

House of Rui Barbosa museum: a preventive conservation plan based on an environmental control strategy

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Abstract

Keeping in mind the nature of a historic house museum and the special relationship among the collection, its character and the building, a multidisciplinary team has been trying to establish a method for developing a preventive conservation plan for the House of Rui Barbosa Museum and its collection, based on an environmental control strategy. This team of technicians and administrative staff from the House of Rui Barbosa Foundation has sought and received advice from international sources on conservation science, environmental management, material engineering and construction techniques, all adapted for the Brazilian context.

Keywords

Architecture, museography, preventive conservation, environmental control, collection conservation

The building and its collection

THE HOUSE OF RUI BARBOSA MUSEUM IS THE OLDEST HISTORIC house museum in Brazil. Built in 1850, with some additions in 1879, the museum building, which is listed, is a significant example of the architecture of the city of Rio de Janeiro in the mid-19th century. Its fabric represents traditional construction solutions: external selfsupporting walls of massive brick, stones and mortar; internal dividing walls of lath and plaster; floors, ceilings and roofs made of wood; and ceilings also of wood and plaster; and a roof with French tiles. The building stands over a high basement, and its facades reflect the influence of neoclassical style, embellished with belle époque features. The interior decoration reflects the eclecticism that dominated the arts at the end of the 19th century. Since its opening as a house museum, the building has undergone several conservation and restoration projects, but most of the earlier interventions have not been properly recorded.

The primary purpose of the House of Rui Barbosa Foundation is to preserve and promote the memory of its patron. The building was the residence of Rui Barbosa, an illustrious Brazilian writer and statesman, from 1895 until his death in 1923. Preservation of the building and the collection has been the responsibility of the Brazilian federal government since 1924, which purchased them after Rui Barbosa's death. The museum's mission is to interpret the daily life of the original owner and his family, through a permanent display.

The need to maintain the atmosphere of that time does not permit displayed objects to be substituted, much less redistributed to more favourable climatic areas within the building. It is important to note that few objects in the collection are displayed inside cases because of the importance of contextual references.

The main characteristic of the collection is its European influence, which is noticeable in most of the works: furniture, decorative objects and personal belongings. Significant

parts of the collection, made of organic and inorganic materials, including wood, metal and textiles, have been restored. A special feature of the collection is its 37,000-volume library, kept in its original location.

Taking into account that the building is listed and cannot be altered; that the collection has been on permanent display for almost 72 years; that the building's adaptation as a museum has altered its climatic performance; that the museum is located in a urban area, which is still changing dramatically due to ongoing economic development; and that Rio de Janeiro has a tropical climate where temperature averages above 27°C and relative humidity averages 70%, an environmental control strategy is fundamental for a preventive conservation plan for the House of Rui Barbosa Museum.

In 1997, the House of Rui Barbosa Foundation began a long-term study to develop a preventive conservation plan for the museum. Its aim is to increase and improve, through a multidisciplinary approach, the preservation of this heritage, to identify the needs of the institution, to deal with the interventions in order of priority, to define appropriate solutions and to have a reference centre on preventive conservation for historic house museums.

For these reasons, environmental control of the House of Rui Barbosa Museum is one of the most important aspects of the preventive conservation plan. The Preventive conservation following steps were identified to guide the development of the plan.

- Stage 1: Develop conservation diagnoses and identify problems and the actions necessary to correct them.



Figure 1. Room card



Figure 2. Plan of sensitive area

- Stage 2: Develop and implement intervention projects.
- Stage 3: Develop a 'maintenance plan' as a tool to manage the risk of further deterioration, guided by actions listed in the previous stage.
- Stage 4: Train museum maintenance staff, and share results with other interested institutions.

Stage 1 focused on the museum environment in a broad sense, considering both the physical and management aspects, since the relationship between both these factors influences the collection's preservation. The methodological base used to define the steps of the diagnosis was the Conservation Assessment developed by the Getty Conservation Institute. Its approach reflects the complex relations between the collection's sensitivity, the building's performance and the effects of other factors on the collection, such as the building itself, the environment, the building's use, the practices and policies related to management, the museum's operations and visitation levels.

In order to accomplish this work, staff meetings were held. Conservation mapping was developed and environment monitoring (equipment and management systems) defined. Technical assessments on a room-by-room basis, including photographic recording and room cards, were also developed.

With the aim of ensuring that the work can continue, special attention was given to consolidating the involvement of different professionals, who work directly with the building and its collection, and to creating work packages that require the participation of all the staff. As a result of that effort we designed a room card (see Figure 1), which, besides providing information relevant to the diagnoses, also helped to develop relations between the different professionals and guarantees that these records can be used in planning future works.

Conservation mapping was done to relate data on damage to the collection to specific areas of the museum. In this way, it was possible to establish which part of the building

is most sensitive. We discovered that it is the area where the book collection is kept, and so the library, one of the largest and most sensitive areas, was selected as one of the priority areas for monitoring (see Figure 2).

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Preliminary analysis

An environment management system (CLIMUS, developed by Saulo Guths from UFSC), consisting of data loggers connected to a computer program, was installed to monitor a group of rooms. The monitoring of temperature and relative humidity demonstrated that the organic components in the collection were under pressure from high levels of relative humidity and temperature. Monitoring validated the museum's decision to carry out inspections for biodeterioration.

Figures 3 and 4 show temperature and relative humidity for the Constitution Room (the library) during the months of January (summer) and July (winter). During the first days of July, typical daily fluctuations are observed, with a drop in temperature and an increase in relative humidity at night. During the afternoon a significant drop in relative humidity, due to an increase in temperature, is noticeable. In the second half of the month significant changes in relative humidity have been recorded, because of the increase in temperature. Although this period represents a winter month, high levels of relative humidity (60% to 80%) were recorded. Because of the prevalence of high humidity both in winter and summer, there is a potential risk of damage to the collection.

During technical visits to carry out a preliminary assessment of the pathologies of the building and the collection, professors Luiz Souza and Abdias Magalhães Gomes from the Federal University of Minas Gerais focused on the ceilings, floors, walls, frames and so on, because a good building envelope is at the heart of a sound conservation plan. The diagnosis of the building that has been carried out by the museum's own technical staff was confirmed as correct. There were no major structural problems that could

endanger the building’s integrity or its users. The pathologies observed are related to an increase in levels of humidity and atmospheric pollution, biodeterioration, unsuccessful past interventions and the ageing of original materials.

The basement has been affected most seriously by humidity and termites. Adaptation as a museum required alterations to be made to the space. It has been continuously adapted to meet the demands of new uses. Thus, the floor of the basement had been lowered and a concrete foundation constructed, mechanical ventilation and lighting systems were installed,

and the original wall finish was substituted with cement-based plaster, which has deteriorated badly due to its high capillarity. The basement ceiling is formed by the wood framing, which supports the first floor at ground level. It has gone through structural repair in the past due to biodeterioration of the wood. The basement is a priority area for further investigation and intervention.

In a preliminary evaluation of the conservation state of the collection, the main problems are related to

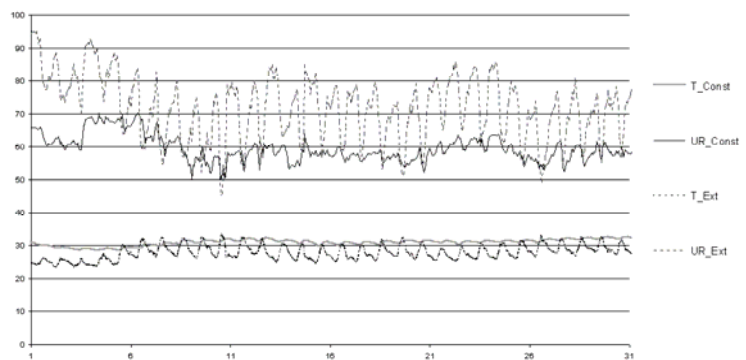


Figure 3. Constitution Room, January 2001

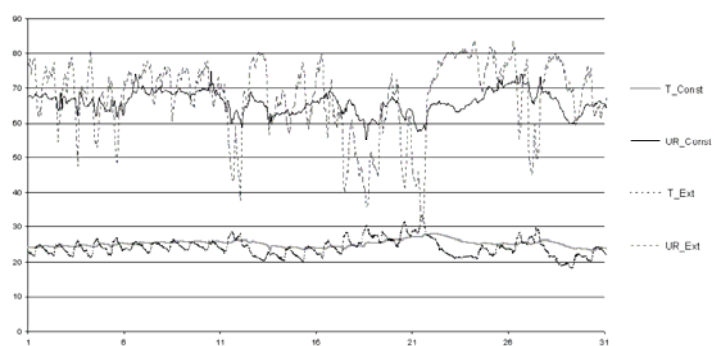


Figure 4. Constitution Room, July 2001

the effect of relative humidity or moisture, temperature, and high levels of solar radiation on the organic materials. The book collection has two distinct problems: the first is related to the climatic conditions of the site (temperature, relative humidity, ultraviolet radiation and air pollution), and the second is related to the way the collection is displayed: wood shelves behind glass and too many books located close to the walls and windows. Although the way the library, as presented, reproduces faithfully the way Rui Barbosa lived, it is contrary to basic principles of care of paper records and related materials. This dilemma has yet to be resolved.

Continuity of the plan

Future work will involve:

- periodical non-destructive inspections of the building and of construction components, to better evaluate the development and impact of pathologies on the building
- completion of ongoing research on all previous interventions in the building by the museum's architects, in order to improve knowledge and understanding of unrecorded methods used in the past, not only to establish their contribution to the building's condition but also as evidence of authenticity
- tackling the basement as the next phase of environmental monitoring, in order to recover its function of protecting the building from ground moisture
- environmental monitoring of the museum to cover all the areas where books and paper records are housed, and in due course environment monitoring within displays.

Conclusion

At this stage, we can draw some preliminary conclusions. Among the many factors to be dealt with in preventive conservation, the most important is to get a balance between conservation and access and between environmental control and environmental comfort.

The success so far is due to the capacity of the team involved to negotiate. The preventive conservation plan for the House of Rui Barbosa Foundation had not only a technical and scientific dimension but a clear link to the institutional reality of the museum. This experience will also be of help to other Brazilian institutions by demonstrating the reality of interdisciplinary work in preventive conservation.

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References

Cassar, May, 1995, *Environmental Management. Guidelines for Museums and Galleries*, New York, Routledge.

Dardes, Kathleen, 1988, *The Conservation Assessment: A Proposed Model For Evaluating Museum Environmental Management Needs*, GCI.

Stolow, Nathan, 1994, 'The preservation of historic houses and sites: The interface of architectural restoration and collection/display conservation principles' in A Roy and P Smith (ed.),

Preprints of The Contributions to the Ottawa Congress, The International Institute for Conservation of Historic and Artist Works, 116–122.