



## THE ARTIFACT, ITS CONTEXT AND THEIR NARRATIVE: MULTIDISCIPLINARY CONSERVATION IN HISTORIC HOUSE MUSEUMS

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### Abstract

A major renovation of nine eighteenth century period rooms and three galleries comprising the Wrightsman Galleries for French Decorative Arts at The Metropolitan Museum of Art was driven in large part by a reinterpretation of the role of lighting in the narrative presented in each room. The conservation of the historic lighting fixtures – including 17 chandeliers, 30 sconces and 12 candelabra, mainly of ormolu, rock crystal and glass – was key to the realization of the new lighting scheme. Along with a description of the treatment and rewiring of the lighting fixtures, this paper will discuss collaboration amongst multiple departments within the Museum working in concert with outside contractors, which was essential for completion of the project in a limited timeframe.

### Keywords

Candelabra, chandeliers, historic lighting, period rooms, sconces

## Conservation of Eighteenth Century Lighting Fixtures in The Metropolitan Museum of Art

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### Introduction

The nine period rooms and three galleries known as the Wrightsman Galleries for French Decorative Arts opened to the public at The Metropolitan Museum of Art in 1969. The Galleries were funded by Charles and Jayne Wrightsman, whose passion for eighteenth-century French decorative arts led to the formation of one of the finest collections of its kind outside Europe. The Wrightsman gift, which included significant objects and furnishings as well as four period rooms, presented the Museum with an opportunity to reconfigure its existing galleries and to highlight its already rich collection of French decorative arts and furniture. The Galleries incorporated an eighteenth-century Parisian shopfront, as well as rooms from some of the most beautiful residences in Paris, Bordeaux and Vienna.

From their inception early in the 1960s, the Wrightsman Galleries were envisioned as a setting for the appreciation of the design and decorative arts of the *ancien régime* rather than an exact reconstruction of original eighteenth-century interiors. Most of the rooms came to the Museum from American collectors who initially purchased them for their private homes where the *boiseries* (carved wood panelling) were sometimes altered to fit new room dimensions. The fine art and furnishings, acquired by the Museum over a span of more than 50 years, were rarely, if ever, original to the rooms themselves. James Parker, former curator in the Department of European Sculpture and Decorative Arts, consulted with Jayne Wrightsman and Stéphane Boudin of the

influential Parisian design firm Maison Jansen on the original layout of the Galleries and interior design of each room [Abbott, 2006; Kisluk-Grosheide and Munger, 2010]. Jayne Wrightsman, now Trustee Emeritus, has remained actively involved since the Galleries opened, making additional donations from her collection and funding new acquisitions and maintenance.



Fig. 1. Evening, the Varengueville Room, boiserie, Paris, ca. 1736-52. The Metropolitan Museum of Art, Purchase, Mr. and Mrs. Charles Wrightsman Gift, 1963 (63.228.1)  
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Beginning in 2006, with the encouragement and generous funding of Jayne Wrightsman, the Museum undertook extensive renovations of the Galleries. The overall concept was inspired by the 2004 exhibition 'Dangerous Liaisons: Fashion and Furniture in the Eighteenth Century' in which the Wrightsman Galleries were used as a theatrical backdrop for mannequins dressed in period costume and posed in a series of suggestive vignettes. Narratives were enhanced through the use of faux candlelight, window lighting and glowing embers in fireplaces. As a result of the overwhelming success of the exhibition, a new design for permanent display in the Wrightsman Galleries was developed in which the lighting would be artfully manipulated to suggest a different time of day in each room (Figure 1).

The renovation included the addition of new recessed lighting in all of the modern ceilings, fluorescent lighting in windows and adjustable fibre optics in room barriers, all

controlled by a computerised dimmer system. The project expanded to include the redesign of some spaces, as well as upgrades to outdated security, fire abatement and air handling systems. A complete de-installation of each room was necessary to provide access to infrastructure, which presented a rare opportunity for study, conservation and reinterpretation of the *boiseries*, furniture and decorative arts on display within the rooms. The historic lighting fixture project, which involved conservation and rewiring of 17 chandeliers, 30 sconces and 12 candelabra, played a pivotal role in the new lighting scheme.



## Project Planning

The lighting and infrastructure project required the collaboration of a team comprised of Museum curators, conservators, designers and staff from the Museum's Construction and Buildings Departments, working with a number of outside specialists including exhibition designers, lighting designers and a historic lighting restoration firm [1]. Curators worked closely with designers to select appropriate light levels to suggest the imagined time of day for each room. The designers provided specifications for new auxiliary lamps and spot lights to be positioned in specific locations on the fixtures; the lighting restoration firm then proposed how this could best be achieved. Repeated refinements in the design were necessary to attain realistic lighting effects with minimal impact on the historic objects.



Fig. 2. Deinstallation of fifteen-light Bohemian leaded glass chandelier from the Varengeville Room. The Metropolitan Museum of Art, Gift of Mr. and Mrs. Charles Wrightsman, 1971 (1971.206.42) Photograph by authors.  
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Since most of the chandeliers were positioned above carpets and furniture, they were the last objects removed from the rooms and the first to be reinstalled. In addition, all the lighting fixtures had to be conserved before any rewiring could begin. These time constraints necessitated a tight project schedule. After in situ assessment of the condition of the chandeliers, a decision was made to avoid the typical practice of removing pendants and dismantling ormolu frames for treatment. This conservative approach minimised handling of the objects and significantly reduced time and workspace requirements.

Prior to deinstallation of the chandeliers, all the crystal and glass components were first wrapped with tissue followed by bubble wrap in various bag and sheet sizes, which could be easily slipped around the pendants and festoons. Additional support for pendants was provided using organza bags with drawstrings that could be tied up around the chandelier arms. Once the fixtures were protected, Museum electricians disconnected the electrical wires at

the walls or ceilings. Riggers removed the chandeliers using hand-cranked rigs to bring them to floor level where they were hooked directly onto rolling racks, facilitating movement and accessibility of the fixtures from the time they were deinstalled until reinstallation (Figure 2). Wire rolling racks with padded adjustable shelving were used to store and transport the sconces and candelabra.



*Fig. 3. Conservators treating one of a pair of twenty-four-light rock crystal chandeliers from the Louis XVI Gallery. The Metropolitan Museum of Art, Gift of Mr. and Mrs. Charles Wrightsman, 1971 (1971.206.41) Photograph by authors. © The Metropolitan Museum of Art*

A closed temporary exhibition space was secured to house the 59 fixtures and provide a space for the conservators, curators and lighting restoration firm to work (Figure 3). The objects were moved into the workspace where their condition was further assessed and documented. Along with written reports, annotated digital photographs proved to be particularly helpful in clearly indicating the location and types of various condition issues.

## Condition

The chandeliers, sconces and candelabra were generally in good condition and showed typical evidence of a history of use. The ormolu, rock crystal and glass surfaces were extremely dusty due to limited access, particularly to chandeliers, as well as the lack of routine maintenance in the period rooms. There were minor



losses and scattered structural problems; however most of the condition issues were a result of previous alterations, such as the addition of electrical wiring or restorations that were either failing or aesthetically distracting. A number of links on suspension chains had been damaged, lost or replaced with incorrectly shaped links, which had altered the length of the chains, resulting in increased stresses and uneven suspension of some of the chandeliers. Surface details of some areas of ormolu were obscured by lead solder repairs or by sheet metal reinforcements riveted across breaks. Modern nails had been used to replace missing screws, tangles of copper wire held the base finials on two of the chandeliers and cardboard washers were visible in gaps between crystal candle cups and drip pans.



*Fig. 4. Before treatment of the Lauzun Room chandelier. Detail of the arm receiving plate showing old electrical wiring. The Metropolitan Museum of Art, Gift of Mr. and Mrs. Charles Wrightsman, 1971 (1971.206.43) Photograph by the authors.*

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It was not possible to determine with any certainty the original configurations of the Wrightsman chandeliers, which, like many historic fixtures, had complicated histories of dismantling and restoration by successive owners. For instance, many of the suspension wires had been replaced so that the original location of pendants was unclear; some had been moved into the wrong orientations or to incorrect positions causing them to lean against the ormolu rather than hanging freely. In addition, several of the stacked crystals on the stems and arms had been improperly positioned. These inconsistencies were most obvious on the matching pair of chandeliers in the Louis XVI Gallery, which had vastly dissimilar placements of pendants and stem crystals.

Finished rock crystal elements were valuable due to the difficulty of mining, cutting and polishing large pieces of clear crystal and historical reuse was common. Chandeliers typically incorporated previously used rock crystal elements, some dating to

over a century before their more frequently updated ormolu frames [Klappenbach, 2001]. This practice was evident on the Wrightsman chandeliers where late eighteenth-century ormolu frames included pendant and stem crystals from the early and mid-eighteenth century, as well as late seventeenth-century rosettes and beads. Many rock crystal elements exhibited old damages indicating that even imperfect crystals were reused rather than refinished or discarded. Damages ranged from minor chipping on pendant edges to large losses on stem crystals. In addition, there were a number of examples in which pendants that had fractured at drill holes were re-drilled near the break edge of the extant fragment and rehung.

Most of the chandeliers, sconces and candelabra had been previously electrified using polyvinyl chloride insulated wires, which had become sticky, attracting dust and leaving residues on the ormolu surface (Figure 4). Wiring was secured to the fixtures with abrasive brass wire ties, adhesive or tape; nests of wires were clustered around arm receiving plates and on tops of canopies. To accommodate the wiring, modern holes had been drilled into some of the ormolu drip pans, candleholders and arms. Hardware was affixed to each candleholder with a variety of materials including paper, plaster and lead. Plastic faux candles were topped with round, bright white light bulbs.



*Fig. 5. Detail of modern auxiliary lights with applied rosettes on a Louis XVI Gallery chandelier. The Metropolitan Museum of Art, Gift of Mr. and Mrs. Charles Wrightsman, 1971 (1971.206.41) Photograph by the authors.  
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Numerous conspicuous auxiliary lights had been attached to the chandeliers to illuminate the fixtures themselves. They came in a variety of shapes and sizes such as funnel-shaped nickel-plated brass cups or polished brass cylinder casings unsuccessfully disguised with cast glass flowers (Figure 5). Pairs of up-lights straddled chandelier arms, and multiple lamps were positioned on drip pans, receiving plates and canopies. The incongruous auxiliary lights added bulk to the chandeliers and visibly interfered with the elegant contours of the gilt frames.

### Conservation Treatment

Three conservators worked exclusively on the historic lighting project for a fifteen-month period. In order to complete the project within the allotted timeframe, priority was placed on surface cleaning, structural repair and re-electrification of the fixtures. Aesthetic improvements were addressed as time allowed.

Conservation treatment began with the removal of electrical hardware, wires and auxiliary lights. Ormolu,



crystal and glass surfaces were cleaned with vacuums and soft brushes, followed by distilled water and ethanol on cotton swabs and wipes. Loose elements were stabilised by tightening or replacing missing screws and threaded rods. Individual suspension wires on chain links and festoons were carefully examined to identify areas of potential failure; partially open links were closed with padded pliers. The broken, missing or fractured links in weight-bearing chains were replaced by taking silicone moulds of the originals and casting and gold plating gilt brass reproduction links. Small epoxy shims were adhered at the upper links of slack chains to safely re-distribute stresses and correct hanging angles. Additional structural support was provided by incorporating fine nylon-coated steel wires into the suspension chains.

Unstable or visually distracting restorations such as the tangles of copper wires holding chandelier finials were replaced with more appropriate materials. Gilt brass reproductions were made to compensate for missing ormolu elements such as finials and decorative nuts. Discoloured repairs in crystal or glass elements were removed and new fills were created using a stable transparent epoxy with a similar refractive index. Dark cardboard washers were replaced with new, virtually invisible, washers cast in the same epoxy.

Although some alterations could not be made without dismantling the chandeliers, a remarkable visual improvement was made by repositioning the incorrectly oriented rosettes and pendants. These were rotated to hang with the faceted sides facing inward like cut diamonds, which is the historically correct position and maximizes reflection and refraction of light. Some pendants were moved to more accurate locations by cutting



Fig. 6. After treatment of the Lauzun Room chandelier. Detail of the arm receiving plate showing new electrical wiring. The Metropolitan Museum of Art, Gift of Mr. and Mrs. Charles Wrightsman, 1971 (1971.206.43) Photograph by the authors.  
© The Metropolitan Museum of Art

the modern attachment wires and reattaching them with new wires that had been chemically patinated to match the adjacent wires. New suspension wires were applied in the eighteenth century manner using fine round nose pliers to create decorative twists at the wire ends. Repositioning of the pendants was particularly effective on the Louis XVI chandeliers, which are considerably more brilliant from a distance and present a mesmerizing series of concentric light circles when viewed from below.

### Re-electrification

Curators and conservators consulted with the lighting restoration firm on the selection of new electrical wires. To avoid the problem of sticky degraded plastic-coated wiring, braided fibreglass sleeves were used to protect the new thinner polytetrafluoroethylene insulated wires (Figure 6). The sleeved wiring was flexible and could be easily toned with acrylic paints to match

varying shades of ormolu, crystal and patinated bronze on which the wires would rest. The old brass wire ties were replaced by less abrasive nylon monofilament. Conservators worked closely with the lighting restoration firm to ensure that the wires fit snugly yet safely along every curve in order to preserve the profiles of the objects. Great care was taken to place electrical wires in the least visible location on the fixtures, taking into account the sightlines of the visitors in the new galleries.

The adjustable socket hardware was assembled in varying heights to accommodate the different sizes of candles in each room. The hardware included hang straights with ball and socket mechanisms so that all of the candles could be easily adjusted to vertical resulting in a major improvement in the overall appearance of the fixtures. Hardware was secured in the candle cups using cork stoppers individually shaped to fit the interior of each cup (Figure 7). In a few cases this system had to be modified because the pre-existing hardware was embedded in lead and could not be easily removed.



*Fig. 7. Installation of electrical hardware and wiring on a three-light sconce. The Metropolitan Museum of Art, Gift of Mr. and Mrs. Charles Wrightsman, 1979 (1979.172.3) Photograph by the authors.*  
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The selection of faux candles and bulbs was carefully considered by curators and designers. Plain ivory beeswax-coated candle sleeves were custom ordered and altered by cutting to specific lengths and applying a specific number of wax drips to indicate the amount of time the candles had been burning in each conceived scenario. Valuable beeswax candles were generally not left in the chandeliers during the day in the eighteenth century [Dillon, 2002]. However, in this case curators chose to show candles in the fixtures in the daytime rooms, a compromise seen today in many historic homes and museums.



The small flame-shaped bulbs chosen for the night-time rooms give off a realistic yellow light and move intermittently by means of a magnetic impulse, as if flickering. A limited number of compact auxiliary lamps with 15 watt Xelogen bulbs were designed to fit into discreet locations on the frames to softly illuminate the chandeliers [2]. Additional gooseneck halogen spot lights were mounted on some of the chandeliers to highlight *boiseries*, sculpture and furnishings that could not be effectively lit with the new recessed ceiling lights.



Fig. 8. Daybreak, the Bordeaux Room, boiserie, Bordeaux, ca. 1785. The Metropolitan Museum of Art, Gift of Mrs. Herbert N. Straus, 1943 (43.158.1)  
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## Conclusion

The success of the historic lighting project was achieved through a collaborative effort resulting in an award-winning lighting system that was thoughtful in its presentation of the fixtures in period rooms where they play a central role in the narrative concept [3]. The conservation of the chandeliers, sconces and candelabra brought about a remarkable aesthetic improvement, and their sensitive re-electrification insured that they remain visually authentic in the context of the historic interiors (Figure 8). The Wrightsman Galleries have seen a marked increase in visitors who linger there to take a closer look at the arts of the *ancien régime*. In this more accessible and dramatic setting, where flickering candlelight reflects in mirrors and animates precious metal surfaces, and light streaming through windows shimmers across silks and crystals, the public might be seduced into stepping momentarily into the eighteenth century.

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## Endnotes

[1] Creative consultant, Patrick Kinmonth, Rossetti Studios, London, UK; principle lighting designer, Larry French, Auerbach Glasow French, San Francisco, CA; custom lighting fabrication and historic lamping firm, Aurora Lampworks, Brooklyn, NY, Principal/CEO, Dawn Ladd, wiring and fabrication, Mark Bump and Manuel Cando.

[2] The prototype for the auxiliary lamps was designed by Aurora Lampworks.

[3] International Association of Lighting Designers, 2009 Award of Excellence, <http://www.iald.org/about/awards> [Accessed April 3, 2013].

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