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Title: Heating failure at Liverpool Museum

Author(s): Simkiss, W.

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Introduction

This is the fifth and sixth part of our series on the Ten Agents of Deterioration; the risks facing museum collections. The last edition of the newsletter did not include an insert such as this. This edition covers both 'Agents' Temperature and Relative humidity (RH) - hence this reference to 5 & 6 on the cover.

It was decided that we cover both topics in this issue as these agents' behaviour is often reflective upon one another.

For details of recommended standards of the relative humidity and temperature for the storage of natural history specimens see:

'2. Standards in the Museum Care of Collections of Biological Collections.1992' pp. 52,53 ISBN 0-948630-18-3

and,

'3. Standards in the Museum Care of Collections of Geological Collections.1993' p. 55 ISBN 0-948630-20-5

Both published by the Museums and Galleries Commission, U.K.

Donna Young

Heating Failure at Liverpool Museum

Between October and April each year, Liverpool Museum's building is dependent on heating supplied from Liverpool Central Library, the building next door. Although the museums and galleries were separated from the control of the city council in 1986, the heating system remains as part of the library system.

Generally, heating is only required in the winter months and prevents large fluctuations in the relative humidity of the storage areas. However, this year the summer had been exceptionally wet and cool so that by the time it was due to be switched on in October the relative humidity of the storage area was a little higher than normal. Unfortunately, this coincided with essential maintenance and repair work which the library needed to carry out on the heating system and it remained cut off for several weeks longer than normal. This, together with the cold, wet conditions experienced externally meant that the relative humidity began to increase rapidly peaking at 80%. Small monitors that are not particularly accurate but show when changes are occurring indicated that this may be causing problems in the storage area. As the relative humidity began to increase, and there were no indications as to when the heating would be back on, the Conservation division was contacted.

Some geological specimens are particularly vulnerable to high relative humidity and once it goes above 60% many of the commonest metal sulphides, such as pyrite and marcasite can be affected. These common minerals are found in a large number of rocks and fossils as well, which means that large areas of the geological collections can be affected and that providing microenvironments for every single specimen would be impractical. Unlike previous heating problems, where just one storage area was involved and the vulnerable material could be temporarily moved to a drier area, this time all areas were affected. Conservation arranged for six industrial scale dehumidifiers to be delivered to Liverpool Museum and these were hired from a local firm at a weekly rate.

The large number of dehumidifiers was needed because of the area occupied by the natural history collections. The storage area is a former gallery and is not compartmentalised. Staff had to empty water collected from the dehumidification process at regular intervals but initially there was so much from the air that one unit failed during the course of a weekend causing a small temporary flood.

The dehumidifiers operated for five days before the heating finally came on again. Relative humidity was monitored and the dehumidifiers were left running until 45% was reached. They were then switched off one by one. This was done gradually as it took time for the heating to be effective in such a large area and the relative humidity was monitored so fluctuations were minimal as control was switched from dehumidifiers to heating.

Wendy Simkiss
Assistant Curator, Earth Sciences
National Museums and Galleries on Merseyside