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Levels of collection care - a self-assessment checklist for UK museums
by Peter Winsor
ISBN 0 948630 62 0 price £6.00 - alternative formats are available

This publication melds the requirements of Registration phase II with the guidelines set out in the MGC series "Standards in the Museum Care of" and sets out three possible levels of achievement of these requirements. The levels are basic practice (required to achieve registration), good practice (achieved by the majority of museums) and best practice (the level to aspire to). The checklists at the back can be photocopied or are available in "alternative formats", presumably standard spread sheets on computer disc. The three levels of achievement are a useful development from the high levels of collection care set out in "Standards", offering a stepped route to achieve "Standards" level best practice via basic practice and a realistic good practice.

For institutions yet to go through Registration phase II, this publication would be a great help during the process of checking procedures and paperwork (the alternative formats would also save a lot of copy-typing.) It will be useful to consultants or in-house staff carrying out first time collection and conservation assessments, perhaps in preparation for a lottery bid. The Standards recommend an annual inspection of collections; this publication also offers a format for an annual in-house audit and review of procedures to enable museums to work towards best practice in all areas. This book would be a valuable addition to any UK conservator or collection manager's library and presents a useful methodology to adopt or adapt elsewhere in the world.

Although threatened performance indicators for UK museums have now been dropped, this publication sets out a far more rounded and comprehensive set of indicators and levels of achievement than the simplistic bums-on-seats indicators sent out for comment and now abandoned.

Papers presented at NSCG AGM 98
STORAGE
The Conservation Centre, National Museums and Galleries on Merseyside 14th May 1998

Environmental Control by Conservation Heating at Ipswich Museum

Ipswich Museums and Galleries has two main buildings, the High Street Museum (listed grade 2, built in 1881), and Christchurch Mansion (listed grade 1, built in 1550).

The High Street Museum, originally a purpose built museum, displays natural history, ethnography and archaeology.
The Mansion, (until a hundred years ago a family house), displays furniture paintings, costume and fine art.

Both buildings were originally designed to be heated by coal fires, but wet central heating systems were installed early this century causing very low relative humidities especially in winter. Relative humidity regularly dropped below 30 % for long periods at a time.

It was evident that the environment was causing damage to objects when splits appeared on recently restored mounted specimens, cracks appeared on painted panels, and veneer began to lift from furniture.
We asked for advice from the Energy Design Advisory Service, the MGC and from the Horniman Museum who have a similar problem, and we set about organising an environmental plan for both museum sites.

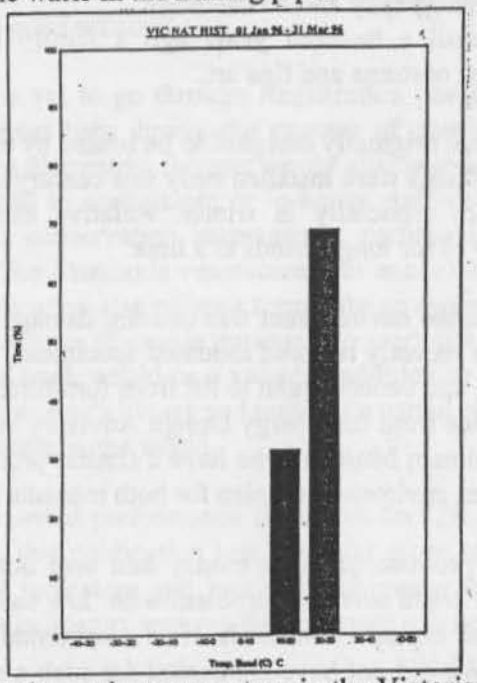
We received the promise of grant money and sent out tenders asking consultants if they could solve our problem with 'low tech' solutions. We did not wish to use expensive methods of environmental control such as air conditioning. We did not have the capital for such a solution and nor was it practical to duct conditioned air around two listed buildings.
We engaged Bob Hayes, environmental consultant to the National Trust. He advised us to use his method of Conservation Heating to raise relative humidity levels in our buildings.

Method 1: Conservation Heating by Lowering Temperature.

Conservation heating utilizes the existing heating system to improve the environment. This is done principally by lowering the temperature. The first thing we did was to make a plan of our heating system. In this way we were able to see where the pipework led, and under which exhibits or cases they ran. We were also able to see which galleries were over-heated and which under-heated.

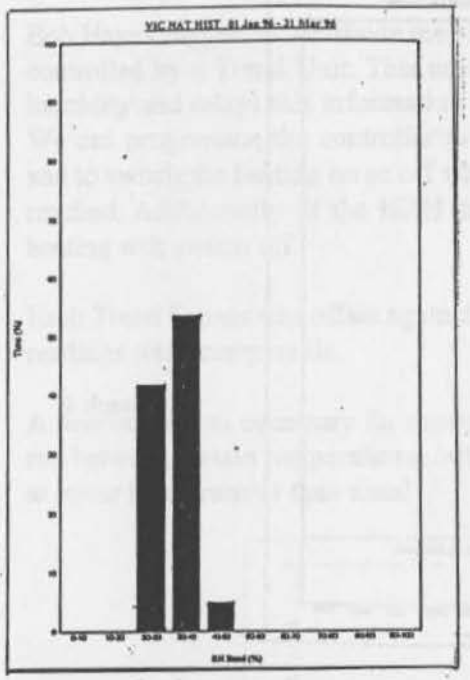
The museum galleries where most damage was occurring were those that were over-heated, and so we hopedlowering the temperature in these galleries would have a beneficial effect on the RH, but it would also have a "knock on effect" in the under-heated galleries.

We then conducted a number of experiments in which we lowered the flow temperature of the water in the heating pipes.

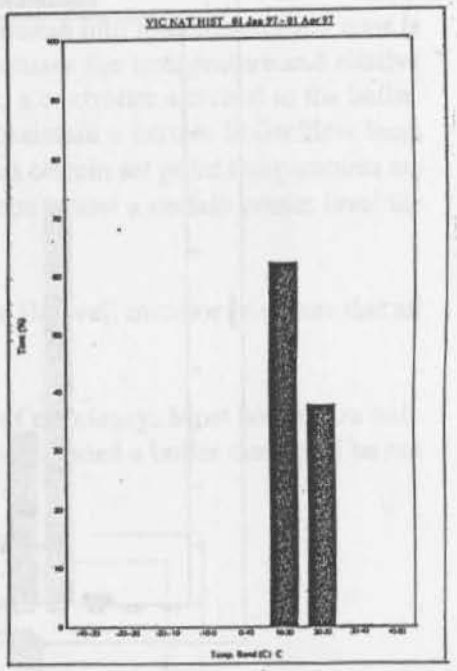


Graph 1

Graph 1 This shows the temperature in the Victorian Natural History Gallery from January to March 1996, before Conservation Heating began. The temperature is in the 20-30°C range for 70% of time. This is much too hot for the gallery and the specimens.



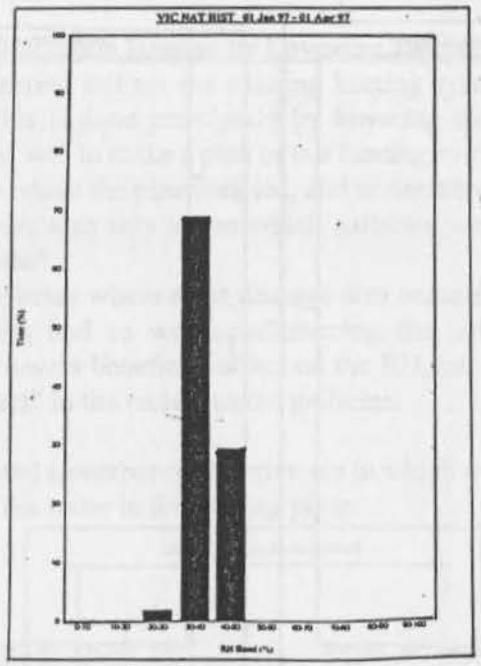
Graph 2



Graph 3

Graph 2 This shows the relative humidity in the Victorian Natural History Gallery from January to March 1996, before Conservation Heating began. As you can see the RH is in the acceptable 40 -50% range for only 5% of the time, and below 30%RH for 40% of time.

Graph 3 Here we see the temperature in the same gallery in 1997, when conservation heating was being used. Overall the temperature is lower, in the
20-30°C range for only 40% of time



Graph 4

Graph 4 Here we see the RH in the same gallery in 1997. The lower temperature has had the effect of increasing RH. It is now in the 40-50% range for 30% of the time, and below 30% for only 3% of the time. This is a considerable environmental improvement.

However, the under-heated galleries were cooler. The public, who usually keep their coats on, found little difference in temperature. School parties taking part in activities in the galleries usually took their coats off and so were cold. Gallery staff also complained. Temporary electrical heating had to be provided in these areas.

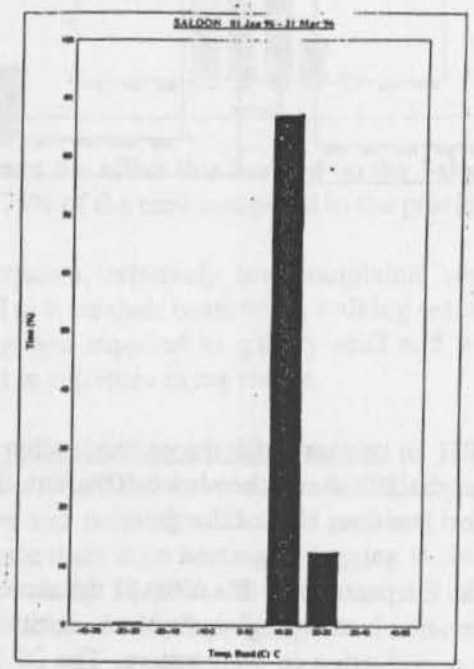
Method 2: Zoning with humidistat and temperature control.

More funding was available to make necessary changes to the heating at Christchurch Mansion to allow a conservation heating regime to be instituted in the 16th century building. In the past we had tried to increase the relative humidity by using humidifiers, but this was ineffective as we had too few humidifiers and filling them was a problem.

Bob Hayes suggested we divide the Mansion into four zones. Each zone is controlled by a Trend Unit. This unit senses the temperature and relative humidity and relays this information to a controller attached to the boiler. We can programme the controller to maintain a certain boiler/flow temp and to switch the heating on or off when certain set point temperatures are reached. Additionally if the %RH drops below a certain preset level the heating will switch off.

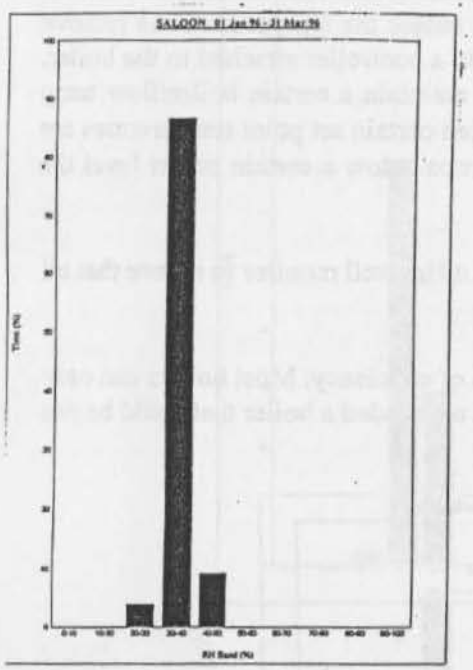
Each Trend Sensor was offset against a Hanwell monitor to ensure that all readings were comparable.

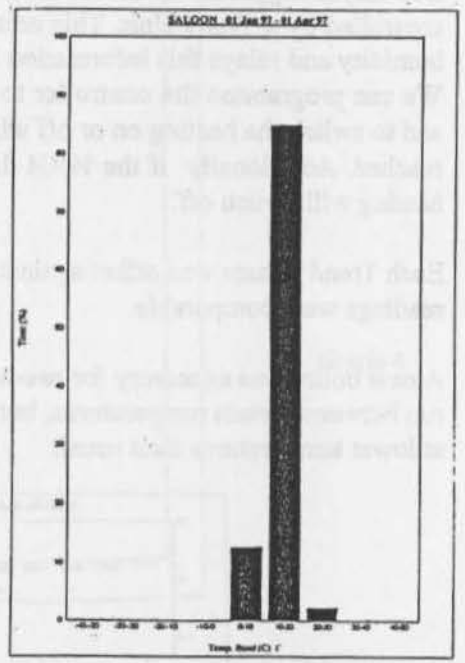
A new boiler was necessary for needs of efficiency. Most boilers can only run between certain temperatures, but we needed a boiler that could be run at lower temperatures than usual.



Graph 5

Graph 5 Shows the driest room in the Mansion, the Saloon, before the new conservation heating regime was instituted. The temperature in this room from January to March 1996 was 10-20°C for 87% of the time, and 20 - 30°C for 13% of the time.

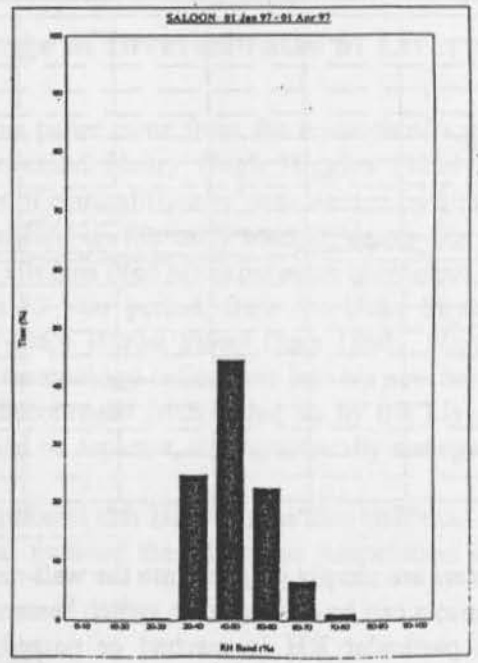




Graph 6 Graph 7

Graph 6 Shows RH in this room for the corresponding period of time. For organic material the RH should be above 40%, but as you can see it attained this level for less than 10% of the time.

Graph 7 Shows the temperature in this room in the same period in 1997 after the new conservation heating regime had been instituted. As you can see there has been a reduction in temperature. The 20-30°C range has been drastically cut, and a 0-10°C range has appeared, but these temperatures occur mostly at night.



Graph 8

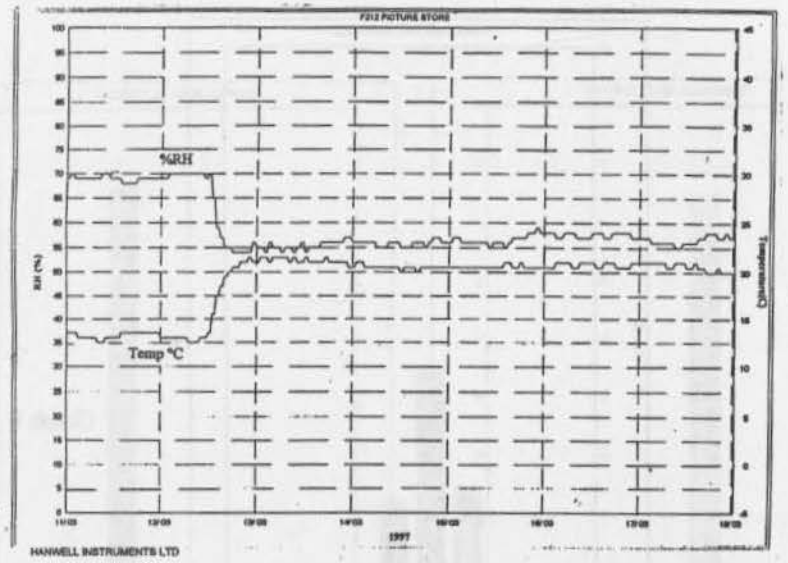
Graph 8 Shows the effect this has had on the Saloon. The RH is now above 40% for 75% of the time compared to the previous 10% figure.

As with the museum, relatively few complaints were heard from the public who tend to wear their coats when walking around the rooms. Extra portable heating was supplied to gallery staff and when school parties were taking part in activities in the rooms.

<u>**Method 3**: Humidistatically controlled heaters.</u>

The attics in the Mansion have stores containing organic materials, namely furniture and paintings. Here the problem is the opposite to the lower floors. Since their is no heating or lagging in these areas the RH is much too high usually 70-80%. Too high an RH can result in mould growth, insect attack and warping of organics.

We have lessened this problem considerably by fitting low voltage convector heaters attached to Hanwell Humidistats. The Hanwell Humidistats consist of a black relay box attached to a small wall mounted



Graph 9

sensor. The heaters are simply plugged into the wall-mounted relay boxes beneath. The sensors can be calibrated to switch heaters or humidifiers on or off when a particular RH is reached or passed. In our case the humidistats are calibrated to switch the heaters on when the RH passes above 60%
All stores are also monitored with Hanwell monitors.

Graph 9 This shows what happened in one of the Mansion attic stores when the heater and humidistat started to work. The heater immediately started warming the room and correspondingly lowered the RH to between 55% and 60 %.

We are not finished with improvements to the heating system yet. We are awaiting money to upgrade the heating system in the Museum and place humidistats and sensors in the gallery.
In the Mansion we are wiring each radiator with its own humidistat which will turn it on or off at its own individual set point.
Many problems still exist, principally the expectation of staff that all galleries should be as warm as their own living rooms. However the Conservation section is still on speaking terms with all the staff, and the environment in both buildings has definitely changed for the better.

Bob Entwistle and Jeanette Pearson.

Historic Storage of Invertebrates at Liverpool Museum

Information for this paper came from the research of a museum volunteer and collector, Reverend Henry Hugh Higgins (1814-1893). A paper entitled 'Museums of Natural History' was written by him in 1884 and this gave much information on the early natural history displays, particularly the invertebrates. Higgins used his experience in rehousing the invertebrate collections over a 12 year period, from the Duke Street premises to its present site in William Brown Street from 1860. Higgins was keen to incorporate the palaeontology collections into his new invertebrate storage/ display but was discouraged from doing so by the Liverpool Geological Society who insisted on separate, stratigraphically arranged displays.

It may also be mentioned that Higgins was also chairman of the Museum's sub-committee and founded the Museums Association late in his life in 1890.

Invertebrate Storage

The invertebrate collections seem to be stored in a 'storage on display' system quite typical of the time with drawers at the base and glass cases at the top. In the 'Animals without Bones' section there were approximately 20 table cases, each measuring five by ten feet. In total, the cases held drawers which accommodated 240 trays of specimens to display 1000 square feet. The cases were equipped with upright compartments and drawers measuring 27 by 16 inches. The drawers were arranged so that they could be lifted out if required for lectures, an indication, perhaps of just how vital it was to use the collections and that access was considered important.

Each drawer gave about three square feet of exhibition space. One third of each drawer was divided into three sections. The left side contained fossil representatives of the group, the central area contained a tablet of information relating to the objects in the drawer, and the right-hand side contained British examples. The remaining two-thirds of each drawer were used to display examples of foreign specimens. Higgins also mentions that this type of storage was not used for the microscopic or soft-bodied specimens.