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CASE STUDIES / SHORT PAPERS

FEATHERWORK CONSERVATION AT THE ETHNOGRAPHIC COLLECTION OF THE MUSEU PARAENSE EMILIO GOELDI

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Abstract:

This paper describe the initial phase of a research about indigenous featherwork conservation with emphasis on the case of Curt Nimuendaju Storage Room which belongs to the Museu Paraense Emilio Goeldi. The feather is a sensitive material, but there is not much information about its reactions at incorrect temperature and relative humidity. At this work will be highlighted the principals forms of featherwork degradation and the specificities of this particular Storage Room.
Keywords: Featherwork; Conservation; Storage Room

Introduction

The indigenous featherwork is one of the most important brazilian cultural heritage. This is mentioned since de first document made about Brazil, the Pero Vaz de Caminha's letter, written in 1500 to announce and describe the new land and the people who were here (BILBAO, 2002). Since then the indigenous featherwork has been part of ethnographic collections all over the world, specially after the 18th and 19th centurys with European travelers (THOMPSON, 2015).

In the 19th century, after the royal family came to Brazil, the scientific institutions began to emerge in the country and with them museums, being the main ones focused on Natural History and Anthropology. The particular case that we are studing are the pieces safeguarded at the Ethnographic Storage Room of the Museu Paraense Emilio Goeldi, one of the oldest scientific institutions from the north of Brazil, having begun in 1866 from an Association formed by important people of Belém at that time, as Domingo Ferreira Penna (SANJAD, 2010; SCHWARCZ, 2013).

Nowadays, the Ethnographic collection of this important museum has almost 15.000 objects. Most of them are from indigenous groups, but there are also african pieces and others regional groups. To better preserve this collection, it was implanted at 2003 a alternative system that uses blows fans,

exhaust fans and dehumidifiers to maintain the relative humidity controlled and bellow 70%. This aims to avoid the presence of biodegradation agents, considered the most dangerous for this collection.

Unfortunately, after three years the monitoring of the climate conditions has no longer occurred and never happened a monitoring of the conservation conditions of the pieces after that. So this research aims to understand the conservation conditions of a important part of this collection, the featherwork, and the effects of the climate at this.

Brazilian heritage: indigenous featherwork and its importance

The featherwork can be described as the ensemble of techniques designed to manufacture artifacts with feathers as feedstock (MOTTA, 2006, p. 102). Most of Brazilian authors, as Berta Ribeiro (1988), consider this work as an art and adds the aesthetic and stylistic components to define the featherwork. In Brazil there are a lot of indigenous groups that produzes this pieces, but their styles are the most diverse as possible because of its diferents techniques, feathers, customs, uses, among other factors.

However, there are two diferent linguistic groups best known for the featherwork art, one of them is the Tupi, famous because of the Tupinambás, but also have the Mundurucus and the Kaapor, and the last one is known for the precious use of minimum feathers composing beautiful details (RIBEIRO; RIBEIRO, 1957). The other group is the Macro-Jê where we can find the Karajá, Bororo, Kayapó and others that produces marvelous pieces with big structures and feathers making a kind of scenographic effect (RIBEIRO, 1989).

This typology of collection must be studied and preserved for its importance. A lot of the groups that used to produces this in the past do not exist anymore or do not currently produce the same way as in the past. Therefore, to keep the traditional knowledge and this important indigenous heritage, many Brazilian museums with an emphasis on natural history and ethnography have been dedicated to gathering, exhibiting and preserving these materials. However, specific studies on featherwork conservation in Brazil are still incipient with rare academic publications regarding research in the area.

The feather: structure and needs

Feather, feedstock for the featherwork, is composed mainly of keratin (about 91%), water and lipids.

There are different types of feather that can be found in the birds and, consequently in the featherwork. Each type is intended for a particular function and location of the animal. The variety can be separated in remiges and rectrices (flight feathers); contour feathers; semiplumes; down

feathers; filoplumes and bristles (HUDON, 2005). The contour and down feathers are the most commonly used in artifacts (BISHOP MUSEUM, 1996), but the flight feathers are also very used at the Brazilian indigenous production.

This material is extremely sensitive and its principals degradation occur by light, dust, mechanical damage, biodegradation agents and incorrect temperature and relative humidity. Light damage is very known for cause fading of the feather colors depending on its sensitivities; "in a featherwork the most sensitive feather will define the light sensitivity of the whole item" (RIEDLER et al. 2014, p.44). Mechanical abrasions, are also a very common way to cause damage on objetcs from museums (BRADLEY, 2011), feathers has a delicate structure with fine barbs and barbules that can easily break and it harm the structural colors of the object.

Other cause of damage is the dust, which for feathers is even more complicated to control because of the oil present in the material since when the bird is alive; this harms not just the aesthetics, but can accelerate the chemical reactions. And a very worrying thing is the biodegradation agents attracted mainly by the sulfur present on the keratin, principal protein of feathers, so that cause the presence of mould,bacteria and insects if there isn't a controlled environment (BISHOP MUSEUM, 1996; BLYSKAL, 2009).

But at this research our focus is about the damage that can be caused by the temperature and relative humidity. This is not a theme studied hard and, even some authors do given ideal parameters as 60ºF-75ºF (about 15,5°C - 23,8°C) for temperature and 45% - 55% for relative humidity (BISHOP MUSEUM, 1996), we are still searching for methods of analysis to understand how the feather can react and if it can be degrade for been exposed so long at the conditions presents at the Curt Nimuendajú Storage Room.

The Curt Nimuendajú Storage Room

The city of Belém, has a climate that can be characterized as hot and humid. There are two different seasons that can be identified: the rainy season that goes between December and May, and the dry season from June to November. At the period of 1967 to 1996 the averages of temperature are 26,4ºC and 84% for relative humidity (BASTOS et al. 2002). The principal characteristic from there are the high temperatures and humidity.

At this scenario are the Museu Paraense Emilio Goeldi and its collections. In the past the ethnographic collection was placed at the zoobotanical park of this institution, safeguarded at two rooms with the climatization made by ar conditioning. In 2003, the Storage Room was moved to the Research Campus of the museum to a new building made to receive the collection. At this new place

was implanted a alternative system for acclimatization with a project from the Getty Conservation Institute.

This project aimed avoid the occurence of biological attacks, considered major risk factor for such typology of collection, so the quimical and mechanical deterioration are not considered for the system. Besides that, the system was designed to integrates low cost, be robust and easy maintenance. Therefore, this system consists on two ducts with two supply fans and two ducts with four exhaust fans and four dehumidifiers. All the system works on the command of sensors located inside and outside of the building. Basically "the ventilators were to operate when the outside relative humidity was lower than the value to remove moisture, and the dehumidifiers were to activate when the outside relative humidity was higher than 70%." (MAEKAWA; TOLEDO, 2010, p.3).

The system was monitored for three years (2003-2005) after its implantation, with results corresponding to the expected with averages for relative humidity between 65-70%. Unfortunately, after this time there was no monitoring for almost ten years . However, since 2015, the technical staff of the Storage Room has continuously monitored the environment with data loggers. And for this research, there were instaled quatro dataloggers T&D RTR-5W and four ONSET HOBO U-10 that will monitoring the envioronment for one year (July, 2016- July, 2017) inside and outside of the building.

However, there is a even greater gap with respect the behavior of the pieces in this new environment. There wasn't a systematic monitoring of the conservation conditions of the objects, therefore, a more detailed survey of the documentation and the history of such pieces must be observed, as well as a diagnosis about the current reality of the materials with focus on feathers.

Interlinking the history, the currenty condition of the acclimatization and the state of conservation of the pieces, this research can help to think about preservation measures for this collection and specifically for this type of material.

Final considerations

This research is still in the initial phase with the search of bibliographic references and also the search for more adequate methodologies to analyze the state of featherwork conservation considering the possibles changes caused by the current acclimatization system. We can already understand that this material is extremely susceptible to deterioration factors and can easily suffer damages. Therefore, although incipient we understand that this study is of fundamental importance given the low Brazilian production in the area of feather conservation and the importance of preserving this Brazilian indigenous heritage.

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COLEÇÃO DE ARTE DA CIDADE – CENTRO CULTURAL SÃO PAULO

Camila Bôrtolo Romano – Coordinator of Coleção de Arte da Cidade

Abstract:

The Coleção de Arte da Cidade is on guard of Centro Cultural São Paulo (CCSP) and the Division of Collection, Documentation and Conservation make its management. This Collection has around 8.000 items and has a basic way to climate control in storage. This case study addresses the concerns about the storage conditions, showroom and how this conditions can affect the collection.

Keywords: Storage, Showroom, climate control

Introduction

The Centro Cultural São Paulo is a public space, managed by Secretaria Municipal de Cultura. It was created in 1982, being considered the first multidisciplinary space of culture in the country. The building is in Sao Paulo / Brazil, next to a Subway Station and has 46.500 m² distributed in 4 floors. The space of CCSP allows users to live together (to study, to dance, to rest) and appreciate diverse cultural programming (cinema, theater, exhibitions). Besides cultural programming and set of libraries, the CCSP has on its guard 5 collections that are managed by the Division of Collection, Documentation and Conservation, are they: Coleção de Arte da Cidade, Arquivo Multimeios, Discoteca Oneyda Alvarenga, Missão de Pesquisas Folclóricas and Núcleo Memória.

Representing the Coleção de Arte da Cidade at International Workshop of Managing indoor climate risks, I present the following information: The Coleção de Arte da Cidade was created in 1962 with intention of gather, list and preserve the works of art scattered around the city of Sao Paulo. Currently the collection has around 8.000 items including: Drawings, engravings, sculptures, paintings, installation, mail art, artist books, among others. We can say that 80% of collection is made of paper.

The storage has 260 m² divided in 4 rooms. It is located in the basement, without windows and the walls are made of brick. We consider a good location because it doesn't have much interference from the external climate, thus facilitating better climate control inside the room, even without air conditioning.

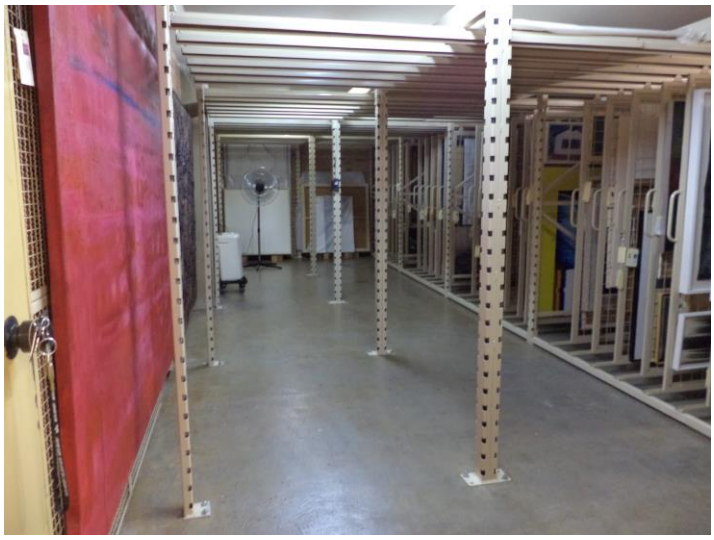

Figure 1 – Storage of Coleção de Arte da Cidade

To climate control of storage, is used fans to promote air circulation and dehumidifiers to control de relative humidity (RH). The Temperature and Humidity data are collected by the Thermo hygrometer manually, for at least three moments during the day, at the opening of the storage, during cleaning and at the time of its closing. This information is written down on paper and then passed to a worksheet on the computer.

Based on our measurements it was possible to determine that the average indoor climate of the storage is 22 °C of temperature and 61% of humidity throughout the year. And the average external climate is 24°C temperature and 73% humidity throughout the year.

The following concerns were presented at the workshop: Some employees need to work within the storage every day, so for better air circulation the door is kept open throughout the day, but the pollution is very large due to the location of the CCSP. So the problem was how would it be possible to promote air circulation without having problems with temperature variations, but without the need to install an air conditioner? Because it is a public institution, the CCSP would not be able to carry out the necessary maintenance in an air conditioning, putting the collection at greater risk in a situation in which the equipment stopped working.

With this concern in mind throughout the workshop it was possible to realize that there was so much concern about possible climatic variations, a fact that we have no measured evidence, that we did not realize that in fact, the team does not observe any visible damage to the collection, As for example appearance of mold, insects, oxidation or other damages. Thus, about the climate there is no problem to solve, it would only be advisable to install a Datalogger to record in a shorter time the data of temperature and humidity for a more consistent analysis.

With this, we conclude that the biggest problem in the storage is the entrance of pollution next to the collection. It is advisable to do the measurement of pollutants inside the reserve, but even without having made a measurement with an equipment, we observe a fast accumulation of dust on the furniture and on the surface of the works of art that don't have packaging, for example the paintings fixed in the walls.

We attribute to this situation the pollution of the region as the main cause of damage to the collection in the storages. As a solution strategy, we recommend installing a filter hood in the rooms to promote air circulation even with the door closed, thus preventing the entry of pollutant particles into the storage.

Different from the conditions of the storage already presented, the CCSP showroom, used for the most part to exhibit works from the collection, showed visible damages to works along exhibitions, such as ripples In paper works. This drew attention to the climatic conditions inside the showroom.
The exhibition room is located on the 4th floor of the CCSP, has 585 m², is made of concrete and glass (between internal and external) and has a basic air conditioning system. Despite having an air conditioning system there is no temperature and humidity control in the room. Measurements have never been carried out to prove the cause of the damage to the works of the collection.

For this situation, it would be advisable to install a datalogger to measure the temperature and humidity data. After analyzing the data, a strategy for adjusting the climate of the exhibition room in a manner similar to that of the storage should be developed. In case the data indicate high humidity variations, for example, the placement of dehumidifiers in the environment would be indicated.

Final considerations

The concern of the CCSP technical team was so much about the storage that we did not realize that the biggest risk factor to the collection would be the climatic conditions of the exhibition room. In this way I conclude that the methodology presented by the Cultural Heritage Agency of the Netherlands has proved very useful in its application because it is very objective and provides a more sustainable vision for mitigation strategies. The Centro Cultural São Paulo has 5 collections under its guard, this methodology will bring many benefits for the management of these collections, since through the measurement of data, application of graphics, the level of each problem of risk to the collections and analysis will be more visible To indicate the most sustainable solution to be applied. It also makes it more efficient to present mitigation proposals to the Directors who are responsible for the final approval decision.

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