

White Paper Report

Report ID: 99628

Application Number: PF5001310

Project Director: Joseph Godla (godla@frick.org)

Institution: Frick Collection

Reporting Period: 7/1/2010-8/31/2011

Report Due: 11/30/2011

Date Submitted: 11/30/2011

National Endowment for the Humanities

White Paper

Grant Number: PF-50013-10

Project Title: Creating a Preservation Environment for Renaissance Limoges
Enamels

Project Director: Joseph Godla

Institution: The Frick Collection, New York

Date: November 30, 2011

A. PROJECT ACTIVITIES

The Frick Collection recently completed a year-long project to renovate two of its historic display cases designed by the eminent architect John Russell Pope (1874–1937). The renovation was necessary in order to create a suitable environment within the cases for the exceptional collection of Renaissance Limoges enamels that are normally housed in them. Because the Pope cases are considered a significant part of the museum’s historic interior, and because the enamels were originally purchased by Henry Clay Frick himself, it was important—in keeping with the institution’s mission—that the enamels remain on view in the Pope cases, as they have been since 1935. It was equally important, however, that the enamels be protected and preserved for future generations.

The elaborate bronze and glass cases were designed by Pope in 1935 specifically for the enamels’ display. At the time, however, there was little understanding of preservation issues relating to enamels. In particular, owing to the inherently unstable makeup of the glass composition in Renaissance enamels, their condition is significantly affected by fluctuations in temperature and relative humidity (RH). In 2008, following close examination, it was discovered that many of the Frick’s pieces showed cracks and delamination of the enamel. Systematic monitoring with data loggers of the RH in the museum galleries and storage areas revealed at least part of the problem: the RH within the display cases experienced severe swings, shifting as much as 25% during the winter months. With these findings, the enamels exhibiting glass deterioration were removed from the cases and placed in a sealed cabinet with proper airflow inside the Frick’s climate-controlled storage vault.

Architectural drawings and notes from the time of the building’s 1934–35 Pope modifications provided information on the source of the climatic problems within the cases. Pope located the cases in front of wall sections that had originally been a large doorway (south side) and a large casement window (north side). At the time the cases were built, both openings were enclosed with masonry consisting of an exterior face of limestone backed with terracotta tiles. These new walls were much thinner than those found in the building’s original 1914 construction and also lacked any insulation or moisture barrier. Unfortunately, these walls serve as the backs of the enamels cases. As a result, external weather conditions had a

significant impact on temperature and RH within the cases.

The cases' façades—constructed of several panels of flat and curved glass mounted in decorative bronze frames with an ornate pediment—were also a source for environmental instability. The façades have hinged doors flanking a central sliding glass panel, which provide access to the interior. While the cases are excellent examples of Pope's classical detailing, we now know that they allow a high rate of air leakage at the hinge points.

Frick conservators, in consultation with colleagues from other institutions with large holdings of enamels and glass, investigated the ideal conditions for the preservation of the inherently unstable Limoges enamels. The goal, it was decided, was (1) to maintain a stable temperature and RH within the 1935 cases and (2) in order to minimize changes in environmental conditions as pieces were taken on and off display, to maintain the same RH for both the display cabinets and the storage vault (i.e., $48\pm 1\%$).

In 2009, Art Preservation Services (APS), specialists in museum environmental issues, were brought in as consultants to develop plans for creating a display case that is capable of maintaining environmental conditions within the tight tolerances required for the preservation of sensitive Renaissance glass, while retaining the historic bronze and glass façades of the original Pope cases. Following many visits to inspect the current conditions, and consultation with sub-contractors, APS developed a plan which included insulating the exterior walls; fabricating a new case with circulating fans and a compartment for buffering salts; and refitting the bronze elements of the original façade with gaskets to ensure a sealed environment.

The first phase of the project—developing the schematic plan into a practical working plan—began in November 2010 and involved numerous meetings with the consulting environmental engineer, case maker, metalworker, and exhibition design consultant to work out numerous details such as: how gaskets would be applied to the historic elements to create a tight seal; the location of the compartments to house the buffering agent inside the cases; modifications

to the counterweights for the central glass panel that would allow it to open an additional 12 inches; and placement of the lights to better illuminate the artwork

In January 2011, working closely with Steven Weintraub, Principal of APS, the conservation department dismantled the cabinets and undertook the year-long project.

Application of insulation between the rear of the case and the wall

To stabilize the temperature in the gallery, high R-value foam insulation was installed on the inner face of the exterior walls behind the cases. The combination of the insulation and its moisture barrier facing eliminates the possibility of condensation buildup on the inside surface of the exterior wall.

Rebuilding the case interiors so that they are air-tight

The cases' primary five-sided structure was made by R. H. Guest Inc. of high-density overlay, and the interior walls lined with inert high-density polyethylene. In an effort to reduce the acidity in the new cases, we also replaced the existing fabric-covered wooden frames surrounding several of the enamels with reproduction frames made with high-density polyethylene.

Developing a unique method for sealing both the cases' front vertical sliding glass panel and the side pivot-hinged glass doors

A major challenge for the project was making the necessary alterations to the cases' bronze and glass façades in order to create the necessary microclimate inside, while maintaining the integrity of John Russell Pope's original design. Specifically, the issue was the manner in which the side doors (the glass panels to the extreme right and left of each case) open. Originally, the doors were attached to the cases by simple pivot hinges, making it next to impossible to create the tight seal necessary. To address this, new brass fittings around the perimeter of the doors were made, on to which new gaskets were mounted. These components have been placed out of view, behind the outer frame of each of these panels, thus not interfering with the design of the original cabinets. Similar elements were made for the central panel as well. Additionally, the counterweight system for the central panel was

reconfigured in order to increase the maximum opening size for the central panel.

Installing a passive RH buffering system utilizing silica gel, located below the deck

Each case now includes two boxes with a buffering agent (silica gel) for controlling relative humidity. Each box also contains a scavenger capable of absorbing gaseous airborne pollutants such as sulphur dioxide and nitrogen dioxide which can accelerate the degradation processes.

Installing a novel active RH control system as a supplement to the passive system -- essential for meeting the dual objectives of tight RH control and low maintenance

After much discussion with the environmental consultant, the metal worker, and the conservators, a novel active RH control system was added as a supplement to the passive (silica gel) system. APS had designed a similar system for conditioning silica gel for its own use, which it then modified for the museum's display cases. This new active system channels the circulating air by means of a small pump through a container with either moist air or dry air (desiccated silica gel) to correct the overall RH. The pumps are attached to separate data loggers that are programmed for the specified RH range. This active system gives the Frick time to replace the silica gel. The new system is also much preferable to older active systems which involved complicated equipment that was difficult to maintain.

Using a low-velocity fan-operated air circulation system to ensure uniform conditions throughout the case

Each case has been fitted with an ultra-quiet fan and a duct system to increase air circulation within the case.

Installing a wireless temperature and RH monitoring system with alarm capability

During the course of the project it was decided that it would be useful for Frick staff conservators to be alerted immediately to any variations in the environmental conditions within the cases. As a result, a wireless temperature and RH monitoring system made by Arten RF was added to the project. This system is web-based and capable of sending alarms to the conservators' computers via the internet.

Installing a custom LED system

In the course of the initial planning the conservators and curators decided to replace the existing fiber optic and fluorescent system (installed ten years ago) with an LED system. The LED system is a more compact and is also more flexible, providing a combination of general and precise spot lighting. In addition, because the LEDs are located above the ceiling, and exterior to the sealed case, all heat is exhausted to the room, thus providing better temperature control within the cases. The LEDs are also more energy efficient.

B. PROMOTION OF THE PROJECT

General audience: An Enamels Room press release (see attachment) was e-mailed to the Frick's approximately 1,200 media contacts, as well as posted on the Frick's website (www.frick.org). To date, the press release has been picked up by the *Art Daily* and *Antiques and Arts Weekly* websites. We have also been told by *The Art Newspaper* that they will include a short piece about the project in the magazine's December issue.

In addition, the Enamels Room was featured in the Frick's November e-newsletter which has a distribution list of over 11,000 names (primarily members and others interested in the Frick). We will also add a description of the project to the conservation section of the Frick's website.

The Enamels Room will also be featured at a press preview on December 12 that has as its main focus the Frick's new Portico Gallery. Offering access to both rooms at this important media event will greatly further visibility and recognition of the Enamels Room project.

In addition, in January 2011 Associate Curator of Decorative Arts Charlotte Vignon and Assistant Conservator Julia Day led a seminar on the Frick's enamels collection. As well as discussing the enamels as works of art and the technical achievements they represent, the seminar addressed the preservation issues surrounding the medium and how the Frick has addressed those issues.

Specialized audience: Julia Day will present the project, along with a discussion of the treatment of the enamels, at the ICOM-CC Enamel Group Meeting in June 2012. Chief Conservator Joseph Godla, Julia Day, and Steven Weintraub have also submitted an abstract about the project for the *Climate for Collections Conference* to be held at the Doerner Institut in Munich in fall 2012.

Steven Weintraub teaches a course in preservation at New York University's Conservation Center at its Institute of Fine Arts and has brought his first-year conservation students to the Frick to see the Enamels Room. Julia Day also teaches a conservation course at NYU and plans to bring her students to the Frick as well.

C. AUDIENCE

The audience for the project is the general Frick audience and visitors, as well as experts in the fields of decorative arts, enamels, and Renaissance history. It was not, and is not, anticipated that visitor flow will increase as a result of the project, only that the visitor experience will be enhanced.

D. ACCOMPLISHMENTS/EVALUATION

The aim of the project was to house the Frick's outstanding Renaissance Limoges enamels collection in a manner that would ensure its long-term preservation, while also maintaining to the extent possible the historic facade of the 1935 John Russell Pope cases. This was successfully accomplished. The restored cabinets now provide a sealed, stable environment for the art objects, allowing the unstable enamels to be on view. It is not possible for an observer to detect any changes to the historic portion of the cases.

During the course of the project the conservators were faced with a number of challenges that required changes from the initial plan. These changes included:

- Adding an active RH control system to supplement the passive system. The combination of the two systems (passive and active) provides the $48 \pm 1\%$ relative humidity required. The newly-designed system is uncomplicated and therefore easy

for the conservation department to maintain and trouble-shoot.

- Adding a wireless environmental monitoring system, thus allowing the Frick to keep constant watch over the newly restored cases and evaluate the system.
- Replacing the fiber-optic lighting with LEDs. This simplified the task of creating a sealed environment by reducing the number and size of penetrations into the case.

We have received very good feedback from the staff and visitors. The enamels are better lit and the case construction provides a more “open” feel. The response from the press has also been positive (see above).

It should be noted that the project was also a successful collaboration of many people and disciplines: conservation, curatorial, consulting environmental engineer, case maker, metalworker, exhibition design consultant, IT, and engineering.

E. LONG TERM IMPACT

Renaissance Limoges enamels are inherently unstable and the best hope for their preservation lies in housing them in a constant temperature and RH conditions—both inside the cases and as they are moved on and off display. The newly restored display cases will ensure this and also allow the art works to stay on view. Sharing the results of the project with colleagues at two international conferences will also provide other institutions facing similar challenges with guidelines for the care, preservation, and treatments of enamels.

Information garnered in the course of this complex project, may be used by the Frick in future projects:

- The LED light fixtures that were developed for the project may be used inside picture lights used in the museum. Steven Weintraub, who designed the unique heat-sink and filtering system, intends to use the new design as a model for future projects.

- Currently, the conservation department uses data-loggers to monitor the temperature and RH throughout the museum. These data-loggers are assessed bi-weekly—a time intensive endeavor. Based on the success of the web-based wireless monitoring system, we are considering expanding the system throughout the museum.

Attachments

- Project photos
 - The cases before being dismantled
 - The cases after being dismantled
 - New insulation behind the cabinet walls
 - Detail showing new brass fittings for gaskets
 - The partially re-constructed cases, showing the boxes for the buffering agents
 - The finished cases
- Enamels Room Press Release









to
right
sect







PRESS RELEASE

from

THE FRICK COLLECTION

1 EAST 70TH STREET • NEW YORK • NEW YORK 10021 • TELEPHONE (212) 288-0700 • FAX (212) 628-4417

WITH SUPPORT FROM THE NATIONAL ENDOWMENT FOR THE HUMANITIES, THE FRICK UPDATES ITS HISTORIC ENAMELS ROOM CASES AND CONSERVES A REMARKABLE COLLECTION

New York's Frick Collection is home to one of the most important groups of Renaissance enamels in the world, ranking alongside those of the Musée du Louvre in Paris, The Wallace Collection and the Victoria & Albert Museum in London, The Metropolitan Museum of Art in New York, and The Walters Art Museum in Baltimore. The forty-two enamels in The Frick Collection were produced in the city of Limoges, in central France, from the late fifteenth to the early seventeenth century. A selection of the Frick's enamels returned to view this month after a year's absence.



The refurbished and relit Enamels Room at The Frick Collection; Photo: Michael Bodycomb

During this period, many objects were examined and treated for the first time since they entered the Collection. This project was inspired by advances in the last decade in the understanding of Renaissance enamel production



The refurbished case on the north wall contains highlights from Henry Clay Frick's great purchase of enamels from the Morgan estate, many of which have undergone treatment and cleaning; Photo: Michael Bodycomb

and composition. It has also benefited from a major international enamel conservation conference held at the Frick. The consensus about the care of enamels has led many institutions to place them in environments of absolute temperature stability with a lower relative humidity than had been recommended in the past. With this new standard in mind, The Frick Collection rebuilt the historic cases created in 1935 for its Enamels Room by the eminent architect John Russell Pope (1874–1937). The ornate vitrines, which evoke the sense of a princely collector's cabinet, offer an appealing context for

the presentation of enamels. The Frick's cases have been completely sealed, allowing for optimal climate control by circulating the air through an automated internal humidification and dehumidification system. The cases are constructed of neutral materials conducive to prolonged display, and they have been relit using customized prototype fixtures developed for the museum by Steven Weintraub of A.P.S. (Art Preservation Services, based in New York). The new devices employ energy-efficient L.E.D. (light-emitting diode) illumination. The combined effect of these efforts, along with the treatment of the objects, is that the Frick's jewel-like enamels now reveal their brilliance as never before and their long-term preservation is assured.

Comments Conservator and project coordinator Joseph Godla, "We are grateful to the **National Endowment for the Humanities** for a generous award that supported this important initiative. The agency joined us in recognizing not only the importance of the collection, but the value and rarity of its display in historic cases. We were able to incorporate the latest standards on enamel preservation and presentation and are also thrilled that these holdings can now be better seen and appreciated by the public. It has been a cross-departmental project, involving Assistant Objects Conservator Julia Day, who treated the objects and who organized the conference; Charlotte Vignon, Associate Curator of Decorative Arts; and Curator Denise Allen. Also involved in the project were William Trachet, Senior Conservation Technician, Adrian Anderson, Senior Gallery Technician, and Stephen Saitas Design; R. H. Guest, Inc.; and Canstruct L.L.C. We have all enjoyed working closely with Steven Weintraub, who consults on museum environments. The unique line of light fixtures he created for us will surely inform additional projects at the Frick and perhaps at other institutions."



Andrea Briosco, called Riccio (1470–1532), *Lamp*, c. 1510–24, bronze, 6 5/8 inches high, The Frick Collection, New York; Photo: Michael Bodycomb

The current display in the Frick's Enamels Room features fourteen enamels as well as two remarkable ceramic pieces from the period, a rare French Saint-Porchaire porcelain ewer purchased by Henry Clay Frick in 1918 and an Italian counterpart, a beautifully painted maiolica dish. Also on view in the refurbished cases are several of the finest Renaissance bronzes in the collection. These small-scale and finely detailed works are best appreciated in an intimate gallery within cases. Among the highlights of the Frick's renowned bronze collection to be displayed there are Riccio's *Oil Lamp*, Grandi's *Hand Bell*, and Severo da Ravenna's *Queen Tomyris with the Head of Cyrus*. On loan from the Quentin Foundation is a unique and delicate wax model by Giambologna. Returning to the gallery are several gemlike Italian paintings by the artists Cimabue, Duccio, Piero de la Francesca, and others.

ABOUT RENAISSANCE LIMOGES ENAMELS

Beginning in the Middle Ages, Limoges was an important center for the production of artistic enamels, and by the end of the fifteenth century, materials and techniques had developed that allowed enamellers to create works that could compete in artistry with tempera and oil paintings on panels or canvas. Limoges enamellers reached such a high level of technical and artistic excellence that today their works are considered to be the finest painted enamelware ever produced in Europe. So-called "painted" enamels were created by applying enamel—ground

glass, colored with metallic oxides, and worked into a paste—to a metal (usually copper) support. The different colors of opaque and translucent enamel were meticulously layered in order to achieve painterly effects of shading and modeling. Repeatedly fired in a kiln, often after each layer of enamel was applied, the vitreous substance fused to the metal, hardening when cooled to achieve a lustrous finish with vivid luminosity. Pieces were sometimes enriched with gold and silver foils placed under the enamel to create shimmering iridescent tones, which could be further enhanced with gold paint. It was a complex process, and the resulting objects were extremely valuable. Only monarchs, important church dignitaries, and noblemen of the highest rank were able to commission such pieces.



Pierre Reymond, *Casket: Old Testament Subjects*, Limoges, sixteenth century, enamel on copper with gilt metal frame, 4 1/2 x 6 1/2 inches. The Frick Collection, New York; Photo: Michael Bodycomb

The enamels at the Frick represent the range of artistic production in Limoges from the late fifteenth through the early seventeenth century, including secular and religious objects, tableware, and portraits. The religious objects are typically triptychs illustrating biblical scenes, conceived as portable devotional works for Renaissance noblemen and clergy. Tablewares such as ewers, platters, salt cellars, and candlesticks were considered too precious to be used and were instead placed on sideboards to create an impressive display demonstrating the owner's cultivation, taste, and wealth. Portraits offered an enduring record of a

subject's likeness and a dazzling display of delicate modeling, as exemplified by the virtuosity of the mid-sixteenth-century enameller Léonard Limousin. The Frick's collection contains works by most of the major enamel painters of Limoges, from one of the earliest identifiable artists, the so-called Master of the Baltimore and Orléans Triptychs of the late fifteenth century, to the masters in the Courteys family in the sixteenth century. A number of these pieces are signed or dated, providing crucial points of reference for the study of Limoges enamels. The Frick's entire collection of Limoges enamels was published in 1977 by Philippe Verdier, in volume VIII of *The Frick Collection: An Illustrated Catalogue*.

HOW THE ENAMELS ENTERED THE FRICK COLLECTION

The collection of enamels now in The Frick Collection was assembled during the first decade of the twentieth century by the American financier and art collector John Pierpont Morgan (1837–1913). This assemblage, which rapidly became one of the most important of its kind in private hands, was on loan for an exhibition at the Victoria & Albert Museum until 1912. That year, Morgan's entire collection of thousands of works of art, including Limoges enamels, antiquities, Gothic tapestries, Italian bronze statuettes and maiolica, Renaissance and Baroque gilt-silver, ivories, glasses, watches and clocks, jewelry, rock crystal, Meissen porcelain, eighteenth-century French furniture and decorative arts, and Old Master paintings, was shipped from London and Paris to New York for a



Léonard Limousin, *Triumph of the Eucharist with Members of the House of Guise*, Limoges, c. 1560–70, enamel on copper, 7 5/8 x 9 7/8 inches. The Frick Collection, New York; photo: Michael Bodycomb

two-year loan exhibition at The Metropolitan Museum of Art. The exhibition, which opened in 1914, is today considered one of the first museum “blockbusters.” It offered the American public, including Henry Clay Frick, the rare opportunity to admire Morgan’s wide-ranging collection of European art and set the standard for many American collectors.



Workshop of Pierre Reymond, *The Mocking of Christ*, Limoges, mid-sixteenth century, enamel on copper, 8 x 6 1/4 inches, The Frick Collection, New York; photo: Michael Bodycomb

Morgan died in 1913, one year before the opening of the Metropolitan Museum’s exhibition, leaving his entire art collection to his son, Jack Morgan. This was a great surprise to the public and the press, as well as officials at the Metropolitan Museum, all of whom expected that a large donation would be made to that institution. Instead, between 1915 and 1916, Jack Morgan sold more than half of his father’s art collection in order to pay inheritance taxes. In 1915 the powerful art dealer Joseph Duveen began buying substantial sections of the Morgan collection, including all of the Italian Renaissance bronzes, the Italian Renaissance maiolica, and the Limoges painted enamels. Duveen immediately resold the enamels to three serious collectors of European art, all of them by now good clients of the firm: William Randolph Hearst, Charles Taft,

and Henry Clay Frick. The enamels purchased by Hearst are now at the Los Angeles County Museum of Art, those acquired by Taft are at the Taft Museum of Art in Cincinnati, and those purchased by Frick are housed at The Frick Collection.

In Frick’s new home at 1 East 70th Street, the enamels were installed in a small room—originally Frick’s private study—at the rear of the large paintings gallery. The purchase of the enamels prompted Frick to transform the study into an exhibition space, renamed for this purpose the “Limoges Gallery.” The preeminent contemporary collectors, including Philip and Robert Lehman, P.A.B. Widener and his son Joseph, and George and Florence Blumenthal, all chose to re-create Italian Renaissance rooms to showcase their holdings from this period. Frick was the only important American collector of the time to display a significant collection of Limoges enamels along with Renaissance furniture in a gallery evocative of a French interior—a bold and unusual choice.



The Enamels Room of The Frick Collection, 1930. Photo: The Frick Collection/Frick Art Reference Library Archives

ABOUT THE FRICK COLLECTION AND FRICK ART REFERENCE LIBRARY

Henry Clay Frick (1849–1919), the coke and steel industrialist, philanthropist, and art collector, left his New York residence and his remarkable collection of Western paintings, sculpture, and decorative arts to the public “for the purpose of establishing and maintaining a gallery of art, [and] of encouraging and developing the study of fine arts and of advancing the general knowledge of kindred subjects.” Designed and built for Mr. Frick in 1913 and 1914

by Thomas Hastings of Carrère and Hastings, the mansion provides a grand domestic setting reminiscent of the noble houses of Europe for the masterworks from the Renaissance through the nineteenth century that it contains. Of special note are paintings by Bellini, Constable, Corot, Fragonard, Gainsborough, Goya, El Greco, Holbein, Ingres, Manet, Monet, Rembrandt, Renoir, Titian, Turner, Velázquez, Vermeer, Whistler, and other masters. Mr. Frick's superb examples of French eighteenth-century furniture, Italian Renaissance bronzes, and Limoges enamels bring a special ambiance to the galleries, while the interior and exterior gardens and the amenities created since the founder's time in the 1930s and 1970s contribute to the serenity of the visitor's experience. Renowned for its exhibitions and for its highly regarded concert series and lectures, The Frick Collection also operates the Frick Art Reference Library, founded by Henry Clay Frick's daughter, Helen Clay Frick, located in an adjoining building at 10 East 71st Street. Both a research library and a photo archive, the Frick Art Reference Library is one of the world's great repositories of documents for the study of Western art. It has served the international art world for more than seventy-five years.

BASIC INFORMATION

General Information Phone: 212.288.0700

Web site: www.frick.org

E-mail: info@frick.org

Where: 1 East 70th Street, near Fifth Avenue.

Hours: open six days a week: 10am to 6pm on Tuesdays through Saturdays; 11am to 5pm on Sundays. Closed Mondays, New Year's Day, Independence Day, Thanksgiving, and Christmas Day. Limited hours (11am to 5pm) on Lincoln's Birthday, Election Day, and Veterans Day.

Admission: \$18; senior citizens \$15; students \$10; "pay as you wish" on Sundays from 11am to 1pm

PLEASE NOTE TO YOUR READERS: Children under ten are not admitted to the Collection.

Subway: #6 local (on Lexington Avenue) to 68th Street station; **Bus:** M1, M2, M3, and M4 southbound on Fifth Avenue to 72nd Street and northbound on Madison Avenue to 70th Street

Tour Information: included in the price of admission is an Acoustiguide Audio Tour of the permanent collection. The tour is offered in six languages: English, French, German, Italian, Japanese, and Spanish.

Museum Shop: the shop is open the same days as the Museum, closing fifteen minutes before the institution.

Group Visits: Please call 212. 288.0700 for details and to make reservations.

Public Programs: A calendar of events is published regularly and is available upon request.

#187, November 14, 2011

For further press information, please contact Heidi Rosenau, Head of Media Relations & Marketing, or Alexis Light, Manager of Media Relations & Marketing

Media Relations Phone: 212.547.6844

Fax: 212.628.4417

E-mail address: mediarelations@frick.org