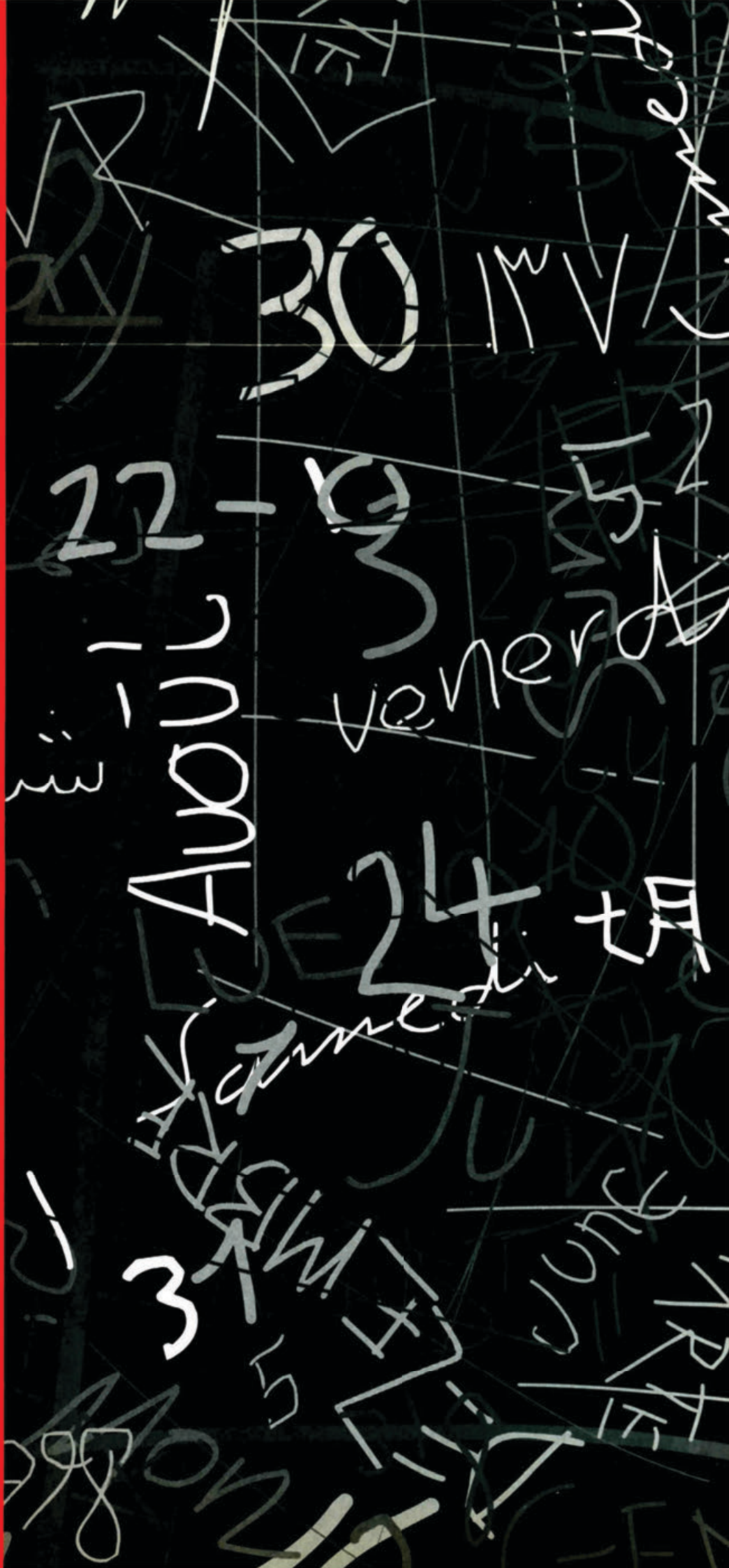
ICOM

A SPECIAL CALENDAR FROM



It is human nature to want
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which are ours to control. *We* are in
ate policies, improve poor systems
make a difference to the life
llections.

A preventive conservation
C A L E N D A R
for the smaller museum

1997

Welcome to preventive conservation

ICCROM

Welcome to preventive conservation

This calendar is a practical introduction to preventive conservation.

With it you will:

- *identify your collection's preventive conservation problems and recognize those that are most urgent;*
- *collect data that will help convince your colleagues of the need for action on preventive conservation;*
- *be able to make realistic proposals for activities on a simple, day-to-day level, and for major preventive conservation projects; and*
- *implement preventive conservation.*

To make a difference to the life of your collections, four key areas will be under study in the Preventive Conservation Calendar 1997:

State of documentation: what and where is the museum collection? how fast can an object be traced? its deterioration? its loss?

Manner in which collections are kept: what are the conditions in the storage? on display? are collections safely kept? are there insidious, long-term hazards of neglect?

Frequency and quality of movement: can major events at the museum put objects at risks? are movements under control? are they always necessary?

External influences: how close are we to potential flood, fire or theft disasters? how much damage are climate or pests doing to the collections?

The whole process begins like a game, which is described in DISCOVERY. You will find a series of 16 spot-checks to test the situation in the four areas described above. You can do these spot-checks whenever and in whatever order you wish. They have been designed so that you can link them to your normal work and plan them for the most

suitable times. What is important is that, once completed, the whole series will give you quite an accurate picture of the main weaknesses in your museum's preventive conservation approach. But are these weaknesses minor problems or real threats to your collection? With the activities described in FOCUS, you will be able to build upon the information you discovered in the first stage and find out the answer.

To help you collect the information in the Discovery and Focus stages and to establish your own preventive conservation data-gathering system, the NOTEBOOK contains samples of all tables and record sheets required (these should be copied for multiple use).

After the Discovery and Focus stages, you will have increased your knowledge of the situation and put down many ideas to correct it. It will be time for IMPROVEMENT! But making changes often requires the involvement of a committed team of people, equipment, funds and time! The Improvement stage will help you to sort out short-term and long-term solutions and gradually involve the whole museum in preventive conservation planning.

It is now up to you. If you like the idea, plan your work and it will be successful!

The entire process has been designed to be combined with your normal work throughout 1997 and beyond.

The CALENDAR and its year planner are your key tools for the preventive conservation year. Please read the following instructions and start your time-planning now!

Preparing the ground

TIME-PLANNING

Integrating preventive conservation into your normal work will be a lot easier if you have some picture of what will be happening in the museum over the next two years.

On the year planner 1997/98, mark (in pencil, just in case things change):

- all events planned in the museum, e.g., Museum Day, new exhibitions, official receptions
- any maintenance work scheduled for buildings or grounds, e.g., gallery painting, office or storage reorganization
- public holidays (and your own leave too!)
- anything else that could affect the time or location of the preventive conservation calendar activities

There will probably be plenty to fill in for the first six months and not a lot in the second year at all, so update this plan at least twice.

You are now ready to plan the Discovery process. As an indication, the 16 Discovery spot-checks might require an average of 1-2 hours each. If you decide to do one per week (a good average), the Discovery process can be spread over a four-month period. Read the Discovery booklet, make your plans and note them on the year planner. Then work out each activity month by month on the calendar, where appropriate.

Upon completing the Discovery process, you will need to evaluate your results and set your priorities for the Focus process. Set aside one or two more weeks in the year planner for this evaluation and for planning your Focus activities. Remember that the Focus process will take longer than Discovery spot-checks, and some activities will have to be repeated at intervals to provide useful information. This is why planning is likely to take you into 1998.

A tip: at the beginning, it will not be easy to estimate the right amount of time for Focus activities. Therefore, we recommend that you record the real time needed for each spot-check during the Discovery phase. This will improve your accuracy in planning the surveys and monitoring programmes in Focus.

TEAM-BUILDING

Preventive Conservation is a team effort. Use this year to start creating a team spirit, sharing information and ideas and informing colleagues in advance on the progress of the project. When you have gone through the work proposed in the calendar, list all the staff in charge of collections and all others you feel should be sympathetic if you are to be able to get useful results. Discuss the project with your director and try to identify whether your involvement might upset someone. You may need access to the Accessions Register or a high-security store; you may want to work with staff mounting a special exhibition or become part of the cleaning team. They may need to be reassured by the director that your investigations will not threaten their jobs before you can ask for their help and approval.

USEFUL EQUIPMENT & INFORMATION TO GATHER IN ADVANCE

This is not a comprehensive list. Try to find these things locally or through national or regional museum associations.

What to collect now:

❍ A file for keeping the tables and plans together throughout the project

❍ Pencil, pen, eraser (coloured pens might help but are not necessary for any of the work)

❍ Coloured stickers or labels to give easy evidence of where you are working

❍ A flashlight

❍ A detailed description of the collections: what types of collection are held (e.g., Natural History, Ceramics); how these are subdivided (e.g., by function, genus, geographical area); how many objects are in each category; where they are located.

What to prepare before starting the Discovery process:

❍ A good copy of a floor plan of all museum buildings (within the bounds of security) that you can reproduce as need arises. Give a number or letter to each room and every display and storage unit to make it easier to keep track of the data you collect. If you draw your own floor plan, make one good master as accurately measured as you can and copy it to a size that will fit a clip-board. All copies (the whole process requires 12 floor plans at least) should be at the same scale. It might be better to have tracings or copies on clear plastic film so that overlays can be done easily for comparison of the same thing at different times or for making correlations between different things, e.g., location of dirt and incidence of pests. Floor plans of separate rooms may be easier to get but you will still need one plan of the whole museum.

❍ Copies of the sample Discovery tables provided in the Notebook.

What to prepare before starting the Focus stage:

This preparation will take place when you plan the Focus stage. Nevertheless, you can anticipate that you will need copies of the sample Focus tables provided in the Notebook. Some Focus activities will require copies of the related Discovery tables as well.

Access to or photocopies of relevant texts (see bibliography at the end of this booklet) will be useful. If the resources are not available locally, contact the ICCROM library service.

A camera and films are useful to illustrate problems and document the current situation so that you can see the difference later when improvements are under way.

Computer access (nice but not necessary)

What you might need for the Improvement stage:

All will depend on your own ideas for dealing with your own situation. But here are a few things:

Sticky traps for insects (may be available from government health, food hygiene or agriculture departments)

Recording thermohygrographs and charts (may be available if there is a climatic station in your city)

Light and ultraviolet meters, UV filters

Paper and binding system for report(s)

Computer or secretary

Summary of Activities

(D and F refer to sheets in the Notebook)

STATE OF DOCUMENTATION

Location codes (D1)	1	Location codes Survey (F1)
Index/register (D2)	2	Index/Register Survey (D2, F2)
Object numbers (D3)	3	Object numbers Survey (F3)

MANNER IN WHICH COLLECTIONS ARE KEPT

Supports (D4)	4	Supports Survey (D4, F4)
		Supports Monitoring Programme (D4)
Cleanliness (D5)	5	Cleanliness Monitoring Programme (F5)
Overcrowding (D6)	6	Overcrowding Survey (F6)

FREQUENCY AND QUALITY OF MOVEMENT

Events involving objects (D7.1, D7.2)	7	Most popular objects Surveys (F7.1.1, F7.1.2)
		Major event Monitoring Programmes (F7.2.1, 7.2.2)
Handling (D8)	8	Handling Analysis (D8)
Handlers and Equipment (D9)	9	(No related Focus activity)
Object routes (D10)	10	Object routes Survey (F1O)

EXTERNAL INFLUENCES

Flooding (D11)	11	Flooding records Analysis (F11)
		Flooding Survey (D11)
		Flooding Monitoring Programme (D11)
Fire hazards (D12)	12	Fire records Analysis (F12)
		Fire hazards Survey (D12)
		Fire hazards Monitoring Programme (D12)
Theft risks (D13)	13	Theft records Analysis (F13)
		Theft risks Survey (D13)
		Theft risks Monitoring Programme (D13)
Light damage (D14)	14	Light source Survey (F14)
		Light source Monitoring Programme (F14)
Damage from high & low moisture (D15)	15	Susceptible objects Survey (D15, F15.1)
		Susceptible objects Monitoring Programme (D15)
		Moisture sources Surveys (F15.2.1, F15.2.2)
		Moisture sources Monitoring Programmes (F15.2.1, F15.2.2)
Pest damage (D16)	16	Pest Survey (D16, F16)
		Pest Monitoring Programme (D16)

bibliography
Annotated and recommended reading

The bibliography is organized in five sections: General Reference and the four Topics of the Calendar. Entries are annotated and also show which articles could be read together for best effect. The part of the work plan in which they may be of use is indicated as follows: F = Focus section, I = Ideas for Simple Improvements and M = Suggested Major Projects.

Key references are shown in bold

General Reference

AMBROSE, T., & PAINE, C. 1993. *Museum Basics.* London & New York: ICOM & Routledge. ISBN 0-415-05770-1. ❑ **F/I/M**

"Organized on a modular basis ... provides a basic guide to 'best practice' in every aspect of museum work. Designed for training courses, to be supplemented by case studies, project work and group discussion." It is also an excellent handbook for the practitioner of any museum trade.

ANDERSON, P., & McCORD, M. 1994. Preventive conservation - Making it happen. In *NZPCG and AICCM Joint Conference, Wellington.* ❑ **I/M**

This is about management. It describes a way of analysing museum work by looking at the systems people use to do it and shows how to achieve an acceptable control of these systems. The diagrams illustrating teams and flow-charting activities also show the associated danger points for objects. Use with Nardi and with Keene.

Association of Manitoba Museums. 1994. *Standards for Manitoba Museums.* ❑ **M**

Easy to understand standards for any type of collection. Covers administration and programme, as well as collections management and conservation. Includes a goal statement for each set of standards. Sets two levels of achievement: basic, essential practices for all museums.

KEENE, S. 1996. *Managing Conservation in Museums.* Butterworth-Heineman. ISBN 0-7506-23845. ❑ **F/M**

Good summary of current management theories relevant to conservation in museums. Useful identification of the information needs for conservation planning. Text on condition survey and audit is easy to understand although the relevant case study has intimidating amounts of statistical theory.

NARDI, R. 1992. Planning as a means of preventive conservation. In *La conservation préventive: 3e colloque de l'Association des Restaurateurs d'Art et d'Archéologie de Formation Universitaire. Paris, 8-10 octobre 1992*, pp. 105-119. Paris: ARAAFU. ISBN 2-907465-02-3. ❑ **F/M**

Demonstrates how to plan activities before starting them. The first example produces a flow chart of all variables to aid decision-making by the management; the second uses critical path analysis and logic diagrams to give best use of teams and time for cleaning and rearranging a store (a most basic and useful tool); the third is a computer-based plan for coordination of a multiple project. Practical and not too hard to understand. Read with Anderson & McCord.

WALLER, R. 1994. Conservation risk assessment: a strategy for managing resources for preventive conservation. In *Preventive Conservation Practice, Theory and Research: preprints of the contributions to the Ottawa Congress, 12-16 September 1994*, edited by A. Roy and P. Smith, pp. 12-16. London: IIC. ❑ **M**

Very interesting concept, good tables, difficult mathematics but then it is the distillation of a three-day course, worth struggling to understand.

Topic 1: state of documentation

KORANTENG, L. 1994. A resume of surveys conducted on need for inventory. In *PREMA Newsletter*, no. 4 (ICCROM). ❑ **M**

Flow chart and short instructions for conducting an inventory which could result in knowing which objects are in the museum and not in the register and vice versa, which are not numbered and which are in the museum but not where you thought. Simple and useful tool.

MALARO, M.C. 1979. Collections management policies. *Museum News*, 58, no. 2. ❑ **M**

Outlines tellingly why such policies are needed and gives easily understood, soundly based guidelines for discussion in formulating your own.

UMNEY, N.D. 1995. Documentation as a tool in the conservation of museum collections. In *ICOM-CC Study Series, no. 1* (articles in English or French, abstracts in the other language). ❑ **M**

Thorough investigation of the reasons for documentation for conservation and correct identification of needs when thinking about a whole system, then goes on to simple computer systems design. Useful background logic.

Topic 2 : manner in which collections are kept

HILBERRY, D., & WEINBERG, S.K. 1981. Museum collections. Storage, Parts I-III. *Museum News*, 59, nos. 5, 6, & 7. ❑ **M**

Three-part series covering: 1. planning for access, location, size and shape of stores; 2. Climate and lighting controls; 3. Security and fire precautions with a bit about renovations.

Part 1 is good used with Walston and Wilcox; part 2 refers to a lot of high-tech equipment; part 3 is good on security, but note that the fire section mentions the use of halon gas, which is outdated.

LABI, K.A. 1992. Upgrading the Ghana National Museum storage area. In *La conservation préventive: 3e colloque de l'Association des Restaurateurs d'Art et d'Archéologie de Formation Universitaire. Paris, 8-10 octobre 1992*, pp. 129-136. Paris: ARAAFU. ISBN 2-907465-02-3. ❑ **F/M**

Work was done as part of a training program which supplemented museum staff by 15 people. The following parts give some idea of the practicalities involved: cleaning the store; allocation of working

and storage space; structural repairs; inventory; upgrading the storage; managing the ethnography and archaeology store.

Museums and Galleries Commission (UK). 1994. *Standards in the Museum Care of Large and Working Objects*. ISBN 0-948630-26-4. ❑ M

One of a series of booklets outlining current best practice in the care of various types of collection. Covers: fieldwork, loan, condition, access, moving, planning response to disasters, building and environment. Each Standard keeps a balance between statement of principle and guidance for its interpretation. Includes minimal bibliography and list of sources of help (UK only). Very practical series, any one of which would make a good working guide for your own museum.

REGTER, F.L. 1993. *Schoonmaken in musea, archieven en historische gebouwen = Cleaning in museums, record offices and historic buildings.* Amsterdam: Central Research Laboratory. ISBN 90-72905-23-7. ❑ I/M

A great and possibly unique booklet about keeping the building (and so the collections) clean. Includes prevention measures, some ideas on waste disposal, a sample cleaning schedule, sections on how to clean everywhere from the toilets to the roof drains, as well as staff involvement and training. (Text in Dutch, English, Arabic, French and Turkish). Beg, buy or borrow a copy and then use it with Pinniger and the CCI Framework poster.

WALSTON, S., & BERTRAM, B. 1992. Estimating space for the storage of ethnographic collections. In *La conservation préventive: 3e colloque de l'Association des Restaurateurs d'Art et d'Archéologie de Formation Universitaire. Paris, 8-10 octobre 1992*, pp. 137-144. Paris: ARAAFU. ISBN 2-907465-02-3. ❑ M

A method for measuring the collection, adding specified amounts for arrangement and shelf thickness and a percentage for collection expansion is used to give the cubic area of the objects, thus the number of fixtures needed and so the floor area of the store in use. Repays careful reading and assimilation because the method works. Can be used in reorganizing existing storage. Use with Wilcox and with Hilberry & Weinberg, Part 1.

WILCOX, U.V. 1990. Managing museum space. In *UKIC Conference papers 'Managing Conservation.'* ISBN 1-871656-10-9. ❑ M

A huge institution illustrates how classifying space according to use helps inventory how much is being used for what and shows how well or badly necessary standards for cleaning, security, etc. are met. A complex subject which repays study and simplification for your own situation, e.g., finding more storage space. Use with Walston & Bertram and with Hilberry & Weinberg, Part 1.

Topic 3: frequency and quality of movement

BAILLIE, J., & COX, M. 1994. An opportunity seized: collection moves and deferred conservation made good. In *NZPCG and AICCM Joint Conference, Wellington*. ❑ M

Describes moving manuscript, book, painting and three-dimensional object collections to refurbished areas of the building. Page 9 on Project Management, though brief, is realistic and has useful hindsight for others in similar situations. Use with Walston & Bertram, Hilberry & Weinberg, Part 1, and Wilcox.

MARCON, P. 1992. The packing and transport of cultural property. In *La conservation préventive: 3e colloque de l'Association des Restaurateurs d'Art et d'Archéologie de Formation Universitaire. Paris, 8-10 octobre 1992*, pp. 211-222. Paris: ARAAFU. ISBN 2-907465-02-3. ❑ M

Overview of research literature from commercial and military packing and shipping agencies on shock and vibration hazards and packing to reduce damage. Has the best photo of compression in museum literature so far. Takes some concentration but read it if you have loans out.

ROWLINSON, E.B. 1975. Rules for handling works of art. *Museum News*, 53, no. 7. ❑ F/I/M

Old but not out of date. Very good general rules. Specialist sections concentrate on paintings and works of art on paper with shorter entries for sculpture and decorative arts.

WARD, P.R. 1978. *In Support of Difficult Shapes.* Victoria, B.C.: British Columbia Provincial Museum. ISBN 0-7718-8029-4. ❑ F/I/M

Theory and practice of support in storage or in display explained easily and with straightforward illustrations, including the damage that can be caused by poor support. Does not avoid the most difficult aspect - flexibility.

Topic 4: external influences

Canadian Conservation Institute (CCI). *Framework for Preservation of Museum Collections.*
Poster (English and French texts on opposite sides of the sheet). ❑ F/I/M

Identifies 9 agents of deterioration and describes briefly what they do. Outlines 5 ways of dealing with deterioration: Avoid, Block, Detect, Respond & Treat, then tables suggestions of how these methods can be used in 3 areas; the buildings, fittings and staff procedures. A useful quick reference for the workplace. Even if you do not have all the technology mentioned, it shows how to approach problems of any scale.

CASSAR, M. 1992. UK Museums: a strategic approach to environmental management. In *La conservation préventive: 3e colloque de l'Association des Restaurateurs d'Art et d'Archéologie de Formation Universitaire. Paris, 8-10 octobre 1992*, pp. 85-91. Paris: ARAAFU. ISBN 2-907465-02-3. ❑ M

Deals with protection of collections through the development of a system of environmental zoning. You could use the appendix, environmental audit checklist and the diagram on strategic approach to environmental management to work out your own environmental management strategy and a first five-year plan.

CHILD, R.E., & PINNIGER, D.B. 1994. Insect trapping in museums and historic houses. In *IIC, Ottawa Congress*. ❑ F/I

Underlines the use of insect trapping as a monitoring tool, not a treatment. The English Heritage Museum Store Insect Monitoring Programme (p.4) is a simple guide to laying out sticky traps, reading the results and deciding on remedial action.

FROST, M. 1992. Preventive Conservation: a major invisible design influence upon museum architecture. In *La conservation préventive: 3e colloque de l'Association des Restaurateurs d'Art et d'Archéologie de Formation Universitaire. Paris, 8-10 octobre 1992*, pp. 59-61. Paris: ARAAFU. ISBN 2-907465-02-3 ❑ M

About the final resort - a new building. If you think you have to go so far, this paper tells what you are up against and how to think about the first step.

HENDERSON, J. 1995. Disasters without planning: lessons for museums. *The Conservator*, 19. UKIC. ❑ F/M

Excellent assessment of normal unplanned reaction to flood waters in a small museum. Includes useful comment on the published advice on disaster plans.

LAMB, A. 1994. Building maintenance: the external fabric of the building: notes on a planned approach to museum maintenance. *Museum Management and Curatorship*, 13, no. 1. ISSN 0260-4779. ❑ M

A firm of property consultants outlines a typical maintenance programme; pp. 87-89, Elements of a Planned Maintenance Programme, contain all you need to know if employing a commercial maintenance company.

TREMAIN, D. 1992. Protecting cultural collections from disasters. In *La conservation préventive: 3e colloque de l'Association des Restaurateurs d'Art et d'Archéologie de Formation Universitaire*. Paris, 8-10 octobre 1992, pp. 121-128. Paris: ARAAFU. ISBN 2-907465-02-3. ❑ M

The first three pages walk you through the development of a disaster response plan tailored to your own situation. The rest is a depressing list of the toll of natural disasters and world conflict.

Preventive Conservation is not a science for a single specialist in the museum, nor is it always a huge, expensive project. Much can be done with small improvements in the everyday care given to collections by everyone. A lot can be done by one person working systematically to make things better. To improve, you first need something to aim for - hence the Minimum Standards. A standard cannot be used unless it is written down. The minimum standards cited here are the

A preventive conservation CALENDAR for the smaller museum

1997

Discovery

ICCROM

If an artifact or specimen has been misplaced and can not be found, the effect is the same as a theft.

C. COSTAIN CCI
Newsletter No 14

Staff will be very vocal in their complaints when their own space is changed, but the sufferings of the collections may not be recognized for years...

U.V. WILCOX Managing museum space

Preventive Conservation is not a science for a single specialist in the museum, nor is it always a huge, expensive project. Much can be done with small improvements in the everyday care given to collections by everyone. A lot can be done by one person working systematically to make things better.

To improve, you first need something to aim for - hence the Minimum Standards. A standard cannot be used unless it is written down. The minimum standards cited here are the simplest statements we could make to give you an aim to measure against. (Your museum may have standards already. If it does, compare and see where these fit in.)

Next, you need to know where you are now. That is why this first section is called Discovery. There are many threats to the safety of museum collections. The most dangerous are not always the most difficult to deal with. The spot-checks in this section will uncover the threats that are part of the day-to-day running of the museum: the manner in which collections are kept in storage and on display, the efficiency of the documentation systems when it comes to finding any object in the collection, the frequency and quality of movement and the ongoing deterioration processes or imminent disasters that could occur within any museum.
Each time you complete a spot-check, grade the result according to the guidelines provided, and enter the grades in the Discovery Chart at the end of this booklet. The completed chart will give you a general picture of the situation and help you in deciding on future steps.

If the spot-checks in the Discovery section uncover a real problem, you will need to focus on that problem and collect reliable data which can speak for itself to your colleagues and your director. This is the purpose of the Focus section.

Discovery

documentation

MINIMUM STANDARDS

There is a comprehensive system of location codes for all museum areas and all storage and display furniture.

You have an index, all in one place and up to date, e.g., to the last calendar year.

All objects are individually numbered as listed, and can be located easily from the index.

Objects which are not yet registered can be easily located.

A good documentation system normally includes entry records, an accession register, a catalogue, various indexes, movement and location records (and sometimes conservation records). For the museum user, its purpose is the retrieval of all the information about any object in the collections; for the collection manager it should mean that she knows exactly where everything is: in which store, on display, on loan, in photography studio. It should help answer questions such as: 'How many objects are in the museum but not yet registered?' 'Is something missing?' It is essential if you have to prove something has been stolen. For the object's welfare, the purpose of a documentation system is to limit the need for physical searches and use or movement of the object itself.

The spot-checks below are intended to help you find out how well your documentation works as an object-management tool. They are most easily done with an index that gives the location of each object, but failing this, use your most complete record of the collections. A sample table for recording your findings for each of the checks is given in the Notebook. Ideas for improving the current setup may occur to you as you work. Do not allow yourself to be diverted into doing them immediately but do write them down for consideration when you reach the Improvement phase.

KEY DANGERS:

Undiscovered theft, increased handling and misplacement of objects.

Theft

will remain undetected for longer periods if the object-numbering or documentation system is inadequate. This in turn encourages further stealing and will gradually erode the collection. Objects are probably at their most vulnerable when waiting to be registered and before they are given a permanent location.

Misplacement of objects

leads to searches and so increased damage to the collections from movement and handling. Poor location marking of storage and display furniture increases the chance of misplacement of objects and impatience (and perhaps decreasing carefulness) in the person trying to find them.

Misplacement of data also leads to more movement, as the object has to be re-measured and examined for re-cataloguing or has to be given to each researcher to do their own measuring and data gathering.

SPOT-CHECKS

1 *Location Code*

Take a museum floor plan that shows all places where objects are stored or displayed. Mark 3 different areas on it. In each of these choose 10 specific locations, such as a storage unit, showcase, cupboard, shelf, box or drawer. List them on a copy of Discovery Table 1.

Visit each area and check that it has a visible name or number and that every individual location chosen has a number or code which can be read easily. Record your findings on the table.

GRADING THE RESULTS OF SPOT-CHECK

Use the following scale to grade your results and also record all grades on the Discovery Chart at the end of this booklet.

Grading Spot-check **1**

0 = every location is individually numbered or named
1 = up to 2 locations have no number or code is too vague
2 = 3 to 6 locations un-numbered or code too vague
3 = more than 6 locations have inadequate coding

2 *Index/Register*

Choose 15 entries in the index or register at random, then find each object, using the following method.

First estimate the total number of entries or the number of pages in the register and divide it by 15. Now, if for example the result is 1000 (in other words your estimated total is 15000) then begin with the 500th entry and choose the 500th, 1500th, 2500th, 3500th, 4500th and so on up to the 14500th entry or page. If you have chosen pages so far then take the entry that is at the same position on each page, e.g., third one on the left. In practice many things make this accuracy unachievable, but the aim is to make a well-separated selection. Just do your best to get close to it.

One important point - if you feel that some portions of the register are probably bad, then take an extra entry from that part. In other words, you must bias this very small sample towards the truth.
Write the object numbers you have chosen on a copy of Discovery Table 2. Fill in the rest of the table as you work.

Grading Spot-check **2**

0 = total success, you found everything immediately
1 = you found most things quickly, had trouble with one or two but did find them
2 = there are still 1 or 2 items you cannot locate
3 = there are more than 2 items you cannot locate even though you went on looking after the time you allowed was up

3 *Object Numbers*

Choose 15 objects from different places throughout the museum and find the index or register entry for each one.

In planning this spot-check, use a museum floor plan to divide the stores, displays and other areas where there are objects into no more than 15 sectors, each containing approximately equal numbers of objects.
Go to each sector in turn and choose one object from each, varying the way you choose as much as you can (high shelves, then low ones, front of drawer, then back; perhaps you could ask a colleague who does not normally deal directly with the objects to do this). Write the object number on your record form.
Go to the index or register and look up these numbers. Record your results on a copy of Discovery Table 3.

Grading Spot-check **3**

0 = all objects have numbers and the corresponding records were found in the register
1 = 1 or 2 objects had no number or an obsolete number but eventually the correct information was found
2 = 1 or 2 objects cannot be linked to any information at all
3 = more than 2 objects cannot be linked to relevant information

keeping

MANNER IN WHICH COLLECTIONS ARE KEPT

MINIMUM STANDARDS

'Object friendly' furniture and supports are the rule.

There is a regular cleaning regime of all areas where there are objects.

Overcrowding is not damaging the objects.

No objects obstruct access.

This topic will try to open your eyes to some problems you may have in the way collections are kept. We sometimes think that once objects are placed in storage or on display they are safe. But storage space that once seemed well organized and large enough, displays that were clean and safe and objects that are left alone do change; the longer we neglect them the more severe that change will be. The spot-checks below will develop your skill at recognizing the health of your storage and display furniture, where your collections are dangerously overcrowded and whether the whole place is thoroughly clean. If you have any ideas for making things better while you are doing the spot-checks, write them down for reference when you reach the Improvement phase.

KEY DANGERS:
neglected supports, inadequate cleaning
and overcrowding.

Support

is anything on or in which objects sit for a short time or permanently. Supports can be: shelves, showcases, tables, trays, plinths, mounts, suspension systems, boxes, even picture frames. An object can have more than one support, such as a ring-pad on a shelf, a box in a drawer, a purpose-built mount and a showcase.

When they are new, supports usually do not harm the objects but they can change over the years. If they were not well thought out to begin with, they might have bent or deformed and in turn have deformed or broken the object. If they have become unstable and move when touched or when a school group marches past, objects may move about or even fall.

The materials of the supports can change and become dangerous to the objects. Paint surfaces lift and flakes catch on objects, rust forms and contaminates objects. Woodworm migrate from wooden case materials and moths from display materials into objects.

Cleaning

here it means space cleaning - not object cleaning, which is a lot more expensive and high profile.

Space cleaning is often the most undervalued and unrewarded part of museum work. Any accumulation of dust, leaves, off-cuts of wood, food scraps, dead insects or vermin can be a starting point for infestation by insects, rodents, even mould given the right conditions, and it is only a matter of time before that infestation reaches the collection.

Most museums clean galleries well but many dead spaces under vitrines hide debris left from setting up the last exhibition. There are good reasons (such as security or tight control of climate) for limiting cleaners' access to stores but this does not provide an excuse for layers of dirt under the storage units or behind larger free-standing objects.

There may be periods of the year when a normally effective cleaning routine is inadequate. The frequency or equipment might need to be changed to cope with high levels of dust at certain times or the removal of wet muddy footprints during the rainy season.

Overcrowding

can mean that objects are so closely packed together that you can't lift the one you want without endangering others nearby. Perhaps they are stacked on top of each other, damaging the lower layers because of the extra weight which gravity now imposes on them. A stack of baskets is the best place to look for this. The top ones will only be rubbed on the outer edges

where they have settled into the one below. But further down the stack you will find more severe distortion of the flexible elements as each basket accommodates itself to the shape of those above and below. In extreme cases, the less flexible elements, probably parts of the older pieces in the collection, will have been broken by this slow gravitational force. Abrasion and breakage occur when someone has to extract one or two baskets from the stack. (Why is it never the top one that is needed?)

Sometimes there is not enough room on the shelves, and objects are kept on the floor, at the ends of the access space between storage racks, and against any free wall space. This frequently happens to heavier or longer objects like sculpture, furniture or canoes but smaller things are not immune. The top edges may be abraded where people have reached across them to find other objects or they may be distorted or broken from having doors opened against them. If you get down on the floor and look at the lowest parts of these pieces you can see how they have been scuffed by passing feet and floor brushes. They may have water marks or even layers of floor-polish from the normal museum cleaning procedures.

SPOT-CHECKS

4 *Supports*

Using the list given in the paragraph about Support above, identify 3 different types of furniture or support in use in your storage or display areas. Check 5 examples of each type, all in different areas of the museum if possible, to find out if they are unstable or damaged so as to endanger the objects. Record your findings on a copy of Discovery Table 4.

NB: Label any infested or corroding supports or mounts with a DANGER sign and details of the problem.

GRADING THE RESULTS OF SPOT-CHECK

Use the following scale to grade your results and also record all grades on the Discovery Chart at the end of this booklet.

Grading Spot-check 4

0 = No problems of stability or condition

1 = 1 to 2 instances of instability or contamination: e.g., storage units and/or vitrines unstable, mounts distorting or not supporting objects, deterioration products affecting objects

2 = 3 to 5 instances of contamination or instability

3 = More than 5 instances of contamination or instability

5 *Cleanliness*

Choose 3 public areas and 3 store areas of the museum. Walk round them and check cleanliness in at least 4 positions in each area (especially on shelves, behind doors, plinths and tops of showcases). Plot your discoveries on a map of the museum and record your findings on a copy of Discovery Table 5. Use a separate form for each area.

Grading Spot-check 5

0 = Everywhere is spotless (first-class, regular cleaning regime)

1 = Main areas are clean, but other places are not so good (good average regular cleaning regime)

2 = Some places have been accumulating dust all year (inadequate, irregular cleaning)

3 = You found piles of detritus such as leaves, wood shavings, rodent droppings, dead insects (very infrequent cleaning or no cleaning at all)

6 *Overcrowding*

Find 3 areas of overcrowding inside storage units and 3 areas where objects obstruct passage.

Check all objects visually for deterioration (don't worry; this is not a detailed condition report) and whether there is enough SPACE to lift them safely and to use cleaning equipment without risk to the objects. Use Discovery Table 6 as a basis for recording what you see and photograph any damage *in situ* if possible.

Grading Spot-check 6

0 = There is no overcrowding

1 = You found less than 3 areas where objects are so close together that you couldn't lift one without touching or moving others or are stacked so that there is damage to the lower pieces

2 = There are more than 3 areas where objects are stacked on top of each other or where objects are too close together

3 = Objects are stacked up to fill most parts of the store and other areas, boxes are packed tightly with objects

movement

FREQUENCY AND QUALITY OF MOVEMENT

MINIMUM STANDARDS

Movement only when agreed to be absolutely necessary.

A defined 'best practice' used for all movement.

Movement means any change in position of all or part of an object or collection. It can be the most destructive agent at work on collections. In museum terms, all object movement is either necessary or unnecessary. Causes of unnecessary movement include rodents, the wind, unstable supports, vibration from machinery, earthquake, people moving nearby and gravity slowly pulling materials out of shape. Causes of necessary movements include loan, exhibition, accession, study, treatment but these hide many unnecessary, excessive or repeated movements carried out for human convenience.

It does not matter to the object whether the cause of movement is human or not. What matters is quality and frequency. The more often an object is moved, the higher is the risk of damage even if the quality of movement is good. Quality of movement means (ensuring) that the object is gently and securely supported throughout the move, including lifting and setting down, that there is a suitable place to put the object at the end and that the process is carried out without rushing. The spot-checks that follow help you to recognize unnecessary movements and the damage movement causes and will increase your awareness of incorrect ways of moving objects. As you work through them, ideas for improving the situation may occur to you. Just write them down for reference when you do the Improvement part of the topic.

KEY DANGERS:
abrasion, impact and stress.

Abrasion

is loss of material caused by the edges or sides of the object vibrating or scratching against whatever it may touch. Look at handles, corners of picture frames, the outsides of baskets and the edges of potshards. The cause of the vibration could be an earthquake but it could equally well be you allowing the object to roll around in the box you are carrying it in.

Impact damage

is breakage or bruising caused by dropping, knocking, crushing an object or squeezing it quickly. The effect is most obvious on ceramics and other brittle materials but wood and soft metals can be bruised or dented if knocked against a harder material. Semi-flexible materials such as basketry, feathers, herbarium specimens or butterfly collections are easily damaged by crushing.

Stress

is inherent in many objects. Part of an object can act as a support or armature for the rest. You can cause stress to the point of distortion, tearing or breakage by changing the balance of such an object during movement. One part catching on something or not moving in unison with the rest will also create stress that can tear the object apart.

7 *Events involving objects*

List any routine activities during the last year which involved moving one or more objects (e.g., education programmes, researchers' requests, cleaning of displays). Choose 4 of these events. Talk to the appropriate staff to estimate the numbers of people and objects involved each time. Use a copy of Discovery Table 7.1 to record your findings. Note in the calendar all major events involving movement of objects (loan, exhibition, catalog photography, display) that are planned for this year. Make a note of the people and collections involved on a copy of Discovery Table 7.2.

GRADING THE RESULTS OF SPOT-CHECK

Use the following scale to grade your results and also record all grades on the Discovery Chart at the end of this booklet.

Grading Spot-check **7.1**

Work out the average number of objects involved in the 4 events, then grade as follows:

0 = 0 to 4 objects moved
1 = 5 to 10 objects moved
2 = 11 to 15 objects moved
3 = more than 15 objects moved

Spot-check 7.2 does not need to be graded

8 *Handling*

Use yourself as a guinea pig. Take a moment to think about the last few times you were handling objects, maybe over the last month.
List all the unnecessary object movements you made.
Analyse why (you moved it to reach other objects, took it to show to someone else, couldn't be bothered to walk round it to examine the other side, the phone rang so you put the object down and started again later). Record your results on a copy of Discovery Table 8.

Now consider the same events and try to identify times when you handled or moved an object dangerously or incorrectly (e.g., you had more than one object in your arms at a time, you put the object under your arm so you could open a door). Again record your results in Table 8.

Finally imagine you are the average worker in the museum and multiply your result in both parts of spot-check 8 by the total number of staff. Put that number in the box for the estimated grand total of unnecessary and incorrect moves per month.

Grading Spot-check **8**

0 = Grand Total of 0 unnecessary or incorrect movements of objects
1 = Grand Total of 1 to 3 occurrences
2 = Grand Total of 4 to 7 unnecessary movements of objects
3 = Grand Total of more than 7 occurrences

9 *Handlers and Equipment*

Find out how many people in the museum have been trained in handling objects and make a list of who and when on a copy of Discovery Table 9. List, on the same table, any equipment used when moving objects in the museum: trays, trolleys, gloves, etc.

Grading Spot-check **9**

0 = Everyone who handles objects has been trained less than 5 years ago
1 = At least 2 people in every 10 members of staff were trained less than 5 years ago
2 = At least 2 people in every 10 members of staff trained between 5 and 10 years ago
3 = No one has been trained less than 10 years ago

10 *Object Routes*

Take a floor plan of the whole museum and any separate buildings used as workshops, stores, laboratories. Mark on this map 4 of the routes that objects take during the routine movements you listed for spot-check 7. Give each one a name or number. Now walk the whole of each route from the shelf the object started from up to and including the place it will be put at the end. You should try to do this check carrying something that needs two hands like a very big (empty) cardboard box. Note all the hazards and obstructions along the way.

Use a copy of Discovery Table 10 to record your results, and plot all the bad areas you found on the floor plan.

Grading Spot-check **10**

0 = You completed every route without having to move anything at all to get through. As far as you can see there is enough space to use equipment safely or to carry objects without tilting them.
1 = You completed every route but had to move other materials to get through. There is not enough space to use equipment safely or to carry objects without tilting them.
2 = You were unable to complete 1 route because you would have had to move objects to get through and there wasn't enough space to use equipment or to carry objects safely.
3 = You were unable to complete 2 or more routes because you would have had to move objects or doors couldn't open completely because of objects in the way. There wasn't enough space to use equipment or to carry objects safely.

Externals

External influences can be broadly categorized by the speed with which they affect the deterioration of objects. The effects of light, insect or rodent infestation, humidity and mould are relatively slow, while theft, fire and flood are fast. Indeed, the difference between a problem and a disaster may be this element of speed. To deal with the identification of problems this topic is divided into two parts:

Dramatic Influences

Progressive Influences

with minimum standards given for each group.

d r a m a t i c

MINIMUM STANDARDS

You have a written disaster plan and a trained response team.

You have a written building maintenance programme.

Flood, fire or theft happen fast, almost instantaneously, and they make us panic. We often find out how vulnerable our collections are the hard way: after something has been stolen (or vandalized), after the tidal wave has hit or the water pipes have burst or after the fire. Knowing what to do when any of these things happens is important. Preventing them happening at all is even better. The only way to do this is to be fully aware of the risks around your collection at all times. This section will help you to begin. Think about your known local extremes of climate (humidity, rain, hours of sunlight, winds, salinity) and features immediately round the museum site (drainage, large trees, power lines or water mains, orientation to sun and prevailing winds) and how a disaster involving any of these could affect conditions within the museum.

KEY DANGERS:

Destruction of all or part of the collection

Flood

is usually associated with civic disasters when a river breaks its banks or a very severe storm breaches a sea wall and low-lying areas are covered in salt water. In a large-scale disaster, the museum is often the last place the authorities are concerned about (unless it is of use to house the homeless). But smaller-scale flooding can happen within the museum. Typical causes are blocked toilets, overflowing cisterns and bursting water pipes, and they can cause the same damage as a more general flood: paint surfaces crack and peel, dyes run, photographs stick together, wood and leather warp and go mouldy while drying, objects are stained with water-borne dirt and so on.

Fire

is normally quenched with water, so not only are the objects charred, distorted, turned to ashes or covered in soot but they and many others untouched by the flames are also flooded with water. Unplanned rescue from both these disasters can cause more physical damage, small objects may be thrown out with the mud and sludge, and thieves have better access to the collections.

Theft

and its little sister Vandalism are the work of people like you and me. Sometimes they are unauthorized visitors, sometimes they are not. The result is the same. An object disappears from the collection or an object is mutilated or defaced and its meaning disappears.

SPOT-CHECKS

11 *Flooding*

Choose 3 areas where collections are held and estimate the number of objects in each. Walk round and record all the possibilities for flooding and objects at risk on a copy of Discovery Table 11. Also map your findings on a plan of the museum.

GRADING THE RESULTS OF SPOT-CHECK

Use the following scale to grade your results and also record all grades on the Discovery Chart at the end of this booklet.

12 *Fire Hazards*

Repeat the above spot-check with a copy of Discovery Table 12, listing all the possibilities for fire. Also map findings on a plan of the museum.

Grading Spot-checks **11/12**

0 = your total score for all 3 areas is 0
1 = your total score for any of the areas is 10 or less
2 = your total score for any of the areas is between 11 and 29
3 = your total score for any of the areas is 30 or above

13 *Theft Risk*

Choose 3 areas (one in storage, one in exhibition and one in another museum space) where tempting or well-known objects are held. Walk round with a copy of Discovery Table 13 and note any weak points in the security system. Also map your findings on a plan of the museum. Please note that one weak point in security is enough to weaken the whole system.

Grading Spot-check **13**

0 = total score is 0 for all 3 areas
1 = total score is 1 or 2 'yes' responses for any of the 3 areas
2 = total score is 3 to 6 for any of the 3 areas
3 = total score is above 6 for any of the 3 areas

progressive

You have a written and functioning condition monitoring programme for the collections.

You have a written pest control programme in operation wherever objects are to be found.

MINIMUM STANDARDS

Here we are dealing with the gradual deterioration of the collection by natural phenomena: light, insects and moisture. The spot-checks will show you any damage done to your collection by each of these agents. Much of the collection may have been damaged in the past but you are interested in preventing damage now and in the future, so we shall limit our search to discovery of deterioration that is active at the moment of inspection. If you have any ideas for improvements as you work through the checks, write them down for reference when you do the Improvement part of this topic.

KEY DANGERS:

fading and mould disfigure objects, cracks and distortions deform and weaken them, efflorescence and corrosion erode surfaces, insects and rodents eat and dirty objects.

Fading

means any colour change caused by the ultraviolet element of any type of light. It appears as a yellowing of white materials or a loss of intensity in other hues. An object does not recover from fading and the effect is cumulative. There is no point beyond which an object will not fade any more because fading is the visible sign of photo-degeneration of the molecular structure of the object; this is why some badly faded areas eventually become holes.

Mould

is the same thing as mildew. Moulds are living organisms of which the spores (seeds) are in the air everywhere. These spores will only start to grow when there is enough moisture in the air and on the surface where they land. They prefer places where there is very little air movement or light. They will only go on growing if that surface is coated with or contains organic material on which the mould can feed and only so long as the high moisture levels are maintained. You may be alerted to its presence by its 'mouldy' smell. Its appearance varies from the light brown and grey or black markings found on paper to the thick, furry, blue and white layers on very old bread or rotten fruit. It feels soft and does not detach from the object when you touch it. The most susceptible objects in museums are often cooking vessels, food containers and leather such as boots or animal harness. Mould only consumes a very small amount of the object to keep itself alive but it is almost impossible to remove. Though it shrinks and can be brushed off when dry, the root system remains in the object as a stain.

Cracks and distortion

can indicate an atmosphere that is too dry. New cracks or splits in wood and/or tightly stretched skins look clean along the edges. This happens suddenly and sometimes you can even hear the crack as the material breaks. Paper and leaves shrink and curl as they dry out. Surface coatings can be detached by the movement. The effect is partly reversible in paper if it is put in a damper place but any surface coating may be even more badly damaged.

Salt efflorescence

happens when salts absorbed by an object in use or during burial are activated by moisture on the object's surface or sustained high levels of moisture in the air surrounding it.

It appears, when the moisture level drops again, as a white powder on the surface and can grow into a small forest of long, brittle crystals which fall off when you touch them. Salt efflorescence pushes off small pieces of the object's surface, causes glazes to flake off and can eventually reduce soft wares to powder. Look for it in archaeological material, especially pottery and porous stone.

Corrosion

is a process that can produce stable coatings such as the black tarnish of silver, the dull brown of unpolished copper, the well-known dark green patina of bronze and the dark, reddish brown of rusted iron (even when it looks as if it is laminating).

Corrosion becomes active when there is a lot of moisture in contact with the object's surface. The moisture can come from water spillage, condensation on the cool metal surface or very humid air surrounding the object.

Active corrosion mainly concerns copper and iron and their alloys. On iron it is bright orange and may have glass-like brown bubbles on the surface. On bronze it is pale green and powdery and appears as isolated spots known as 'bronze disease.'

Infestation

refers here to colonization by insects such as wood-boring beetles and clothes moths or by rats and mice.

EVIDENCE	PROBABLE CAUSE	SUSCEPTIBLE MATERIALS
Fading or colour change	too much light	dyed textiles and fabrics, watercolour paintings, feathers, photographs
Active corrosion, mould growth	too much moisture	archaeological bronze and iron, food containers (especially wooden ones), leather bags, animal harness
Salt efflorescence, lamination of multi-layer surfaces	wide variations in moisture	archaeological pots and stone, marquetry or inlaid wood, ivory
Cracks and distortion	too little moisture	fine basketry, drum skins, works on paper, newly carved wood
Holes, wood-dust, excreta	insects and rodents	wool and fur, furniture, sculpture and tools made of wood, basketry

Once inside the building, these pests use the collection as living quarters, cutting it up to suit themselves, eating the bits they like and leaving it dirty.
Unexpected holes in objects sometimes indicate infestation. To know whether the pest is active at the moment, look for new marks of claws or teeth, little piles of clean wood dust, loose or fallen fur or pieces of wool cloth, live or dead insects, maggots, spots or pellets of excreta and urine stains.

To help you look for the evidence of these dangers, identify some objects most likely to be affected and produce symptoms (these will be your indicators). In order to do this, study the above list of susceptible materials and underline the ones you have in the collection. Find out where they are in the museum and choose the locations most likely to be affected by the relevant probable cause for your spot-check sites.

SPOT-CHECKS

14 *Light Damage*

Look for 10 places in storage and 10 in display where photographs, dyed textile or painted paper objects are near a light source (e.g., within 2 metres of a window or fluorescent lamp). Compare the under side or covered area with the upper, exposed side. List your findings on a copy of Discovery Table 14.

GRADING THE RESULTS OF SPOT-CHECK

Use the following scale to grade your results and also record all grades on the Discovery Chart at the end of this booklet.

Grading Spot-check **14**

0 = There are no coloured objects within 2 metres of any source of light anywhere in the buildings
1 = There are objects within 2 metres of a light source but you noted no visual difference between the top and under sides
2 = You noticed colour change on between 1 and 5 objects
3 = More than 5 of your samples show colour change

15 *Damage from high and low Moisture*

Using the table above, choose a total of 30 vulnerable objects in the museum displays and stores (wood, leather, paper, iron, copper, excavated pottery, stone, etc.). Bias your choice a little in favour of positions known to be damp (near outside walls and in cellars) and places that could have variable conditions (on open display, near heaters or windows that get full sun). Check for traces of live mould, active corrosion and salt efflorescence and record your findings on a copy of Discovery Table 15.

Grading Spot-check **15**

0 = you found no evidence of mould, corrosion or salt efflorescence, either active or inactive
1 = you found evidence of mould, corrosion or salts that are not active at present
2 = there is a total of 1 to 10 objects with active mould growth, active corrosion or efflorescence
3 = more than 10 of your samples are actively affected at the time of the check

16 *Pest Damage*

Using the table above, choose a total of 30 objects susceptible to insect attack (wooden objects, wool, feather, skin or fur objects, etc.) in the museum storage or display.
Look closely at the objects and their surroundings for traces of insect and/or rodent attack. From the information given above and in the table, judge whether it is active or not. Use a copy of Discovery Table 16 to record findings and also map locations of infestations on a plan of the museum. Add the totals from the active infestation columns together for an overall result to grade. NB: When traces of active insect attack are seen, immediately isolate the suspect object (seal in a polythene bag) and confirm the identification of the insect with a reliable entomologist.

Grading Spot-check **16**

0 = no evidence of infestation, active or inactive
1 = evidence of previous attack, no longer active
2 = up to 2 instances of probable active infestation
3 = widespread, probably active infestation or 1 or more definitely active infestations

Review of the discovery process

The chart below is extremely useful in two ways: it very quickly gives an idea of how your work is progressing and, when complete, it provides a tool for deciding what is doing the most damage to your collections.

As you finish each spot-check, turn to this chart and colour in the appropriate column to the right height for the grade you have allocated yourself (from 0 to 3).

What does the Chart show to be the most urgent problems for your museum? List them below:

1 _____

2 _____

3 _____

This is as far as you can go alone. Preventive conservation becomes a team job from now on and your information should be made public. Use this chart and your list of problems for discussion with your director. Together, you should present your initial findings to all those who work for the museum as a picture of your situation today. Everyone will then be able to understand the need for more specific analysis of the most urgent problems. You may even have offers of help with the Focus section. With the data that this brings you can begin to understand, as a team, how to allocate whatever budget is available, identify places where temporary help might be useful and what projects need to be better developed before you can look for private or corporate funding. Together you can lay out a plan for continually improving preventive conservation of all the objects in your care.

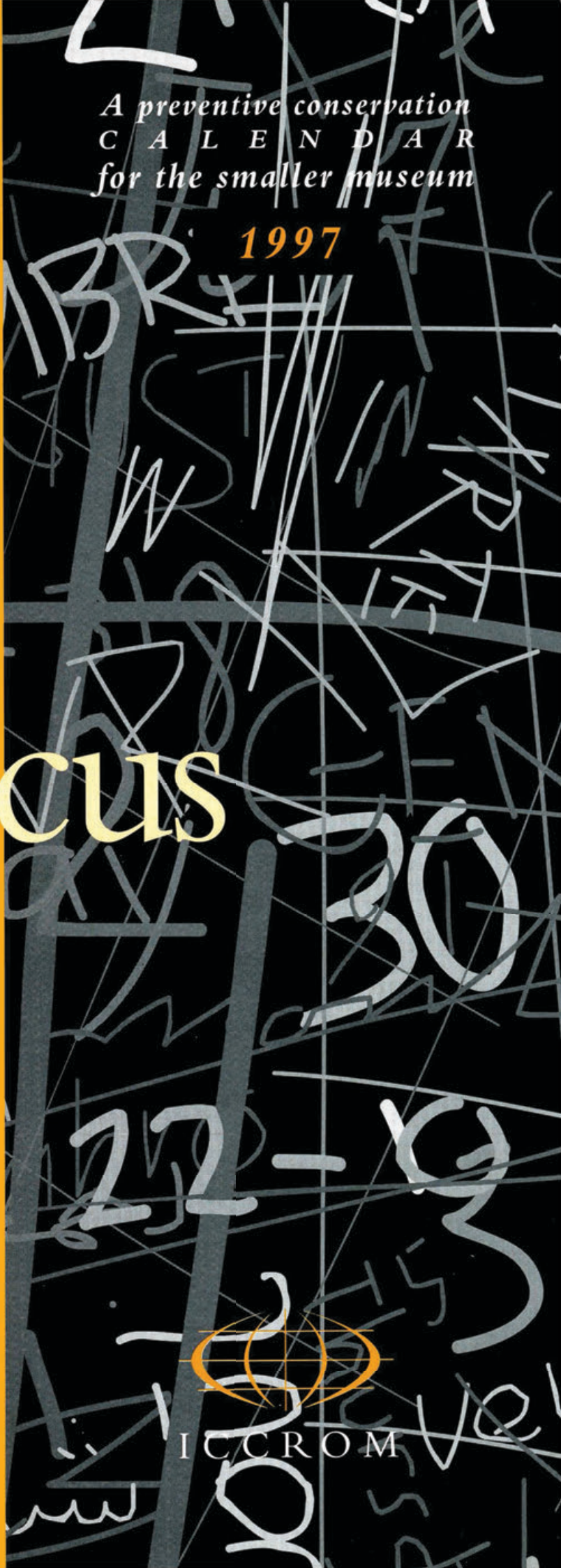
The results of the spot-checks have shown whether you have problems, and the completed Discovery Chart will have told you which ones are most acute. What you do not know yet is the size of any of them. This section will help you to translate problems into figures that will allow your museum to make appropriate decisions for improvement. In all cases the aim is to verify the truth of your own situation before you rush off to change things.

Discuss the Discovery Chart and all the problems on your

Focus

A preventive conservation
C A L E N D A R
for the smaller museum

1997



ICCROM

Survey your building as if you were a thief or a vandal.

AMBROSE & PAINE Museum Basics

Ideally, preventive conservation should be able to identify and quantify all risks to a collection...

R. WALLER Conservation risk assessment

The results of the spot-checks have shown whether you have problems, and the completed Discovery Chart will have told you which ones are most acute. What you do not know yet is the size of any of them. This section will help you to translate problems into figures that will allow your museum to make appropriate decisions for improvement. In all cases the aim is to verify the truth of your own situation before you rush off to change things.

Discuss the Discovery Chart and all the problems on your list with the director (see sample agenda for this meeting below). Select no more than two problems to focus on. List them now at the top of the chart called "Planning the Focus Process", next page.

To get the evidence you want, you need to expand the information obtained during the Discovery activities (spot-checks). This means carrying out an analysis or a wider survey or a longer programme of information-gathering (monitoring) on a larger sample (representative sample) of vulnerable objects. In this booklet, there are suggestions for the most appropriate focus activities for each of the topics, related to each of the spot-checks.

Focus

Choose a programme that is appropriate to the problems you have agreed on with the director. Refer to the related spot-checks and use them as a guide to list materials needed for the focus investigations and to estimate how long they will take. Because there are more objects involved and larger areas of the museum, spot-check time multiplied by five or six might be about right. Work out a basic time-plan using the chart here. Arrange progress meetings with the director. Note proposed planning in the calendar.

PLANNING THE FOCUS PROCESS

NOTE THE PROBLEMS THAT YOU AND THE DIRECTOR HAVE AGREED SHOULD BE INVESTIGATED THROUGH THE FOCUS SECTION OF THE CALENDAR

1 .....

2 .....

TIME-PLANNING

Use the following table to plan your programme and to keep track of your progress through the year. Write the topic name and the number or title of each Focus activity involved in the appropriate space. Complete the Duration column with your proposed start and finish dates, e.g., mid-February to end April. Report your plan in the Calendar, where appropriate. As you go ahead with the work, check it off in the last column and congratulate yourself!

Topic & related analysis, survey or monitoring programme to be carried out	**Duration**: from - to	**Complete**

Deciding on a representative sample:

The size of a representative sample does not have to be in any particular proportion to the total number of objects in the collection or even the total number of items that might be susceptible to the problem you are surveying. But 200 is probably the smallest workable number that will give useful results. If your total number of susceptible objects is close to or lower than 200, then do a full survey including them all.

Locate 200 items of a type you expect to be susceptible to the problem in hand. It may be possible to do this from the register or index. Or you may have to walk round with a floor plan and mark places where you can see such objects, noting approximate numbers at each location. When you select your 200 examples, keep the numbers chosen in proportion to the total number of susceptible items in each location, e.g., if you choose 5 from a group of 50 objects then take 30 from a group of 300, and so on until the total number chosen is 200.

Analysis
(why something is happening):

If your spot-check results were graded 0, take some time to work out why. It will help to find out what you are doing right! This is very valuable information which you may be able to use elsewhere. Analysis is also appropriate if the results were not good and the spot-check was examining the quality of an activity. Focus your attention on the activity next time, just as you normally do it. Identify the separate parts of the activity and note, as you carry it out, whether what you are doing is bad for the objects or not. (It helps if you can imagine that you are the object.)

Survey
(how widespread something is):

There are two types of survey. One is a building survey which maps problems on a plan of the building. The other is item based, and counts the occurrences of a particular problem throughout the museum. Examination of the whole collection is not what we are suggesting here but a survey with a sample size that will allow decisions to be made about simple, immediate improvements and long-term projects. Develop your survey using a representative sample of 200 objects following the guidelines given. It is perfectly legitimate to use your intuition in sampling - so long as you recognize the fact. So choose for your survey those parts about which you are uneasy. (Write down your reasons; this information may be useful later.) Plan your choices before you start, spreading them through your chosen areas as evenly as possible - and always stay with the plan; resist the temptation to bend the rules. Record your results immediately.

Monitoring programme
(when or how often something happens):

Any monitoring programme must run for one full year and produce at least four sets of results before useful conclusions can be drawn. Repeating appropriate spot-checks regularly may be enough to make up a monitoring programme. Frequency and timing of the programmes will vary. Once a year may be often enough for something like checking for broken locks, but if a danger is continuous or variable, e.g., active corrosion or infestation, then increase the frequency during any period of high risk. The more times you fill in the table of results, the more reliable your information will be, so the importance of monitoring increases with time. (If you find drawing graphs easy then use this method of presenting your data. The more points the better for seeing trends.)

IMPORTANT

What if your spot-checks were graded 0 ?

If the spot-check results indicate no problems and you can spare the time, repeat the spot-check once or twice more during the year. For some of them (cleanliness, high and low humidity risks, pests, etc.) it might be useful to plan to repeat them after a change of season or a special event in the museum.

If you are sure that the spot-check results truly indicate no problems, then you have a well-controlled system. Congratulations! Take some time to work out why. Look at how things are done and write down your procedure simply in two columns one headed 'Action' or 'This is done' and the other 'Guidelines' or 'Why it is done.'

What if the Focus activities proposed below do not fit your situation exactly?

Then, you will need to design your own analysis, surveys or monitoring programmes, using the examples here as a pattern. Whether you do a survey or a monitoring programme, record your information every time using copies of the sample tables provided. If you design your own record charts, keep them simple so that the results can still be judged by the number of instances found.

STANDARD AGENDA

AGENDA FOR MEETING WITH THE DIRECTOR

This agenda will be the same for every meeting. The order of subjects may change and times for each one should be thought about and agreed at the start of the meeting.

1 Agree time available, agree agenda to fit the time.
2 Review aims of preventive conservation calendar; this will be a useful reminder for both of you at least at every second or third meeting.
3 Briefly state topic(s) in hand: title in calendar, where you want to / are using it in the museum.
4 Share all results (bring any tables or plans showing data), name others who have been helpful.
5 List and discuss any difficulties you are having. If there are none, be happy to say so.
6 Say what you need to do next, discuss how it may or may not fit with what is going on in the museum as a whole, agree any modifications, e.g., timing, locations to use. Agree ways the director might help, such as providing copies of floor plan or authorizing use of fax.
7 Agree date of next meeting.
8 Send a copy of VERY SIMPLE MINUTES, list of topics discussed and list of actions agreed for both of you, including date of next meeting.

documentation

MINIMUM STANDARDS

There is a comprehensive system of location codes for all museum areas and all storage and display furniture.

You have an index, all in one place and up to date, e.g., to the last calendar year.

All objects are individually numbered as listed, and can be located easily from the index.

Objects that are not yet registered can be easily located.

If documentation and object location systems are areas you have decided to focus on, the most appropriate way to confirm the results of your spot-checks or expand your information is by survey, a separate one for each problem. Review your original results. They may have suggested some reasons why everything is not perfect: index card missing, no location code, object not numbered, movement not recorded, objects in the wrong place (or even lost). What interests you now is the spread of the problem, how bad it is and whether it is worse in some areas than others.

NB: all numbers of the following FOCUS ACTIVITIES refer to original spot-checks in Discovery section

Once you have completed all the Documentation Focus Activities below, report your main findings in the DOCUMENTATION FOCUS DATA SHEET at the end of this booklet

FOCUS ACTIVITIES

1 *Location Codes*

Survey: Continue work on the floor plan used in the original spot-check to note all areas and locations where a location code is missing or inadequate. Depending on the size of the museum, this can be done: a) as a simple extension of the spot-check to all the other areas where objects are stored or displayed; or b) developing the check of the original 3 areas to cover every location in them. Record your findings on a copy of Focus Table 1.

2 *Index/Register*

Survey: Repeat spot-check 2 for a representative sample of objects. Use the guidelines at the beginning of this booklet. In order to identify your representative sample, you may realize that some of the register or index you have been using is not very reliable (entries between certain dates for example). Choose for your survey those parts about which you are uneasy and write down your reasons. Spread out your choices through the chosen areas as evenly as possible, e.g., every 10th entry, planning before you start - and do not change the plan. Record your results on a copy of Focus Table 2.

3 *Object Numbers*

Survey: Using the floor plan marked for spot-check 3, increase your inspection up to 200 objects. If the total number of objects in these areas is nearly 200, you may decide to check every object. Repeat the check working from the objects to the index, on this larger scale. (If there are other unchecked areas it is better to repeat the original check there before going on to a more thorough survey). Spread out your choices through your chosen areas as evenly as possible, e.g., every 20th object, planning before you start - and stay with your plan.
Record your results on a copy of Focus Table 3.

keeping

MANNER IN WHICH OBJECTS ARE KEPT

MINIMUM STANDARDS

'Object friendly' furniture and supports are the rule.

There is a regular cleaning regime of all areas where there are objects.

Overcrowding is not damaging the objects.

No objects obstruct access.

If you decide that there are problems (for example, if spot-checks 5 and 6 have shown damage from overcrowding which made you want to rearrange everything), take time to survey a larger sample before proposing any changes. The next step is to find out how bad the worst problem is throughout the museum. How many showcases are unstable to the point of damaging objects? How many storage units are critically overcrowded? These will require surveys, whereas defining the causes of inadequate cleaning is best done with a monitoring programme. Once you have completed all the Focus Activities below, report your main findings in the related FOCUS DATA SHEET at the end of this booklet.

NB: all numbers of the following FOCUS ACTIVITIES refer to original spot-checks in Discovery section)

FOCUS ACTIVITIES

4 *Supports*

Survey: Using the comprehensive list developed during spot-check 4, walk round the museum and count how many of each type there are. Record this information on a copy of Focus Table 4 and map the supports on a floor plan of the museum. Choose a representative sample of 200 of your museum's supports. Use the guidelines at the beginning of this section. Depending on the problems you have, you may decide to concentrate on supports of one type, all in the same area or made of the same material. There is no point surveying metal units if insect infestation is your major problem. Repeat spot-check 4 on all 200 supports. Record your findings on more copies of Discovery Table 4.

Monitoring programme: If your result was 0 and was still 0 when you had completed survey 4 on all supports, you are safe for now. But repeat the full check once a year regardless of your first result. Record your findings in the same way every time. By comparing year by year you can see how ageing affects each type of support and will be able to replace weak supports before they become a threat to the objects.

5 *Cleanliness*

Monitoring programme: Write a schedule of 'dirty' activities for the next year (exhibition opening, loan preparation, repairs or building works). Take the floor plan you used for spot-check 5 and walk round the museum, noting all the worst areas for dirt. From these two sets of information prepare your monitoring plan. Select six of the worst areas. Mark in the calendar at least 5 dates fairly evenly spaced throughout the year on which to walk round. Choose different days of the week. On the first tour leave a marker in the worst places - run your finger through the dust or write the date on squares of clean card and leave them on top. On your next visit you will easily see how much more dust and dirt has accumulated, and eventually you will be able to tell where and when it is heaviest. This part of the check can be made more scientific by sticking double-sided adhesive tape to the cards and weighing them before and after dust has settled. Record your findings on a copy of Focus Table 5.

6 *Overcrowding*

Survey: The purpose is to quantify the overcrowding on shelves and inappropriate use of the floor, as in Discovery spot-check 6. Using floor plans of the museum (room by room if necessary), walk round all storage areas and mark every overcrowded unit and all points where collections have accumulated between units or in other circulation areas. From this information work out a representative sample of overcrowded situations. Choose 200 objects from these areas. Remember to keep the number chosen from each area in proportion to the total (or estimated total) number of objects housed there. Survey the areas, recording where: a) the space between objects for handling purposes is less than 1/3 of the greatest width of the object; b) objects are less than 10 cm above the floor; c) objects are stacked on top of each other. Record your results on a copy of Focus Table 6.

movement

FREQUENCY AND QUALITY OF MOVEMENT

MINIMUM STANDARDS

Movement only when agreed to be absolutely necessary.

A defined 'best practice' used for all movement.

If you decide that there are problems with object handling and movement within the museum, you can develop a monitoring programme around a specific process such as accession or photography, survey the effects of movement on the collection or map all the obstructions to safe movement throughout the complex.

Once you have completed the Focus activities below, report your main findings in the related FOCUS DATA SHEET at the end of this booklet.

NB: all numbers of the following FOCUS ACTIVITIES refer to original spot-checks in Discovery section

FOCUS ACTIVITIES

7 *Events involving objects*

Surveys (most popular objects): To be able to back up any statement you make about the damage movement can do, carry out a small condition survey. Discover the most popular objects (those most often requested for loan, used for school visits, most frequently researched). Go as far back as you can in the available records as well as using people's memories. Use sample Focus Table 7.1.1 as a guide for your record. Then choose 20 vulnerable objects from the favourites listed, which you think have been moved most often and for which you have an illustration in the accession record, an old photograph, sketch or reliable personal memories. Compare their condition then and now. Using sample Focus Table 7.1.2 for guidance, note any changes. (If you can photograph them now it will make a useful reference point for future condition surveys.)

Monitoring programmes (major events): Choose one of the major events noted in spot-check 7 to follow closely. It will be very useful if you can be part of the team directly involved in it. The aim here is to discover the times of most movement for objects and the people who should have training in handling. Fill out a copy of sample Focus Table 7.2.1. Check it against your original record of collections and the staff involved. Choose 4 objects to track through the event from beginning to end, noting every move. Tie a large coloured paper label on each selected object. Explain what you are doing and ask anyone who moves a labelled object (even if only from one side of the table to the other) to record that move by ticking the label. Locate each of the objects once a week and note on the label yourself the date and where they are (if there has obviously been an unrecorded move, then you may add one tick to the label). This will help identify what process they are going through, e.g., cleaning or photography and so which processes produce the most movement. When a label fills up, record the number of tick marks on a copy of Focus Table 7.2.2 and replace it with another of the same colour. When you have quite a collection of labels you might report back to your helpers and encourage them to keep going. When the event is over, total the movements (tick marks) for each object and record them on a copy of Focus Table 7.2.2.

8 *Handling*

Analysis: Having guessed about the number of times you moved objects unnecessarily in spot-check 8, next month choose one day each week when you are working with objects and focus on: a) each time you move an object unnecessarily and the reason you did so (include those times when the movement of the object is indirectly your fault, e.g., you bumped into the table and the object rolled to one side); and b) each time you avoid moving an object unnecessarily and how you achieved this.

Record your findings on a copy of Discovery Table 8. If you have time, repeat this several times during the year to increase your own awareness.

9 *Handlers and equipment* (no focus activities)

10 *Object Routes*

Survey: Take the floorplan you used for spot-check 10 and survey all the paths objects take in the museum, marking them together with main obstructions and dangers. Record the number and type of obstruction or danger on a copy of Focus Table 10.

d r a m a t i c

You have a written disaster plan and a response team.

You have a written building maintenance programme.

If there are any problems indicated by the Discovery spot-checks, this section will extend the investigation for potential dangers and collections at risk to all areas of the museum. It will give you some useful maps and reliable data linking water pipes, loose electrical wiring and other hazards to the most susceptible objects. It is aimed at answering questions like: How many objects are kept in risky areas? How many highly flammable objects are there in the collection? Are the most important objects safe? How well prepared is the museum to face disaster from a dramatic external influence like fire or cyclone?

Analysis of past events and surveys of the present state of the museum buildings will make you aware of the real risks in your situation.

Once you have completed the Focus activities below, report your main findings in the related FOCUS DATA SHEET at the end of this booklet.

NB: all numbers of the following FOCUS ACTIVITIES refer to original spot-checks in Discovery section

NATURAL HAZARDS ANALYSIS

The first step towards understanding dramatic external influences is to consider all possible large-scale natural hazards that could cause damage in your region - such things as earthquake, flood, cyclone, civil war. Find out the year (or years) in which they occurred and whether the museum or its current site were affected by any of them. For each type, note occurrences over the last 50-100 years. Collect all available information as to the year, effect (if any) on the museum and its collection, and what measures were taken during and after the event. Keep this information for reference.

While some of these hazards are beyond our control, the impact of others (flooding, fire or theft) on the museum can be directly related to or even caused by the vulnerability of the museum building itself. The following Focus activities will look at both aspects.

11 *Flooding*

Analysis: Discover how many major and minor instances of flooding there have been in the last 10 years. Go as far back as you can in the available records, as well as using people's memories. Use a copy of Focus Table 11 for your record.

Survey: if your initial spot-checks in 3 areas did not include every store, exhibition hall, and workshop, repeat them to survey the whole museum. Use more copies of spotcheck table 11 to record your findings. Map them on the floor plan you used for the spot-check.

Monitoring programme: To keep up a continuing awareness of your risks of flood, repeat spot-check 11 once every six months, filling out a new copy of the spot-check table. But take the table completed during the former visit with you to check what has been mended and what has gotten worse.

12 *Fire Hazards*

Analysis: proceed as for flooding analysis; use a copy of Focus Table 12 for your record.

Survey: Proceed as for flooding survey. Office areas can provide sources of fire which can spread to the collection areas, so include them in the relevant checks this time. Use more copies of Discovery Table 12 to record your findings. Map them on the floor plan you used in the spot-check.

Monitoring programme: Proceed as for flood monitoring.

13 *Theft Risk*

Analysis: Proceed as for flooding analysis; use a copy of Focus Table 13 for your record.

Survey: Proceed as for flooding survey. Office areas can provide entries for thieves who can have access to the collection areas, so include them in the relevant checks this time. Use more copies of Discovery Table 13 to record your findings.

Monitoring programme: Proceed as for flood monitoring.

progressive

You have a written and functioning condition monitoring programme for the collections.

You have a written pest control programme in operation wherever objects are to be found.

If you decide that there are problems in this area, surveys will help you find out their extent and provide relevant figures on how many objects are affected. A monitoring programme will keep this knowledge up to date. Comparing this year's results with previous ones will help you begin to know where the serious, ongoing problems are. Once you have completed the Focus activities below, report your main findings in the related FOCUS DATA SHEET at the end of this booklet.

NB: all numbers of the following FOCUS ACTIVITIES refer to original spot-checks in Discovery section.

FOCUS ACTIVITIES

14 *Light Damage*

Survey (light sources): In all areas where there are objects, note on a plan of the museum (1) any windows on which there is no way to cut the light, (2) all fluorescent lamps; check for those which have no means of reducing the ultraviolet content of the light. (Some tubes may already be of a low UV type, others may have a plastic filter sheet wrapped closely around the tube). List your findings on a copy of Focus Table 14.

Monitoring programme (light sources): Repeat the above survey every 6 months. Always take the previous survey documentation with you so that you can confirm what has gotten worse and whether any repairs have been done.

15 *Damage from high and low moisture*

Survey (moisture-susceptible objects): The best way to confirm the scale and distribution of active mould, corrosion and efflorescence is to carry out a larger scale survey. Choose your representative sample of 200 objects including some of those already known to be affected and selecting others from areas radiating around those objects as long as the materials and types of object remain the same (i.e., leather, wood, cellulose materials, archaeological iron, bronze, ceramic or stone). Include similar material in other similar areas that you may suspect. Remember to keep the number of objects chosen in ratio to the sizes of the groups from which they are taken. Use copies of Discovery Table 15, and then record the total number of objects affected in each area on a copy of Focus Table 15.1.

Monitoring programme (susceptible objects): Repeat spot-check 15 each season when the climate changes or every 6 months if you have little seasonal variation. Use more copies of the original spot-check table to record your findings. A full year's records will tell you when the effect is worst. By comparing these results with those of the surveys above and below you may be able to link them to a specific point of entry for moisture.

Surveys (moisture sources): Walk round the buildings looking for potential points of entry for moisture. If this seems very difficult, take someone else with you and cross-check your findings. Check the inside and outside separately. Plot each piece of evidence found on a plan of the museum complex. Record your observations according to Focus Tables 15.2.1 and 15.2.2. Number the entries and afterwards compare the outside and inside evidence. Note in column 5 those which may be linked. Highlight them on the plan.

Monitoring programme (moisture sources): Repeat the above survey every 6 months. Always take the previous survey documentation with you so that you can confirm what has gotten worse and whether any repairs have been done.

16 *Pest Damage*

Survey: If your spot-check has revealed active insect infestation, you should do a survey to confirm the extent of the problem. Use a total of 200 susceptible objects and record your findings on copies of Discovery Table 16. Insects tend not to travel very far in search of food, so if neighbouring objects are of the same material, concentrate on the areas around the infested objects for your representative sample. If not, move to the nearest group of the same material. If using more than one group, keep the numbers sampled in proportion to the size of the source group. Map the surveyed areas and your findings on a floor plan. Record your results on a copy of Focus Table 16.

Monitoring programme: Because insect infestations may be more active at one time of year than another and different species hatch at different times, repeat spot-check 16 every 2 to 3 months. By recording your findings and comparing them over a whole year you may be able to discover when your collections are most in danger.

DOCUMENTATION
Total number of objects in museum
Total number of objects in accessions register or index
Number of objects in representative sample if other than 200
Number of objects not found
Number of objects not numbered
Number of locations with inadequate location code

MANNER IN WHICH COLLECTIONS ARE KEPT
Total number of supports
Number of supports surveyed
Most dangerous types
Main reasons, e.g., unstable, corroded

Total number of storage units
Number of units overcrowded
Types of collections concerned, e.g., mainly basketry and paper
Principal damage noted, e.g., deformation, chipping
Number of objects in circulation areas
Types of collection concerned
Principal damage noted

Total number of dirty places
Area of museum with greatest number of dirty places
Possible reason, e.g., exceptional or routine events, seasonal need not met
Types of collection kept there

FREQUENCY AND QUALITY OF MOVEMENT
Average number of moves made by tracked objects
Object that was moved most frequently .
Location or process where each object was moved most often

Most popular collection in museum
Most popular single object or set of objects
Most common type of damage noted
Object or set of objects with greatest evidence of damage

Total number of hazards on routes used to move objects
Most common type of hazard
Worst route for this hazard.

Total number of obstructions on routes used to move objects
Most common type of obstruction
Worst route for this obstruction

EXTERNAL INFLUENCES, DRAMATIC

Total number of burglaries attempted or successful in last 10 years..
Type of object or other item (e.g., money) most often involved .....
Number of thefts from display .....
Type of object most often involved .....
Number of incidences of vandalism .....
Type of object most often involved .....
Total number of fires, large and small in last 10 years ....
Most frequent cause reported .....
Total number of floods large and small in last 10 years ...
Most frequent cause reported .....
Total number of possible sources of flooding .....
Area with highest number of sources .....
Total number of possible sources of fire .....
Area with highest number of sources .....
Total number of possible points of entry for thieves.....
Area with highest number of points of entry .....

CUS DATA SHEETS FOCUS DATA

EXTERNAL INFLUENCES, PROGRESSIVE

Number of windows with limited or no means to cut the light
Area of museum worst affected
Type of collection housed there

Number of fluorescent lamps without UV filtering
Area of museum worst affected
Type of collection housed there

Total number of instances of active infestation
Most common type of infestation
Location of highest incidence of this type
Location of any higher incidence of another type

Total number of instances of active corrosion and mould growth
Location of collection worst affected

Total number of instances of salt efflorescence
Location of collection worst affected

Total number of places where there is evidence of possible entry of moisture
Number of confirmed locations (where outside and inside evidence match)
Area worst affected
Type of collection housed there
Most common cause of entry of moisture to museum
Areas affected
Areas where evidence of active mould, corrosion or salt efflorescence correspond to points of entry of moisture

SHEETS FOCUS DATA SHEETS FOC

You now know the scale of the problems in the collections and have an indication of the causes. These may be easy to set right by simple improvements or they may be complicated and require major changes.

A Simple Improvement is

Improvement

something you can start now without extra finance and complete alone or with one or two others, perhaps in a series of small steps. Anything affecting other people's jobs and/or requiring a budget you cannot supply is not a simple

A preventive conservation
C A L E N D A R
for the smaller museum

1997

ICCROM

One who

It takes two to

doesn't plan can only hope

speak the truth, –

for better luck

one to speak, and

next time.

another to hear.

P. NARDI

Planning as a Means

of Preventive Conservation

H.D. THOREAU

Improvement

You now know the scale of the problems in the collections and have an indication of the causes. These may be easy to set right by simple improvements or they may be complicated and require major changes.

A Simple Improvement is something you can start now without extra finance and complete alone or with one or two others, perhaps in a series of small steps. Anything affecting other people's jobs and/or requiring a budget you cannot supply is not a simple improvement and should be classified as a Major Project. These projects may well entail changes in practice, perhaps creation of policy, for the whole museum. Major projects are beyond the scope of this calendar. They cannot be undertaken without discussions with managers or the director, detailed reading on the subject in hand and probably further surveys. Perhaps specific training and the involvement of a lot of other people would be necessary.

In preparation for sorting out ideas for improvements, begin with those notes of good ideas that occurred during Discovery spot-checks and Focus activities and read the relevant information from the bibliography for more help.

Check yourself against the Minimum Standards for the Topic you are dealing with. Does the way your museum works fulfil them? If not, then turn your mind to those targets. If the museum does come up to these standards then improve on them - they are only minimum standards.

PRIORITIZATION

Now it is time to produce and classify as many suggestions for improvement as can be found. If other people have been interested in what you are doing, get them together and do this part as a group (it will pay dividends later).

The work below will take some time, a lot of concentration and several large sheets of paper (or a blackboard). You start by examining the results of your Focus activities and prioritizing them for action. Then go on to imagine your solutions to the worst problem and prioritize those approaches. Like this:

1 Which of your results indicates the greatest danger to the collection in the short term? List these with the worst at the top.

2 Next, identify anything that is affecting the more valuable objects. Move these to the top of the list, maintaining the order within this group and within the remainder.

3 Now take the worst effect on the most valuable objects and list all solutions to the problem any of you can think of - from the stupidly simple to the most fantastic hope.

4 Divide all the ideas under two headings: 'Things I can do entirely alone' and 'Things that will involve other people.'

5 Rearrange both these idea lists according to expense, starting with things that will need least money to do.

6 Finally, separate the simple ideas from the complex ones.

Write them in their proper place on the sheets that follow for the appropriate one of the four topics: State of Documentation, Manner of Keeping, Frequency and Quality of Movement and Dramatic or Progressive External Influences. You will then be ready to begin making improvements, starting with the simplest and cheapest that you can do alone or with one colleague. You will also have ideas for simple improvements that could be done by the museum as a team and possible Major Projects with good back-up information to put forward for consideration in the next budget.

❑ You may tackle more than one problem, but remember it is the implementation of the improvements that counts, NOT the number of written recommendations you make. If you think you really can undertake more than one, then repeat the prioritization procedure starting with a list of the results that indicate the greatest danger to the collections in the long term. Keep the rest of your results to prioritize for future management plans. Review the situation annually and update your results and priorities; look for better ways and plan long-term, simple actions. Go on improving. See the sample five-year plan below.

IMPLEMENTATION

To help the Improvement processes get off to a good start, make sure that, for each one, you have:

- a clear picture of the possible effects on other museum staff or users of what you are proposing
- the director's approval and involvement if that is also possible
- contact with a mentor
- tolerance from colleagues who are not directly involved
- a cooperative team of helpers
- a strong plan for the activity

HOW DO YOU GET THESE?

A clear picture of possible effects on others: If your museum has more than about eight staff, it is wise to confirm just which jobs and people might be affected by what you are proposing.

The director's involvement: This does not mean s/he needs to be active in the project except in knowing what is the ultimate goal and who is involved. S/he should be encouraged and welcomed to visit the site or discuss progress with any of the team without formal meetings and to pass on his/her opinion openly to the rest of the staff.

Contact with a mentor: A mentor is someone to talk to for an objective view, an expert in some aspect of the problem in hand: an entomologist, builder, policeman, a wise friend or someone who has had similar problems in another museum or a member of a museums group in your area or country, or ICCROM if you need us. 'Talking' can also be done by phone, fax or even e-mail, though it is more pleasant face to face.

Tolerance from colleagues: The most important question to ask before starting any improvement activity is always, 'Will anyone else's work or use of the collection be affected by what I want to do?' Starting from a position of tolerance is the best you can hope for. It can be transformed into interest and support if you share information and do not invade other people's territory or threaten their superiority.

Cooperative team of helpers: Almost everyone you involved in the prioritization exercise should be willing and happy to get involved in implementing the chosen idea. You may not need them all and you may need others who have not yet been involved.

Strong plan for the activity: It is possible to spend too much time planning but it is still important to work out exactly how to achieve your goal. Identify all the steps necessary. Then think backwards from the final step, asking each time, 'What do I need to do, or have or know before I can start this?' Make a note of all the necessary equipment you identify and all the people you will need to involve at each step. Identify gaps in your knowledge or skill that might hold up the process and try to get advice or training for one of the team before you get to the point of need.

Draw up a time plan using these six elements: plan, prepare, implement, review, improve, complete and, most important, celebrate.

Plan: just what has been described above, thinking out each step and putting it on paper.

Prepare: getting equipment and stationery, training and data together.

Implement: start the first two or three steps.

Review: look at what has been done, check that it is still aimed at achieving what you wanted, see if anything new is needed or any better ways have been developed.

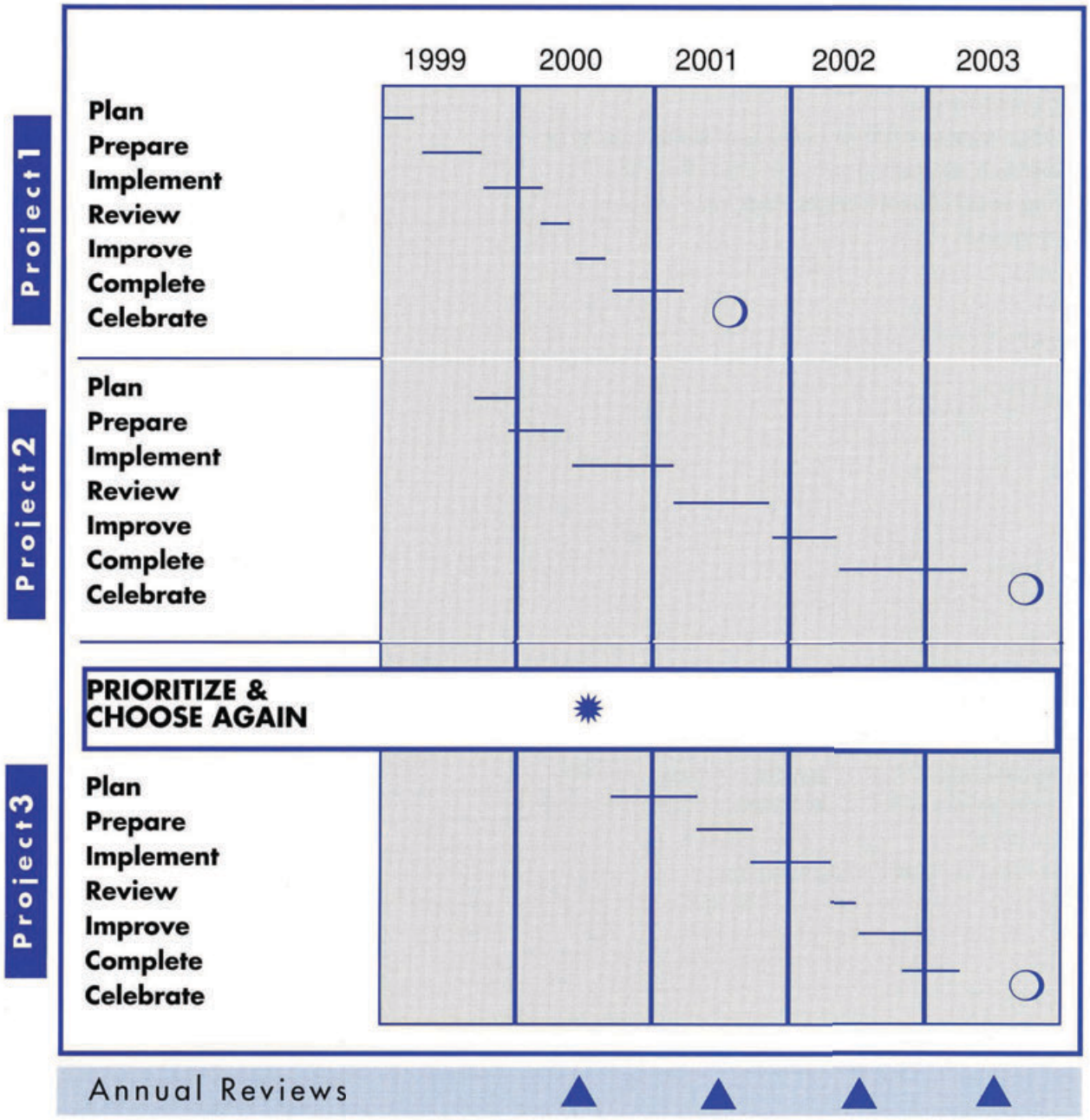
Improve: add any new and better ways of doing things and delete the old ones, modify times if necessary.

Complete: carry on with the remaining steps and have a final review.

Celebrate: it is very important to mark the occasion somehow - report your completion to the director or in the staff newsletter, show other staff how it worked, acknowledge your helpers.

*

Here is an example of what a five-year plan might look like drawn up this way.



MINIMUM STANDARDS

documentation

There is a comprehensive system of location codes for all museum areas and all storage and display furniture.

You have an index, all in one place and up to date, e.g., to the last calendar year.

All objects are individually numbered as listed, and can be located easily from the index.

Objects that are not yet registered can be easily located.

Add your own agreed Simple Improvements

SIMPLE IMPROVEMENTS

include things like:
- tying labels on un-numbered or unregistered objects as you find them;
- putting a contents list on outsides of storage units; or
- giving each un-named area a letter of the alphabet, starting with 'Z' and working back, as a temporary location code.

MAJOR PROJECTS

such as:
- getting rid of the backlog of unregistered objects;
- developing the present documentation system (more indexes, start a movements register); or
- computerizing the documentation systems.

keeping

MANNER IN WHICH OBJECTS ARE KEPT

MINIMUM STANDARDS

'Object friendly' furniture and supports are the rule.

There is a regular cleaning regime of all areas where there are objects.

Overcrowding is not damaging the objects.

No objects obstruct access.

and Major Projects to the suggestions below

SIMPLE IMPROVEMENTS

. include things like:
- putting a separator (sheet of clean paper or cloth) between stacked objects;
- discussions with colleagues to identify dirty areas that are not 'owned'; or
- isolating objects from infested supports

MAJOR PROJECTS

such as:
- rearranging the storage areas so that all the objects you would have had to move during spot-checks can be properly housed;
- developing a joint training programme on object awareness for museum cleaners and cleanliness awareness for all other staff; or
- campaigning for a new storage building.

MINIMUM STANDARDS

movement

FREQUENCY AND QUALITY OF MOVEMENT

Movement only when agreed to be absolutely necessary.

A defined 'best practice' used for all movement.

Add your own agreed Simple Improvements

SIMPLE IMPROVEMENTS

include things like:
- putting your hands in your pockets every time you go near objects.
- providing a carrying tray with raised edges and a softly padded cushion that fits inside it.
- voting each year for the best packer or handler in the museum, publishing his or her name.

MAJOR PROJECTS

such as:
- developing written guidelines on how to handle and move objects.
- organizing a training programme for the staff
- persuading the director to make one of the museum's written and published objectives that: "All unnecessary movement of objects will be eliminated. All necessary movements will be reduced to the fewest possible elements and each of these will be carried out with the least direct physical disturbance to the object." Then planning and carrying it out, recording progress over, say, the next 3 years so that you can share a celebration when movement has been cut by two thirds - and start selling your techniques to other museums;
- identifying suppliers and budgeting for a comprehensive list of equipment; or
- providing museum staff with a complete set of tools and equipment for handling and moving.

d r a m a t i c

You have a written disaster plan and a trained response team.

You have a written building maintenance programme.

MINIMUM STANDARDS

and Major Projects to the suggestions below

include things like:
- putting up NO SMOKING signs and providing a big ashtray outside the museum door.

SIMPLE IMPROVEMENTS

such as:
- checking the building for fire, security and flood risks with local fire fighters and police;
- creating a Disaster Response Team.
- campaigning for a new storage building.

MAJOR PROJECTS

MINIMUM STANDARDS

progressive

You have a written and functioning condition-monitoring programme for the collections.

You have a written pest control programme in operation wherever objects are to be found.

Add your own agreed Simple Improvements and Major Projects to the suggestions below

SIMPLE IMPROVEMENTS

include things like:
- painting window glass to cut light levels;
- providing a fan to move air around mouldy objects; or
- investing in a museum cat.

MAJOR PROJECTS

such as:
- reviewing the exhibitions policy;
- developing a simple, inexpensive climate control system which will be reliable in your geographic, technical and economic circumstances;
- setting up a quarantine room for all infested objects and all objects entering or re-entering the museum; or
- initiating a pest management plan.

NOTE YOUR PLANS FOR SIMPLE IMPROVEMENTS

For each improvement you wish to implement, mark your plans on a copy of the chart below

AIM OF IMPROVEMENT	
STEPS IN IMPROVEMENT	
PEOPLE TO CONTACT	
MATERIAL TO PREPARE	

Preventive Conservation in 7 points

1 Instead of thinking "**Object**" think "**Collection**"

2 Instead of thinking "**Room**" think "**Building**"

3 Instead of thinking "**Individual**" think "**Team**"

4 Instead of thinking "**Short term**" think "**Long term**"

5 Instead of thinking "**Professionals**" think "**Public**"

6 Instead of thinking "**Trade secrets**" think "**Communications**"

7 Instead of thinking "**How**" think "**Why**"

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