

### Scientific Symposium

Changing World, Changing Views of Heritage:  
the impact of global change on cultural heritage – Technological Change

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## THE DEBATE IN PROGRESS ABOUT MATERIALS AND TECHNOLOGIES FOR THE SUSTAINABLE CONSERVATION OF THE BUILT HERITAGE IN BRAZIL

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### Introduction

Recently at the Brazilian ICOMOS seminar about Science and Heritage in Curitiba (March 26 and 27, 2009) and at the Brazilian Association of Conservators [ABRACOR] Conference (13-16 April, 2009), I was asked to give a speech about traditional materials and technology for the conservation. This speech was also part of a series of round table discussions with other professionals from Brazil and Latin America. In August I will present a similar paper at the seminar planned by the Brazilian Institute for the Preservation of Cultural Heritage [IPHAN], whose program will include topics about materials used for the sustainable conservation of the built heritage. These meetings indicate there is a raising awareness in Brazil as to how technology of conservation is being approached.

This article is an overview to the questions of technological change in Brazil raised in the above meetings, plus arising from my career experiences. Issues selected below indicate points considered to be more relevant or connected to the aim of the Malta Symposium, and as a contribution to international discussions about the theme of technological change in heritage conservation. It is anticipated the following information can also contribute to the debate that is in progress in Brazil.

### General issues

The presentations, discussions and debates, as well as the recommendations of the ICOMOS Brazil and ABRACOR meetings, show interesting positive and negative outcomes.

A positive outcome is, for the first time at ICOMOS Brazil and ABRACOR, an open debate about the need to understand technological change and for a consciousness about how to use materials and technology for sustainable conservation.

Negative concerns evolved around the enormous difficulties to increase conservation practice, and the gap between the levels of expertise and technical knowledge, both of which are often omitted from site work and in practice. At the same time problems are increasing in a huge country dealing with extreme differences - social, economical, environmental, natural disasters, urban scale and density, etc. How can we achieve sustainable conservation when financial models and policies look only at criteria such as lowest budget, rather than wise application of technology, ecological or social benefits, or fail to seek compatible and long lasting outcomes?

There is a strong need for a change in attitude, to structure a network of actions such as policies, research and education, and for these to be applied in different levels of institutions, markets and society to cover the demands of today's cultural heritage.

### Issues from the ICOMOS Seminar Science and Heritage / Curitiba

At the end of the meetings the participants drafted issues and recommendations, some of which are outlined below.

#### - Should Brazil learn from the experience of other countries?

The experiences of other countries dealing with the science of conservation of cultural heritage, is an important step from which Brazil can learn about the state of knowledge as already exists. This includes positive aspects as well as problems and mistakes already identified in this field. However Brazil has its own requirements, such as different economical, social, traditional constructive methods, materials, etc, which need to be re-evaluated.

Learning from others' experiences means there is an international knowledge base that can be applied directly or adapt to the Brazilian situation or developed according to Brazilian requirements and needs. Outstanding is a need to develop research to solve Brazilian specific problems.

- What is needed?

Brazil needs political decisiveness as well as a change of mentality and attitude. There was a perception by the conservators that science can be a very important tool for their activities and fields of conservation. Such change needs to progress through the education system, to ensure awareness by new graduates, young conservators and researchers/scientists.

It is clear, that to achieve "reliable" results besides technical scientific methodologies, there was a need for theoretical and careful methodological based approaches in research and teaching.

Also considered important was the need for qualified scientists and professors with solid education expertise as well as adequately equipped laboratories. Whilst there are many laboratories at the Brazilian universities that contend with teaching demands (graduation and complementary courses) and research, it is necessary to also operate these laboratories around the demands of the conservation of cultural heritage.

- What are the difficulties?

It is not possible to ignore the budget problems and difficulties that have a financial impact upon cultural preservation in Brazil. Answering the needs for better conservation resources cannot be postpone any longer, otherwise there will be irreparable loss of the cultural heritage. Budgets should be adjusted and include research and analysis.

- What is the function / responsibility of the universities?

The universities have the function as centers for the production of knowledge in this specific field, and to distribute research results to the conservators, especially where is there is a post-graduation program in conservation. For instance, the studies are urgently needed of the durability, longevity and compatibility of conservation materials, process of ageing, along with reliable laboratory results.

- What are the responsibilities of the professionals / scientists?

If the contribution of the science of conservation is fundamental and vital to the conservation, the operators of this complex activity should have, at a minimum, a dialogue with the scientific community.

The scientific community should be aware of the cultural issues and of heritage preservation. Therefore it is the responsibility of the universities and all cultural institutions to create mechanisms and ensure their experts are open and skilled in the science in conservation.

- Any other remarks?

Noted were the interdisciplinary characteristic of the scientific research for the conservation of cultural heritage. This enables a rich relationship amongst laboratories and academic experts.

The work of conservation, due its methodological criteria, is always a science in itself. What was noted at the meetings, however, was the question of the durability of conservation materials, artifacts and structures that constitute the basis for research laboratory investigations.

Heritage conservation research has a close relationship with the studies of alternative and traditional technologies, building materials, social studies, and the revival of forgotten traditional techniques. There is also the social development of some traditional communities which are losing their traditional ways of production due to the competitiveness of the market. Here too the science of conservation can assist in order to demonstrate that traditional methods are the technically correct ways to conserve heritage.

- What would be the actions to pursue and the meetings' recommendations?

To motivate the establishment of universities to have an active role in historical cities; as well as the formation and the financing of research groups and networks to increase technical knowledge. ICOMOS should be part of such a network. Further, ICOMOS should promote visits by experts from other countries and the internal exchange among professors and scientists, as well as produce and/or promote seminars, courses and technical publications;

To provide access to information to the general population and communities, to develop mainly preventative conservation and to give priority to the use of traditional materials and techniques;

The scientific of conservation should be integrated in policies as a socio-economic issue and for sustainable development of a society;

The specific yet diverse nature of the built heritage requires an interdisciplinary approach to deal with the risks and degradation process that the heritage is inevitably undergoing;

To transform scientific knowledge into practice and to guarantee technical information is produced for the restoration of sites in order to increase the quality of conservation repairs;

To identify and map conservation problems and risks, in order to develop strategies for sustainable conservation;

To develop scientifically and in practice traditional materials and technologies for the conservation of the built heritage;

To promote the use of local/regional materials and local resources and services to facilitate the maintenance of the built heritage;

To structure institutional programs based on scientific methodologies and sustainable practices and to disseminate the information to communities;

At institutional based technical seminars, workshops and meetings, to implement the dissemination of scientific knowledge, as well as training, and to inform administrators, politicians, managers and business people, about the fundamental importance to adopt a technical approach based on reliable knowledge, research and laboratory results.;

To propose to the minister of education more courses on conservation should be developed, and how these can contribute to the preservation of tangible and intangible heritage, and specifically to the use of traditional construction techniques;

To propose to national and regional institutions charged with the conservation of cultural heritage, that projects for the restoration of buildings must include, when specifically needed, analytical laboratory studies as a requirement. This is to aid the understanding of the conservation / deterioration problems and diagnostics to be used as a basis for a proposal for intervention and/or adaptation of historical buildings;

Regarding the level of conservation repairs and building interventions, there is a lack of quality and durability, and mainly for those projects being done through public competition. For public works competitions, specifications should incorporate guidelines for the project and interventions, including the requirement for scientific studies that prove the effectiveness of the traditional materials, and require higher standards for interventions, as well as stress the advantages of maintenance of cultural properties in order to extend longevity.

#### **Issues from the ABRACOR Conference/ Porto Alegre**

The round tables and presentations about categories of cultural preservation, specifically those related to the conservation of the built heritage, provided an opportunity to discuss issues such as ethnicity and sustainability, the science of conservation, preventive conservation, traditional materials and building culture.

Also discussed were themes from earthen to modern architecture. This range demonstrates that today ABRACOR is increasingly supportive and concerned about the conservation of the built heritage. There is greater awareness of a wider array of conservation needs from vernacular to modern architecture, from wood to concrete, from preventive to security topics.

The presentations and the debates from the participants demonstrated major concern about achieving higher standards of conservation based on ethical and scientific principles, ecological and sustainable consciousness, social benefits, community involvement, educational process, etc.,.

However, the audience and presentations were alert to the lack of such concerns in day-to-day preservation works of the historic built heritage in Brazil. The reality is different from a selected group of professors, professionals, architects and conservators who are keenly concerned with the conservation of Brazil's built heritage.

### **Conclusion**

One of the major problems relates to the policies and management of conservation and restoration contracts and guidelines. Implementation works often fail to comprehend nor see conservation as a continuous process based on criteria and analytical data. The majority of the administrators and coordinators of institutions and enterprises believe conservation work is only the intervention phase, and do not consider, at all, the importance of the research, previous testing, training, after-works evaluation, or for these to be a guide and a fundament to the design future interventions.

As it was briefly discussed above, the conservation of the built heritage in Brazil requires an enormous need of responsibility and for technical discussion, learning, improved processes, education, political will, and an attitude change. Even so, there is an enormous technical capacity in Brazil: the universities have potential resources and collectively, if well used, can be of a major benefit.

It is hoped that the points raised above are a contribution to the Valetta Symposium and assist in developing policies for technological changes in Brazil and other countries with similar problems and issues.

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