RESURRECTING DELLA ROBBIA’S RESURRECTION: CHALLENGES IN THE CONSERVATION OF A MONUMENTAL RENAISSANCE RELIEF

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1. INTRODUCTION

Resurrection of Christ (fig. 1) is a glazed terracotta lunette by Giovanni della Robbia, the third generation of the della Robbia family to run the Florentine workshop begun by his great uncle, Luca. Its large scale overwhelms the viewer with a tour de force of dynamic postures and colors. Christ rises from the tomb at the center, flanked by angels and Roman soldiers fleeing in fear, though one is slumped over asleep. The garland border is bursting with energy, animals in chase amid lush flora and ripe fruit. The donor portrait at Christ’s right is instead distinguished by calm amid the action. The portrait depicts the wealthy Florentine trader Niccolò di Tommaso Antinori, with hands clasped in prayer and brow wrinkled in thought. Glazes and colors, especially skin tones, have a wide range, emblematic of Giovanni expanding the palette of his predecessors Luca and Andrea. The marked difference in color and dramatic staging is especially apparent in comparison to Luca’s Resurrection, with its refined figures and glazes restrained to white and cobalt blue (Santa Maria del Fiore, Florence, 1442–1445).

2. HISTORY AND PROVENANCE

The lunette was acquired in 1899 as a gift from then President of the board of the Brooklyn Institute of Arts and Sciences (which later became the Brooklyn Museum), A. Augustus Healy. Healy had purchased the relief in Florence in the summer of 1898 directly from the Antinori family, by whom it was originally commissioned circa 1520 for their villa outside Florence, Villa Le Rose. The Resurrection is thought to have been commissioned either by Niccolò before his death in 1520 or by his son Alessandro in commemoration of his father soon after death. Niccolò was a powerful Florentine merchant whose enterprise centered around the silk trade, and included a company of gold-beaters that would have supported the creation of luxury fabrics. By the 16th century, the Antinori family controlled a vast swath of properties, in addition to entrepreneurial enterprises and public offices (Antinori 2007). The fact that
we can trace the Resurrection’s provenance directly from its original location to the museum is rare for a della Robbia in the United States (Cambareri 2016).

Although it is known that the lunette once hung in the Villa Le Rose, its exact placement in the complex is not certain. According to a record from the Brooklyn Museum archives, the Resurrection was created to adorn the villa’s chapel (Board of Trustees 1898). However, the 1899 yearbook states that the object was made to hang over one of the villa’s entryways, its shape corresponding to the pediment above a doorway (Brooklyn Institute of Arts and Sciences 1899). In the winter of 2016, Sara Levin visited the Villa Le Rose in an effort to identify the lunette’s original location. The niche above the main entry doorway, which is inside the villa’s main courtyard, appears to have been a likely location for the relief. Although the pediment is now small, it is apparent from a seam running along the top of the doorway that it has been reduced in size after a previous renovation. Two iron brackets protrude from either side of the doorway that appear to belong to a previous mounting system and likely mark the bottom of the former niche. Measurements were taken by the staff at the villa of the area, which measures 160 cm × 350 cm (fig. 2). This is almost the exact height of the relief as measured currently (subtracting the extending height of the backboard), though the relief is 14.5 cm wider than the niche. The difference in width may be due to different spacing between elements on their current mount. The original chapel was also visited, which is now a private dining room. Although there is no niche, the walls on either end of the room appear large enough to have fit the relief.

Like other della Robbia reliefs, the terracotta sections of the Resurrection would have been originally installed directly into the wall using mortar. After the purchase of the lunette, the tiles were removed from the wall and secured to the wooden backboard that we have today. There are no records of when and how this was done. Upon acquisition by the Brooklyn Museum, the piece was installed outside of the Trustees’
Room on the first floor of the building and celebrated as a masterpiece of the budding collection. As the museum’s galleries were developed, the relief was moved into the Italian Renaissance hall on the third floor. Sometime in the late 1930s, it was moved again into a newly renovated Italian Renaissance gallery on the fifth floor, where it remained for more than 70 years. It isn’t until 1989 that we have the first conservation record, when Ellen Pearlstein, Jane Carpenter, Beverly Perkins, and Leslie Ransick Gat went up on scaffolding to conduct an examination. During their treatment, the object was cleaned overall in-situ and small elements reattached, but no significant structural work was performed (Pearlstein et al. 1989).

Due to changing gallery exhibitions and themes, the relief was repeatedly walled in at various times during the 1980s, 1990s, and early 2000s. By 2012, then director, Arnold Lehman, made the decision that the Resurrection had to be deinstalled to allow the space to become a gallery for South American Art. At this time, the object was cut from the wall, remaining attached to two structural iron braces, and taken to off-site storage. There it sat undisturbed for two years until Marietta Cambareri, Museum of Fine Arts, Boston (MFA) curator of Decorative Arts and Sculpture, inquired about including it in the MFA’s 2016 exhibition, Della Robbia: Sculpting with Color in Renaissance Florence, breathing new life into the Resurrection.

3. EXAMINATION AND DOCUMENTATION

In August of 2015, the lunette was brought back to the Brooklyn Museum so that it could be documented and assessed for stability and future travel. Many serious condition problems were
immediately obvious—a large break extended the length of Christ’s left leg, and his left foot was separated along with several other detached fragments. Most of the tiles were loose on the backboard due to aging mounting materials; some were barely being held in place at all. Previous restorations were also evident, some of which had visibly deteriorated over time. It became apparent that the individual tiles would have to be removed from the backboard in order to be more closely assessed. Before doing so, a condition diagram was created for all 46 tiles that comprise the relief (fig. 3). Each tile was assigned a part component (pc) number that would be used to track them in the museum’s collections database, TMS.

The Resurrection’s tiles had been secured to the board’s front using a combination of screws, metal wire, and ferrous brackets. Most of these elements were embedded in plaster, which was reinforced in some places with burlap. Despite, or perhaps because of, the numerous attempts at reinforcement, the materials were failing and unstable. The haphazard system had added significant weight and stress over time, and the ferrous hardware had become highly oxidized (fig. 4).

As the tiles were deinstalled (fig. 5), we noticed at least three different numbering systems that mapped each individual tile to the board, with printed tabs of paper attached to the backboard and crayon or pencil written directly onto the verso of the tiles and backboard. The sets of numbers may reflect remounting and reinstallation campaigns in the museum’s past.
After removal, each of the 12 objects conservators in the lab were assigned at least two tiles to document, assess, and treat. This allowed us to divide the work to make it more manageable and to have many trained eyes on the object to investigate original materials. We created custom treatment logs for each tile so that conservators could make their own notes on individual tiles in a
uniform format and track their work in case it became necessary, because of other exhibition and loan commitments, to transfer their work to another person mid-treatment. Regular meetings allowed us to share unique observations, deliberate over treatment questions, and foster a consistent approach.

4. PREVIOUS RESTORATION AND MOUNTING MATERIALS

Our first treatment challenge was to distinguish materials and techniques of the original work from mounting and restoration media to ensure that we would not remove any original material during treatment. In addition to visual and microscopic examination, several different analytical techniques were used. Before treatment began, x-ray radiography was performed to determine the extent of metal hardware within and underneath the plaster. In addition to the mounting brackets, x-ray imaging revealed that some large joins were bridged with metal scraps, as was seen along the break separating the back of Christ’s right leg and mandorla. Bridging materials included nails, metal tabs, and a rasp (fig. 6). Treatment began with reducing plaster from the back and sides to remove hardware, reduce excess weight, and expose original ceramic. The plaster itself was white and homogenous, which allowed us to differentiate it visually from older, beige mortar repairs that could be seen beneath the plaster in some instances.

On the front, painted restorations were also evident in many areas, such as on Christ’s two raised fingers and on many flowers, leaves, and fruits along the garland border. These restorations consisted of a low-fired terracotta that was covered in a gesso-like material and painted to match surrounding glaze. A sample of the restoration terracotta and two samples of what was thought to be original ceramic were sent to Oxford Authentication for thermoluminescence (TL) analysis. The firing date of the original ceramic was found to be consistent with the Renaissance, while the restoration was shown to be “less than 150 years old” (Oxford Authentication 2016). The restoration campaign is therefore likely from the late 19th century as it is thought to have been carried out before the object entered the Museum in 1899. A sample of wood from the backboard was taken for identification and reported to be “most likely
Chestnut” (Alden 2015). As chestnut was available in both North America and Europe, this was not indicative of where the board was produced, unfortunately.

5. ORIGINAL MATERIALS AND TECHNIQUES

Examining the materials and techniques of production was a wonderful opportunity to gain more knowledge about the Giovanni della Robbia workshop. Being the third in the line of della Robbia masters, his practice is also the least studied from a technical point of view. The clay used by the della Robbias has been widely investigated, comprised of a marl with a high calcium oxide content. This type of clay is well suited for lead glaze because its thermal expansion coefficient is higher than other clays and closer to that of lead glaze, encouraging a strong bond between the clay and glaze, which can prevent crazing upon cooling (Barbour and Olson 2011). The calcium-rich marl is light beige and therefore easily distinguished from restoration clays, which are a darker hue. However, we found that in some instances for the border tiles, Giovanni used a red terracotta base for structural elements and covered it with the light-colored marl only for presentation surfaces. Presumably, this allowed the workshop to use a less valuable type of clay to create the bulk of the highly three-dimensional structures and reserve the calcium-rich marl for the tile’s glazing surface (fig. 7). It may also be a technique of a specific craftsman in the workshop at the time or used for certain structural advantages. The same strategy of layering two types of clay is also found on Giovanni’s relief Saint Donatus Purifies a Well, made around the same time as the Resurrection (Hykin 2016).

As the tiles were being cleaned, we also examined them for any original markings. We found a few numerals etched into the clay, when it would have been wet, but we did not find a cohesive numbering

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Fig. 7. The side of a border tile, showing the top green glaze layer, thin beige marl, and thick red terracotta substrate. Green restoration paint and plaster residues are also present (Courtesy of the Brooklyn Museum)
system. One of the border tiles has two sketches visible on its top surface: one that may be the garland itself with pinecones and one that appears to be a squirrel. The glazed squirrel, for which it might have been a sketch, appears on a different garland on the left side of the relief (fig. 8).

Like the clay, della Robbia glazes have also been widely studied. Portable x-ray fluorescence spectroscopy (p-XRF) showed that the *Resurrection* glaze components are largely consistent with elements that have been reported in previously published research. They include lead and tin in all glazes; cobalt in the blues (Kingery and Aronson 1990, Pappalardo et al. 2004); copper in the green; antimony in the yellow (Duran et al. 2011); and manganese in the purple, brown, and black (Zucchiatti and Bouquillon 2011). Iron was found to be the primary colorant for skin tones. Scanning electron microscopy/energy dispersive x-ray spectroscopy (SEM/EDS) analysis of glaze samples performed by Richard Newman at the MFA also detected higher traces of antimony and manganese in the dark skin tones versus the lighter tones (Newman 2016). Arsenic was not found in the blue glaze, as it has been found in other examples of the della Robbia blues dating after 1520 (Pappalardo et al. 2004 and Zucchiatti et al. 2006). This may support an earlier dating of the relief, but further research would be required to support such a claim.

Traces of gilding are present throughout the relief. Remnants can be seen on Christ’s mandorla, as might be expected, but also on the Antinori family crests, soldiers’ armor and weapons, and—surprisingly—in trees in the background and on leaves and flowers throughout the garland (fig. 9). Traces of mordant in the forms of a starburst and rays of light can be seen in specular reflection in the sky to Christ’s right. The extensive use of gilding, evident from what is extant, indicates that the spectacular colors and vibrancy of the relief would have been extravagantly highlighted with gold, much of which has been lost over time.
There are also significant traces of red cold painting in protected areas of Christ’s drapery, such as the edges (fig. 10), inside folds, and inside his wounds. Analysis of a sample by the MFA using FTIR and Raman microspectroscopy identified the paint as vermilion with lead white in an oil and protein binder (Derrick 2016). Paint was likely used on the drapery and wounds because the technology for making red glaze was not known in Italy in the 16th century except as a luster (Padeletti and Fermo 2003). Red is
therefore the color of cold painting on terracotta that was most common at the time. Several examples of cold painting on other della Robbia works differ from the *Resurrection*, however; the areas that were painted were often left unglazed, such as Andrea della Robbia’s *Virgin* and *Christ* in Moulins-sur-Allier, Musée Anne-de-Beaujeau (Le Hô and Labbe 2011). The use of both glaze and red paint by Giovanni implies that costs were not spared in the execution of the relief.

Multiband imaging was performed on select tiles to see if anything further could be learned about Giovanni’s complex glazing technique. Two examples were particularly instructive. Christ’s skin has a markedly yellow cast, but it could not be discerned at first if the yellow hue was internal to the glaze or due to an applied resin of some kind. UV reflectance imaging (UVR), which is well suited to illustrating surface textures, did not show evidence of an overall surface coating. Instead, it revealed prominent brush strokes that delineate musculature in Christ’s chest, abdomen, and arms in a very painterly manner. When reexamined under the microscope, the faint individual brushstrokes appeared integral to the glaze. Although barely visible in normal light, they became apparent in UVR due to the fact that yellow glazes tend to absorb strongly in the UV range, making them contrast with the surrounding glaze (fig. 11). From a distance, these details lend a yellow glow to the skin overall. Such subtle renderings in Giovanni’s glazing technique are noteworthy because they reflect the broader Renaissance interest in articulating human anatomy.

The Marchese Antinori figure was also photographed with multiband imaging. His brown cloak has a highly variegated texture, dark-brown background, and light-brown wavy lines. The design of the fabric is difficult to see in normal light due to the texture but is exposed more clearly in the infrared region (fig. 12). The moire design suggests a luxury fabric such as watered silk. Such a detail seems particularly fitting considering that the silk trade and luxury fabrics were central to Antinori’s business.

6. ORIGINAL REPAIRS

Some of the ceramic figures suffered from severe drying cracks and breaks that appear to have occurred during the first firing. A green or yellow glaze was applied to these areas as a type of “original” repair.

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Fig. 11. Left: Visible light image; Right: UVR image showing yellow glaze highlights (which appear dark gray) on Christ’s torso, chest, and arms (Courtesy of the Brooklyn Museum)
before the second firing and is visible on the backs and along break edges (fig. 13). Inherently weak, these areas often had to be retreated in later restoration campaigns. In some instances, such as on Christ’s legs and on the Antinori figure, these flaws created areas that are severely stepped. Mortar repairs are also evident on the back. These repairs were visually distinguishable from the later plaster restoration campaign, as they are more cream-colored compared to the plaster and highly aggregate. Unlike the plaster repairs, the mortar repairs were found to be highly stable; as such, they were left in place during our treatment campaign.

Fig. 13. The break edge of a tile that had been readhered before the second firing with green glaze (Courtesy of the Brooklyn Museum)
7. TREATMENT APPROACH

Working as a team under a tight deadline is a challenge that many conservators face. As described previously, all 12 objects conservators in the Brooklyn Museum lab contributed to the treatment, 2 of whom were hired to be dedicated to the project, while the other conservators worked simultaneously on objects for other loans or exhibitions. Due to the large scale of the Resurrection and many hands at work, it was important to maintain consistency while remaining flexible when unique challenges arose. Although general guidelines were established for plaster removal, reversal of failing joins, choice of adhesive, fill materials, etc., each section of the relief was approached individually when evaluating its stability and the exact extent of intervention that would be taken. Then curator of European Art, Dr. Rich Aste, was consulted about aesthetic compensation for lost elements and the degree to which losses were replaced. If losses were deemed visually distracting, reversible replacements were created that were modeled after similar pieces extant in other locations. Regular department meetings and establishment of timely treatment goals enabled us to complete the treatment in 10 months, in time for exhibition.

All plaster that was supporting previously installed iron brackets and metal hardware repairs was removed with mallet and chisel (fig. 14). This aided in lessening the weight of the relief, reducing the weight of the

Fig. 14. Conservator Erin Anderson reducing plaster with mallet and chisel (Courtesy of the Brooklyn Museum)
tiles by an average of 2 lbs. each. Some plaster was kept in place on the verso of select tiles if removing it was considered detrimental to the stability of the object. The ferrous brackets and other miscellaneous metal elements used for previous joining were deemed historic and bagged according to their pc number for possible future study. Surfaces were cleaned with pressurized steam, avoiding areas of unstable glaze, gilding, and original red cold paint. Further reduction of grime and overpaint was performed with scalpels where necessary. Nineteenth century restorations of decorative elements were kept because they are also part of the history of the object and removing them would have required inventing new forms or recreating redundant forms with new materials.

Fragments were joined with 40% w/v Paraloid B-72 in acetone, which was bulked with glass microballoons where the break edges contained gaps. The long vertical break at the center of Christ’s legs and surrounding breaks were repaired with a 3:1 mixture of Paraloid B-72 (40% w/v in acetone) and Paraloid B-48N (40% w/v in acetone). Also known as the “Tullio blend,” this mixture was formulated by The Metropolitan Museum of Art to provide exceptional shear strength for the reconstruction of the marble Adam by Tullio Lombardo (Riccardelli et al. 2014). The adhesive mixture was chosen in this instance because of the orientation of the large break and weight of the fragments, which makes the join highly susceptible to shear stress (fig. 15).

Large structural gaps were bridged with detachable fills made with West System 105 epoxy tinted with dry pigments and bulked with glass microballoons. The epoxy putty was molded over a lightweight balsa wood core for internal support while the adjacent terracotta was covered with plastic wrap. The fill was adhered, after curing, with 40% w/v Paraloid B-72 in acetone. Distracting losses of decorative elements, such as leaves or fruits, were recreated by taking a mold of a matching element and casting a replacement with plaster. In cases in which a mold could not be taken, replacement pieces were modeled by hand with

![Fig. 15. Christ’s legs during treatment (left) and after treatment (right) (Courtesy of the Brooklyn Museum)](image-url)
Milliput epoxy putty. Fills were inpainted with Golden Acrylic emulsion paints and surfaced with Golden Porcelain Restoration Glaze (gloss). A laser-printed paper label with each pc number was applied to the verso of each tile with 20% w/v Paraloid B-72 in acetone.

All excessive overpaint covering original glaze was removed. If the restoration paint on the terracotta restorations was in good condition, however, it was kept and, where necessary, was coated with ~25% Paraloid B-67 in petroleum benzine to enhance gloss. Paraloid B-67 was chosen because it could be reversed without affecting the paint below. If the restoration paint was highly degraded, cracked, and flaking, it was removed. In some instances, the paint required touch-ups and was isolated with a clear coating of Paraloid B-67 before being painted over with acrylics.

8. REUSE OF THE WOODEN BACKBOARD

The previously used wooden backboard was chosen for remounting. The board retains historical value since the tiles were attached to it at some point during the 19th century. Additionally, the board remains in good structural condition and provides adequate support for the Resurrection's tiles.

The backboard was made using a combination of joining techniques. Mortise and tenon joints and rubbed joints were used on the perimeter stile. The center rail and center stile run perpendicular to one another and join in the center with a cross-lap joint. Their terminating ends mortise the perimeter stile. The bottom rail does the same. Each of the mortise and tenon joints are further secured with wooden pegs that span the full depth of the board. The spaces between the rails and stiles are compensated with equally thick wooden panels that were installed from the board’s verso into a rabbet lap joint along the opening's perimeters and secured with animal glue and flat-head slotted iron screws.

On the backboard's verso is attached a single piece of flat ¼-in.-thick steel bar, approximately 2 in. wide. The steel armature is secured to the rails and stiles with flat-head slotted iron screws. The backboard shows evidence of more than one method for mounting the tiles (holes, nails, labels, inscriptions, outlines in graphite or chalk, etc.), suggesting that more than one mounting material or method was used at the Brooklyn Museum or prior to purchase of the Resurrection.

9. MOUNTING

Each tile was mock mounted to the backboard’s front face to understand how well the tile aligned with its adjacent tiles but also to determine the ideal location for brass clips to be used to secure the tile efficiently and safely. The existing outlines drawn onto the backboard aided significantly in evaluating how the tiles fit together. A printout of each tile’s before-treatment photograph was used to annotate the clip locations and record any other tile-specific considerations and potential mounting issues.

The larger figural tiles and the Resurrection’s border tiles were particularly heavy and had elements that stood in high relief. This made mounting them directly to the backboard using only clips a precarious consideration. Therefore, a heavy-duty foam insert was fashioned to partially fill the cavity and add extra structural support (fig. 16). The insert also reduced the risk of the tile shifting from its position once it was mounted.

A Mylar template was created for each individual tile. The outer and inner edges of the tile’s contact surface were outlined, as well as the location of the mounting clips and any extra foam padding or inserts.
to be used for support. The clips and padding were labeled according to their associated mounting hardware numbers (an identification number, e.g., 99.5 pc2_2, is punched into each clip). The foam inserts were made using Ethafoam 900, a high-density polyethylene foam, 9.5 pcf (152.2 kg/m$^3$) that is resistant to creep (Dow Chemical Company 2017), wrapped with smoother ¼-in. to ½-in. Ethafoam sheets. These were secured to the backboard using ¼ in. × 3- to 6-in. zinc-plated hex lag screws that fit into predrilled holes (half the total depth) of the Ethafoam 900 block; 3/8 in. × 8 in. screws were used for the supports of the crests at each corner. Zinc washers, 5/16 in., were used to pull and secure the foam inserts to the board.

The clips holding the tile to the backboard were fashioned from 1/8-in. stock brass rods and assembled using silver solder, followed by machine working to the desired shape. The brass clips were covered with Benchmark Sueded Polyethylene on the interior surface in contact with the ceramic and screwed to the backboard using 8-in. × 1½-in. screws.

Fig. 16. Mount maker Michael Mandina fitting a foam insert into the back cavity of one of the Roman soldiers (Courtesy of the Brooklyn Museum)
Several border tiles required adjustments in their mounting so that their heights better transitioned aesthetically with the adjacent tiles. A platform was created and installed beneath these tiles with screws (8-in. × 2-in. flat-head Phillips screws). The foam block inserts for these specific tiles were attached to the platform. The platforms were made from 1-in. Medex board and shaped to follow the contour of the back of the tile to ensure that the tile was secure and not rocking when in position.

All of the tiles were first mounted in the conservation lab space, enabling the mount maker, Michael Mandina, and conservators easy access to machinery, equipment, and materials for making adjustments to the overall mounting design and its associated clips and padding inserts. This system methodology ensured that the tiles and the mount screw holes were accurately placed.

During the initial mounting phase, the Mylar templates were taped to the backboard and adjusted accordingly as each tile was fitted onto the board. Each tile was mounted over the Mylar template on the backboard using the platforms, Ethafoam inserts, brass clips, and supplemental padding. Adjustments were performed on an ongoing basis (fig. 17).

During the initial mounting phase, an order of installation was also developed to safeguard from locking tiles out and knowing the proper order of installation for mounting components.

Due to the weight and size constraints of the entire Resurrection assemblage, the final mounting of the tiles was conducted in a larger, more accessible space on the first floor near the crating workshop. This

Fig. 17. Conservator Nick Pedemonti securing tiles to the backboard during the initial mounting phase (Courtesy of the Brooklyn Museum)
allowed easier lifting and transportation of the whole piece with the museum’s gantry system. After the tiles were all mounted in the conservation lab spaces, the whole assemblage was dismounted in the reverse order of installation and carefully transported in sections to the final installation location.

The Mylar templates were removed at this stage; each mounting hole was marked with blue tape and labeled with the pc and mount numbers. This would aid during remounting, helping relocate the associated holes with their brass clips and Ethafoam inserts. For the final mounting, the backboard would be covered with a ¼-in.-thick black Volara sheet. The backing sheet served several purposes; it provided extra padding to the Resurrection’s tiles, helped prevent subsequent shifting once tiles were mounted, and provided a uniform black background in the negative space between the tiles.

Before laying the black Volara sheets onto the backboard, each mounting screw hole was filled with a projecting bamboo skewer that extended approximately 1 in. out of the backboard. The Volara sheet (running the full length of the board) was laid over this prepared surface; it was then gently pressed down toward the backboard evenly. The pressure against the bamboo skewers punched holes through the Volara’s surface, thus marking the location of every mount and their associated screw holes. The Ethafoam inserts and large brass clips were laid over the Volara holes and their contours were marked and cut out of the Volara to fit the mount directly against the board. This process was repeated for the board’s upper half as well (fig. 18). The tiles were then installed, one by one, onto the Volara-covered backboard, making adjustments as needed to ensure a secure mount.
In locations where the tiles were close to each other and risked contacting, an Ethafoam wedge covered in thin black Volara was fashioned and placed between the tiles. This helped further secure and stabilize the assemblage as a whole. Final touches were made at the end, including inpainting of brass mounts and platforms to match surrounding tiles and backboard, and covering the visible white Ethafoam inserts and padding with black Volara.

Fig. 19. Diagram illustrating how the rigging apparatus is removed and how the relief hangs on the wall (Courtesy of the Brooklyn Museum)

Fig. 20. *Resurrection of Christ* after treatment, inside its inner crate (Courtesy of the Brooklyn Museum)
10. RIGGING

To enable installation of the object for exhibition, the MFA collaborated with us to devise and assemble custom equipment for rigging the full assemblage. A Mylar template of the verso of the backboard, which outlined its outer edges and metal armature, was first sent to the MFA for reference so that they could fabricate the necessary elements. The resulting rigging system, designed by Dante Vallance, collections engineer at the MFA, allows the relief to be lifted with a gantry and secured to a wall, where it is supported by a structural shelf. The tailor-made rigging apparatus was assembled and attached to the lunette’s backboard at the Brooklyn Museum after all of the tiles had been mounted. It was then used to lift the lunette into a vertical position for packing, and remained on the object while it was transported to Boston. Once at the MFA, the same apparatus was used to install the object onto the exhibition wall (fig. 19).

11. CONCLUSION

The full-scale treatment of the Resurrection has not only allowed this masterpiece to be included in the MFA’s groundbreaking exhibition, where it could be appreciated in context with other great works of its kind, but it has also brought the dynamic, colorful relief back to life so that it can be enjoyed by new audiences for years to come (fig. 20). It is a rare occurrence that conservators are able to know the complete history of an object. Because the Resurrection had only been in two locations—the Antinori Villa and the Brooklyn Museum—after leaving the Giovanni della Robbia workshop, evidence of what happened to the object in those two locations could be unraveled. While questions remain, the object allowed its story to be told through the remaining evidence of past interventions. The lab’s ability to identify and study original and restoration materials gave us the confidence to make appropriate treatment decisions regarding cleaning, handling of old restorations, and reconstruction, as well as learn more about the workshop’s original practices. Extensive collaboration between conservators and the mount maker throughout the process enabled us to devise a mounting system that made each tile secure in preparation for travel. The 19th century hardware that has been stored in the conservation lab’s study collection and the terracotta restorations that remain on the object can also serve as examples of conservation history. Reusing the previously constructed backboard not only saved time and reduced costs but allowed the historic board to remain with the object. We hope that the approach and decision-making process used during this treatment can serve as an example for future projects of this type and scale.

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NOTES

1. For studies of della Robbia clay composition, see Bouquillon 2011; Olson and Barbour 2011 and 2001; and Hykin et al. 2007.

2. Although the use of copper as the main colorant for green reflects findings of other studied examples (Zucchiatti and Bouquillon 2011; Hykin et al. 2007; Agosti et al. 1997), it differs from the results of Sendova et al. who found green to be a subtractive mixture of blue and yellow colorants in a relief attributed to Luca (2007). Thus, some limited variation appears to have existed in workshop mixtures.

3. Multiband imaging was performed with a modified Nikon D610 DSLR (IR/UV filters removed). Visible images were taken with an IDAS-UIBAR filter (375- to 700-nm bandpass) attached to the lens, illuminated with Genaray SpectroLED-14 lights (output: 5600 K). UV reflectance images use an X-Nite BP1 (320- to 670-nm bandpass) and X-Nite 330 filter (270- to 375-nm bandpass). Infrared reflectance images were taken using mounted lights in the imaging area, with an X-Nite 830 filter (830-nm longpass) attached to the lens.

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**SOURCES OF MATERIALS**

3M ESPE Express STD
3M ESPE Dental Products
2510 Conway Ave.
St. Paul, MN 55144-1000
1-888-364-3577
www.3m.com/3M/en_US/dental-us/
Ammonium Hydroxide  
Fisher Scientific  
Fair Lawn, NJ 07410  
201-796-7100  
www.fishersci.com

DAP Weldwood Carpenter’s Wood Glue No. 40890  
DAP Products Inc.  
2400 Boston Street Ste. 200  
Baltimore, MD 21224-4723  
888-372-8477  
www.dap.com

Ethafoam  
The Dow Chemical Company  
2030 Willard H. Dow Center  
Midland, MI 48674  
800-258-2436  
www.dow.com

Evolon  
Freudenberg Performance Materials LP  
500 Industrial Dr.  
Durham, NC 27704  
919-479-7212  
www.evolon.com

Flügger  
Flügger A/S Islevdalvej 151  
DK 2610  
+45 7015 1505  
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