

Preventive Conservation Strategies for Protection of Organic Objects in Museums, Historic Buildings and Archives



MASTER

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Project partners: Norwegian Institute for Air Research, Norway, University College London, UK, Albert-Ludwigs Universität Freiburg, Germany, Technical University of Crete, Greece, National Museum in Krakow, Poland, Historic Royal Palaces, UK and Trøndelag Folk Museum, Norway.

Subcontractors: The National Trust, UK, The consulting and Support Centre for the Museums of Baden Württemberg, Germany and Wignacourt Collegiate Museum, Malta.

Assessing the Museum Environment

Aim of the project

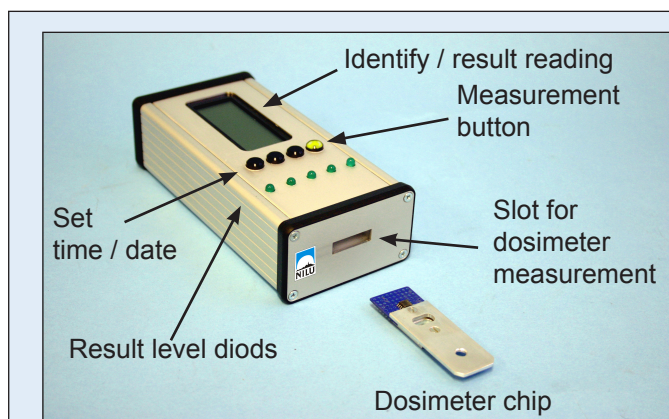
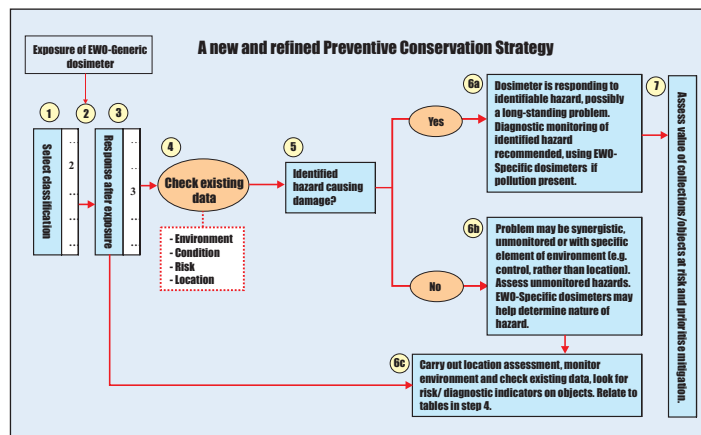
The MASTER project aims to provide conservator staff of museums, historic buildings and archives with a new preventive conservation strategy for the protection of cultural property, based on an early warning system assessing the environmental impact on organic objects such as fiber materials.

Early Warning Dosimeters

Two novel dosimeters (EWO-Generic dosimeter and EWO-Specific dosimeter) have been developed to assess the effects of the environment on organic objects.

The dosimeters are based on polymer and dye technology and the result of the exposure is measured as change in absorption of the dosimeter film from before to after its environmental exposure.

A major advantage of the new dosimeters is that the dose effect can be read directly at the location after exposure, and can be interpreted by comparison with acceptable exposure levels for different kinds of institution, from archives to open structures. The threshold levels are set based on best available effect measures for the environmental parameters on organic objects, dyes and existing standards.



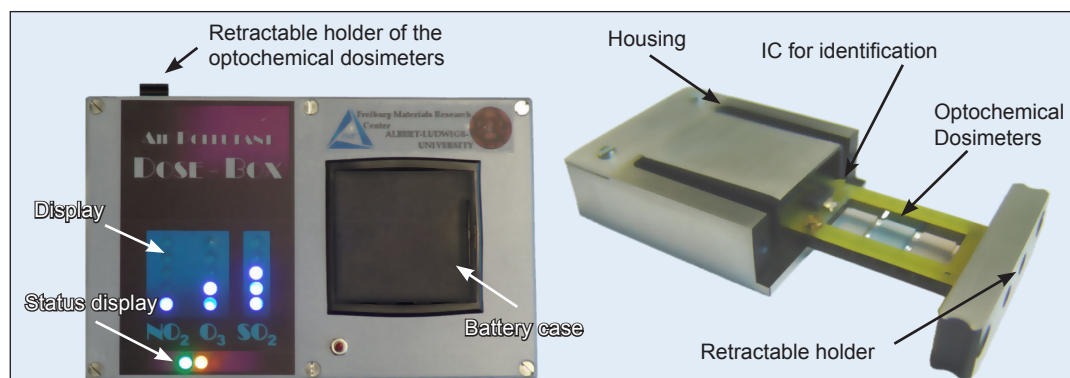
The EWO-Generic dosimeter has been calibrated against the combined effect of the oxidising gases NO₂ and O₃, temperature and UV-light. Combined high RH and SO₂ values will also affect the dosimeter. The dosimeter should be exposed for 3 months. The measuring result is displayed as a single digit, corresponding to the dose value and a threshold interval.

The preventive conservation strategy is developed as a step-by step guide explaining how the system is carried out from initial exposure to mitigating causes of deterioration.

The innovative preventive conservation strategy has involved the development of an early warning system (EWO system) including the EWO-dosimeters that will provide a relatively cheap and easy way for museums to evaluate the quality of the environment they provide for organic objects, diagnose and mitigation problems.

The new Strategy is developed for various kinds of institutions, from archives to historic houses. Each institution will have different needs and existing information but the EWO system can be applied to all of them.

It's relevance to conservation needs has been ensured by formal consultation with end-users from across Europe.



The EWO-Specific dosimeter measures the doses of the separate gases NO₂, O₃ and SO₂ and the value for the dose result is displayed as the three gas concentrations. The dosimeter can be exposed from days up to months. After exposure into the museum environment the dosimeter will be read out easily on site by a hand held electronic device discovering possible pollutant risks.

Acknowledgement

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