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Cette publication dont l'édition scientifique a été assurée par la Section d'Histoire de l'Art et d'Archéologie de l'Université Libre de Bruxelles (Belgique), est financée par ICOM / ICOM-CC / ULB

This publication whose edition was made possible thanks to the Section d'Histoire de l'Art et d'Archéologie of the Université Libre de Bruxelles, Belgium is funded by ICOM / ICOM-CC / ULB

Cahiers d'étude

Comité de Conservation (ICOM-CC)

Study series

Committee for Conservation (ICOM-CC)

INTERNATIONAL COUNCIL OF MUSEUMS
CONSEIL INTERNATIONAL DES MUSEES

Préface

Saroj Ghose
Président de l'ICOM

Je suis heureux de saluer la parution du *Cahier d'étude* du Comité international de l'ICOM pour la conservation. Je remercie tous ceux qui y ont contribué et en particulier Catheline Périer-D'Ieteren, Présidente du Comité, dont l'enthousiasme et la compétence ont permis la sortie de cette publication en un temps record.

Je souhaite que ce premier numéro de la série des *Cahiers d'étude* de l'ICOM soit suivi de nombreux autres et que tous les Comités internationaux aient à cœur, comme le Comité pour la conservation, de diffuser largement les données les plus récentes de leur discipline.

Foreword

Saroj Ghose
President of ICOM

I commend the publication of the *Study Series* of the ICOM International Committee for Conservation. I thank all those who contributed, particularly Catheline Périer D'Ieteren, Chairperson of the Committee whose enthusiasm and efficiency made this publication possible.

I express the wish that this first issue of the ICOM *Studies Series* be followed by many others and that all International Committees be eager to widely distribute, as does the Conservation Committee, their most updated information.

Sommaire - Contents

Saroj Ghose. Préface	1	Jonathan Ashley-Smith, Living with Deadlines	14
Catheline Périer-D'Ieteren, Les enjeux actuels de la conservation-restauration What's at Stake Now in Conservation-Restoration	2	Paul Philippot, La restauration depuis 1945. Naissance, développement et problèmes d'une discipline	16
Gaël de Guichen, La conservation préventive: un changement profond de mentalité	4	Ingrid C. Alexander, Technical Studies and the Field of Conservation	17
Jan A. Buijse, Aspects to the large Scale Operation to save the Dutch Cultural Heritage- Activities at the Rijksmuseum voor Volkenkunde	6	Colin Pearson, Codes of Ethics for Conservation Practice	18
Martine Jaoul, Conservation préventive: des réserves sous haute surveillance	8	Ségolène Bergeon, La formation des restaurateurs: spécialisation, interdisciplinarité et dangers	20
Charles S. Tumosa, David Erhardt, Marion F. Mecklenburg, and Mark McCormick-Goodhart, The Effects of Relative Humidity and Temperature on Exhibited Objects	9	Alain Godonou, Prema 1990-2000: réponse à un patrimoine en péril	22
Roberto Nardi, Open-Heart Restoration: Raising the Awareness of the Public	9	Nick Umney, Documentation as a Tool in the Conservation of Museum Collections	23
G. Basile, Les enfants peuvent aussi contribuer à la sauvegarde des œuvres d'art	11	Marie Berducou et Régis Bertholon, La conservation-restauration en archéologie: le nombre et l'urgence	26
Alessandra Melucco Vaccaro, L'entretien régulier des monuments anciens et des collections: de la théorie à la mise en pratique?	12	Miriam Clavir, The Conservator's Approach to Sacred Art	28
Barbara Roberts and Janet Bridgland, Emergency Preparedness Large- Scale Problems and Solutions: News from the Front Lines	13	Janet Bridgland, Principal international Organisa- tions concerned with the Preservation of Cultural Property	30
		Nicholas Stanley Price, Suggested Further Reading Bibliographie sélective	32

ou y organiser des stages qui débouchent sur des cas concrets.

Rendre ainsi les réserves plus vivantes et plus professionnelles, c'est une autre manière de restituer les collections au public, du moins à certaines catégories de public, tout en améliorant les conditions de conservation.

The Effects of Relative Humidity and Temperature on Exhibited Objects

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Résumé

Les variations de température et d'humidité relative jouent un rôle prépondérant sur l'état des objets de musées. On peut déterminer les limites requises par ces paramètres environnementaux en examinant les propriétés matérielles des composants.

On considère que, pour la plupart des objets, les variations d'humidité relative doivent se situer entre 35% et 65% et les variations de température entre 18° et 25° Celsius, c'est-à-dire dans le même ordre de grandeur que pour le confort humain.

Proper environmental control is the most important factor in the preservation of collections. While environmental factors such as light, pollution, and vibration also affect museum objects, temperature and relative humidity (RH) have an overriding effect on their stability.

Consider relative humidity and its variation. A relative humidity of about 50% with little variation has been considered ideal for the overall exhibition and storage environment by many museum staff. This environment, however, is difficult and expensive to maintain throughout the year. If the environmental requirements could be relaxed without causing damage, climate control would be much simpler. Relaxing environmental control requires answering two basic questions. First: do all RH fluctuations, no matter how small, cause damage, or is there a threshold of allowable RH fluctuation below which there is no damage?

Second; if some fluctuation is allowable, how much?

To identify an acceptable RH and allowable variation the relevant material properties of the objects must be known. These properties are dimensional and mechanical changes due to RH. From theoretical calculations derived from and utilizing the results of empirical measurements, the range of relative humidity in which MOST objects are mechanically stable is between 35% and 65%. The mechanical changes which most materials, even those under restraint, undergo during RH fluctuations in this region are elastic and reversible. While higher relative humidities up to 65% may not be suitable for some objects because of the possibility of mold or increases in chemical reactivity, many objects can be exhibited within this range of RH with no damage from dimensional change. Exceptions to this principle are based on other non-mechanical behavior such as the corrosion of metals. These objects should be kept in their own climate controlled containers or cases.

Often objects are recovered from adverse environments such as under water or extremely humid storage conditions and such objects must be treated in ways so that changes in dimension coupled with restraints by their own construction do not allow damage to occur. Some objects equilibrated to a high RH (80+%) will crack when brought into a drier environment, especially if there is also an accompanying temperature change. The damage is caused by the specific starting and ending RH, not necessarily the wide range in RH. If possible, objects at risk may be disassembled to allow for equilibration without restraint. The preservation of objects depends upon avoiding the extremes of high or low RH. Establishing an average value of 50% RH results in a relatively large allowable range of fluctuation about this mean value, since most hygroscopic materials are significantly less responsive to RH changes near this value.

The temperature of museums is usually set by considering the comfort level of the visitors and workers. This temperature has often been set between 18 and 25°C with a minimum amount of fluctuation. The same reasoning applies to the discussion of temperature as was applied to relative humidity. Changes in temperature between the above limits will also have a dimensional and mechanical effect upon museum objects. If a restrained object is subjected to large variations in temperature, stresses may develop in the object that can lead to deformation or damage. However, in most cases little effect seems to be caused by changes in temperature within the 18-25°C range. Other problems may arise that are not at first obvious. As temperatures drop, certain materials, such as acrylic paints, may become stiffer and stronger but also may become more fracture sensitive. These materials will become more susceptible to damage by shock and vibration because of their embrittlement.

Lowering the temperature below the 18 to 25° C range can significantly reduce the rate of chemical decomposition of many materials. This effect is useful in the long term storage of objects that are sensitive to ongoing chemical degradation. For example, the lifespan of photographic materials kept at 0°C or below can be hundreds of times that of materials stored under ambient conditions. Most photographic media are mechanically tolerant of sub-zero temperature. Changing the temperature of a building can be a sensitive method for controlling the RH of the building since as temperatures drop RH will increase and, conversely, as temperatures increase RH will decrease.

The general museum environment is a compromise between human comfort, the costs and feasibility of maintaining desired conditions, and the preservation of the exhibited objects. Selecting and maintaining the proper temperature and humidity ranges can be both economical in heating and cooling resources and beneficial to the exhibited objects.

Open-heart Restoration: Raising the Awareness of the Public

Roberto Nardi

Directeur du Centro di Conservazione Archeologica Roma

Résumé

Au cours des dernières années, de plus en plus de chantiers de restauration ont été ouverts au public. On peut dire que, de façon générale, le monde de la conservation a été plus soucieux d'informer les média et le grand public.

Dans cet article, nous examinerons ce phénomène sur la base de l'expérience du Centro di Conservazione Archeologica di Roma (C.C.A.), qui, pendant dix ans, a ouvert ses chantiers de restauration au public quand les circonstances l'ont permis.

De cette action d'informer les visiteurs, il ressort que chaque fois que l'attention du public a été engagée, on a obtenu des résultats positifs soit à court terme soit à long terme; à court terme, il y a eu une grande participation à l'initiative et à long terme une sensibilisation accrue aux problèmes de conservation. Si nous croyons donc que la protection des biens culturels doit passer par des moyens de prévention, il est évident que la sensibilisation du public est un élément clé. Ce seront les citoyens eux-mêmes qui, un jour, ressentiront la responsabilité et le plaisir de protéger leur patrimoine culturel.

In recent years, restoration projects have more and more often been open to the public, as, for example, the treatment of Veronese's *Marriage at Cana* in Paris or (using guided tours) the restoration of the Sistine Chapel. We may say that, in general, there has been an increase in the attention paid by the world of conservation to informing the media and the general public.

In this paper we will examine this phenomenon in the light of the experience of the Centro di Conservazione Archeologica di Roma (C.C.A.), which in the last ten years has opened its restoration worksites to the public whenever circumstances permitted.

Let us summarize these initiatives:

* 1984, Arch of Septimius Severus in the Roman Forum: the delegates to the Assembly General of ICCROM visit the site. Objective: to show the

restoration site to some of our colleagues.

* 1985, Arch of Septimius Severus: the Archaeological Superintendency of Rome, as part of its «Cultural Heritage Week,» organizes, in collaboration with the restorers, guided public tours of the site. Objective: to raise public awareness on the subject of the deterioration of monuments from atmospheric pollution.

* 1986, Crypta Balbi, in the center of Rome: once again in the context of «Cultural Heritage Week,» the Archaeological Superintendency of Rome organizes guided tours for the public of the excavation site and the restorations. Objective: to provide visitors with the opportunity for a close-up view of how the city has become stratified in the twenty centuries of its existence and for comprehending the extraordinary importance of the archaeological message.

* 1990, Atrium of the Capitoline Museum: the restoration of the architectural structure of the palace and of the collection of statuary displayed inside is open daily to the public, who can thereby view a «live» demonstration of the work in progress. Objective: to promote a direct relationship to the works under restoration and to the problems of safeguarding the cultural heritage.

* 1994, Masada, Israel, Western Palace, conservation *in situ* of mosaic pavements: thousands of visitors view the work in progress by means of aerial gangways. Objective: to transmit to the general public the idea that monuments are perishable and require constant care. (Fig.)

* 1994–1995, Zippori, Israel, the building with the Nile mosaic: a terrace

over the site allows the public to watch the work «live» and to ask the restorers questions. Objective: to inform the public on the subjects of conservation *in situ* of the mosaic, its maintenance, and the necessity to preserve the historical message of the monuments.

Public response has exceeded all expectations: long lines have formed under the scaffolding, guided tours have been requested for school groups, and many people have returned periodically to follow the evolution of the work. A precise measurement of public response has come to us from a questionnaire distributed during the conservation of the atrium of the Capitoline Museum. This was a restoration in which informing and increasing the awareness of the public were considered important objectives from the very start of the project: a painting was installed, seven meters high, reproducing the inside façade of the portico of the atrium, with its arches and statues and with the outlines of restorers at work and of visitors, in order to simulate a closed workshop; but instead of being a separation, it served as a means of reference and communication with the public. In order to exploit the full potential of the project, several initiatives were organized: guided tours by the restorers in three languages, didactic panels, a video, and a questionnaire on the subject of the conservation of artistic patrimony. The questionnaire was distributed in four languages in front of a statue that had been deliberately left unrestored in order to allow the public to understand the state of conservation of the collection before treatment. Five different questionnaires were prepared: the text, with only two questions, changed every day, and the answers to the previous questions were displayed in succession. Particularly stimulating for the public was the idea of being able to compare, from one day to the next, the answers to the queries of the previous days. An average of 150 visitors answered each day, for a total of 750 persons. 71% believe that the principal aim of a restoration is to conserve the work of art, while only 18% believe that restoration aids in the comprehension of the work. 69% state that their own interest in ancient sculpture was stimulated after seeing the restored statues. 91% maintain that to carry out the restoration without closing the site to the public is informative and should be encouraged. 79% believe that the further deterioration of the sculptures will be arrested only if there is main-

tenance after the restoration. Finally, 84% of the visitors are willing to dedicate 30 minutes to a visit to a restoration workshop, out of the 60 minutes necessary to visit a museum.

For us, these results confirm the validity of the initiatives dedicated to the public, but, at the same time, they teach us that opening a restoration to visitors is not something to be improvised, and even less does it mean simply to allow the public physical access to the site. If this were so, the risks and responsibilities would be numerous and would fall completely on the conservators who had had the idea. This is reflected in the criticism often expressed by certain restorers with regard to these initiatives: they maintain that restoration is not entertainment and that restorers do not want to feel like animals in a cage. One might argue that this point of view is not widespread in the profession and that it reflects a passive attitude on the part of the few restorers who limit the importance of the conservation treatment solely to its technical dimension. Instead, the conservation treatment is above all study, research, and understanding; likewise, communication and information are part of the direct evolution of a single process. The relationship with the public must be active, it must be managed rather than endured. But obviously the operation requires careful planning in every detail, to eliminate all the risks and reduce to a minimum the impact that the initiative will have on the conservator at work. The spaces should be organized in such a way that their uses and equipment do not interfere with tour itineraries. These, in turn, must be planned to take into account the physical safety of the visitors and of the work. The worksite must always be kept in order and in perfect efficiency, but this, like the aforementioned need for planning, is a welcome obligation where everyday practices and human weakness could lead to distractions. The public should be made to feel welcome by didactic aids, such as illustrative panels, a video, a guided tour, in such a way that the visitor is slowly introduced to the subject matter of the restoration, thus restricting the need for dialogue with the restorers to a few specific questions. In the atrium of the Capitoline Museum one conservator each day, in rotation, had the task of receiving the public and answering questions; in Zippori the tourist guides were constantly brought up to date about the progress of the work, and thus they functioned as a cushion between the public and the conservators.

An extremely positive side effect of these initiatives in the general economy of the work is the increased level of involvement of the conservators in the project: they feel themselves to be an active part of a program with a direct relationship to the public, and they keep themselves constantly informed about the progress of the entire project. The daily routine of the technical treatment is continually regenerated (gratified and criticized) by the dialectic with the external observer. All this translates into less stress for the worker and higher quality of the work. But the positive features do not end there. One should not underestimate the value to the conservator of the necessity to respond to a variety of questions and thus to keep everything under discussion, nor the value of suggestions and criticisms from people who come from outside and whose minds are free from preconceptions. The response of children has been very positive, as has been shown by the large number of guided tours requested by the schools. This, in particular, is a field which we intend to enlarge in future programs, by preparing didactic materials designed to entertain and at the same time to stimulate curiosity and to transmit the message.

When the public responds, so do the media: the press has always reported these programs with great enthusiasm, helping to amplify the effects of the initiatives; thus one should cite, among the positive results of the operation, the possibility of collecting a clipping file, which, as everyone knows, is always useful.

As to the risk of distracting the public from the «traditional» visit, as has sometimes been lamented, there is no remedy: if a visitor chooses to dedicate part of his time to the restoration site, it is because he judges, of his own free will, that it offers him something interesting or unusual. So much the better to transmit to the public a dynamic vision of the the museum or archaeological site, in which «new» things may happen and to which it is worthwhile to come back again.

Underlying the enterprise of informing visitors is the consideration that every time the public is involved, the results are positive, in both the short and the long term: in the short term, with a large participation in the initiative; in the long term, with an increased awareness on the subject of conservation. Thus if we believe that the protection of the cultural heritage must be obtained through systems of prevention, then the raising of public awareness is a key element: it will be the citizens themselves who, one day, will

feel themselves to be participants in the responsibility and pleasure of protecting the cultural heritage.

In conclusion, we may say that, on balance, our experiences in this field are decidedly positive and we will certainly continue on this road, and this article is intended, in turn, as a sign of encouragement for more and more initiatives of this type.

C.C.A., Centro di Conservazione Archeologica, is a private company, founded in 1982, undertaking public commitments in Italy and in other countries in the field of conservation of ancient monuments and archaeological sites and materials.

Les enfants peuvent aussi contribuer à la sauvegarde des œuvres d'art

Giuseppe Basile

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Abstract

Children make up a good proportion of museum visitors and educational programmes are often specially designed for them. But although these programmes provide a wide range of information, only rarely do they include anything on conservation and restoration. This article shows how childrens' perceptions can change if they are told about conservation aspects during their visit.

Pour assurer la sauvegarde de notre patrimoine culturel, il faut un effort de la part de tout le monde.

En effet, devant l'ampleur de la tâche, ceux dont la fonction est de sauvegarder les biens culturels, malgré toute leur bonne volonté, ne pourraient jamais y arriver seuls. Il faut impliquer le plus de gens possible et les informer de ce qu'il convient de faire pour atteindre l'objectif. Il ne suffit pas d'expliquer lors de visites guidées que les oeuvres d'art et les monuments au milieu desquels nous nous trouvons sont importants parce que ce sont des témoignages de notre passé et qu'il faut donc les respecter. Il faut aussi faire comprendre leur fragilité. Il est très rare que l'on sache à quel point les oeuvres antiques sont fragiles, même si elles ont l'air extrêmement résistantes. C'est également la faute de ceux qui continuent à parler de l'éternité des oeuvres d'art et des monuments en