tracts should remain public.

As to vacant land, both in cases in which the use is prescribed (embassies) or otherwise, a new opportunity to rebalance the perverse land structure of the metropolis should be explored: today, 10% of the inhabitants live in the Pilot Plan and immediate surroundings while 44% of the total jobs of the metropolis are located here (it is easy to guess the huge amount of commuting generated by this). Vacant land in the bucolic scale may be occupied by low-rise (but high density) housing, in the varied way that Vila Planalto teaches us. No damage to the city's image will result. On the contrary: today, it is the 'imagebility' (Lynch, 1999) of the site that is damaged by physical discontinuities and unoccupied land. As in Vila Planalto, we are not talking about *exclusive* residential use here: diverse services in support of residential function may spring in the interstices of the residential fabric, in so far as they agree to the building types proper of the bucolic scale – which is *not* the case with what is being currently proposed by TERRACAP.

Conclusion

Preserving the many qualities of Brasilia as a World Cultural Heritage site is an indisputable task. Unfortunately, legal instruments, or even a clear doctrine, are missing concerning this goal. No official explicit arguments exist by which the essential attributes of the city are discussed, let alone defended. Legislation is too economical. It fails in describing the character of the city's various scales by not citing explicitly the morphological structure that supports them. This gives ample room for arbitrary interpretations and that is where sheer power comes in. Also, there are many commonplace beliefs and prejudices concerning the fact that the city is the 4th largest Brazilian metropolis; that it therefore needs to adapt itself to this reality, and the refusal to consider it as such. GDF (the local government) and IPHAN (the Heritage and Historical National Institute) often quote Lucio Costa – "Brasilia has no interest in being a large metropolis" – as an explanation for their denial to propose/accept interventions that could, for example, bring low income families to live closer to the city core (as if Brasilia was only the World Cultural Heritage site, and not all the metropolitan area that holds circa 3.0 million people). A broad program of heritage education and an open debate are needed to establish new parameters to ensure not only the physical preservation of the capital but the social diversity in which its inhabitants' culture is based. Hopefully the Preservation Plan for the area declared as World Cultural Heritage, currently under preparation, will be a good starting point for this.

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Landscape of the urban shoreline of Valparaíso: towards the establishment of indicators for the dynamic preservation of change

Mario Ferrada[1]

Abstract

Valparaíso, UNESCO World Heritage site (2003), is a port city that has shaped its own identity and cultural landscape through a process extending over 500 years. Throughout this historic construction, the coastal border expresses itself genuinely as a landscape of modernity, as a spacial and mental interphase element in the mind of its inhabitants, and as an anchor of economic, cultural, and social exchange of domestic and international impact. The shoreline, as well as that of most post-independence Latin American urban seaports, unfolds itself as a cultural development of unparalleled uniqueness, especially in the course of its 200 years of self-sufficient existence. However, in spite of the undeniable potential for sustainable growth, Valparaíso and its waterfront face the threat of a highly mediated and economic globalization characterized by transnational, speculative processes whereby urban planning and local, regional, and national seaport administrations are unable to operate effectively.

The inadequate preservation of Valparaíso's coastal border, embedded within an active urban setting, calls for a conceptual redefinition of the place itself and the mechanisms promoting its appreciation and protection. This can only be achieved through the design of instruments enabling the management of a complex heritage resource and which is, by definition, dynamic and exposed to the ongoing *in situ/ in visu* transformation of society over the time continuum. This paper proposes indicators relevant to the measurement of the state of preservation and the development of the coastal border. These indicators bear direct relation with the current/historic uses of the property, the social engagement of its inhabitants, the surrounding facilities, and the ecological relationships between natural and cultural resources.

Keywords: landscape, urban planning, architecture, heritage conservation

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The landscape of urban shorelines: a post-modern approach

In our contemporary urban/architectural culture, the arrival of new approaches aims to offer a comprehensive explanation for such phenomena as urban planning and development as well as the complex dimensions taken on by architecture within this field, especially with regards to the identification and appreciation of a cultural and social identity. In this respect, the landscape unveils itself as a concept and a technique, allowing an integrative understanding of the processes that man has developed systematically within his physical and natural environment and the value conferred to the construction of a place (*genius loci*).

The aforementioned observation becomes meaningful when corroborating the fact that the configuration of the coast in port cities leads to the emergence of centres for cultural and commercial exchange, which, acting as catalysts for an urban and architectural morphology, synthesize through an 'artificialized' second nature the shaping of the coastal, maritime, and environmental surroundings. In fact, such landscape can be conceived of as a series of successive collective transformations and as the cultural projections that the social groups exert over a given geographical space (Nogué, 2009). These materialize both in the form of physical and tectonic realizations as well as images and conceptual representations that gradually transpire in the art and in the immaterial realities of the mind.

However, in view of the complex nature of urban coastal landscapes, we are forced to regard this setting as a place intended created and designed and characterized by the constant interplay of environmental, social, and cultural factors over the time continuum. The landscape thus behaves as a system consisting of at least three levels (Rodríguez, 1998): a geosystem, pertaining to the environment and the ecology of natural resources; a social system, related to the production systems and the mechanisms of power within society; and a cultural system closely linked to the collective identity and its domains of representativeness.

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Consecutively, the relation of man as a social individual with his environment and the elements of nature turns him into an entity aware of the need for transformation, being capable of generating models of nature-society relations and practical, physical realities of aesthetic application. In addition, an ethical function stems from man's confrontation with reconciliation mechanisms operating on a modified, and often times, mistreated nature (Zimmer, 2008).

From a historical-environmental standpoint, the landscape of Valparaíso city projects itself not as a static heritage asset but as a sufficiently adaptable and dynamic process to face the diversity of contemporary cultural schemata, a confrontation that translates into persistent interpretations and reformulations of foreign architectural models blended with local expressions largely shaped by geographic, climatic, material, and socioeconomic factors.

Equally worth mentioning is the function that the landscape grants to architecture, forcing it to act within a domain of active interdisciplinarity and creativity on the basis on the territory configuration and cultural reality. The landscape function of architecture finds justification in the search for new environmental equilibrium with a conscious effort for memory recreation (Montaner, 2008), a fact manifested in the refurbishment of pre-existing architecture (industrial and naval facilities, fluvial axes, piers, harbour systems) and the design of new infrastructure in tune with the predetermined patterns of the landscape.

As Roger (2007) points out, the landscape configuration is primarily an aesthetic, artistic and ethical action reflected in two interdependent operations which he refers to as 'artealization' One is direct and physical, acting directly on the setting the individual adapts; in other words, an *in situ* operation. The second one is indirect, occurring through the transformative and interpretative action of one's mind, i.e. *in visu*, and whose profound subjectivity makes it susceptible to ingoing cultural patterns and enriching periodic feedback of the *in situ* constructions. The landscapes of urban shorelines are prolifically documented with pictorial images capturing the setting, the maritime life, and the daily working routine on the shore; loading/unloading operations, shipping traffic, etc. (Figure 1).

The port's landscape, manifested in the land-water-inhabitant relation, becomes a market of consumerist and disposable images disseminated by the media, tourists and commercial discourse. In most cases, the information is distant from the original source: the place itself. One way to prevent this post-modern distortion is through "the re-assembly of the landscape in its aesthetic dimension and underlying values, an ambivalent mirror of our relationship with space, nature and the world" (Minca, 2009). Therefore, for an adequate understanding of Valparaíso's urban shoreline, it is necessary to analyze the way in which society has historically taken possession of the pre-existing natural resources and the patterns resulting from this dynamics.

Figure 1. The shipwreck of Arethusa, by Charles Wood Taylor (oil on canvas), 1826. Landscape representation of the western coastal border in Valparaíso and the inclement natural forces.

In terms of heritage conservation, the concept of cultural landscape, adopted by the UNESCO World Heritage Convention in 1992, is defined as distinct geographical areas or properties "represent[ing] the combined work of nature and of man and are illustrative of the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both external and internal" (UNESCO, 1992). However, the implementation of this concept at the level of specific conservation measures is far from having yielded a consistent theoretical frame and successful experience.

1. Current and historic situation of Valparaíso urban shoreline

A brief historical account of the coastal landscape evolution reveals the long-standing vocation of a city strongly bounded to its water resources, a fact reflected in the following relevant stages:

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Valparaíso was discovered in 1536. From then on, until the end of the 17th century, it served as a pier and small harbour opened to national trade, mostly at the expense of Santiago, the capital city, and as an international export centre for ships crossing between Spain and Port of Callao, Perú. As a result of the need for open-space areas to locate the population and the first warehouses, the city began to grow longitudinally (east-west) and towards the foothills (see Figure 2). The first traces of an early road system began to emerge. In this period, due to the tension triggered by the gradual population of hills and seaside areas, the most advantage is taken of the rocky foothills.

By the 17th century, and until 1832, war gun batteries were constructed over the hill plains (San José, San Antonio, de la Concepción) near the narrow downtown area to repel the attacks of pirates and corsairs seeking maritime and commercial dominance, especially those of England and Holland. Because of this, in September 1682, Valparaíso was declared a Military Port. This period in history is characterized by the pioneer settlements on the hills at 50 meters of altitude above sea level. The defensive configuration of the city made possible, for the first time, panoramic and visual control of the landscape.

In spite of these achievements, the actual beginning of the systematic process of creation and construction of Valparaíso's urban shoreline dates back to 1818 with the Chilean Declaration of Independence, a time when Valparaíso was finally opened to international trade. Soon the harbour transformed itself into the economic, cultural, and technological pivot of Europe and the United States. The blossoming of the road system materialized in the artificial land filling in the coastal area, the first engineering operations and construction of wooded wharves.

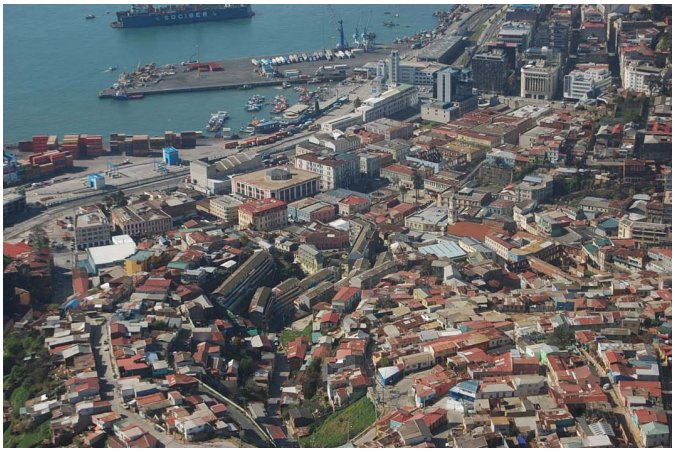

Figure 2. Scenic view of the UNESCO site that highlights the dock-facilities in the urban border located in the Western side of the city. Photograph, 2010 (Collection of the Centre for Contemporary Urban Development Studies. DUOC Valparaíso).

In 1832 Peñón del Cabo [Cape Rock] was blown up and Esmeralda Street came into existence. Thus the oldest part of the city and El Almendral, on the north-east side, became connected as one area. Similarly, at the end of 1851, the tip of Artillería Hill (former settlement of Fort San Antonio) was blasted. These operations, together with the artificial land filling of the coastal border during the 19th century, highlight the most important engineering advances achieved thus far and which account for the development of port and commercial facilities. Throughout this process, artificial streets marked the boundary between the downtown area and the coastal border. In 1843 Cochrane Street was opened and in 1870, Blanco Street, giving birth to the first set of rectangular blocks located in the foothills. The most distinctive feature of this land filling process was the gradual displacement of the shoreline on the north-south side.

No doubt, the industrialization processes and transport developments during the second half of the 19th century are the hallmark of Valparaíso as the country's most important seaport, undergoing substantial improvement until the 1930s (see Figure 3 and Figure 4, next page). In 1852 the railway connecting Valparaíso and Santiago began to be built. These unprecedented advances radically transformed the urban configuration of space and form. The railroad layout significantly shaped the north-east side of the city, especially through the construction of Barón's railway wagon manufacturing factory and its workers' dwellings.

The system of industrial capitalism brings about the modernization of the transportation system, the growth of port facilities, the need for more factory facilities, the search for more land (in view of population growth), and the creation of pedestrian and commercial areas especially suited for the emerging bourgeois banking system.

By 1886, in an attempt to improve port facilities, the government began a land filling process that, together with the new infrastructure, determined the look and feel of the harbour waterfront. In 1909, the Port Commission Law (*Comisión de Obras Portuarias*) was enacted. Subsequently, intensive improvement operations on the urban coastal border came to a halt in 1928-1930. Significantly important is the role of the government in the consolidation of the port

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Figure 3. Map of Valparaiso, 1871. During this period major engineering constructions were built, such as backfilling works for containment of original beach (National Library of Chile).

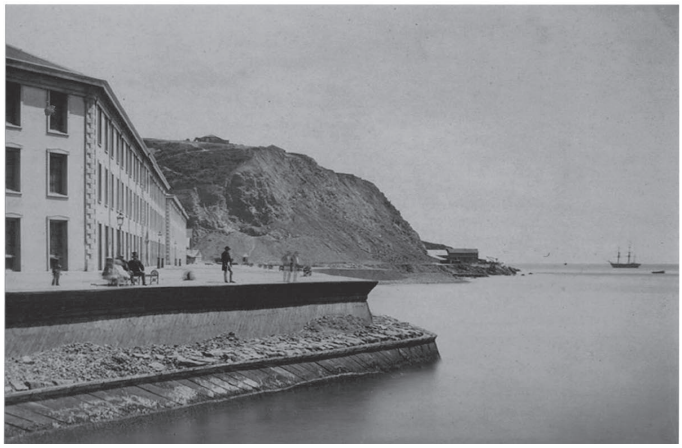

Figure 5. Coastal border and customs' warehouses, Las Habas in the west of the city. Clearing and levelling work was conducted on Artilleria hill to generate surface area for customs and dock-related activities.

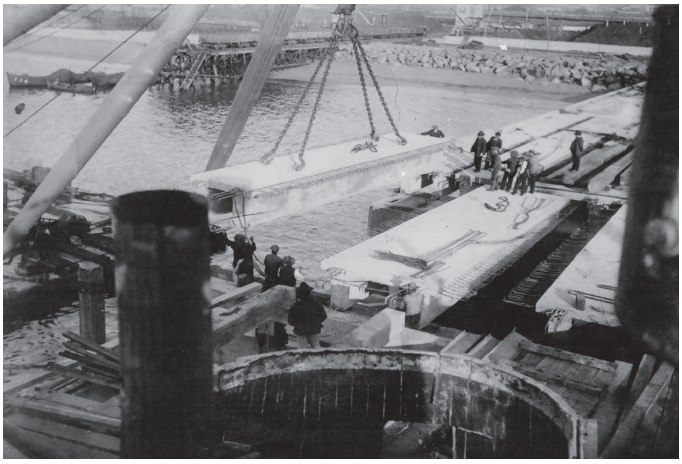

Figure 4. Construction of the pier nearby Baron hill in the eastern side of the city. Photograph, 1929 (from author's own archives).

Figure 6. Precluded at the end of the 19th century by numerous studies and projects, the construction of the breakwater was finally completed in 1929.

development (see Figure 5) as well as the pioneering work of foreign and Chilean professionals in the field of hydraulics engineering (Ferrada, 2009). The working port is now a strategic tool for national and international growth that benefits, directly and indirectly, other coastal towns within the country.

In a context of global industrialization, the vision of engineering has a lasting impact on Latin America. Valparaíso does not escape this influence. The current port facility gives birth to a new modern city whose image begins to consolidate in 1928-30 (Figure 6). The concepts of rationality, transport efficiency, city connectivity and loading/unloading systems begin to figure gradually, but prominently, in the government's discourse. Emphasis is placed on the sanitary developments of the 19th century (drainage, street levelling, water service, etc.).

2. Current situation: isolation of the landscape spirit from the urban shoreline

An equally important matter is the gradual isolation of the shoreline from the rest of the urban territory during the 19th century, a fact that finds explanation in the dramatic changes in transport and technology brought about by the Industrial Revolution. Between 1830 and 1930, despite the consolidation of the port facilities, a number of irregularities evidence the isolation of the coastal border from the surrounding city areas. This isolation is intensified by the 20th century with the implementation of newer technologies in industry and transport.

Currently, such an alienating trend has been paradoxically characterized by a government policy to detach the working port from commerce, tourism, or culture-related activities. Another factor threatening the harbour's identity is the series of

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inadequate interventions occurring with the introduction of the conservation paradigm in the 1990s and its subsequent consolidation in 2003 with the UNESCO World Heritage site declaration.

As a result of a worldwide trend, the city's coastal area has become the subject of intensive planning pertaining to the development, maintenance and expansion of port facilities with standardization projects intended to diminish the historic role of this commercially important seaport. In South America no more than twenty harbours satisfy the market needs of the entire continent (doubling its surface area). Out of these harbours, three are Chilean: Valparaíso, San Antonio and Antofagasta. The first two are strategically located in the central region of Valparaíso, which acts as a corridor linking the Pacific Ocean to Asia (Mastrantonio, 2009).

Since the introduction of the Preservation Coastal Border Plan [*Plan de Recuperación del Borde Costero de Valparaíso*] in 1990, a government initiative negotiated by seaport administrations, a new freeway pass leading directly to the port has been built in order to avoid congestion in downtown streets. A similar innovation in the Barón area will result in a mega-development project consisting of malls, cultural centres, offices and apartment buildings. The fact the city's harbour requires, paradoxically, more space for its daily operations has sparked proposals for the construction of two new working sites and the failed attempt to demolish four state-run warehouses, some of the few remains of development works of the 19th century.

The evident mismatch between the appreciation of the urban coastal landscape and the heritage preservation tools can only be explained in light of the poor understanding of ecological and environmental matters in relation to the sustainable growth of the urban territory (adequate use of finite resources), a fundamental approach to the critical, interpretative view of the landscape and the resources of the territory (Ferrada, 2009).

None of the regulations contained in the National Coastal Border Policy (approved in 1994) introduce key concepts pertaining to landscape and component features, as understood from a material and immaterial connotation. There is only mention of the proper care of the natural resources from an ecological and environmental standpoint, but not from a cultural one.

As Andrade (2008) points out, the coastal border, as conceived of by the Chilean legislative system, corresponds to a limited space subjected to a set of special regulations. Although such view satisfies the regulations on use of local resources, it does far from offering a systematic, comprehensive analysis of the coastal territory.

With regards to Valparaíso's heritage status, the protection of the shoreline and its cultural resources (urban, industrial, and architectural) applies only to certain areas in accordance with Law nº 17.288/70 (Barón railway manufacturing factory and areas extending beyond the UNESCO World Heritage site). Under the same law, some properties have been declared Historic Monuments; others have been declared Heritage Property by The City Regulations Plan [*Plan Regulador Comunal*].

3. Towards the establishment of guidelines for preservation and development

The current state of urban coastal landscape calls for the elaboration of classical policies of landscape appreciation and which should include a number of variables accounting for the ongoing processes of adaptability and change, particularly in relation to the intense physical and mental anthropization of the natural resources throughout history.

In other words, rather than just preserving the actual expressions of the process (facilities, architectures, city layout), we must pay attention to their underlying dynamics. Without a doubt, the appreciation of heritage and identity must be rooted in historical, urban, social, cultural, and economic factors that guarantee the vitality of relations of the internal system and an integrative unit of its components. The sustainability of these actions engages the natural insertion of the individual who inhabits, interprets, modifies, and perceives the urban coastal border. According to the historically documented process, the internal dynamics are shaped by the mobility of the commercial, industrial, and port activities taking place on the coastal border and by the functioning of the city as a territorial unit.

Adequate appreciation, conservation, management, and planning of this type of landscape, as well as the establishment of guidelines for its monitoring over time, must be based on a frame of technical operations supported by a system of four interrelated components: an environmental system, a cultural system, a social system, and an economic system. These will ensure sustainability in the active

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dynamics that reproduces itself historically from its society.

Given the aforementioned reformulation of the heritage appreciation, it is fundamental to establish relevant guidelines for the state of preservation and development of the urban coastal assets and which should be designed interdisciplinary with the maximum level of participation and consensus on the part of the community under discussion (inhabitants, government, seaport organizations, commercial entities, etc.). These indicators must be manipulated interactively so as to derive a holistic vision of the actual state of conservation and development of the landscape dynamics to be protected.

4. Indicators for the preservation and development of the landscape in the coastal urban border

a) Level of impact of uses and activities: the aim at this level is to assess the degree of the impact upon the dynamics of the landscape system, taking as a basis the examination of the correspondence between historic and current activities in relation to the changes to be incorporated. In this respect, it would not be adequate to alter industrial, dock-related uses, as they are highly demanded for economic activities in the city, the region, and the country. The descriptors of this indicator derive from types and quantities of employment, consistency between planning instruments at local and regional levels, type and quantity of deployment of natural resources (biotic and abiotic) as well as the cultural expressions (urban manifestations, layouts, architecture).

b) Level of functionality, accessibility and interpretation: this level stresses the assessment of the correspondence and complementation between the border functions and those generated in the city and the region in order to maintain adequate transportation, pedestrian and visual accessibility from and to the border, either from the city or from the waterfront. Amongst the main descriptors we can mention transportation systems, the measurement of visual cones, identification of salient images as perceived by inhabitants from and to the urban border, degree of pedestrian use of the different access points and their main areas.

c) Level of social involvement in processes of use, perception and appreciation of the coastal border: one aim is to determine the extent to which the inhabitants are able to create a landscape through their actions and their involvement with the activities it fosters, and also their capacity to critically interact in decision making related to changes and improvements (e.g. plans, programs, projects). It is in this level where 'artealization' plays a major role as a tool promoting a continual construction and identification with the landscape. As a descriptor we propose the evaluation of the kind and number of people benefited directly or indirectly economically, socially, and culturally with the activities generates in the urban border. We also deem it relevant to consider specific instruments of participation (polls, surveys, monitoring, political-administrative tools). It is likewise important to measure the extent and number of areas dedicated to public activities in contrast to those that are private or have been leased.

d) Level of impact and quality of physical interventions in the border and its surroundings: this indicator focuses on the spatial, formal, volumetric, perceptive, and visual treatment of the urban border, taking into account urban, architectural, and aesthetic patterns which characterize the landscape to be preserved. On the one hand, this level considers assessment of scope and quality of interventions seeking preservation and rehabilitation of existing supports (relevant architectures, dock, industrial and shipping equipment). On the other, assessment also considers advantages or disadvantages of new works and/or urbanizing initiatives as to their impact upon the configuration of the landscape (as seen in water and urban fronts). Descriptors are based on proper respect for heritage preservations norms (maximum heights, volumes, rhythms, etc.), preservation of valuable typological qualities and of the spatial

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fluidity between architecture and public areas.

e) Level of 'artealization' of coastal urban border: this level aims at the assessment of the bi-/uni- vocal degree of activity between concrete and intangible factors that, as a whole, shape the heritage dimension of the border. The main objective is to identify, document, and make known the outcomes that the border generates in cultural and artistic fields (visual arts, music, literature, performances in public areas, etc.) under the assumption that these expressions, in turn, enrich an understanding of the heritage dimension of the border. In this perspective, it is important to broaden the conceptual tools under which the appreciation of the landscape takes place in order to incorporate aural, tactile, and olfactory elements. Amongst effective descriptors to attain these purposes we can mention: social and cultural activities generated in or by the border, funding and policies, both private and public, degree of involvement of members of the community in border-related activities (spontaneous or planned) and the levels of enrichment of toponymy.

f) Ecological level of use and reemployment of natural and cultural resources: This level seeks to assess the balance regarding the use of the existing capacity from natural and environmental resources (water, air, biotic and abiotic factors) and cultural resources in order to potentiate an adequate anthropization sustainable for the dynamic, unitary, and comprehensive quality of the urban border landscape. Descriptors attain to assess levels of pollution affecting the sea, land, and air. Regarding cultural resources, the descriptors seek to assess the degree of disintegration of architectures and relevant equipment, their rehabilitation for social and economic purposes, and the growth of cultural expressions derived from border activities as well as the respect for environmental norms, including those that regulate the preservation of the architectural and urban heritage.

5. The landscape of the coastal urban border of Valparaíso: towards a definition of its heritage value and projections

In the context of the UNESCO Nomination granted to the city of Valparaíso in July of 2003, which declared its Historic Quarter as World Cultural Heritage, the protection of the coastal urban border along with its dock-industrial facilities becomes a matter of utmost priority and concern. Failing to safeguard this heritage may result in incalculable damage to the urban territory and irreversible loss affecting the seaport quality of Valparaíso, a condition that plays a key role in the identity of the city. In order to fulfil this challenge, it is first necessary to approach the invaluable heritage of the coastal border differently by re-considering its authentic meaning as a tangible and vivid expression of the landscape. Thus the coastal border grows as a privileged site from which to visualize the historical, social, economic, cultural, political, and technological developments of the city, from its discovery to today.

In this light – and according to the Operative Guide that translates the objectives set forth by the *Convention* on world cultural and natural heritage, approved by UNESCO in 1972 – the Nomination of Valparaíso is fully explained in Consideration II of the Convention which deems as valuable and exemplary those cities that represent "an exceptional testimony of the earliest stage of globalization at the end of the 19th century", emphasizing the importance of the nominated site as 'seaport historical area'. This definition clearly reflects the condition of Valparaíso and the remarkable quality of its urban and coastal landscape.

The permanent relationship of the border's trading, commercial, and dock-related activities with the city, from the mid-19th century to today, is also a relevant point to appreciate the role of the border. These activities condition the forms in which the flat area of the dock sector (UNESCO Historic Quarter) and the coastal border are occupied, which explain the continual and difficult backfilling over large surfaces that were originally part of a natural beach. The historic and urban evolution of Valparaíso – from the colonial period to the industrial modernization in the 19th century – emphatically determines that the commercial use of the docks (e.g. customs, warehouses) greatly contributed to the new urban settlements essential for the development of the city.

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In order to properly protect the coastal border it is necessary to activate technical measures and planning strategies in institutional and public areas. In this sense, the participation of the community is important to raising awareness about the preservation of this heritage under the assumption that the landscape is a social construction that members of a group create through time, culturally transforming, improving, and interpreting the natural surroundings.

Preservation aims, therefore, should stimulate the process of change that defines the uniqueness of a landscape, its very fluidity and dynamism, thus avoiding its paralysis or its transformation into an idealized image of commodity. In this light, natural, biological, and environmental resources are as important as cultural aspects (both concrete and intangible): they both interact generating the dynamic character that defines the landscape. Finally, architecture as a cultural element can be understood as a means to construct the landscape by signalling approaches to the activities of the border and by creating the urban scale of architecture so as to integrate the coastal border into everyday and authentic experiences in the city.

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Definition of indicators in the rehabilitation plan of the historic centre of Porto Alegre

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Abstract

This article describes the construction process of indicators to be used in the implementation of the Rehabilitation Plan of the historic centre of Porto Alegre, RS, Brazil. It first presents a summary of this Plan, focusing on its main steps and proposed instruments, notably the strategic objectives and lines of action that articulate the priority projects. The indicators emerge as part of the implementation and management process of the Rehabilitation Plan. The approach focuses on the procedures used for their selection, definition and classification as qualitative and quantitative indicators. According to this categorization, it exposes and details the indicators related to monitoring aspects of the Plan which focus on conservation and physical intervention in urban space, such as improvement of public spaces and preservation of architectural heritage. Finally, this article presents a brief discussion of the process, pointing out its limitations and prospects.

Keywords: rehabilitation of historic centres, architectural heritage preservation, urban indicators

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Introduction

The historic centre of Porto Alegre corresponds to the area circumscribed by the first inner ring road of the city, with 228 hectares and a population of 36,862 inhabitants (2000 census). It is a territory with a peculiar identity for its role in urban history, the stock of buildings and places of cultural interest, but also for the diversity, vitality and importance of the activities developed there. It is the most diversified area of the city, due to the characteristics of the social groups that inhabit, work or move around there.

In the Master Plan for Urban and Environmental Development of Porto Alegre (*Plano Diretor de Desenvolvimento Urbano e Ambiental de Porto Alegre*, hereafter PDDUA), the historic centre was pointed as an area of rehabilitation and as the object of a specific plan. With support from the Ministry of Cities, this Plan was prepared between 2007 and 2009, and joined the multitude of technical views of several municipal agencies with the support of external consultancy,[1] including also the necessary contribution of the most significant social actors.

The participation of these actors and agents representing the historic centre was essential for a joint construction of the Plan and for the agreement on the propositions presented during its development within a methodology that gave priority to dialogue between specialists and the community (Figure 1, next page). Monitoring the foreseen actions and expected results was as important as this participative aspect in the Rehabilitation Plan. To this extent, the process of constructing the respective indicators to assess the effectiveness of the plan constitutes the main object of this work.

1. Summary of the Rehabilitation Plan

The Rehabilitation Plan of the historic centre of Porto Alegre was developed from a diagnosis based on initial surveys, which supported the development and validation stage of the subsequent thematic instruments, consisting of the following: a

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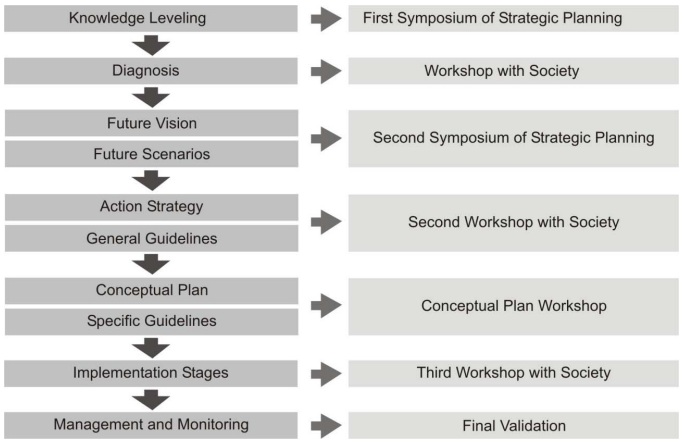

Figure 1. Stages of development of the Rehabilitation Plan of the historic centre of Porto Alegre.

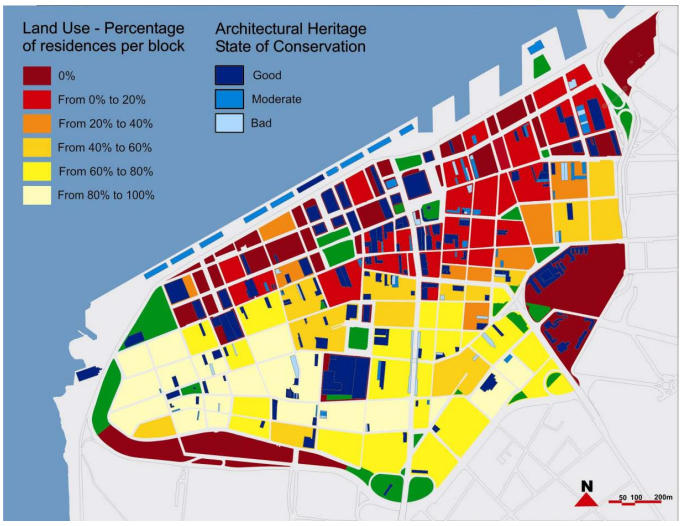

Figure 2. Land use and architectural heritage in the historic centre of Porto Alegre (2007 data).

Strategic Plan, a Conceptual Plan, an Operational Plan and a Management Plan.

The diagnosis was made from evaluations of the City technical team, so as to identify the historic centre problems by crossing the data collected in matrices of the cause—effect type. These assessments were supported by surveys in the studied area, as well as by information from the City Hall's own database.

The map below (Figure 2) shows one aspect considered, focusing on the concentration of architectural heritage in relation to the zoning of the predominant activities in the study area. The preservation of architectural heritage in Porto Alegre is supported by specific legislation. The process of granting recognition and protection as 'heritage' occurs at the municipal, state or federal legislatures and is applied to buildings of exceptional value. The inventory is an instrument of municipal preservation, linked to the PDDUA. The historic centre has a total of 288 preserved buildings, 42 are listed as heritage and 246 have been inventoried, out of which 62% of them are in good condition, 24% in fair condition and 14% in bad state of conservation (2007 data). The technical perspective was complemented and integrated with a society perception, through two meetings and workshops held between the Working Group and representatives of the public, business and commercial sectors, residents, as well as formal and informal services and other organized groups of civil society. Thus, based on the physical—functional survey and on the identification of conflicts and potentialities pointed by the technicians and by the interested public, this report indicates the main qualifying and distinguishing elements of the historic centre to be considered in the continuation of the Plan.

The Strategic Plan (Figure 3, next page) was set after two meetings with society. Its purpose was to align the components and to set steps to be performed to achieve, efficiently, the goals set forth in the Rehabilitation Plan. Based on the mission and the future vision established for the historic centre in the next ten years and also incorporating the diagnosis interpretations, the Rehabilitation Plan assumptions, goals and guidelines were articulated, on the basis of three main directive factors:

a) promoting the image of the historic centre in order to reverse the negative perception of the population due to the urban environment degradation, lack of security and social marginalization, to strengthen the local historical, social and cultural identity;

b) improving urban space in order to restore and preserve the Architectural and urban heritage — reinforcing the historic centre role as a touristic and cultural reference in the city — and also to promote social integration through environmental improvement;

c) strengthening the functional dynamics in order to push forward the economic, touristic, residential and cultural activities, thus enhancing the historic centre potential as a privileged site of social and economic diversity.

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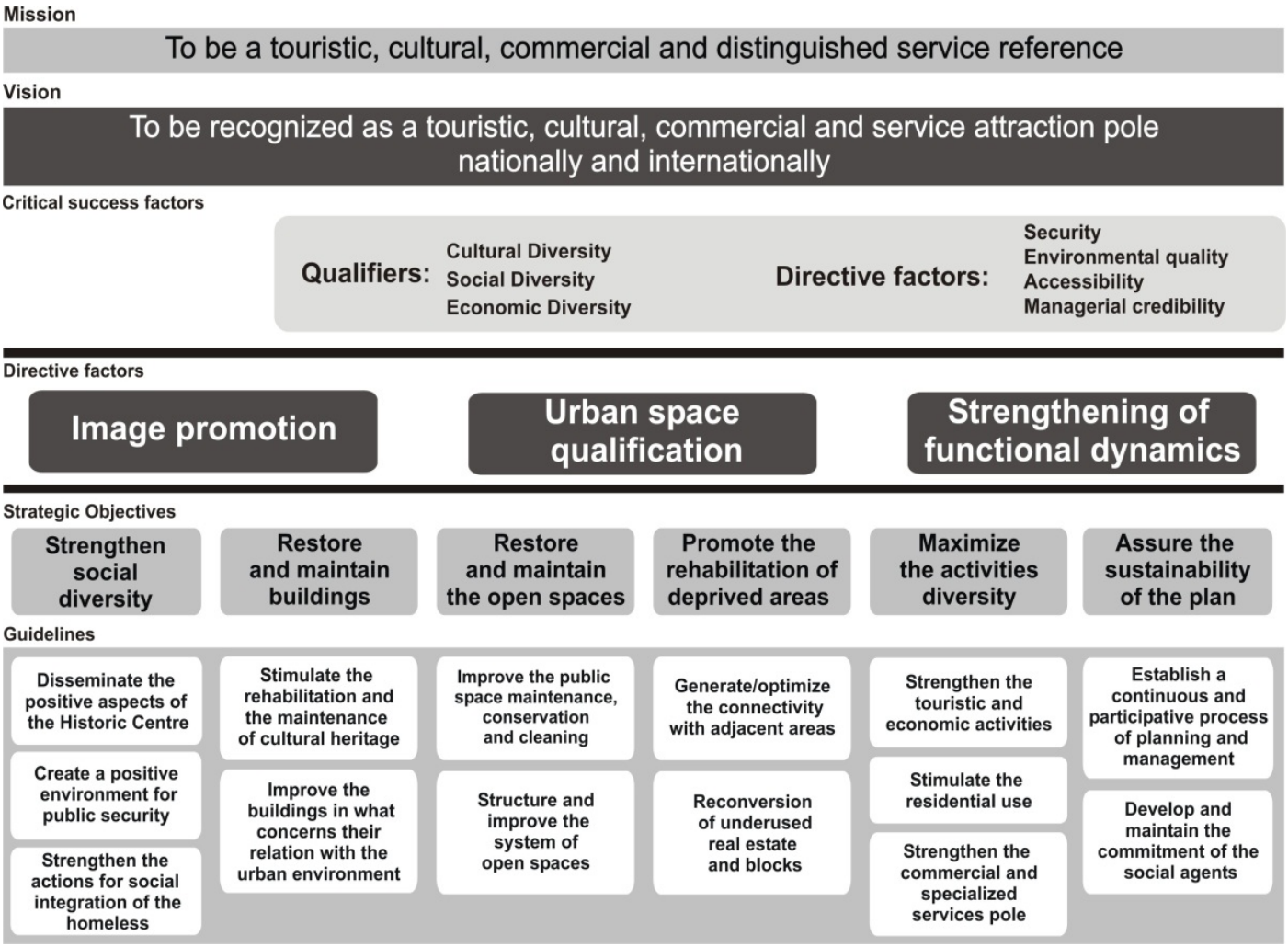

Figure 3. Strategic map for the Rehabilitation Plan of the historic centre of Porto Alegre.

The Conceptual Plan stage was characterized by the consolidation of general and specific guidelines for the physical and functional structural development of the historic centre, so as to guide the selection of actions and projects in an integrated manner. Thus a specific workshop was held under the coordination of the Working Group, and it was attended by teachers and scholars of Architecture from Porto Alegre Universities[2] and by an invited team from the Barcelona City Hall.[3] The technical teams have made several proposals of urban intervention, which are summarized in the map below (Figure 4).

This map demonstrates the spatial distribution of the guidelines adopted in the Conceptual Plan which guides actions in order to minimize or eliminate conflicts regarding the physical and functional structure of the historic centre. Considering the imminent impact of the Football World Cup 2014 on the urban space, such as the regeneration of the docklands (Mauá Quay), the guidelines give priority to proposals directed to land use, open space and mobility:

a) optimization of predominant uses where it was already established an area of regional use, characterized by the concentration of commerce and services and by the major institutional and cultural facilities in the city, and where there is local use, with evident residential vocation;

b) consolidation of the open spaces system – bound to the access and qualification/ planning/conservation of parks, street furniture, vegetation, pavements, buildings, outdoor advertising, etc.;

c) integration of the historic centre with adjacent areas – qualification of the connections between the central area and the surrounding neighbourhood, allowing an easier displacement, for both vehicles and pedestrians.

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Figure 4. Synthesis—Map of the conceptual plan for the historic centre of Porto Alegre.

The specific lines of action were also defined through these guidelines, characterized by rules for land use and occupation, preservation of cultural heritage buildings, establishment of routes, rationalization of public transportation, compatibility of the public and private parking lots provision with the urban structure, complements to the first inner ring road, among other measures.

The next step consists of the Operational Plan, aiming to establish, in a viable and integrated manner, the implementation of the General Plan from the definition of a structure that will accomplish the established strategy, also specifying the set of measures to be followed and their impact on the goals. Thus, in the Operational Plan, the sets of actions are articulated according to their similarity (then called 'Macroactions') and to the projects defined as priorities for the rehabilitation of the historic centre. Within this main goal, short, medium and long—term actions were determined, compiled in ongoing programs in the city management system available on the Internet specific website ('Portal de Gestão') and added to complementary proposals developed by the technical team according to the predetermined lines of actions.

Finally, the Management Plan addresses the administrative model to be adopted, to ensure continuity to the Rehabilitation Plan over time, independently of any political changes in municipal government. Another important factor to consider is the necessary flexibility to absorb the peculiar demands of a territory that continuously interacts with its surroundings at the municipal, metropolitan, regional and national levels.

Thus, the approach of the indicators will be more directly linked to these last two reported steps, according to the need to monitor the measures and to verify the results.

2. Proposed indicators

The process of monitoring and evaluating the Macroactions entailed by the Operating Plan generated the need to define indicators to measure the efficiency while performing the achievement of goals and objectives of the Plan, but also to carry out a permanent evaluation of these targets when it is detected the necessity of an eventual redirection. In this sense, the procedure adopted for the definition of indicators was based on the following schedule:

a) identification of the expected results (attributes) in each strategic objective;

b) election of numerical data or information which can reveal whether the strategic objective is being achieved or not;

c) creation of a list with the identification of each strategic objective, the quantitative data and corresponding units of measurement;

d) assessment of the viability of the data for the construction of each indicator, discarding those whose data were unavailable;

e) assessment of each indicator, using scores for factors which consider the aspects of ambiguity, ease of data collecting, ease of interpretation (concerning the data meaning) and ease of comparison with references, within the following criteria:

- ambiguity level of indicator (1 point—high; 2 points—moderate; 3 points—low)
- data collection (1 point—difficult; 2 points—moderate; 3 points—easy)

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— data interpretation (1 point — difficult; 2 points — moderate; 3 points — easy)

— references for comparison (1 point — difficult; 2 points — moderate; 3 points — easy)

f) multiplication of the points assigned to each factor to obtain the final score for each indicator;

g) selection of indicators for all the attributes, prioritizing those with higher scores;

h) suitability assessment of the indicators with higher score, checking whether they are sufficient to measure the performance of the strategic objective;

i) development of qualitative indicators to complement the quantitative evaluation and/or addition of other necessary information.

From the application of this method, thence, two types of indicators were obtained: the quantitative indicators – composed of numerical measurements of accessibility, monitoring and more immediate reading – and the qualitative indicators, consisting of a set of factors or subjective factors, requiring the use of more elaborate and/or indirect mechanisms for their determination, such as opinion polls and evaluations.

According to this categorization, 18 indicators were established for monitoring the six strategic goals set in the Rehabilitation Plan, which are listed below:

a) qualitative indicators:

— population's perception of the image of the historic centre

— population's perception of the public space condition

— population's perception of the buildings condition

— population's perception of trade, service, culture and leisure

— evaluation of the condition of the vulnerable population

— technical evaluation of the public space condition

— technical evaluation of the buildings condition

— evaluation about the increase in the developed activities

b) quantitative indicators:

— number of homeless people in social inclusion programs

— number of police reports

— number of restored, preserved or recently built squares

— number of abandoned/non — built up areas

— number of provisional parking lots

— number of idle or under — used real estate units

— number of new building units

— public investment in actions of the Plan

— private investment or public — private partnerships in actions of the Plan

— number of implemented actions of the Plan

From the set of indicators presented above, more details were elicited concerning those related to the three strategic objectives of the Rehabilitation Plan directly linked to the issue of conservation and/or physical intervention in the built space of the historic centre.

The first strategic objective indicates 'restore and maintain buildings' and has as expected results the total preservation of the declared and inventoried architectural heritage, with physically restored buildings, by means of compatible and sustainable activities. To monitor this objective, two qualitative indicators were selected:

a) population's perception of the buildings condition – opinion poll

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to be commissioned, in order to measure the degree of satisfaction of society concerning the conservation conditions and the use of declared and inventoried heritage in the downtown area;

b) technical evaluation of the buildings condition — diagnosis to be made by the technical team of the City Hall, containing at least the following items to compose the indicator:

— percentage of buildings declared heritage in good state of repair

— percentage of inventoried buildings in good state of repair

— percentage of the remaining buildings in good state of repair

— percentage of buildings with legal outdoor advertising

In the second strategic objective, 'restore and maintain open spaces,' the attributes concern street furniture qualification and conservation; proper management of forestation and vegetation; establishment of thematic routes, ensuring universal accessibility in public spaces, restoration and conservation of monuments and artistic works. In this case, there are two qualitative indicators that are similar to the previous item, as well as a quantitative indicator:

a) population's perception of the public space condition – opinion poll to be commissioned, so as to measure the degree of satisfaction of society concerning the conservation conditions and the use of open space in the downtown area;

b) technical evaluation of the public space conditions – diagnosis to be made by the technical team of the City Hall, containing at least the following items to compose the indicator:

INDICATORS	type of survey	data base	data unit	data feasibility	ambiguity level	data collection	data interpretation	references for comparison	final score
number of new building units	data collection	register in PMPA / *in loco*	quantity	yes	low	easy	easy	easy	**81**
number of abandoned / unbuilt areas	data collection	register in PMPA / *in loco*	quantity	yes	low	easy	easy	easy	**81**
number of provisional parking lots	data collection	register in PMPA / *in loco*	quantity	yes	low	easy	easy	easy	**81**
number of idle real estate or underused areas	data collection	register in PMPA / *in loco*	quantity	yes	low	moderate	easy	easy	**54**
number of restored, conserved or built-up squares	data collection	*in loco*	quantity	yes	low	moderate	easy	easy	**54**
technical evaluation of the public space condition	diagnosis made by the municipal technical team	register in PMPA / *in loco*	percentage	yes	low	moderate	easy	moderate	**36**
technical evaluation of the buildings condition	diagnosis made by the municipal technical team	register in PMPA / *in loco*	percentage	yes	low	moderate	easy	moderate	**36**
population's perception on the public space condition	hired polling company	public opinion	percentage	yes	low	moderate	easy	difficult	**18**
population's perception on the buildings condition	hired polling company	public opinion	percentage	yes	low	moderate	easy	difficult	**18**

Figure 5. List of indicators in order of priority, according to the scoring criteria adopted.

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— adequacy of street furniture

— management status of urban forestry

— universal accessibility conditions on sidewalks and streets

— state of repair of monuments and public art

— state of cleanliness of streets and squares

— street lighting adequacy and operation

c) number of restored/preserved/urbanized squares, using as initial parameter the situation prior to the implementation of the Plan.

The third strategic objective seeks to 'promote the rehabilitation of deprived areas', where the attributes indicate fully occupied buildings, lack of provisional parking lots and adequately occupied/built—up areas. To monitor this objective there are the following quantitative indicators:

a) number of abandoned/non—built up areas — obtained by collecting the number and square footage of non—built up areas in relation to their status prior to the Plan, obtained in the database of the of Municipal Planning Department (*Secretaria do Planejamento Municipal* – hereafter SPM);

b) number of provisional parking lots — obtained by collecting the number of lots used as provisional car parks in relation to their status prior to the Plan, obtained in the database of SPM;

c) Number of idle and under used real estate units, obtained through a search in the database of SPM in relation to their status prior to the Plan;

d) number of new building units, obtained by a search in the Municipal Technical Registration, out of the total number of existing residential and commercial buildings, compared to the situation prior to the Plan, found in the database of SPM.

In the table below (Figure 5), the indicators resulting from these three strategic objectives are organized in order of priority through the score received by each one according to the selection criteria applied.

3. Discussion

The use of indicators to monitor public policies is a relatively recent practice in the Municipality of Porto Alegre. The lack of a deeper study and the little experience in this area still features the work routine developed within the scope of urban planning and preservation of Architectural and urban heritage of the city. In this sense, the report of this process must be understood as an effort in order to alleviate a disability that still persists.

At the present juncture, the Rehabilitation Plan is undergoing political—administrative validation and, therefore, the operational and managerial aspects are being structured. To this extent, the main drawback of the proposal and the discussion presented here is undoubtedly the absence of a practical application, thereby preventing the categorical verification of the effectiveness of the selected indicators.

Concerning the functionality of the qualitative indicators, is should be pointed out that an ongoing issue is related to lack of human and financial resources, very recurrent not only in Porto Alegre City Hall, but in any other municipal administration in Brazil. Thus, it is essential to understand the importance of the implementation and management of the Plan by the municipal authorities, ensuring that services are hired and a specific technical team is trained to conduct the necessary research and evaluations to monitor the process.

The qualitative indicators are not commonly found in the administrative structure and rarely occur in the working routine of a city government such as Porto Alegre, what characterizes the difficulty, for example, in conducting research involving public opinion. This fact is evidenced by the low priority level assigned to this type of indicator by the selection criteria applied (Figure 5). However, the major difference of this procedure considering other monitoring instruments is exactly the most direct account of the city space user's perspective, reaffirming the same intention of social participation adopted since

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the beginning of the development of this Rehabilitation Plan.

Regarding the quantitative indicators, to the extent that obtaining a wide range of information depends on several databases of the City Hall, it emphasizes the necessity of greater integration of the responsible bodies in different municipal departments which are autonomous. Therefore, improving the information access and management at the municipal level is a crucial issue to format the indicators in a fast and reliable manner.

Concluding Remarks

The construction of a working method for the development and validation of the Rehabilitation Plan for the community and the definition of indicators were great challenges. Now the new challenge is to follow the process, which demands new measures, capable of articulating the political, administrative and technical means which will ensure the implementation of this instrument in the downtown area.

With monitoring through the selected indicators, it is sought to provide a systemic view about the program of physical rehabilitation and use of public space, about the inventoried and heritage assets, among other actions set forth by the Rehabilitation Plan. Since this procedure is nowadays timely developed by private and public agents at a municipal, state and federal level, it is intended to expand this operation for the sake of a more integrated dynamic, which qualifies the urban management and preservation of cultural heritage, coupled with the promotion of the economic and touristic sustainable development in the historic centre of Porto Alegre.

The opportunity to present and discuss the experience reported here with professionals and specialists at a national and international level also represents a key aspect to improve the procedures to be adopted in the future development of this process.

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An indicator for measuring the state of conservation of urban heritage sites

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Abstract

This paper sets out a proposal for an *indicator of conservation* to assess the state of conservation of urban heritage sites.[3] The indicator was designed as a monitoring instrument for evaluating the state of conservation of cities, towns, villages and other types of urban areas of heritage value. It is hoped this indicator will come to be regarded as a valuable instrument to be included in the UNESCO system for monitoring the state of conservation of the urban sites included in the World Heritage List. The indicator was designed to perform two tasks: 1) to evaluate how the conservation of an urban site evolves over time (internal performance analysis); and 2) to compare cities as to their conservation performance (comparative performance analysis). The indicator was developed using the theoretical approach suggested by Carley (1981). The paper presents the main concepts used as key performance indicators (KPI), that is, significance, integrity and authenticity and how they contribute to meeting the objective of attaining the sustainable conservation of heritage sites. This is the overall purpose of the indicator and why it seeks to measure the KPIs. The paper also presents the mathematical structure of the indicator, the weights of the variables of the indicator and the methodology used to calculate them.

Keywords: state of sustainable conservation, key performance indicators, significance, integrity, authenticity, opinion of the stakeholders

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The problem

Since about ten years ago, UNESCO has asked each new site included in the World Heritage List (WHL) to produce a management plan and to designate a national institution responsible for its implementation. These plans are important as they provide UNESCO with monitoring instruments to assist evaluations included in the Periodic Reports (PR) on the state of conservation of the sites, which are conducted every six years. The reports assess the permanence of the heritage values as well as the state of conservation of the sites. Moreover, they provide information on the changes in the social, political and economic context, the state of implementation of the World Heritage Convention and of management practice in the regions.

In spite of the importance of the PR, it is clear that what is lacking is even more effective monitoring instruments, especially to evaluate the state of conservation of the sites. It is important to use instruments to indicate changes in the state of conservation of each urban site in the World Heritage List (WHL) within a period of time that is sufficiently short to trigger control measures to prevent, correct or mitigate problems and tackle conservation. Indicators have been identified as the best instruments for performing this task.

For more than 40 years, indicators have been used for analyzing the performance of environmental, social, economic, urban and regional planning (Carley, 1981; Wong, 2006). In the specific case of conserving heritage sites, the use of indicators is very new. Attempts to construct indicators for assessing conservation assets were developed in 1999 (IAPH, 1999); 2000 (Carruthers *et al*., 2001); 2006 (UNESCO 2006, p. 7); and 2007 (UNESCO, 2007). It was only in 2007 that the World Heritage Centre/UNESCO laid down that the objectives of the conservation indicators were those of UNESCO (2007):

- Maintaining the significance and the universal values;
- Maintaining the integrity and authenticity;
- Identifying the threats;

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- Evaluating the management;
- Evaluating the public use.

And that the proposed uses of the indicators were:

- To be capable of showing tendencies towards change in the assets (urban areas);
- To permit comparison of current and prior performance in conserving the assets;
- To permit comparison between one specific asset and another;
- To permit the comparison of the performance of an asset relative to international standards of conservation.

Giving such a structure to objectives leads to adopting a classical division of the types of indicators: those of pressure (threats to the asset), those of state (universal values, authenticity and integrity) and those of response (management and public use of the asset). However, the *indicators of the state of conservation* are those which first and foremost require an effort to be made operational for they are the most important instruments of the monitoring system and permit a reply to the question: *What do the records show over time with regard to the state of conservation of a heritage urban area*? The other types of indicators are fundamental to the process of management.

Considering the current state of developing conservation indicators it is necessary: 1) to deepen understanding of the concepts of significance, authenticity and integrity; 2) to understand how these concepts can represent the state of conservation of the sites; and 3) how they can be the object of a qualitative/quantitative evaluation, or 'measurement'. These tasks impose the use of the theoretical base approach (Carley, 1985) to develop indicators of conservation. In this approach, indicators are derived from causal models that show the interrelation between the variables.

1. What is sustainable conservation of urban heritage sites?

Hypothesis: The sustainable conservation of urban heritage sites (UHS) depends on the maintenance of their present and past significance. To achieve sustainable conservation, managers of urban sites, and other stakeholders, act on the attributes of the heritage[1] that convey values. The attributes can be of a material (tangible) or a nonmaterial (intangible) nature.[2] The actors may keep, change, restore, reshape or substitute the attributes or even the objects. They may also produce activities that help to foster values as part of the collective memory of society through educational and cultural activities. The actions of managers and other stakeholders should be guided in such a way that the values, the integrity and the authenticity of the attributes of objects are maintained.

1.1. Objects, processes, material and nonmaterial attributes

The conservation of urban sites, unlike the conservation of archaeological sites or of works of art, deals with objects (and their attributes) and processes because urban sites are basically living sites, in which the presence of humans is essential for their existence (Zancheti and Jokilehto, 1997). So the heritage of urban sites comprises objects and processes that have value for people.

Objects are identical to artefacts, understood as physical entities, with material substrata, that have been altered or selected by human beings.[3] The attributes of an object are defined as any and all features of objects and processes recognized as having heritage value, whether material or nonmaterial. The processes are the elements that generate the dynamics of urban sites, that is, make them alive and subject to continuous change due to human action. Those are intrinsically tied to the lives of the people of the site.

The heritage consists of those objects and processes which society recognizes as being important enough to be passed from the present to future generations. To society, important heritage values are those attributed by collective processes, through inter-subjective selection and evaluation procedures performed over long periods of time. Because of this, heritage objects tend to be old, or at least old in relation to the majority of objects in use in a society.

For the purpose of this paper, the city is seen as configured objects, structures, natural and built, and human/symbolic relations and processes. They are represented as significant entities that embrace material and nonmaterial attributes related to a mode of specific construction, living and being and are recognizable as being an essential part of an intelligible whole.

1.2. Values and significance

Urban sites are conserved because they have values and these are always defined in relation

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to other values. Thus, it is quite difficult to define values due to this circularity. Also it is very challenging to determine whether values are intrinsic to objects[4] (the objective approach) or whether they are defined by their subjects; that is people (the relativistic approach).

It was Frondizi (1971) who best defined values without being caught by the traps of these two approaches. He understood that the subject interacts with the object in certain contexts and the values are determined by this relationship. The object is not passive yet neither is the subject absolute in projecting values on the object. There is a reciprocal determination that depends on the context in which the interaction happens.

However, heritage values are significant for society when they are the product of many subject-object interactions, that is, they are the outcome of a large number of inter-subjective evaluations. They are related to historical time and to collective memories. Therefore, the values of the heritage can be many, depending on who evaluate it, when it is evaluated and where it is assessed.

The concept of significance embraces all values of the heritage within a period of time. Mason (2004) made an excellent observation on the conflictive nature of the concept, when he argued that since significance is "an expression of cultural meaning, it must be expected to change, involve multi-valence and contention, and be contingent on time, place, and other factors". Values are always identified in relation to other values, so significance is a set of values that has been mutually fixed and it is not easy to separate them from other values.

Significance is therefore a set of all values known about an object and, in this sense, it is impossible for one interpretation to capture the complete significance of the heritage (Zancheti *et al*., 2009) of a specific society and period of historical time. Any attempt to formalize significance in a manageable text always produces a partial set of values, or a specific narrative.

The statement of significance is an instrument that selects a set of values of the significance with the intention of producing an instrument for managing conservation of the heritage. It is a set of values that was selected and validated by socially institutionalized procedures, as for example, through public consultations or in laws. However, the statement is not a complete substitute for significance since it must be revised periodically and be subject to judgment and validation by the stakeholders involved in the management of the site.

1.3. Integrity

The *Operational Guidelines for the Implementation of the World Heritage Convention* state that:

> "Integrity is a measure of the wholeness and intactness of the natural and/or cultural heritage and its attributes. Examining the conditions of integrity, therefore requires assessing the extent to which the property: a) includes all elements necessary to express its outstanding universal value; b) is of adequate size to ensure the complete representation of the features and processes which convey the property's significance; c) suffers from adverse effects of development and/or neglect" (UNESCO, 2005, p. 23).

This interpretation is firmly rooted in the materiality of heritage. Some other authors have presented a different view, founded on the idea of circumstances, since objects, in order to convey meanings, must be interpreted in historical and cultural contexts.

Clavir (1994a, 1994b) thinks that the analysis of integrity must transcend the limits of the materiality of heritage to include the cultural environment, in which it has been created, understood, used and transformed. She advances the idea of conceptual integrity "in order to clarify the fact that the conservator´s decision making process includes consideration of the nonmaterial properties of the objects, properties such us religion or cultural significance, or the intention of the artist. These properties are included even if they are not physically evident to us through the object" (Clavir, 1994b, p. 53).

Jokilehto (2006), following a similar line of thought, proposes that integrity has three dimensions (who act simultaneously because each one poses limits and, at same time, opens up views for the identification and interpretation of values): the social-functional, the structural and the visual. Social-functional integrity is related to the activities performed when use was made of the heritage in its historical development and to the interfaces that the heritage site establishes with society, religion, the environment and the movement of people. Structural integrity expresses the soundness of the remains of the heritage that convey messages from past societies. Finally, visual integrity refers to the capacity of objects (and processes) to express visually (or aesthetically) messages and meanings.

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In this paper, integrity will be defined as the level at which the attributes of the heritage embody heritage values in a complete, whole and secure way considering their past and present contexts.

1.4. Authenticity

Authenticity is related to the idea of truth or falsehood and, therefore, depends on value judgments. Value is conferred on sites through their past and present activities, of memories, of knowledge and of socio-cultural relationships that occur in space and time (Jamal and Hill, 2004). This is the same line of thought advanced by Lowenthal (1999) when he stresses that different generations see authenticity in different ways and this reflects their need for truth, standards and credos in the uses of their heritage.

It was only in 1994 that a discussion was held on the concept and attributes by means of which authenticity is manifested, namely in the *Nara Document on Authenticity* (ICOMOS, 1994). The central ideas that permeate this document are that authenticity is the essential factor for attributing value and that it arises from cultural diversity, with due judgment being made, taking into consideration the cultural context of each asset. In this sense, the *Nara Document* closely follows the mainstream of current understanding regarding authenticity expressed in the works of Taylor (1992) and Ferrara (1998). However, the document did not manage to reach a precise conceptual definition, but rather an operational one and, once again, "the term does not have a clearly fixed meaning, but is essentially a vague, underlying quality that is recognizable, but not easily pinned down" (Heynem, 2006, p. 289).

Despite this, the Conference identified the means by which attributes or sources of information on authenticity might be identified. To do so, other criteria were included in the *Operational Guidelines for the Implementation of the World Heritage Convention*: form and design; materials and substance; use and function; traditions, techniques and management systems; location and setting; language and other forms of nonmaterial heritage; spirit and feeling; and other internal and external factors (UNESCO, 2005, p. 82).

The *Riga Charter* on authenticity and the historical reconstruction of cultural heritage introduced a definition of authenticity, as an operational and measurable concept: "Authenticity is a measure of the degree to which the attributes of cultural heritage [...] credibly and accurately bear witness to their significance" (Stovel, 2001, p. 244). However, the idea of measurement brings with it difficult problems when applied to practice. It is possible to say that an object is authentic, or partially authentic, but it is almost impossible to evaluate the amount of authenticity in an object, since this assessment is the outcome of a judgment about the truth of the authenticity.

One can say that the authenticity of an object "is inseparable from its probability" (Stone, 2002). To avoid the problem of the indeterminate measurement, this paper will use the following definition of authenticity: the judgment of the probability of attributes of sites expressing heritage values whether in a true or a false way.

2. Assessing sustainable conservation of urban heritage sites

Sustainable conservation seeks to maintain the condition for the interpretation of the relation object-values[3] between generations, because it should: 1) carry forward the present values of heritage to future generations; 2) maintain records of values given by past generations for the use of present and future generations; and 3) leave open to future generations the possibility of interpreting and associating new values of past and present heritage (Zancheti and Lacerda, 1998). To do that, it is fundamental to keep the integrity and the authenticity of material or nonmaterial attributes of the objects.

Conservation is a set of identification, analysis, judgment and decision actions. For the new paradigm of conservation, critical judgment is a double act of synthesis and judgment that, first, seeks knowledge and to interpret the values of the heritage and, second, decides which and how the material and physical attributes will be dealt with, depending on how the state of their integrity and authenticity is judged. The theory of contemporary conservation recognizes its dependence on subjective judgments.

This theory does not regard the conservator as an enlightened rational human being, as imagined by Brandi (1963), but as a social agent who works in a context of subjective interpretations and decisions. His role is to work with inter-subjectivity, recognizing that the heritage is valued differently by individuals and groups, thus seeking to identify the maximum social consensus that can be reached on conservation decisions (Clavir, 2002, p. 43).

It is on these plural substrata that decisions on what to conserve and how to conserve it are taken,

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supported by practical knowledge, common sense and prudence; that is, on *phronesis*, the Aristotelian concept (Aristotle, 2004, Ch. VI) for defining the capacity of individuals to form judgments regarding conflicting values in different situations or contexts (Flyvbjerg, 2004).

Viñas expresses the Aristotelian role of the conservator very well when he states that: "Contemporary theory of conservation calls for 'common sense', for gentle decisions, for sensible actions. What determines this? Not truth or science, but rather the uses, values and meanings that an object has for people. This is determined by the people" (Viñas, 2005, p. 212).

2.1. Subjective and inter-subjective judgments

There are three questions when judging if the heritage is well conserved or not and if sustainable conservation has been pursued in a given period of time: was the significance maintained? Was the integrity maintained? Was the authenticity maintained?

These judgments cannot rely on an objective assessment since they are qualitative concepts, or 'variables', that cannot be 'measured' against defined quantitative standards. The judgment can simply state if the variables have been kept or not, or if there has been some change in the heritage, that has affected the perceptions of the values, integrity or authenticity in a positive (good) or negative (bad) way.

For Viñas, "[i]nter-subjectivism in conservation can be viewed as a consequence of agreements among the subjects for whom objects have meanings. Furthermore, the responsibilities for the conservation of an object fall on the affected people – or their representatives; it is their duty to preserve or restore those objects, and it is for them that conservation is performed" (Viñas, 2005, p. 153).

In practical terms, the judgment of the three main conditions for declaring whether the heritage has been well or badly conserved is the responsibility of people whose life is affected by the heritage or its meanings. This group is called the stakeholders (Avrami *et al*., 2002; Cameron *et al*., 2001) because they may generate and be impacted by tangible and intangible effects, in different ways and magnitudes, depending on the degree of their involvement with the significance of the heritage. Therefore, stakeholders are people with rights on what to do with the heritage and, in urban sites, they are basically: specialists, residents, cultural reference groups and visitors.

Stakeholders tend to play an increasing role in the management of heritage conservation, since decisions in this field must be reached by agreements between the people affected. As to the contemporary approach, conservation interpretations and decisions are based on negotiation, discussion and consensus (Avrami *et al*., 2000; Staniforth, 2000; Cameron *et al*., 2001).

3. The Indicator of the State of Conservation (Isc)

The Indicator of the State of Conservation (Isc) is used to express the level of urban sustainable conservation of urban heritage sites. According to contemporary conservation theory, it is determined by three key performance indicators (KPI): significance, integrity and authenticity. The basic structure of the Isc is:

Where:

- I_{sig} is the KPI of significance/values
- I_{int} is the KPI of integrity
- I_{aut} is the KPI of authenticity

The theory of conservation does not provide arguments to define the structure of the function $f(I_{sig}, I_{int}, I_{aut})$. However, Table 1 suggests that the best structure is the multiplication of the KPIs:

$$Isc = f(I_{sig}, I_{int}, I_{aut}) \quad (1)$$

$$Isc = I_{sig}^{a} . I_{int}^{b} . I_{aut}^{c} \quad (2)$$

and:

$$a + b + c = 1 \quad (2.1)$$

The parameters a, b and c are the weights of the KPIs in the overall evaluation of the state of conservation. The theory of conservation has no elements to determine these weights by means of a mathematical or a statistical process. They will depend on historical contexts and perceptions, knowledge and beliefs of people affected in some way or other by the state of conservation of the site, since they are the outcomes of subjective judgments. It is only possible to give numeric values to a, b and c, that is, to the judgments, by means of weighting and scoring techniques (Thompson, 1993, p. 7). The scoring of the parameters implies that the overall weight, or the summation, of the KPIs must not exceed 1 (one) if the theory of conservation is to be respected.

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The KPIs are calculated taking into account the evaluations made by four different social groups of people: *specialists*, *residents, cultural reference groups* and *visitors*. This means that each KPI results from the summation of group opinions:

$$I_{sig} = \alpha_1 I_{sig}^{Lesp} + \beta_1 I_{sig}^{Xesp} + \gamma_1 I_{sig}^{Lres} + \delta_1 I_{sig}^{Nres} + \varepsilon_1 I_{sig}^{Rgru} + \zeta_1 I_{sig}^{Vis} \quad (3)$$

$$I_{int} = \alpha_2 I_{int}^{Lesp} + \beta_2 I_{int}^{Xesp} + \gamma_2 I_{int}^{Lres} + \delta_2 I_{int}^{Nres} + \varepsilon_2 I_{int}^{Rgru} + \zeta_1 I_{int}^{Vis} \quad (4)$$

$$I_{aut} = \alpha_3 I_{aut}^{Lesp} + \beta_3 I_{aut}^{Xesp} + \gamma_3 I_{aut}^{Lres} + \delta_3 I_{aut}^{Nres} + \varepsilon_3 I_{aut}^{Rgru} + \zeta_3 I_{aut}^{Vis} \quad (5)$$

Where:

$$\alpha_i + \beta_i + \gamma_i + \delta_i + \varepsilon_i + \zeta_i = 1 \quad (6)$$

The parameters α, β, γ and δ are weights given to the opinions of the stakeholder. For each KPI, the summation of the parameters is equal to 1 (one). It is questionable if all KPI indicators should be assessed for all social groups involved in the process.

3.1. The weights of the Isc

Figure 1 shows the hierarchy of concepts used to define urban sustainable conservation and to determine the weights of the Isc. The hierarchy is necessary because R1, R2, R3 etc. represent and show how the relationships between the key indicators for value, integrity and authenticity act upon the material and the nonmaterial attributes of the objects of the urban site in order to ensure that the effect of urban sustainable conservation will be long-lasting

In Figure 1, the relations (R) 1 to 8, expressed by the links between the elements of each hierarchical level, represent the importance of the element in the level below so as to determine the importance of the element in the level above. Examination of the relations between Levels 3 and 2 reveals that the relations R3 and R4 express, respectively, the importance of the maintenance of significance[5] (values) for the conservation of material and the nonmaterial attributes of urban sites. The relations R5 and R6 and R7 and R8 express, in the same way, the importance of integrity and authenticity for the maintenance of material and nonmaterial attributes. The relations R1 and R2 show the importance of the maintenance of the material and the nonmaterial attributes to attain urban sustainable heritage conservation. So, to find the importance of maintaining the values, integrity and authenticity of sites for urban sustainable conservation, it is necessary to multiply the matrix of relation between the elements of the hierarchical levels 3 and 2 by the matrix that represents the links between levels 2 and 1. In formal terms:

$$\mathbf{A} = \begin{bmatrix} R3 & R4 \\ R5 & R6 \\ R7 & R8 \end{bmatrix} \quad \mathbf{B} = \begin{bmatrix} R1 \\ R2 \end{bmatrix}$$

and

$$\mathbf{A \times B = (Ws, Wi, Wa)} \quad \mathbf{(6)}$$

Ws, Wi and Wa (or simply Wj)[6]are measurements of the importance of significance, integrity and authenticity for sustainable urban conservation. To match the condition of equation (1.1) the importance of Wj can be transformed into ratios, or weights,

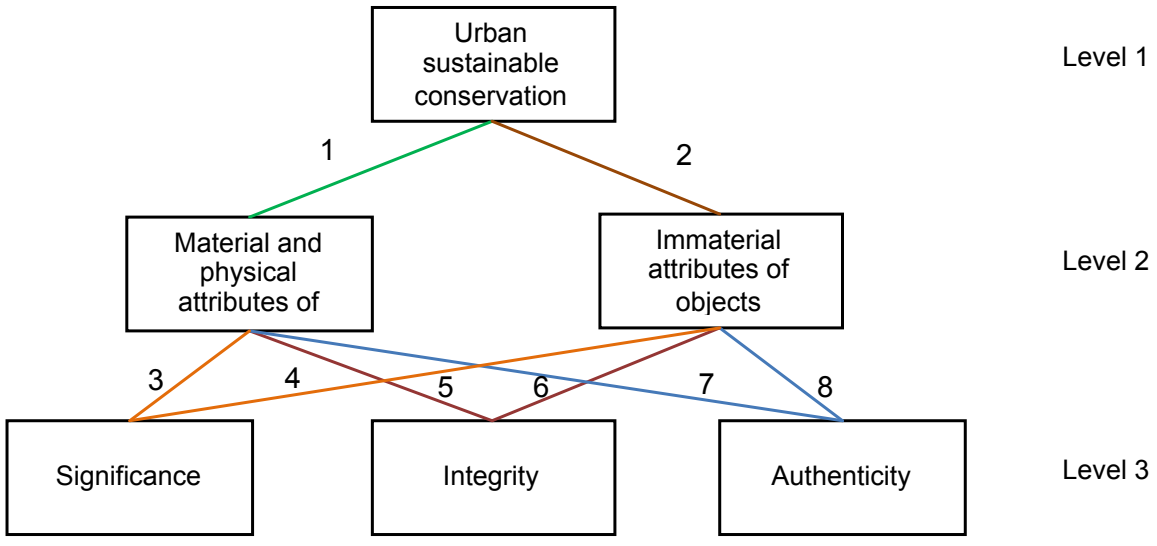

Figure 1. Hierarchy of concepts for planning urban sustainable conservation.

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Regions/Continents	Distribution of WHUS		Distribution of the experts on the Delphi Panel (DP)	
	Number	Percentage	Number	Percentage
Africa	23	22%	1	3%
Arab States	14	6%	1	3%
Asia and the Pacific	22	10%	4	12%
Europe and North America	123	57%	21	62%
Latin America and Caribbean	35	16%	7	20%
Total	217	100%	34	100%

Table 1: Geographical distribution of the experts participating in the first round of the DP (Source: UNESCO – ICOMOS 2008).

by dividing each importance by the sum total of all three variables: Wj/(Ws + Wi + Wa). Thus, the weights a, b and c of (1.1) are obtained.

The size of the Delphi Panel (DP) plays an important role in assessing the quality of the results it produces. To determine the size and composition of the panel, an analysis was made of the distribution of World Heritage Urban Sites (WHUS) in the regions of the world covered by UNESCO. Also the minimum number of respondents required to start the DP was defined as being 30 so as to guarantee that Delphi principles were respected (Dalkey, 1969). Forty-five experts accepted the invitation to participate in the DP and 34 actually answered the first round. They were chosen from among conservation professionals and academics. The academics were identified from their publication profile and were drawn from such disciplines as urban conservation, urban regeneration and heritage management while the professionals were chosen by virtue both of their involvement in international or national institutions for the conservation and management of the heritage and of their work as managers or coordinators of emblematic conservation programs, plans and projects for WHUS. Table 1 summarizes the structure of the first panel of experts. The experts were based in 19 different countries[7], and thus the diversity of the sample by their geographical location is stressed. However, it was impossible to arrange a perfect match between the distribution of the experts on the DP by country of activity and that of the WHUS.

3.2. The weights of the KPIs in the ISC

The first round was not sufficient to reach complete consensus on the statements that describe the importance of the concepts of values, authenticity and integrity for sustainable conservation. The variation in the respondents answers in relation to statements 3 and 8 (see Appendix) resulted in inter quartile ranges larger than one unit and, according to McEntree (1989), consensus is present when the inter quartile range[8] is not greater than one unit in a five–point scale. The interaction of the second round led to an adequate consensus for statements 3 and 8. Thus, further Delphi rounds were not necessary, with a mean value capable of being transformed into weightings.

The weights of the KPIs (Ws, Wi and Wa) of the Isc were calculated by multiplying the two matrices below. These correspond to the matrices A and B of the theoretical model explained above.

Matrix A

Value of the means of the importance of the KPIs for the conservation of material and nonmaterial attributes of UHS:

KPI	Material Attributes	Nonmaterial Attributes
Significance	4.06	4.35
Integrity	4.24	3.76
Authenticity	4.18	3.96

Matrix B

Value of the means of the importance of the conservation of material and nonmaterial attributes of UHS to sustainable conservation:

Attributes	Sustainable Conservation	
Material	4.36	
Nonmaterial	4.18	

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The multiplication of Matrices A and B determines the weights of the KPIs for the sustainable conservation of UHS.

KPI	Sustainable Conservation	Weight
Significance	35.8846	0.342
Integrity	34.2032	0.326
Authenticity	34.7776	0.332
Total	104.8654	1

Table 2. Values of the weights of the KPIs for the sustainable conservation of urban heritage sites.

Therefore the Isc can be written as:

$$Isc = I_{sig}^{0.342} . I_{int}^{0.326} . I_{aut}^{0.332} \quad (7)$$

The differences between the values of weights Ws, Wi and Wa are not large enough to claim that the contribution of anyone key performance indicator was much more important in relation to the others in determining the value of the indicator of sustainable conservation. These small differences are results expected from the point of view of the theoretical base of this study, since, from the standpoint of the theory, it is not possible to state which one of significance, integrity or authenticity is a more important concept than the other two in order to attain sustainable conservation. Thus equation 8 must be rewritten as:

$$Isc = I_{sig} . I_{int} . I_{aut} \quad (8)$$

3.3. The weights of the opinion of stakeholders in the Isc

In Delphi round 1, some statements presented inter quartile ranges larger than 2. These statements were used to scale the importance of the opinion of long-standing and new residents to assess the significance (12), integrity (17 and 18) and authenticity (23 and 24) of WHUS (see Appendix). Consensus was not reached due to small differences between the scales of the respondents. Round 2 of Delphi was run with the five non consensual statements and the information of the main statistical parameters for all respondents and consensus was reached easily. The results of the second Delphi round enabled the weights of the opinions of the stakeholders to be calculated using the means of the responses. Table 3 shows the weights necessary to write the equations of the three KPIs already adjusted so as to sum up to 1 (one).

With these weights equations 2, 3 and 4 of the KPIs can be written as thusly:

$$I_{sig} = 0.200I_{sig}^{Lesp} + 0.183I_{sig}^{Xesp} + 0.194I_{sig}^{Lres} + 0.127I_{sig}^{Nres} + 0.176I_{sig}^{Rgru} + 0.121I_{sig}^{Vis} \quad (9)$$

$$I_{int} = 0.206I_{int}^{Lesp} + 0.196I_{int}^{Xesp} + 0.192I_{int}^{Lres} + 0.122I_{int}^{Nres} + 0.164I_{int}^{Rgru} + 0.119I_{int}^{Vis} \quad (10)$$

$$I_{aut} = 0.206I_{aut}^{Lesp} + 0.199I_{aut}^{Xesp} + 0.190I_{aut}^{Lres} + 0.115I_{aut}^{Nres} + 0.178I_{aut}^{Rgru} + 0.111I_{aut}^{Vis} \quad (11)$$

The set of equations (9), (10) and (11) represents the most complex case for evaluating the state of conservation of urban heritage sites, since it can be implied that the opinion of all types of stakeholders are important in all cases. However, that is not a rule for all sites since, for example, the significance of many of them when taken on their own does not depend on the presence of any others, such as the cultural reference groups. Among the large number of UHS on the World Heritage List (WHL), there is a small set where the values of the site are related to cultural groups, such as some based in religious sites.

KPIs	Local Experts	Outside experts	Long-standing residents	New residents	Reference group	Visitors	Sum
Significance	0.200	0.183	0.194	0.127	0.176	0.121	1
Integrity	0.206	0.196	0.192	0.122	0.164	0.119	1
Authenticity	0.206	0.199	0.190	0.115	0.178	0.111	1

Table 3. Weights of the stakeholder's opinion to determine the KPIs of significance, integrity and authenticity.

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It is important to notice that the relative weights of equations (09), (10) and (11) are split into two groups. The weights of the opinions of new residents and of visitors are relatively lower than the other weights, since their range varies, approximately, from 11.1% to 12.7%, while the others vary from 16.4% to 20.6%. It is clear that the panelists scaled the opinions of the specialists, long standing residents and reference groups as the core stakeholders when it came to evaluating the state of conservation of the sites and minimized the importance of new residents and visitors.

These outcomes are in line with the recent literature that evaluates the urban management process and stresses the importance of academic/experts/conservation enthusiasts, long-standing residents and cultural reference groups. The literature argues that they are the main social actors in sustaining the conservation process.

The possibilities of constructing equations for the KPIs are many. The weights of Table 2 can be grouped in many ways so as to express the different contexts of particular UHS in relation to the importance of stakeholders in conserving such sites. They will depend on decisions taken at the local level, by the national and local officials, with the advice of the WHC/UNESCO in the case of the WH sites. They will also take into consideration the complexity of the spatial, material, cultural, social, political and economic structure of the site and the country in which it is located. Certainly, the larger the range of stakeholders considered in the surveys for establishing the KPIs, the more precisely the Isc is likely to express the progress toward the sustainability of heritage conservation.

Conclusion

The indicator for measuring the changes to the state of conservation (Isc) of urban heritage sites was designed to answer three interlinking questions: Has the significance of a site been maintained over time? Has the integrity of the attributes that convey significance been maintained? Are these attributes authentic?

The Isc indicator is expressed as a function of the three performance indicators (KPIs) of significance, integrity and authenticity that are assessed by surveying opinions of the main stakeholders involved with the conservation management of sites. The indicator is thus based on the subjective judgment of individuals framed by an inter-subjective survey structure.

The method used in establishing the values of Isc and KPI weights was the Delphi round table technique. This was considered an appropriate technique because no previous knowledge or empirical research was available in the literature on the field. The outcomes favour the use of Delphi in designing urban conservation instruments for analysis and policy.

Regarding the components of the indicator of the state of conservation of the heritage urban site, survey results showed an almost perfect coincidence between the values of the weights of significance, integrity and authenticity. This result presents no surprise from the theoretical point of view, since it would be very difficult for theory to explain a different outcome. Again, the result confirms the importance of the Delphi technique in estimating subjective weights by means of inter-subjective controlled procedures.

The resulting values of the weights of stakeholder opinions in the KPIs were also in conformity with theory. Clearly, the stakeholders can be divided into two groups of importance. The opinion of the local specialists, long-standing residents and cultural reference groups were shown to be more important than the opinion of new residents and visitors.

The structure of the Isc is fixed and the same for all sites independent of their geographical location. However, the structure of the KPIs can be adapted to express the social composition of stakeholders and to use the capabilities and resources of the management institutions of the sites. It is an instrument that can contribute to improving the monitoring process of the UNESCO WHL, thus bringing more transparency to the process, giving a common structure to the evaluation of performance and diminishing bias, all of which need improvement in the instrument used today.

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Appendix: statements about the relative importance of the concepts to the ISC and the importance of stakeholder's opinion for assessing the KPIs.

Part 1: Scaling the importance of significance, integrity and authenticity to the Isc

1. Maintenance of the attributes of material objects is essential for the sustainable conservation of urban sites.
2. Maintenance of the attributes of nonmaterial objects is essential for the sustainable conservation of urban sites.
3. Keeping values is essential for the conservation of the material objects of an urban site.
4. Keeping values is essential for the conservation of the nonmaterial objects of urban heritage sites.
5. Integrity is an essential quality for the conservation of the attributes of material objects in urban heritage sites.
6. Integrity is an essential quality for the conservation of the attributes of nonmaterial objects in urban heritage sites.
7. Authenticity is an essential quality for the conservation of the attributes of material objects in urban heritage sites.
8. Authenticity is an essential quality for the conservation of the attributes of nonmaterial objects in urban heritage sites.

Part 2: Scaling the importance of the stakeholder's opinions to the maintenance of significance (values) of sites

9. The opinion of LOCAL EXPERTS is important to assess if the values of a World Heritage Urban Site have been maintained in the period being monitored.
10. The opinion of OUTSIDE EXPERTS is important to assess if the values of a World Heritage Urban Site have been maintained in the period being monitored.

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11. The opinion of LONG-STANDING RESIDENTS is important to assess if the values of a World Heritage Urban Site have been maintained in the period being monitored.

12. The opinion of NEW RESIDENTS is important to assess if the values of a World Heritage Urban Site have been maintained in the period being monitored.

13. The opinion of VALUE REFERENCE GROUPS is important to assess if the values of a World Heritage Urban Site have been maintained in the period being monitored.

14. The opinion of VISITORS is important to assess if the values of a World Heritage Urban Site have been maintained in the period being monitored.

Part 3: Scaling the importance of stakeholder's opinions to the maintenance of the integrity of sites

15. The opinion of LOCAL EXPERTS is important to assess if the integrity of a World Heritage Urban Site has been maintained in the period being monitored.

16. The opinion of OUTSIDE EXPERTS is important to assess if the integrity of a World Heritage Urban Site has been maintained in the period being monitored.

17. The opinion of LONG-STANDING RESIDENTS is important to assess if the integrity of a World Heritage Urban Site has been maintained in the period being monitored.

18. The opinion of NEW RESIDENTS is important to assess if the integrity of a World Heritage Urban Site has been maintained in the period being monitored.

19. The opinion of VALUE REFERENCE GROUPS is important to assess if the integrity of a World Heritage Urban Site has been maintained in the period being monitored.

20. The opinion of VISITORS is important to assess if the integrity of a World Heritage Urban Site has changed in the period being monitored.

Part 4: Scaling the importance of the stakeholder's opinions to the maintenance of the authenticity of sites

21. The opinion of LOCAL EXPERTS is important to assess if the authenticity of a World Heritage Urban Site has been maintained in the period being monitored.

22. The opinion of OUTSIDE EXPERTS is important to assess if the authenticity of a World Heritage Urban Site has been maintained in the period being monitored.

23. The opinion of LONG-STANDING is important to assess if the authenticity of a World Heritage Urban Site has been maintained in the period being monitored.

24. The opinion of NEW RESIDENTS is important to assess if the authenticity of a World Heritage Urban Site has been maintained in the period being monitored.

25. The opinion of VALUE REFERENCE GROUPS is important to assess if the authenticity of a World Heritage Urban Site has been maintained in the period being monitored.

26. The opinion of VISITORS is important to assess if the authenticity of a World Heritage Urban Site has been maintained in the period being monitored.

Endnotes

[1] In this paper, the heritage is understood as a set of objects and processes of the urban sites that are under the protection of the society by a legal system.

[2] It is not simple to separate material from nonmaterial attributes since values are formed in the same process and their disaggregation is, in most cases, an analytical step in scientific analysis.

[3] There are non-material objects "that transmit information about our cultural heritage" (Orna *et al*. 1994, p. 52), but they will not be considered in the arguments of this paper.

[4] In this section, the term object is used in a philosophical way and includes the material objects and the processes of the urban heritage.

[5] The concepts in italics were analysed and defined in Part I of the paper. The definitions are in the Appendix.

[6] The process to multiply the matrices A and B is the following: Ws = (R3.R1+R4.R2); Wi = (R5.R1+R6.R2) and Wa=(R7.R1+R8.R2).

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[7] Netherlands, Portugal, Belgium, Italy, Lithuania, Denmark, Finland, Sweden, Great Britain, Brazil, Chile, USA, Canada, Lebanon, Benin, Nepal, Bangladesh, Philippines and Australia.

[8] All the inter quartile ranges of Table 2 and 3, and others were calculated using the Tukey method. Available at: http: //www.investpedia.com/terms/q/quartile.asp; http: //mathworld.wolfran.com/interquartilerange.html.

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Indicators of conservation of significance of natural/cultural heritage

Onilda Gomes Bezerra[1]

Abstract

This article presents the partial results of the author's doctoral research to develop a system of indicators for monitoring the conservation of significance of natural/cultural heritage. The significance of Brazilian World Heritage national parks[2] is used as a theoretical and methodological basis for constructing indicators to evaluate their conservation. The indicators proposed here were developed in line with the model conceived by Carley (1985), which envisages the construction of systems on a theoretical basis interrelated with variables associating facts or phenomena to quantitative data. The discussion aims to derive indicators from the values which go towards making up the significance of natural/cultural heritage in order to evaluate how far a set of congruent and systematic indicators are operationally effective for monitoring the conservation of significance of heritage. Questions are raised about how the significance of heritage is understood, especially for properties where both natural and cultural characteristics are relevant. Natural and cultural values, whether tangible or intangible, are attributed to natural/cultural sites, giving them significance, a concept suitable as a methodological basis for monitoring heritage conservation through indicators.

Keywords: heritage conservation, significance, values of nature, indicators, monitoring

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[2] From among the types of Brazilian protected areas that are World Heritage sites, national parks were selected. These form part of bio-ecological and geophysical complexes, recognized by UNESCO as exceptional examples of natural human heritage. The following parks were investigated: Iguaçu, Serra da Capivara, Pau Brasil, Monte Pascoal, Descobrimento, Superagui, Pantanal Matogrossense, Chapada dos Veadeiros, Emas, Fernando de Noronha, Jaú and Anavilhana.

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Introduction

The preservation of natural and cultural heritage is a topic that figures in official discussions of policy, management processes and academic research on heritage as seen today. This concern has increased because of the scale of development undertaken on a global level, where associated environmental impacts are gradually destroying global heritage built up over time. This trend has drawn attention to the problem of how to protect the environmental heritage given the continuous decline in the integrity of natural processes and the loss of integrity and authenticity among cultural processes.

Heritage conservation has focused on natural goods that are vulnerable, fragile or under threat of extinction, as well as cultural goods that are unique representatives of the diversity of human self-expression and ways of life. These goods are exceptional living legacies – bio-ecological and geophysical processes and physical and visual aspects of landscapes – and the cultural inheritance represented by human processes incorporated within nature. Through the particular form it has taken, natural heritage is recognized for its hybrid values in terms of physical and biological characteristics together with the expressions of humanity stored up within it.

This context has brought about a huge mobilization throughout the world associated with valuing and recognizing natural and cultural goods. In practical terms, the number of heritage properties on UNESCO's[1] World Heritage List[2] has increased. The associated economic benefits and the boost to tourism in the areas where these properties are situated have increased competition among UNESCO Member States to include their sites on the list, alongside increased awareness throughout the world of the importance of heritage protection. The organizations responsible for managing conservation of the World Heritage have therefore considered the issues in greater depth and are in the process of working out operational mechanisms to monitor the conservation of the sites.

For the evaluation of candidates for inclusion, a committee under the aegis of UNESCO, made up of the IUCN[3] and ICOMOS,[4] analyses their natural

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and cultural characteristics on the basis of a predetermined checklist of criteria.[5] The resulting categories express the antagonism that exists between the cultural and natural types of heritage, an attitude that reflects the dichotomy of heritage conservation movements – those that seek to protect cultural monuments and sites on the one hand, and those that defend natural elements. These criteria or conceptual parameters used to evaluate candidates for inclusion in heritage categories are employed in a very general way, focusing on the predominant and most exceptional characteristics of the site.

For evaluation for inclusion in the World Heritage List, UNESCO requires a Statement of Significance[6] attesting to the relevant character of the candidate justifying its consideration as being of world importance. This Statement provides information relating to the importance of the property, its representativeness for the community associated with it and the environment of which it forms part, these being the factors that justify its consideration as possessing exceptional value. The Statement of Significance is an important element in the process of evaluating natural and cultural properties, and its conceptual basis was first formulated in the heritage charters (*Australian Natural Heritage Charter* and *Burra Charter*) which define significance as the ensemble of values attributed to the property by those directly and indirectly involved with it. Whether they are natural or cultural, during the process of entry to the list, heritage sites are evaluated in accordance with the values itemized in the site's Statement, and they are categorized according to the classification criteria established by the World Heritage Centre (WHC).

UNESCO monitors the conservation of the ensemble of values associated with the properties through periodic reporting in order to check that heritage values are being preserved and maintained.[7] As well as evaluating the state of conservation of the site, this measure is also intended to keep information regarding changes in the environmental, socio-cultural and politico-economic context over time up-to-date. Periodic reporting is regarded as a fundamental tool in the management of heritage conservation. Despite its efficacy, however, it lacks practical operational mechanisms when it comes to monitoring the conservation of the ensemble of values associated with the sites. In light of this, thought has been given to indicators that could fill the gaps and strengthen monitoring systems for heritage conservation on a global level. Zancheti and Hidaka (2010, p. 2), analyzing the conservation situation for urban sites, it is important to use tools capable of perceiving changes in the state of conservation of the sites. In this way, operational measures can be developed to monitor in order to prevent or rectify damage, as well as mitigate or diminish threats to heritage preservation. Indicators are here seen as fundamental tools to meet this need.

Systems of indicators are suitable instruments for the evaluation of natural and cultural heritage, allowing the persistence of associated values and the state of conservation of heritage properties to be monitored. One of the greatest difficulties to arise lies with considerations relating to the theoretical and methodological underpinnings of these evaluation mechanisms. In line with the model developed by Carley (1985), the concept of significance was employed as a theoretical foundation, interlinking variables relating to the representativeness of the property being studied (Brazilian national parks within the human heritage) with quantitative data or parameters. This permitted the construction of a system of indicators for monitoring and conserving the significance of these sites.

Taking the heritage charters as a theoretical and methodological basis, the significance of Brazilian national parks was found to lie in the dimensions and categories of *biodiversity, geodiversity, natural beauty and cultural expressions* associated with this natural, and at the same time, cultural heritage. To identify the significance of Brazilian national parks that form part of the World Heritage, the method of 'content analysis' developed by Bardin (1977) was applied to technical and scientific evaluation reports produced by the main management organizations (UNESCO/IUCN/ICOMOS and IBAMA/ICMBio). On this basis categories were derived for the values applied to the parks in question. These categories were then interrelated with variables relating to the state of conservation of the parks and the pressures to which they are subject, making it possible to generate the indicators proposed for monitoring the conservation of the significance of these natural and cultural heritage properties.

1. Heritage conservation and the significance of natural and cultural heritage

The integrated conservation approach, which built on the earlier idea that heritage, more than the monument itself, also meant the ensemble of works and its situation in the broader territorial context,

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found strong expression in Italy in the 1970s. It is emphasized by Castriota (2009, pp. 229-230) that urban heritage conservation took shape after 1975,[8] but it did not arise all of a sudden on the European continent. It had operational antecedents as well as theoretical and conceptual ones. The formation of national associations[9] that promote initiatives to protect cultural heritage, with the objective of supporting public management of the safeguarding and restructuring of historic city centres, means that Italy must be seen as leading the way when it comes to the ideals of integrated conservation.

Summing up the integrated conservation approach to the historical heritage, Castriota (2009, pp. 229-230) calls attention to the idea that heritage is more than just the traditional concept of the historical, cultural building. In this context, heritage was interpreted within the scope of urban territorial planning. Integrated conservation came to be understood as a process with the objective of integrating heritage preservation in conjunction with the context of planning in its broadest possible sense, including the environmental dimensions around the object itself.[10]

In relation to the conservation of natural processes the principal focus lies on the protection of the 'living heritage', keeping in view the constant threat and the accelerated process of losses or extinction of species of flora and fauna, endangering the life of beings on the planet. The main motives underlying the defence of natural heritage were to avoid the destruction of biological processes built up over millions of years that are responsible for maintaining the life of species, including man; to maintain the integrity of ecosystems because of the important role they perform in regulating the equilibrium of bio-ecological phenomena within the biosphere; and to keep natural resources available because of the contribution they make to human welfare and development. The culminating element is the bio-ethical principle of conserving nature, understood as man's moral duty not to eliminate the life of other beings nor the geophysical processes that sustain them, which constitutes the inheritance of present and future generations.

The understanding of nature conservation is based on the interpretation of the relation between society and nature, built up during the course of human development. It is recognized that occidental society based its form of life and human development on Greco-Christian thought, whose theoretical and philosophical foundations involved anthropocentric ideas. From this perspective, nature is seen in terms of its utility; according to Passmore (1995, p. 91) over millennia, occidental peoples have considered nature to be of divine origin "created by God to be used by man" and defined as "that which, leaving the supernatural aside, designates what is non-human, neither in itself nor in its origins". Thus the concept of nature in the area of conservation was filtered through the understanding of the relationship between man and nature, whereby the key problem is the way this relationship is to be managed. In the context of sustainable development, it has been recognized that while existing societies need nature for their development, there must also be a commitment to safeguard it for future generations can benefit from it on the same terms.

Though movements defending natural resources go back to the 18th and 19th centuries, the idea of nature as heritage to be protected and safeguarded arose recently in the form of heritage conventions and charters. The protection of nature was formalized with the First Conference on the Human Environment, which underlined the importance of maintaining bio-ecological integrity given human physical and social development (UNEP, 1972).[11] The 1972 *World Heritage Convention* incorporated these ideas, institutionalizing the protection of cultural and natural heritage and creating heritage categories embracing the two dimensions of heritage.[12] The heritage types created differed in terms of the values attributed by the principal administrative bodies on a global and national level. On this basis the values traditionally defined as cultural heritage (historical, artistic and aesthetic) were expanded to include bio-ecological, geophysical and scenic values, producing a set of criteria to situate and evaluate cultural and natural objects. It can be seen that in institutional terms, the two areas of heritage protection, cultural and natural, were brought together. This explains the influence the IUCN has on ICOMOS. The institutional process of protecting heritage came to be a joint one, although the evaluation for inclusion of items on the World Heritage List was carried out differently depending on the cultural or natural characteristics involved.

As the concept of sustainable development became consolidated and established within administrative processes, it became imperative to create strategies for nations to replace their growth processes through the use of alternatives that are not destructive to the physical and cultural environment. This conceptual framework suggests that sustainability can only be achieved through radical changes in

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terms of the use of resources and the distribution of costs and benefits. This would mean bringing about social equity both between generations and within each generation (*Brundtland Report*, 1987, p. 46).[13] Eco-92[14] delivered the *Convention on Biological Diversity* as a statute to defend the 'living heritage', in doing so establishing the concept of biological diversity. Considered the conceptual touchstone of bio-conservation, this was defined as "the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems" (CBD, 1992, Art. 2). The focus of biological conservation lies in the protection of the integrity of species and those natural environments that possess functions vital to the maintenance of life, having in view the survival of present and future generations (CBD, 1992).[15] Biodiversity, as part of the natural biological heritage, is one of the values highlighted in the *Natural Heritage Charter* of 1996 (Australian Committee for IUCN, 1996), which defined natural significance as the ensemble of values inherent to *ecosystems, biodiversity* and *geodiversity* on account of their *scientific, social, aesthetic* and life support values for present and future generations.

Geodiversity, another value of equal importance that goes into making up natural significance, is considered as the physical basis within which the biological diversity of the Earth's ecosystem exists. Together with biodiversity, it forms the biophysical ensemble of the values associated with nature. The Charter gives special emphasis to the relationship between these values and the *value of existence*, the intrinsic value of nature, and to the social and aesthetic values associated with natural resources. Geodiversity, corresponding to the non-biotic heritage, is made up of the geological, geomorphological, pedological, hydrological and paleontological resources of the terrestrial system. In the context of conservation, it is understood as 'geo-heritage', defined as the set of values representing the geodiversity of the physical and natural environment. Geodiversity is related to natural values and also to cultural ones. It may be represented by the geomorphic aspects of landscapes and geo-sites, and it is subject to the measures and procedures of the geoconservation process (Rodrigues and Fonseca, 2008, p. 2).[16]

The geological and geomorphological aspects, the principal dimensions of geodiversity, describe our planet's history and features, helping us understand the forms acquired by the Earth over time and interpret what is visible today (Council of Europe, *Recommendation Rec* 2004-3). They constitute the morphological features of places and sites, generating the physical and visual expressions of natural heritage in the most diverse scenic forms or natural landscapes. Here, landscape is understood in terms of its aesthetic character resulting from the physical and natural morphology of the Earth's surface to which it lends varying perspectives and beauty through human aesthetic experience.

Natural significance with regards to terrestrial processes would also include the social values whose representations appear in association with the places and sites constituted by geophysical and bio-ecological formations. Rodrigues and Fonseca (2008, p. 2) emphasize that in the view of the *European Manifesto*, geodiversity unites the Earth, its people and its culture constituting the physical territorial basis within which societies are situated. In sum, the terrestrial heritage is made up of: the geological formations composed of rocks, soils and sediments, minerals, fossils, bodies of water and their morphologies represented by landscapes. Clearly, natural values are inextricably linked with cultural values as represented by human processes inscribed in nature over the course of time. The human attributes or cultural values are understood on the basis of the conceptual reference-point of the *Burra Charter*, which defined cultural significance as "aesthetic, historic, scientific or social value for past, present or future generations" (ICOMOS, 1994, Art. 1.2).

Against this background it can be seen that national parks may be understood as natural/cultural heritage, thus incorporating not only values related to nature as such, but also the additions that have been made by man through his historical and geographical trajectory. As a result of this investigation, the significance of the Brazilian World Heritage national parks was identified. The values attributed to them were shown to encompass *biodiversity*, *geodiversity*, *natural beauty* or scenic aspects of the landscapes, and *cultural expressions*, both material and immaterial, inscribed in the heritage locations or sites.

Having in view the conservation and maintenance of the natural and cultural values of heritage for the use and enjoyment of present and future generations, researchers and heritage conservation process managers have sought to develop operational instruments that have effect in the form of monitoring.

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2. Natural / cultural heritage and monitoring indicators for heritage conservation

In the attempt to develop mechanisms with a view towards improving the process of evaluating and monitoring the conservation of the World Heritage sites, the WHC/UNESCO management system has met with operational difficulties. The organization is now promoting discussions to reflect on, and put together, instruments that are operationally effective and efficient for monitoring activities.

In relation to cultural heritage, particularly when it comes to historical sites, according to Zancheti (2009), in 1990 a pioneering initiative was launched that sought to put together conservation indicators for heritage cities within Latin American countries, but little progress was made in terms of practical proposals. In 2000 a seminar promoted by WHC/UNESCO and ICCROM[17] was held on the monitoring of human heritage cities,[18] which aimed to formulate conservation indicators, but despite the high level of participation by international specialists it too was unable to achieve consensus on a proposal. WHC/UNESCO has promoted studies with a view towards revising the methods of periodic reporting and producing proposals for conservation indicators for the properties on the World Heritage List. In 2006 a diagnostic study was carried out which observed that periodic reporting involved questions that were descriptive and non-quantifiable. Statistical data existed, but there were no indicators of conservation levels. In 2007 some progress towards the formulation of indicators, with the definition of typologies such as authenticity and integrity was seen, but there were still no concrete proposals for operationalizing the instrument.

One of the most notable systems of indicators that considers natural and cultural heritage jointly was developed in Australia, where the federal government monitors the country's natural and cultural goods using a system of environmental evaluation built up on bases set out in Agenda 21 giving support to the *National Strategy for Ecologically Sustainable Development* for the federal, state and territory governments. This system is made up of a set of indicators[19] specifically covering aspects ranging from human settlements to biodiversity, the land, internal bodies of water, estuaries and the sea, as well as taking into account natural and cultural heritage as such. However, the federal government emphasizes integrated treatment of heritage, both natural and cultural. The joint treatment of natural and cultural indicators is considered by Australian administrative bodies to be an innovative, important and necessary method. In this way, the Australian model for indicators is aimed at integrated natural and cultural heritage; and within the set of indicators that have been drawn up, it focuses on the following heritage items: *natural heritage place*s; *indigenous heritage place*s, including those that form part of human cultural life, such as archaeological sites; *indigenous language*s, given the vital links between the aborigines and heritage places, considered to be sacred; *historical sites*; and *natural and cultural objects*. It is worthwhile to emphasize that although the indicators are presented in separate sections, efforts have focused on dealing with the environment, treating it as a whole within an integrated heritage vision that recognizes the complex interrelation between natural and cultural dimensions (Pearson *et al.*, 1998).

With regards to natural heritage, what have been developed in terms of indicators are the systems proposed for the environmental dimensions of sustainable development envisaged by Agenda 21, and consolidated following the Rio Conference. Based on the concept of sustainable development, environmental management instruments have been put together with the aim of promoting balance and integration between the economic, social, environmental and institutional dimensions mentioned in Agenda 21. It should not be forgotten, though, that environmental sustainability is related to the impacts and pressures of human actions on the environment. Building on this idea, the basis for the model of environmental indicators may be summed up as PSR (pressure/state/response). In this way interest in indicators to evaluate environmental actions and policies arose in the 1990s. This reflects the maturing of the theory and concepts of sustainable development, particularly after the Rio Conference.

Among existing models for indicator systems, where variables are interrelated with specific concepts and empirical data, a relevant point of reference is the theoretically founded model outlined by Michael Carley, which suggests that indicator systems can be developed on the basis of a theory that maintains relations with variables associating facts with empirical data, so allowing the formation of "estimates of relations between theoretically specified variables" (Carley, 1985, p. 68). This methodological orientation has allowed for the development of a system of indicators as an instrument for

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monitoring the conservation of natural/cultural heritage on the basis of the concept of significance.

3. Operationalizing the indicators to monitor conservation of the significance of natural / cultural heritage

Considering natural/cultural heritage within an integrated heritage conservation approach made it possible to understand its significance. Heritage significance was the theoretical and conceptual presupposition underpinning the construction of indicators for monitoring the conservation of the significance of Brazilian national parks that form part of the heritage of humanity. Heritage values were identified on the basis of an understanding of the operationalized concept of significance according to the theoretical and operational protocols and procedures used by world systems for managing heritage conservation.

According to the methodological protocols and procedures of the heritage conservation system, within the management process all involved actors should be heard in order to determine the significance. In order to carry out this investigation, the values attributed by the principal managing organizations (UNESCO/IUCN and IBAMA/ICMBio) were taken into account. It should be emphasized that these agents determine the policies, actions and implementation of management instruments for the conservation of the Brazilian national parks within World Heritage. For this reason, the heritage values they consider to be objects of protection attributed to the parks are officially recognized by the organizations responsible, giving them a solid political, technical and scientific basis in the context of conservation and thus making the evaluation substantive and credible.

The 'content analysis' of the documentation selected for the objective of this study, which consisted in evaluating the bio-ecological, geophysical, aesthetic and socio-cultural characteristics of the national parks under consideration, made it possible to derive categories of values found. These categories were linked with the various dimensions of values attributed to the national parks according to the significance represented by *biological diversity*, *geophysical diversity*, *scenic aspects of landscapes* and *cultural expressions*. This made up a matrix of values including biological and abiotic aspects (natural or non-human values), and the aesthetic aspect and human expressions (cultural value).

From an operational point of view, the allocation of the values identified to their respective heritage values was based on the evaluation and classification criteria adopted by UNESCO. By interrelating the set of values established in the heritage charters for natural and cultural significance with the heritage evaluation criteria adopted by UNESCO and the values identified as making up the significance of the Brazilian national parks, it was possible to define value categories that could be represented by indicators, making it feasible to monitor the conservation of significance of these properties. With a view to the construction of the indicators, the value categories identified were understood in terms of their representativeness in relation to the value dimensions shown in Table 1.

Once the structure underlying significance had been established, the mechanisms for formulating the proposed indicators were developed. The logical starting-point for the construction of the indicators was an understanding of the operational content of the categories as variables interrelated to parameters that can be quantified. In other words, the categories (described in Table 1, next page) functioned as variables related to data that can measure the fundamental characteristics of the values represented by each specific category. In consequence, the interrelation between the variables and the empirical data produced congruent indicators that are pertinent to them.

Thus, the basic operational procedure for formulating the indicators was to associate value categories with the data quantifying their characteristics. These data or quantifiable variables were deduced on the basis of situations related to the conditions that characterize the 'state' or the 'pressure' to which the parks are subject, in accordance with the PSR model (pressure/state/response). The result is a set of indicators that can instrument the monitoring of conservation of significance of Brazilian national parks that form part of the heritage of humanity.

Conclusions

The study showed that in order to construct a system of indicators for the evaluation of the heritage conservation of a natural/cultural item, first, the theoretical approach used as a basic methodological and conceptual premise needs to be taken into account; in this case this was integrated conservation.

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VALUE CATEGORIES	VALUE DIMENSIONS	VALUES
NATURAL SIGNIFICANCE NON-HUMAN VALUE		
Vegetation formations	BIODIVERSITY	BIOLOGICAL
Flora		
Fauna		
Habitats *		
Geological history of the Earth	GEODIVERSITY	ABIOTIC
Forms and features of relief		
Hydrological resources		
Relief units *		
Geological structures *		
Geophysical formations *		
Natural landscape	NATURAL BEAUTY	AESTHETIC VALUE
CULTURAL SIGNIFICANCE / HUMAN VALUE		
Historic or prehistoric records	CULTURAL EXPRESSIONS	CULTURAL VALUE
Indigenous peoples		
Immaterial culture		

Table 1. Categories, dimensions and values. * N.B.: These categories were not considered in the course of this research owing to the complex variables associated with geological, geomorphological, morphoclimatic and phyto-geographical aspects.

Secondly, the methodological procedures must be anchored in the doctrines and operational protocols of the instruments adopted by world systems for managing the conservation of natural and cultural heritage, as appropriate to the object being studied.

In terms of theoretical and conceptual premises, it was concluded that the integrated conservation approach involves a set of macrosystems for evaluating heritage conservation whose disciplinary approaches guide the operationalization of instruments applied to the evaluation of the object as a whole. Secondly, significance, considered as the key term for the evaluation of heritage conservation, calls for the interlinking of all the value dimensions it embraces, drawing on the specific disciplinary approaches needed to understand its theoretical and operational content. Given this, within the concept of significance there is an interdisciplinary interaction between the theories of the biology of conservation, geoconservation and the conservation of cultural heritage, both tangible and intangible.

From a methodological and operational point of view, it can be seen that the set of values identified made it possible to interrelate variables and quantitative parameters to generate indicators compatible with the theoretical and conceptual foundations drawn on as well as being suitable for monitoring the significance of natural/cultural properties. It may therefore be concluded that it is indeed possible to define a set of indicators capable of evaluating the conservation of significance of natural/cultural heritage by systematically bringing together a set of theoretical and methodological protocols and operational procedures applied to the process of managing integrated heritage conservation.

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Endnotes

[1] UNESCO — United Nations Educational, Scientific and Cultural Organization.

[2] UNESCO's World Heritage List currently includes 911 items, of which 704 are cultural, 180 natural and 27 termed 'mixed', spread among 151 member states. There are 11 cultural and 7 natural properties in Brazil. The natural items correspond to the protected areas which include the national parks that are the empirical object of this study. (www.unesco.org. Accessed: 09/11/2010).

[3] Inernational Union for Conservation of Nature and Natural Resources, currently known as the International Union for Conservation of Nature, and also formerly the World Conservation Union (www.iucn.org. Acessed: 09/11/2010).

[4] ICOMOS — International Council on Monuments and Sites.

[5] The ten criteria were drawn up by the The Operational Guidelines for the Implementation of the World Heritage Convention, in 1992, divided into six criteria for cultural heritage and four for natural heritage. In 2005, these were revised and compiled as a set of ten cultural and natural criteria.

[6] The 'Statement of Significance' is a document required by UNESCO/WHC (World Heritage Centre) which offers technical and scientific support to the Member States in drawing it up.

[7] Periodic reporting takes place every six years, and is carried out in one region of the planet at a time. Member States take responsibility for producing the reports with technical support from UNESCO provided by the WHC.

[8] This was the European Heritage Year, as declared by the Congress on European Architectural Heritage where the unique architecture of Europe was denominated as the 'common

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heritage of all peoples' forming part of the 'cultural heritage of the entire world' (*Amsterdam Declaration*, 1975).

[9] The most active association at the time was the *Associazione Nazionale Centri Storico-Artistici*, formed in 1960, which mobilized politicians, administrators and intellectuals involved in the area of the conservation of the historical heritage (Castriota, 2009, p. 229).

[10] Castriota (2009, p. 230) notes that these ideas had been advocated before this, for instance in the *Bruges Charter*, which defined a broad European environmental policy including a focus on heritage matters. This may explain the impact of the 1972 Club of Rome report, which drew attention to the question of the limits of population growth given industrial development and the scarcity of food and natural resources.

[11] UNEP — United Nations Environment Programme — *Stockholm Statement*, 1972.

[12] This Convention defined categories referring to cultural heritage (monuments, groups of buildings and notable sites) as well as natural heritage (natural monuments, physiographical and geological formations, habitats and notable natural sites).

[13] This report, also known as *Our Common Future*, defines sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (*Our Common Future*, 1987, p. 46).

[14] Known as the *Rio Conference*, the *Rio Charter* or UNCED (United Nations Conference on Environment and Development), held in Rio de Janeiro, Brazil.

[15] *Convention on Biological Diversity*, signed in 1992, during ECO-92.

[16] Geoconservation is the process of conservation of abiotic elements of nature, or geodiverisity. According to Sharples (2002) it aims to preserve geological and geomorphological meaning, the features and processes of the ground, maintaining the integrity of natural levels and scale while bearing in mind change within natural processes.

[17] ICCROM — International Centre for the Study of the Preservation and Restoration of Cultural Property.

18 Seminar on 'Monitoring for World Heritage Cities'.

19 The system of indicators makes up the substance of the report *Environmental Indicators for National State of the Environment Reporting – Natural and Cultural Heritage*, produced in 1998 by the Australian government's Department for the Environment.

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