

CASE STUDY

Environmental Preservation Vault for the Universidad Iberoamericana (IBERO)

IBERO

IBERO's Preservation Milestone

Universidad Iberoamericana (IBERO) is one of the most prestigious universities in Mexico and Latin America.

In preparation for a monumental donation from the renowned photographer Mariana Yampolsky, IBERO sought to create a space to house her invaluable photographic collection, documentary archive, library, and collection of prints.

Cobeal partnered with IBERO to design, build, and install an advanced environmental preservation vault tailored to meet the preservation needs of this historic collection.

The vault was carefully engineered to maintain 8°C and 35% RH, providing the ideal conditions for long-term preservation while remaining accessible for researchers, students, and academics to consult and study the collection.

PRESERVATION THROUGH INNOVATION



Thanks to Cobeal's expertise, IBERO met international preservation standards, ensuring the integrity of Yampolsky's collection for future generations.

The state-of-the-art environmental vault enabled the university to fulfill the requirements for the donation and transfer rights.

This critical milestone was celebrated at the Francisco Xavier Clavigero Library, where the agreement was officially signed.

A CELEBRATION OF CULTURE AND LEGACY

The unveiling ceremony brought together prominent cultural figures, including Catherine Bloche, Mexico's representative in the UNESCO Memory of the World Program; Juan Carlos Valdés and Mayra Mendoza, director and deputy director of the National Photo Library; Rebecca Monroy, director of the Image Center; and Walther Boelsterly, director of the Museum of Popular Art. Their presence exemplifies the importance of this collaboration in preserving Mexico's cultural heritage.

UNIVERSIDAD IBEROAMERICANA (IBERO) ARCHIVE

DESIGN & IMPLEMENTATION OF A PRESERVATION VAULT

Abstract

This paper describes the process and technical considerations involved in designing and constructing a state-of-the-art preservation vault for Universidad Iberoamericana (IBERO) to house the photographic collection donated by Mariana Yampolsky. Cobeal conducted a feasibility study, material analysis, and engineering design to create a VOC-free vault with highly controlled environmental conditions. The project aimed to ensure the preservation of materials for 200 years, meeting strict international standards.

Introduction

The preservation of cultural heritage requires precise environmental conditions to protect sensitive materials such as photographs, paper, and polyester. In 2024, Universidad Iberoamericana initiated a collaboration with Cobeal to design a dedicated environmental vault for the storage of the Mariana Yampolsky collection. This project involved feasibility studies, engineering design, and construction to create a controlled environment that would preserve the collection for future generations.

Feasibility Study

The project commenced with a detailed feasibility study to determine the optimal location for the vault within the university. An unfinished section of the library, initially designated for book restoration, was identified as the most suitable location due to its structural properties and insulation potential. The designated space measured 85m² and provided the necessary flexibility for custom environmental controls.

The feasibility study also included:

- **Collection Review:** Analysis of the collection size, material composition, and storage requirements.
- **Material Analysis:** Identification of materials such as polyester and paper, which demand distinct temperature and humidity levels for preservation.

Engineering Design

Based on the findings of the feasibility study, Cobeal completed the basic and detailed engineering phases, which included:

- **Construction Drawings:** Detailed blueprints for the vault's construction, ensuring compatibility with existing infrastructure.
- **Environmental Equipment Design:** Selection of advanced HVAC and filtration systems, dehumidifiers, and temperature control units to maintain precise conditions of 8°C and 35% relative humidity (RH).

The team determined these parameters to maximize preservation, projecting a 200-year lifespan for the collection under these conditions. Additionally, high-density storage furniture was incorporated to optimize space and ensure secure housing for the collection.

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Construction and Materials

Construction began following the completion of the engineering phase. Key aspects of the construction process included:

- **VOC-Free Environment:** Use of low-emission construction materials to prevent volatile organic compounds (VOCs) from damaging sensitive items.
- **Stability Assurance:** Ensuring no variations in temperature or humidity throughout the space, critical for long-term preservation.
- **High-Precision Installation:** The integration of environmental control systems, sealing, and insulation to achieve airtight conditions.

The engineering and construction phases lasted 8 months, culminating in a fully functional, validated preservation vault.

Environmental Control Systems

The vault was equipped with state-of-the-art systems to ensure stable environmental conditions, including:

- **HVAC Systems:** Tailored to maintain precise airflow, temperature, and humidity control.
- **Monitoring Equipment:** Continuous monitoring sensors to detect and address fluctuations immediately.
- **Redundancy Mechanisms:** Backup systems to prevent equipment failure from compromising environmental stability.

These systems were validated through rigorous testing to ensure compliance with international preservation standards.

Results and Validation

Upon completion, the vault met all requirements for preservation:

- **Temperature Stability:** Maintained at 8°C, with no significant fluctuations.
- **Humidity Control:** Maintained at 35% RH, providing optimal conditions for polyester and paper preservation.
- **Preservation Longevity:** Environmental modeling confirmed a projected lifespan of 200 years for the collection under these conditions.

The vault was delivered on time and fully operational, marking a significant milestone in the preservation of cultural heritage at IBERO. Cobeal's design and construction of the preservation vault at IBERO demonstrate the critical importance of environmental control in preserving cultural artifacts. By integrating advanced engineering, material analysis, and environmental systems, this project set a benchmark for preservation standards in Latin America. The success of this initiative illuminates the value of collaboration in safeguarding history for future generations.