Abstract

Restoration of the Frank Lloyd Wright Darwin Martin House required collaboration between a curator and conservators, who worked with original collections, period photographs and other documentation to determine how best to preserve the collection and present the house to the public. The state of preservation of some of the pieces in the collection led to the use of some reproductions and replicas. This paper addresses how the decisions were made to introduce these materials and what steps were taken to make them as accurate as possible. Additionally, the paper evaluates how successful these decisions were.

Keywords
Frank Lloyd Wright, upholstery conservation, furniture reproduction, digital prints

Keeping it Real: The Relationship Between Curator and Conservator in Furnishing a Historic Interior

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The Darwin Martin house, Buffalo

Frank Lloyd Wright’s Darwin Martin house in Buffalo, New York, designed for Darwin D. Martin and his family in 1903-05, has been considered a laboratory for Wright’s emerging gesamtkunstwerk vision of domestic design and one of his most successful Prairie houses. Its design includes strong horizontal lines and planes, deeply overhanging eaves, a central hearth, a prominent foundation, and a cantilevered roof. As he often did, Wright designed much of the furniture for the main floor and specified its placement; he had an immutable vision of how all furnishings would function within his interiors. Darwin Martin, a strong supporter of Wright, said, ‘Your tout ensemble is magnifique,’ and promised he would never move a footstool from its appointed position. [Darwin D. Martin, 1905] He did not, however, keep that promise. The Martin family lived in the house until 1937; the State University of New York at Buffalo purchased it in 1966. [Jackson-Forsberg, 2005]

In 1992, the university crafted an agreement in which the house would, after restoration, become a New York state historic site. Before restoration, ownership passed to the Martin House Restoration Corporation (MHRC) not-for-profit organization. Per the agreement the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) became a partner in the restoration process. OPRHP’s Bureau of Historic Sites (BHS) conservators would treat the state-owned collections.
In 1994 the MHRC, BHS staff, and a panel of scholars decided that the property would be restored to its 1907 appearance, soon after its completion. This led to interesting philosophical conversations about preservation and, eventually, to the restoration of the entire Martin House complex, including the reconstruction of the pergola and carriage house [NYS OPRHP, 2001] (Figure 1).
In planning the interior restoration, staff drew on a rich archive of letters between Martin and Wright, Wright’s drawings, and Wright-commissioned period photographs [1] [Quinan 2004]. Despite the changes in ownership, the house retains nearly 100 objects original to it, many of which Wright designed. We, a team of conservators and the Martin House curator, worked for over ten years preparing the collections for (re)installation. We realized that to make our work successful, we would need to give the importance of ‘le tout ensemble’ considerable significance in every decision we made. For example, furniture finishes originally were identical to those on interior woodwork. Would it be possible to match original, conserved furniture with new woodwork? Wright had used a palette of greens and golds drawn from the landscape. Paint layer research revealed original paint colors, which could be duplicated. The curator believed that the interior fabrics would have been in the same palette. The furniture, however, did not retain its original covers, and the curtains, portieres, and carpets were only known from black-and-white photographs. What other resources could be used to choose correct fabric colors?

Two issues were constant during the decision-making for collection conservation. One was the question of accuracy and authenticity, as described above. The other was preservation vs. access—how to strike a balance between these essentially opposing needs. In looking at the objects identified for display in the Historic Furnishing Report [Jackson-Forsberg, 2005], we realized that the best way to resolve these issues required conservation of some objects and creation of reproductions/replicas for others. The decorative art objects and most of the non-upholstered furniture were conserved. The projects discussed below—the Japanese prints, the sofa and chair upholstery, and the library and dining room tables—illustrate the various ways in which reproductions were developed.

**Japanese prints**

The Martin House collection includes 24 Japanese woodblock prints, primarily from the Edo period (1603-1868), with works by Hiroshige, Shunsho, Shigemasa, Utamaro, and Kôryûsai. The prints vary in size and format from tall, vertical ‘pillar prints’ to smaller prints in portrait and landscape orientation.

Wright considered Japanese prints to be organic elements of his interiors. The Wright-commissioned photographs show that he had selected and specified the prints’ locations, as he often did in other projects [Meech, 2001]. In a letter to Mrs. Martin, he even recommended the frame style, and the matting dimensions, in addition to their coloration - ‘dull gold mats’ [Wright, 1906] (Figure 2). Careful examination of historic photographs, research in the archives, and information on the verso of the prints and mounts, allowed us to create a map of their hanging locations during the Martin family’s occupancy.

Because of their extreme sensitivity to light, it is challenging to display Japanese woodblock prints in a historic house. The long-term display often desired in historic houses subjects these prints to far more light exposure than is recommended for paper-based materials. In museums, works of art as light-sensitive as these prints are often ‘rested’ in dark storage for three to five years after being exhibited for as few as 12 weeks at very low light levels. Museums’ standard rotation or substitution protocol is often not practical for historic interiors; this was certainly the case in the Martin House, where the prints were over-exposed from years of display.

In the past, historic house museums and some museum exhibitions have substituted photographic copies of prints for originals. Photographs of prints, however, change the aesthetics of the original and thus the visitor’s experience of the interior. In a historic house, one element that is ‘off’ can be jarring in a way that is unexpectedly significant.
Advances in digital printing encouraged us to experiment with digital copies of the Japanese prints. We went to great lengths to create compelling digital copies, which we termed ‘replicas.’ The replicas allow us to display the images Wright specified, while preserving the original prints by protecting them from further light damage in archival storage.

Creating a convincing digital imitation woodblock print began with commercially available products, but quickly diverged into the experimental. While a color-correct digital image file was easy to produce, relating that color accuracy to the desired printing substrate was not. Many of the Japanese papers marketed for digital use are non-standard substrates and do not have a commercially available printing profile for ink-jet printing. The paper we chose for the Martin House replica prints was an unprepared (uncoated) Japanese paper with a natural printable finish. This paper was sympathetic in color and transparency to that of the original prints, but did not provide enough color separation or render the colors as closely as we desired. Working with a talented and adventurous printer, we overcame this hurdle by coating the paper before printing to improve the surface finish and make it more receptive to the ink-jet process. While this made the process slower and more expensive, the quality of the final product more than justified the extra expense.

Matting and framing the digital copies was equally challenging. The original woodblock prints were in a variety of frames, from varnished wood and imitation-gold-painted wood frames dating from the early twentieth century to the current millennium. The window matting varied from original imitation-gold-painted mats to modern-day paper laminate mats and decorator-inspired, textile-wrapped mats. We decided to give the replica prints new frames with new mats, rather than put replica prints into historic frames and mats -- some of
which were original to Frank Lloyd Wright, some later. To retain evidence of the prints’ history, we placed all the components associated with the original prints—mats, frames, backing boards—in collections storage.

Since commercially available frames did not match the variety of the historic frames, and reproducing those styles and materials would have used too much of the interior restoration budget, we decided to place all replicas in frames that matched one of the original frames. We selected a 2.5 cm-wide, quarter-sawn oak frame because it was aesthetically authentic and readily reproducible by a frame maker.

The woodblock print replicas are an integral part of the experience of the Martin House as well as ‘ambassadors’ for responsible stewardship of light-sensitive materials. Martin House docents tell visitors that the prints are replicas, and explain that they are a necessary compromise to preserve the originals. These can be viewed, off-site, on request.

**Upholstery**

At the beginning of the project the upholstered furniture was covered with soiled, utilitarian, 1970s covers, and the profiles of some pieces were distorted from use or re-upholstery. The Wright-commissioned photographs showed the original appearance of the upholstered furniture in black-and-white. To look for evidence of the original covers, we documented and removed the modern covers and saved representative samples in the object files and then carefully examined the under-upholstery (supporting layers) and frames for evidence [2].

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Fig. 3. Reception Room arm chair. Left: original cover preserved on inside back. Right: chair after treatment with new cover. ©NYSOPRHP/Darwin Martin House.
Some pieces required a tremendous amount of study to determine the original fabrics and colors whereas others were more straightforward. On one chair there was ample evidence, as the entire original inside back fabric was in situ. This discovery engendered discussion about conserving and exposing this fabric. If we did this, how should we treat the rest of the chair—with a ‘neutral’ fabric or with one that was similar to the original? Or, should we cover the chair in a replacement fabric? Because the chair would be displayed in the Martin House (vs. in a museum exhibition), the latter option was selected. The original fabric had a fairly generic design, in a still-popular color, so we were able to choose a new fabric from several on the market (Figure 3). The original fabric was retained in situ, and was protected by a Tyvek undercover between the old show fabric and the new.

Decent-sized pieces of the original cover were preserved on another arm-chair; these served as a model for a replacement fabric. The evidence on most of the other pieces, however, was less clear. Six chairs from the Reception Room had fiber/yarn evidence showing that the pieces had been covered with a yellow-gold wool fabric. Knowing this, however, did not make fabric selection easy. Not enough fabric remained to determine its weave structure or quality. Looking for period samples of plain fabrics proved fruitless; as the museum and fabric archives searched only contained fabrics with patterns. In the end, our model was a reproduction of a fabric from another Wright house that Scalamandré, a New York-based fabric house, had made in the 1990s. Based on that fabric, we selected a yellow-gold, satin-weave wool fabric for these chairs.

The four sofas proved even more challenging. The living room sofa was the most puzzling. In Wright-commissioned photographs this sofa cover looked dark, glossy, and crisp. Colleagues who studied the photographs thought the sofa was covered with black horsehair or silk fabric. Examination of the under-upholstery and frame provided absolutely no evidence of either fabric, nor any other conclusive evidence. Instead, our investigation showed that the sofa had been fully re-upholstered at least once and that the re-upholstery had reused some of the under-upholstery materials. A series of yellow and green wool fabric fragments was preserved on the bottom back rail. Closer examination showed that the two
colors were on one piece of fabric. This was either a yellow fabric that had turned green, or a green fabric that had turned yellow. These fragments were the best clue to an early, if not original cover. Because the green color could read as dark in a black-and-white photograph, we decided to cover the sofa with a dark green, satin-weave, wool fabric, which we hoped would produce the desired sheen. Happily, when the sofa was photographed after treatment, the fabric reflected the light in a way similar to the original (Figure 4).

**Furniture**

The furniture that came to BHS for conservation included a table with two shelves that looked like a possible Wright design (Figure 5). This table did not appear in any of the historic photographs, Wright’s drawings, Wright-Martin correspondence, or descriptions of the furnishings. Historic photographs and Wright’s drawings did, however, show two other tables; one in the Library and one in the Dining Room. These rooms are at either end of the long, rectangular space that Wright called the Unit Room, composed of the Dining Room, Living Room, and Library (Figure 6). The tables are crucial to the interpretation of the Unit Room, as they not only anchored it, but also counterbalanced the views out the art glass windows. The historic drawings and photographs show the two tables were of similar shape. With twenty legs each, and built-in planters and candelabra, they were altar-like in appearance. Without these unique and complex tables in the furnished spaces, it would be difficult for curators, conservators, and especially visitors, to understand Wright’s Unit Room design.

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Fig. 5. Top: ‘undocumented table’ or table fragment. This fragment is now in storage at Peebles Island Resource Center Waterford NY. ©NYSOPRHP/Darwin Martin House.  
Bottom: 1908 view of Dining Room, showing table. ©Henry Fuermann and Sons, courtesy University Archives, State University of New York at Buffalo and Centre Canadien d’Architecture/ Canadian Centre for Architecture, Montréal.
Fig. 6. Top: Wright’s presentation drawing for the library table showing stanchions supporting a lamp and plants. A similar drawing exists for the dining table. Bottom: Wright’s Martin House first floor plan. The library table (bottom) and the dining table (top) are circled. These drawings are not adequate working drawings and do not portray all the details. ©University Archives, State University of New York at Buffalo.
The furniture conservator began an intensive study that incorporated detailed examination and radiography of the undocumented table and two ‘stanchions’ (wooden structures that Wright had designed to support the planters at the corners of the tables), including identification of the function of every hole on the undocumented table, as well as close scrutiny of the original Wright drawings and period photographs (Figure 7). The study not only gave the furniture conservator the opportunity to explore in great depth the construction of two pieces of Wright furniture but proved that the ‘undocumented’ table, now understood to be a fragment, was the extremely modified remains of the library table. The analysis established that both the dining and library tables had been built as Wright had designed them. The study also demonstrated that it would not be possible to reverse the changes that created the surviving fragment. To complete the restoration of the Unit Room, it would be necessary to have reproduction tables.

The furniture conservator convinced the MHRC to commission accurate reproductions of the tables and in collaboration with Alex Carlisle, furniture conservator and furniture maker of Williamstown, Massachusetts, made the working drawings. After a national search, Timothy Coleman of Sheffield, Massachusetts was chosen to make the tables. The learning process continued as we worked together on additional construction features. Coleman made the tables using hand-sawn veneers with all the wood coming from a single tree. The result was a high-fidelity match to what remained of the original table, even in terms of the wood grain and ray pattern (Figure 8).

Having a high degree of precision is critical to a successful reproduction project in a historic house museum. The reproduction tables are clearly marked as reproductions, to prevent future confusion about their date of manufacture. Visitors to the Martin House may notice that the tables look somewhat brighter or cleaner than the other, original, conserved pieces in the room. While the reproductions might be perceived as deceptions, their significance in the interpretation of the space, and their importance as landmarks in American furniture justifies their creation. Although a reproduction seldom has a place in a museum, in a historic house interior, especially a designed interior, it is used to give the ‘tout ensemble’ of the original intent.

![Fig. 7. Top: radiograph of ‘stanchion,’ showing hole for electric wiring. Bottom: table fragment top with ‘stanchion’ place on it; acrylic sheet indicates how corner of original table was cut off. ©NYSOPRHP/Darwin Martin House.](image-url)
Successful collaboration between the furniture conservator and the curator allowed us to develop the designs for the reproductions. The curator had access to the photographs and archival drawings and a deep understanding of Wright’s design intention, while the furniture conservator had knowledge of materials and techniques, and the furniture building skills to interpret clues on the table fragment. In the process of researching the tables, much of the struggle between the Martins, Wright, and the original builders of the table was also revealed. The design dialogue between client and patron was preserved and was translated once again into furniture joins and veneers.

**Conclusion**

Over the course of this project, we had many discussions on the use of copies. These included conversations about different products and methods of production. Eventually, we agreed on terms to explain the differences. We adopted the term **reproduction** to describe a copy that was produced with the same materials and methods as the original. We adopted the term **replica** to describe a copy that was made by methods and materials that differed from the original. We called the tables and the oak frames for the prints reproductions and the digital prints and their mats replicas. As for the upholstery fabrics; perhaps it is best to call them **adaptations**, since we do not know, in most cases, exactly what the original fabric was.

This project was successful in part because we had time and two very supportive institutions -- the MHRC and NYSOPRHP/BHS -- on our side; a luxury that not many historic house projects experience. Because reconstruction and restoration of the buildings extended from the original goal of restoring the Martin House proper, to restoration of the entire Martin House Complex, we had over a decade to research, examine, and consider how we might treat the collections so they would best fulfill the site’s interpretive goals. Because the field of digital printing advanced during this period, the prints were more successful than they would have been.
a decade earlier. Although the cost of reproducing the tables was high, the MHRC board and NYSOPRHP/BHS administration recognized their importance to the interpretation and understanding of the house, allowed time for the research and national search, and raised funds to have them built. Overall, at the Martin House conserved and reproduction pieces work well in achieving the interpretive goal—to present its appearance soon after Wright handed the keys over to the Martin family.

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Endnotes

[1] Wright commissioned Henry Fuermann and Sons to photograph the house in 1908.

[2] While this paper does not discuss treatment of the under-upholstery, this was part of the project. Under-upholstery treatments followed contemporary upholstery conservation principles, including stabilization of original materials and minimizing the introduction of metal fasteners into frames.

Materials

Replica prints:
Kozo-shi light 24 gsm Japanese paper; InkAID® Clear Matte Precoat
Digital Print Supply, 9596 B Chesapeake Dr, San Diego, CA 92123 USA.

Frames:
Timothy Holton, Holton Studio Frame Makers, 5515 Doyle Street, No. 2, Emeryville, CA 94608 USA

Fabrics:
Stark Carpet – Fabrics, 979 Third Avenue, New York, NY10022 USA
Schumacher, 979 Third Avenue, New York, NY 10022 USA

Drawings for furniture:
Alex Carlisle, A.M. Carlisle Art Conservation, 526 Water St., Williamstown, MA 01267, USA

Furniture:
Timothy Coleman Furniture, 39 Wilson Graves Rd, Shelburne, MA 01370. USA www.timothycoleman.com

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