

**RARE BOOKS PRESERVATION ASSESSMENT OF THE BIBLIOTECA SANTIAGO
IGLESIAS, HIJO OF THE SCHOOL OF ARCHITECTURE AT THE UPR**

Condition Assessment: Final Report

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I. Introduction

In 2019, the Biblioteca de Arquitectura Santiago Iglesias, hijo, from the University of Puerto Rico, Río Piedras Campus, was awarded a National Endowment for the Humanities' Preservation Assistance Grant for Smaller Institutions, in order to condition and assess its Rare Books Collection.

The library staff involved in this project is as follows:

- José E. Flores Ramos, Former Library Director
- Laurie A. Ortiz-Rivera, Library Director
- Luis Raúl Rodríguez Matos, Academic Computer Coordinator
- Hector Abreu Abreu, Academic Computer Coordinator
- Carlos Morales Fiol, Library Assistant II
- Ruth M. Carrión Meléndez, Administrative Official I

The library's purpose of this assessment is to develop a long-term preservation plan "to delineate our conservation needs by developing the proper strategies and actions to meet those needs. In so doing, we will be establishing a much-needed initial framework. This long-term plan will serve as a basic working tool during the coming years. In addition, the plan will justify to the University and funding agencies and foundations our preservation needs. It will also establish a future comprehensive plan for our invaluable collection pieces, many which are not found elsewhere. This activity, beyond attending to our particular needs, will also serve as a working model to other libraries in our Campus." (José E. Flores Ramos, 2018).

This preservation plan is based on this written assessment report that will include recommendations for proper storage, housing and more important issues to be considered.

II. The collection

"The Library's Rare Books Collection is a very heterogeneous one. It comprises 892 titles (which amount to 1271 volumes) that include texts of great historical value as well as relevant contemporary texts, including many that are now out of print. The Collection provides useful examples of architectural visual representations, styles and techniques, as well as

historical and theoretical information about the discipline” (José E. Flores-Ramos, 2018). It is a growing collection although growth is slow. Acquisitions happen via purchase or donations.

At least four digital photographs of each item are to be taken, as part of this assessment. This task is of great significance, since there are no photographs on this collection. A digital photographic record of each object should be kept on disk. This is particularly relevant; only through photographs can a historical understanding of the condition of each object be maintained.

a. Collection’s condition

i. Conservation history

The library has never had a conservator survey the collection, nor has professional conservation treatment work been undertaken. However, the library has been trying to attempt some preservation strategies by storing valuable books in custom-made acid free boxes and attending to minor repairs. 177 books have their own custom-made enclosures with custom-made archival materials. This is good because they are protecting fragile books. However, only a few of them meet custom-made standards in conservation (besides the use of conservation materials).

ii. Condition survey

An item-by-item conservation assessment of 644 items from the Rare Books Collection has been performed. This quantity represents more than half of the Rare Books Collection and gives a real idea of its entire conservation conditions. As Jesper Stub Johnsen (1999, p. 102) mentioned, “there is no magic number for sample size, but 400 objects (for each storage location) has been suggested as acceptably representative for libraries”¹ (Eden et al., 1998; Johnsen 1999).

The assessment of each item offers the following information:

- Item description: Assessment date and information identifying the item.
 - Access number, author, title, date, provenance, binding dimensions, text block dimensions.

¹Stub Johnsen, Jesper: “Introduction to the surveyor’s guide to condition assessment of the photographic collections”, 1999, London, James&James

- Constituent components of each book: covering, binding, board, endbands, text-block, media.
 - If there is a previous intervention.
 - If the item has an enclosure.
- Damage: Visual condition report of each item (see Appendix 1, 2, and 3, Rare Books Condition Assessment, prepared by Luis Raul Rodríguez Matos).
 - Every reported damage is located in the item’s constituent components, noting its intensity (Minimal, Medium, High); if an additional interesting photograph should be taken, it is also noted.
- Final rating condition: evaluation condition ranking, treatment proposal and remarks if any.
 - A rating is chosen between an ascendant scale (Very bad, Bad, Poor, Fair, Good, Very Good and Excellent), followed by a brief proposal treatment and any important remark (“handle with extreme care”, “be aware of mold presence”, among others).

III. Results

As shown on Table 1, more than half of the collection is in “Very Bad”, “Bad”, or “Poor” condition. Please see detailed findings at the end of this report (prepared by Luis Raúl Rodríguez Matos).

Table 1. Rating

General condition	Total items	Percentage (%)
Very Bad	105	16.3
Bad	117	18.2
Poor	141	21.9
Fair	181	28.1

Good	80	12.4
Very Good	20	3.1
Excellent	0	0

Table 2. Deterioration

Damage	Quantity	Percentage (%)
Dirt/dust/soil	637	98.9
Losses/missing materials	404	62.7
Brittleness	234	36.3
Stains	461	72.0
Tears	494	76.7
Folds/creases	409	63.5
Delamination/splits	237	36.8
Peeling/skinned	148	23
Holes/dent	214	33.2
Insect damage	186	28.9
Distortion	234	36.3
Water damage	280	43.5
Foxing	606	94.1
Mold	107	16.6
Detachment	147	22.8
Yellowing/discoloration	594	92.2
Cracked/broken joints	155	24.1
Abrasions/scratches	613	95.2

* Highlighted in red are damages that represent more than 50% of the studied collection.

a. Interpretation

The following classification puts together damages related to, but not exclusively, a particular problem:

i. Lack of climate control

- Mold (107 books)
- Insect damage (186)
- Water damage (285)
- Foxing (606)
- Yellowing/Discoloration (594)

ii. Handling and storage concerns

- Abrasions (613 books)
- Tears (494)
- Folds/Creases (409)
- Delamination/Splits (237)
- Distortion (234)
- Dent (214)
- Cracked/Broken joints (155)
- Peeling/Skinned (148)
- Detachment (147)

iii. Inadequate practices

- Labels (453)
- Tapes on spines (420) or mend a tear
- Paper clips (a few)

b. Climate control and environment

i. Facts

After hurricane María's passage back in 2017, the island experienced an ongoing power outage and the library's electric generator was seriously damaged. Therefore, the library's collection lacked climate control for more than three weeks. Nowadays, the library's air-

conditioning system is working 24/7. This is a relief for the entire library's collections, but the building has several problems concerning impermeability. During the assessment, I experienced drops falling from the roof after days of continuous rain. While the library does have a monitor for temperature and humidity at the Director's office, there is no systematic environment control or recorded data at the moment. Thus, it is impossible to know if there are temperature or humidity fluctuations during the day and/or during specific moments of the year. In like manner, the lighting as well as its intensity are not monitored as an essential part of the problem.

ii. Recommendations

- My recommendations include a survey from two specialists: one specialized in architecture/buildings, the other in preservation environment for cultural entities. Their findings are more than necessary at this point.
- the purchase of hygrothermographs. These machines record on-going temperature and relative humidity readings on a daily/weekly/monthly graph. It is usually desired to maintain spaces at a 40% to 60% level all year, with the ideal being as close to 50% as possible. Mold growth can begin above 60%, and conditions become too dry below 40%, desiccating paper among other materials. Without hygrothermographs it is impossible to understand the interior environment and how it fluctuates on both a daily and yearly cycle. Another option to consider is the purchase of data loggers which record temperature and humidity digitally. High humidity conditions have a direct impact on books, causing severe swelling of the cellulose fibers. During the assessment, I could see the results of books exposed to humidity. These are tell-tale signs that an Environmental Survey should be seriously considered to mitigate further deterioration. Controlling the environment controls the long-term preservation of the collection.
- to block UV light from the large windows, I would recommend covering them with ultra-violet film protection, since both reading, and exhibition spaces receive natural light. This film can be cut to fit the windows and

easily attaches into place. This would offer constant ultra-violet protection for the holdings.

- the replacement of lamps to LED lighting. The purchase of a light meter should also be considered. It is normally recommended that light levels be kept in the 5 foot-candle (ft-c) range (or 50 LUX) for sensitive materials (textiles, watercolors, paper materials) in the storage room. A lighting level of 30-40 foot-candles is adequate for general reading and staff areas.

c. Storage and handling

The survey has shown that a great part of a book's deterioration is directly related, or at least favored, by inadequate storage and handling: 613 books show abrasion/scratches, 494 have tears, 409 have folds, 404 books have losses, 147 books show various kinds of detachment and 155 books have cracked/broken joints.

i. Storage facts

Since its foundation in 1966, the Rare Books Collection has been moved around four times. The first move was to the new building of the Architecture School. But after Hurricane María (back in 2017) the collection has been moved three times: to the Exhibition room José A. Torres Martínó; then to the Architecture and Construction Archives; and finally sharing space with the Special Collection. Collection storage is located within the library's building. The Library encompasses an area totaling 11,642 square feet and all books are located on the first floor. Books are distributed in the reading room, except for the Rare Books Collection and other important small collections. These collections are kept behind a counter, and their access is limited to the library staff and interns. The Rare Books Collection comprises 892 titles (1271 volumes). This storage room has high density compact shelving, shared with all these collections. Over-sized books are kept aside, flat, in storage furniture. In the same space, there is an office and a restroom (for any staff member).

ii. Storage recommendations

Overall, I would recommend moving the Rare Books Collection out of this space. These are the reasons:

- lights are turned on all the time during library's opened hours; indeed, other books are often asked by the public, contrary to those from the Rare Books Collections.
- since other collection books are consulted, the Rare Books Collection is more exposed, therefore more vulnerable.
- the high-density compact shelving has smaller shelves than the width of some books. Those books do not have the support they need; furthermore, the compact shelving cannot be completely closed, and any mistake could make books fall.
- a space with an office and a restroom, is not appropriate storage for the Rare Books Collection.
- the collection storage room will not provide adequate long-term storage capabilities with a growing collection over time.

That said, the ideal storage room would be:

- a room with controlled temperature and humidity.
- a stable environment, where no leaks could occur, and where there is no air conditioning exhaust hose above books.
- a regularly clean space.
- soft light and LED lighting if possible.
- One where “storage units should be constructed of a stable material and finished with nonreactive coatings, such as high gloss, epoxy powder coating in white or off white, and sealed with neoprene or silicone elastomer door gaskets”²(“Preventive conservation: collection storage”, p.617), with the sufficient width and depth to support any book. Use

²Elkin, Lisa, A. Norris, Christopher: « Preventive conservation: collection storage », 2019, New York, Society for the Preservation of Natural History Collections

bookends to properly maintain books in place if needed and dispose books in the shelving according to their sizes.

- a space with limited access.
- iii. Handling issue recommendations
- Foresee training budget for staff members, to properly handle and store books.
 - Prepare friendly notice for users, showing how to handle with care and provide rest/support cushions for fragile books if needed.
 - Preparing custom-made archival quality enclosures for every book. This would offer necessary protection against dust, light, pests, and inappropriate handling.
 - Since it is a Rare Books Collection, I would evaluate the possibility to digitize, if not the entire collections, at least books that are more valuable (according to the library's policy) and/or more fragile.

d. Library's practices

- i. Facts and recommendations
- Tears repair: to repair tears on paper, ordinary tapes were used. With time, they become yellow, and the adhesive crystallizes as it ages. In the future, I recommend the use of an archival quality transparent mending tissue, to avoid this problem. It is an acid-free and a no yellowing product.
 - Labels: the library has been using transparent or white labels to identify every book. Unfortunately, adhesive from these labels has been damaging every single spine. After the removal of these labels, I recommend the use of archival quality labels to be placed over the "spine" of the custom-made enclosure.

- Book carts: book carts are being used to move books from the storage room to the front desk. Unfortunately, most of the books are bended. This leads to a general distortion that might provoke the break of a joint. If there are not enough books to support each other, I recommend laying them down, avoiding any tension in the bindings, and possible falls.

IV. Recommended first steps implementations

While planning the hiring of consultants specialized in buildings and preservation environment, these are immediate steps that I would implement concerning the collection:

- a. Conduct and complete the photographic documentation of each book.
- b. Separate books identified with mold during the condition assessment survey; wrap them and put them aside; these cannot be lent until planning proper conservation treatments.
- c. Separate books identified with tears, detachments, broken joints and high brittleness of the paper; these cannot be lent until planning proper conservation treatments.
- d. Plan treatments to be carried out by a conservation specialist, using the evaluation condition ranking attributed during the condition assessment; it is the best way to prioritize treatments according to their needs.
- e. Discuss and decide if a digitization of part of the collection, or the entire collection, would be worth it.
- f. Plan to rehouse the entire collection in custom-made conservation boxes; this task could be undertaken by a specialist in the conservation field, or by a staff member that received proper training.
- g. Plan annual budget to train staff in the proper handling and good storage practices of books.

At this point, surveys from the two mentioned specialists are to be considered, prior to moving the collection and according to their recommendations as well.

V. Conclusions

This conservation condition assessment focused on the library's Rare Books collection. Findings of the condition assessment show that more than half of the studied books are in bad condition and need professional conservation treatments:

- a. 56.4% of the studied collection is in "Poor", "Bad" and "Very Bad" condition
- b. 36.3% has brittle paper, of which 53.6% has a Medium and High brittleness
- c. 28.9% has been identified with "Insect damage"
- d. 43.5% with "Water damage"
- e. 16.6% show mold presence
- f. 22.8% has any "Detachment"
- g. and 24.1% with "Cracked/broken joints", among others

This assessment unveiled the conservation condition of the majority of the library's Rare Books Collection. It highlighted the reasons that favor or increase their damage, as well as the possibility to gain knowledge from the collection itself. A lot of recommendations can be applied immediately; others need proper planning in a short- and long-term basis.

This assessment is to be completed by two evaluations: an evaluation of the library building as well as its entire physical environment. At the end, everything is connected and there is no seriousness in considering the physical conservation of a book collection if the building has numerous fails and/or there is a weak environmental control.

It has been crucial to establish priorities in treatments, to remind adequate and safe handling, to recommend regular training to staff, to give ideas of proper storage room, among others. Last, but not least, I recommend diffusing this final condition assessment report: general public's empowerment promotes knowledge, care, and good practices. Additional information is available at https://www.youtube.com/watch?v=ddi_3CNCj1Y.

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