# The Chanler Fireplace Project

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Our research was also informed significantly by consultation with Marco Leona (Metropolitan Museum of Art), Federico Caro (MMA), Wesley Haynes (Kaitsen Woo Architect, P.C.), and Elizabeth Frasco (Institute of Fine Arts, New York University).

## EXECUTIVE SUMMARY

A once-glorious decorative plaster and bronze fireplace now lies obscured under decades of overpaint. The former studio of Gertrude Vanderbilt Whitney located at the New York Studio School in lower Manhattan contains one of the most important commissions of artist Robert Winthrop Chanler. The artist created a decorative personal studio for Whitney that originally included painted screens, stained glass windows, a polychrome bas-relief ceiling and a flamboyant and spectacular fireplace. The fireplace is the focus of this study.

This unique sculptural fireplace, completed in 1923, was applied over a pre-existing brick mantel and chimney structure. Work began in 1918 and continued over a period of five years. Its creation was a process of evolution and experimentation. Over time, the fireplace has been repeatedly overpainted and has slowly deteriorated. A project to assess the condition and establish the chromochronology of the structure began in January of 2013, initiated as a joint effort of the World Monuments Fund; the Conservation Center (Institute of Fine Arts, New York University) and Columbia University's Historic Preservation Program (Graduate School of Architecture, Planning and Preservation, Columbia University).

The intricate design of the fireplace and the lack of primary historical material describing its original appearance necessitated a thorough methodological approach. Art historical research was compiled and analyzed by Elizabeth Frasco while the conservation team conducted a thorough conditions assessment and materials analysis in order to document the fireplace and formulate a treatment proposal. Seventy paint samples were analyzed in cross section through microscopic examination. Thus far they reveal an extraordinarily complicated original polychrome scheme with up to four campaigns of aluminum- and copper-based leaf finishes, and varied pigments on both the bronze and plaster components of the fireplace. Additionally, the use of Scanning Electron Microscopy- Energy Dispersive Spectroscopy (SEM- EDS) and Fourier Transform Infrared Spectroscopy (FTIR) aided in further understanding the materials and techniques used by Chanler. These visual and instrumental analyses allowed the team to form maps of the prevailing conditions issues and to conceptualize the polychromy of the original fireplace finishes, as no known historic color images exist documenting the structure during its creation or shortly after completion.

In its interdisciplinary nature, the project involved students and specialists in the fields of architectural conservation, heritage preservation, art history, and fine arts conservation. Along with the challenges of coordinating different approaches to the documentation of the fireplace and its paint cross section analysis, the project also involved juggling different ideas about the interpretation of results and recommendations derived from the data gathered. It raised difficult questions about the ethics of conservation and the scale and practicalities of conservation and restoration treatments in spaces still in use. Since the fireplace functions both as a work of art in itself and as an integrated part of a larger decorative scheme in an architectural setting, the team also relied on past work from a variety of building consultants and other conservators who examined the studio and its decorative bas-relief ceiling. The project speaks to the challenges of preserving artwork within an architectural context and of re-imagining historic spaces.

The goals of the project were to complete a conditions assessment, materials identification, recreation of the original polychromatic decorative scheme, and to make recommendations for treatment in regard to the fireplace.

Section I.

# Introduction

## INTRODUCTION

Graduate students of New York University's Conservation Center at the Institute of Fine Arts and Columbia University's Historic Preservation program were commissioned by World Monuments Fund to conduct a conditions assessment and determine if the original historic finishes were evident on the Chanler Fireplace in the Whitney Studio located within the New York Studio School in New York City. The work took place from January to May of 2013 under the supervision of Mary Jablonski and Michele Marincola.

This report was written for presentation to World Monuments Fund by Alafia Akhtar, Kathryn Brugioni, Megan Randall, Kari Rayner, and Jessica Walthew to provide a better understanding of the conditions and significant finishes present on the Chanler Fireplace.

Section II.

# Description of the Fireplace

## DESCRIPTION OF THE FIREPLACE

The Chanler Fireplace is located in the Whitney Studio, now part of the New York Studio School. The Whitney Studio is located on the upper level of a nineteenth-century carriage house that was converted to a studio in 1907 by Gertrude Vanderbilt Whitney. She installed a skylight and removed most of the floor joists that divided the hayloft from the carriage house below. It is hypothesized that this is when the current fireplace and chimney were added.[1] Between 1918 and 1923 Whitney hired Robert Winthrop Chanler to decorate both the fireplace and ceiling of the space. Chanler created the bas-relief plaster ceiling and a sculptural addition to the chimney, which are both still present today. The fireplace, constructed of brick, is decorated with cast bronze flames that are hypothesized to have been installed in two phases. The first was a set of low relief flames present on the front of the fireplace extending from the hearth and ending above the mantle. The second phase was composed of the highly three-dimensional cast flames on the lower portion of the north and south elevations. To these bronze castings was added a third phase in plaster-relief flames, which engulf grotesque and animal forms as they climb. The original scheme of the fireplace is believed to have been polychromatic, incorporating a combination of paint and metallic leaf finishes. Following Gertrude's death in 1942, the complex was owned by the National Recreation Association until 1967 at which time the New York Studio School purchased the building. Currently, it is used for critiques and seminars for the school's students and for small dinners following evening lectures. [2]

[1] Giudice, Anthony M. "Whitney Studio Ceiling Assessment: The New York Studio School of Drawing, Painting and Sculpture." Anthony M. Giudice, P.E. Consulting Engineers, 2008.
[2] Ibid.

Section III.

# Methodology

## METHODOLOGY

### *Visual Examination and Condition Assessment*

The team conducted a visual examination and conditions assessment during the week of January 7-11, 2013 of the Chanler Fireplace at the New York Studio School (NYSS). A scaffold was provided that allowed access to almost all of the fireplace. The top three feet were not accessible due to the height of the scaffold.

Alafia Akhtar (left) and Megan Randall (right) perform an initial visual examination of the Chanler Fireplace, Section A.

To understand this highly complex fireplace, it was examined in sections that were created by dividing each elevation into three levels along its height: bottom, center, and top (A, B, and C, respectively). Documentation of the conditions of each level at each elevation (north, east, and south) included corresponding condition photographs. The locations of these photos were noted on hand drawings of the fireplace (See Appendix A). All photographs were cataloged and notes were transcribed digitally. Conditions have been digitally mapped onto stitched composite images produced in Adobe Photoshop of each elevation of the fireplace. (See Section IV). Further examination and sample removals occurred during the week of March 18-27, 2013 and additional visual examination was conducted. Conditions of the fireplace were reviewed and updated (if changed) from the previous visit.

### *Sampling*

Sixty paint samples were taken from the site for analysis during the visual examination the week of January 7-11, 2013. The aim was to take representative samples from all elevations and levels, as well as to sample from areas of plaster, metal, and brick substrates. Ten additional samples were taken at the transition between the fireplace and the ceiling during the second week at NYSS, between March 18-27, 2013, when slightly higher scaffolding was installed which allowed access to the transition area of the fireplace and ceiling.

Prior to removal, each sampling location was labeled using 3M Blue Painter's Tape© (NYSS001- NYSS070), a photograph was taken of each area, and locations were noted on a drawing for documentation purposes. Then, samples were extracted using a scalpel, with an attempt to remove all layers including a portion of the substrate. The samples were collected in labeled plastic bags.

At the Conservation Center, the seventy samples were cut into smaller fragments as necessary and set in Bio-Plastic, a polyester embedding resin.

A small label indicating the sample number was also included within each sample well. Once the resin had hardened, the Bio-Plastic blocks were extracted from the trays and polished using various grades of sandpaper and Micro-mesh® in order to expose the stratigraphy of the paint layers.

**Figure 2.** Megan Randall (left) and Kari Rayner (right) prepare the embedding resin for the cross section samples under a fume hood at the Conservation Center.

### *Microscopic Analysis of Cross Sections*

Cross sections were examined using the Leica DM4000 M microscope at the Conservation Center, and photomicrographs were taken at 50x and 200x magnification in normal and ultraviolet light mode. The number and the color of layers were recorded for each sample (See Appendix E for the maps of this data). The samples were examined starting with the substrate layer, designated as layer 1, and numbered consecutively to the uppermost layer (Appendix E, Figure 1).

Layers were also characterized by opacity/transparency, continuity, thickness, and the inclusion of heterogeneous particles. Layers were then grouped together based on whether they would have likely constituted a discrete finish to determine how many artistic campaigns are represented within each sample. For example, a size, foil layer, and corresponding glaze would have constituted one finish. Selected layers in several samples were also color matched with Munsell color chips. All of this information was entered into the standardized sample sheets seen in Appendix A and B. Thumbnail images of each of the photomicrographs taken and a thumbnail of the sampling location were recorded on the sample sheet as well (See Appendix B).

***Elemental, Pigment, and Medium Analysis***

Scanning Electron Microscopy with Energy Dispersive Spectroscopy (SEM-EDS) was performed at the Conservation Center to determine the elemental composition of fifteen samples, approximately one quarter of the total cross sections taken. In most cases, samples were re-polished to achieve optimum flatness for analysis, and photomicrographs were retaken in order to reflect the samples' appearances at the time of analysis by SEM-EDS. Follow-up analysis was performed of sample NYSS011 at the Metropolitan Museum of Art with conservation scientist Federico Caro.

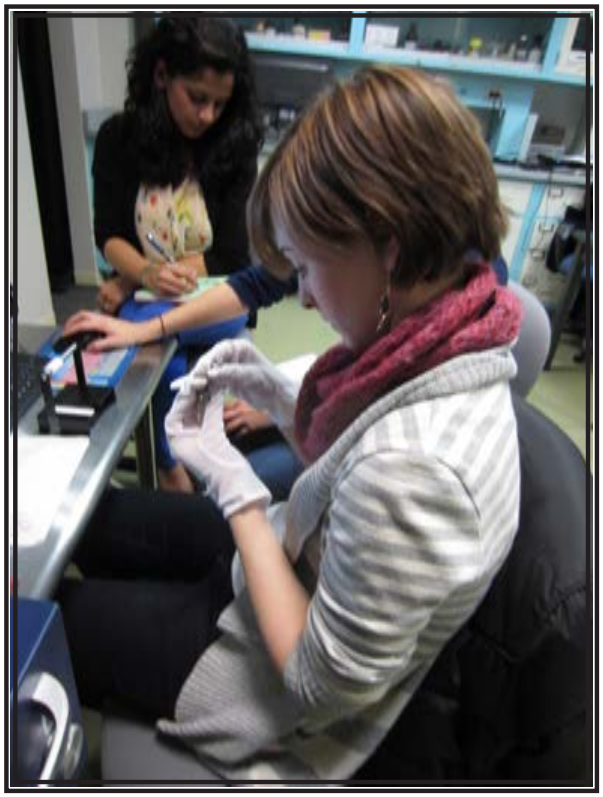


**Figure 3.** Kari Rayner operates the SEM instrument at the Conservation Center, Institute of Fine Arts.

Fourier Transform Infrared Spectroscopy (FTIR) and Raman Spectroscopy for pigment and binder identification were undertaken at the Metropolitan Museum of Art under the guidance of Conservation Scientist Marco Leona.

Adobe Illustrator and Adobe Photoshop were used to create composite documents showing the distribution of

**Figure 4.** Jessica Walthew operates the Leica DM4000 M microscope to examine a paint sample while Alafia Akhtar finishes the surfaces of a sample mount with Micro-Mesh™.

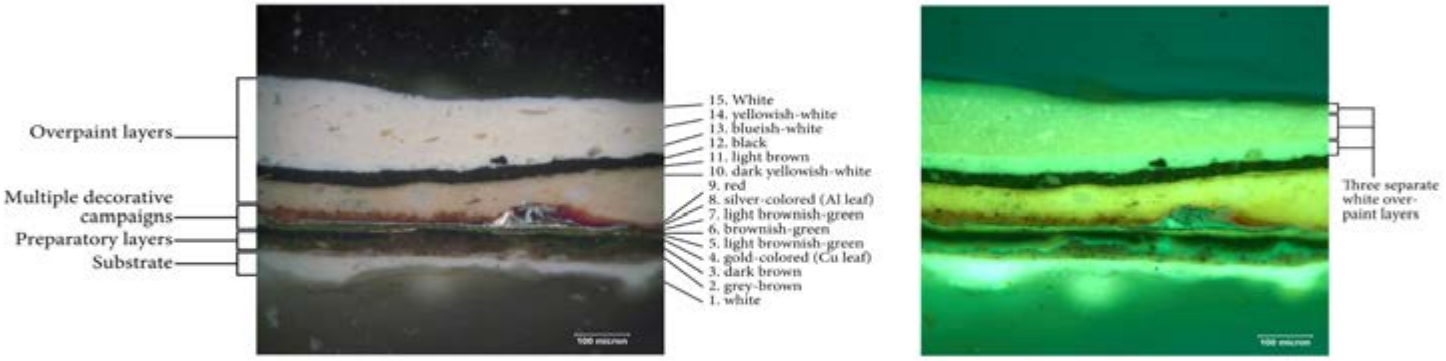



**Figure 5.** Example of a typical cross section, NYSS034, showing the method used for identifying and labeling the paint layers.

pertinent characteristics over the entire fireplace (Appendix F).

***Paint Reveals***

During the January examination, two detached fragments of the vertically-projecting flames from level B, North elevation, were discovered. This allowed examination of the wire armature of the flames, as well as the plaster composition. During the March examination, these fragments facilitated controlled testing of overpaint removal and reveals of the finish layers in the laboratory at the IFA's Conservation Center.

Paint strippers Citrustrip® and 3M Safest Stripper™ were tested at various time intervals, uncovered and covered with foil to retard drying.

On site, two locations on the fireplace were chosen to attempt reveals. These areas were marked off with 3M blue painter's tape. The locations correlated to previously sampled regions whose cross sections revealed red and green paint layers. 3M Safest Stripper was ultimately chosen to conduct a chemical reveal. Paint layers were slowly removed at timed intervals. Saran Wrap placed over the surface of the applied paint stripper was generally used to retard its drying.

Reveals were also undertaken mechanically using scalpels in areas of preexisting damage, particularly at level C, east elevation, in order to explore the transition between the ceiling and the fireplace. Further discussion concerning the reveals is in the Finishes Analysis section of this report.

**Figure 6.** Megan Randall and Kari Rayner examine the results of a paint reveal under a microscope at the Conservation Center.

Section IV.

# Conditions Assessment

## CONDITIONS ASSESSMENT

To understand the current state of the Chanler fireplace, a conditions assessment was conducted. The brick fireplace, a common feature in a carriage house, was used as the substrate for a sculptural treatment of the three-dimensional bronze and plaster flames and figures. The brick base and the bronze and plaster overlays are in good condition. Since it is known that Robert Chanler worked on the fireplace for about five years, it is hypothesized that the fireplace was constructed in phases. The first phase is the low relief cast bronze seen on the lower part of the east elevation (in front of the fireplace). The second phase is the high relief cast bronze seen on the lower part of the north and south elevation likely completed in 1918. During the visual examination it was noted that the bronze castings appeared to have a patina applied underneath the painted and leaf finishes. The third phase consists of the sculptural plaster flames found on the majority of the fireplace. The plaster relief covers the fireplace on all three elevations (north, south, and east) and is sculpturally integrated into the top of the bronze relief and stretches the height of the fireplace into the cove of the ceiling. The plaster reliefs vary in motifs ranging from animals to mythical humans that are consumed in flames. Plaster flames range from free standing flames visible on the north and south elevations to lower relief flames on the east elevation (front). The integration of the fireplace with the ceiling was likely completed with the installation of the plaster ceiling elements.

The paint layers and colors observed in the cross section analysis suggest that the fireplace was originally very colorful, especially on the lower portions of the elevations. During its existence, the polychromatic fireplace was subjected to numerous monochromatic campaigns. After the initial polychromy, the fireplace was covered in gold toned aluminum leaf, then, it was painted black, most likely at the time the space was rented as a private studio, and currently it is completely white. The resulting thickness of the overpaint led to a loss of sculptural detail particularly on the ornamental figures. Currently, the space is used as an art studio and flecks of colored paint are seen throughout the lower region of the fireplace. It was noted that the floor directly adjacent to the fireplace shows signs of deflection, specifically on the south-east side resulting from the load the system is placing on the floor.

In order to conduct a detailed analysis of the complex fireplace, it was divided into three sections along the height: A, B, and C. Section A measures about eighty-one inches in height. The majority of this region is covered with cast bronze flames. The metal is about sixty-one inches high on the north and south side elevations and about thirty inches on the eastern front elevation. The baseboard on this section is also bronze. The bronze substrate was determined through tapping tests as well as through observations during sampling. The artist's signature and a date of casting reads "RW Chanler 1918" to the right side of the east elevation within the bronze baseboard. Section B measures about seventy-five inches and the decorative elements in this section are constructed entirely of plaster. Section C is the chimney transition into the ceiling space. It measures ninety-one inches in height and is constructed entirely of plaster. Between the chimney and ceiling space is a plaster cove running along all elevations.

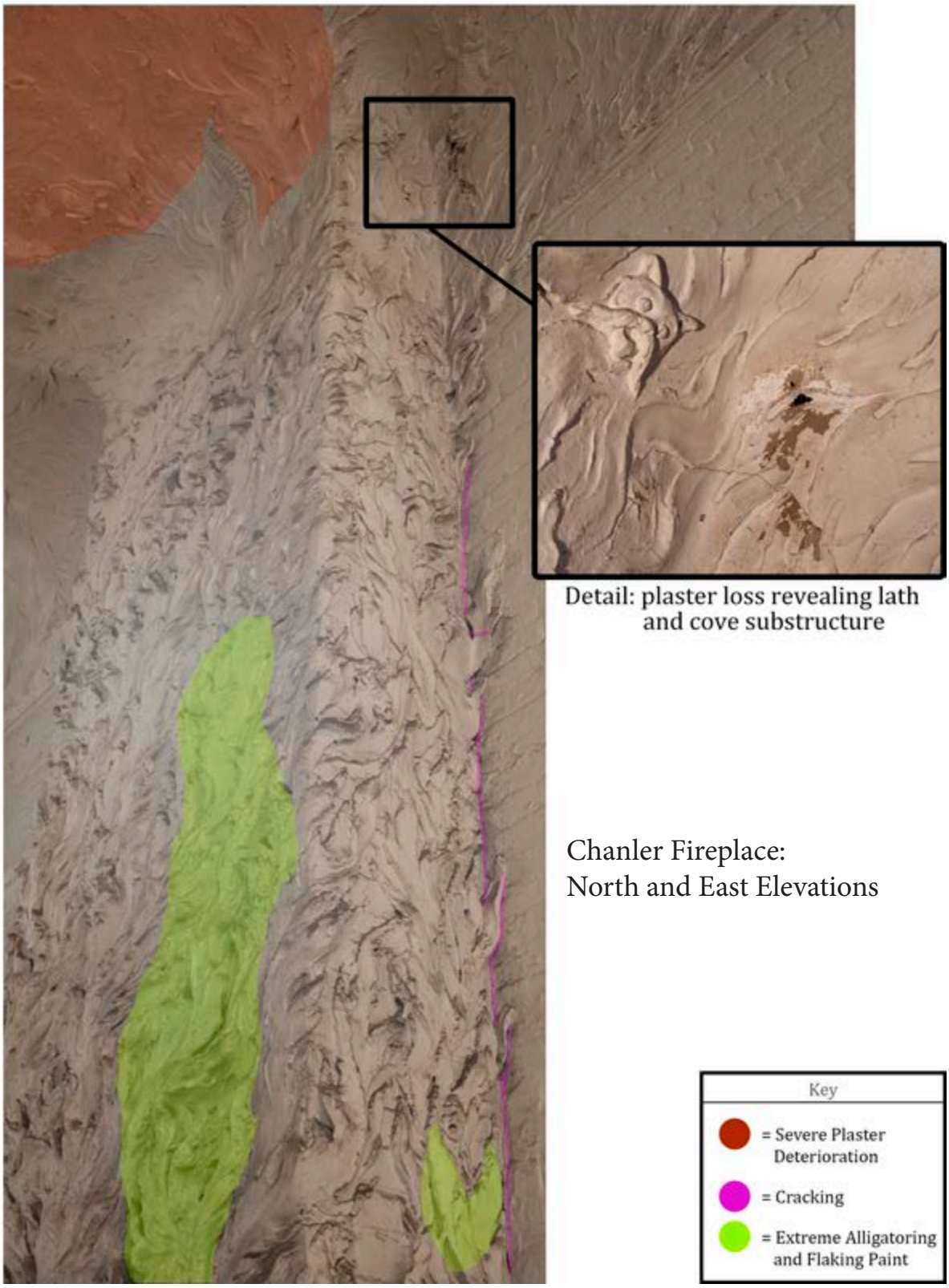
For the purposes of this report, the analysis is described according to these overall elevations.

***North Elevation:***

The lower region of this elevation (A) consists of cast bronze sculptural flames installed over the brick fireplace with an upper transitional region of sculpted plaster. Throughout the elevation there are regions of flaking and chipped paint exposing both bronze and brick substrates. Alligatoring of paint and soiling is prevalent and areas of brick that are not covered by the metal installation have regions of visible black paint from prior overpaint campaigns. A small area of corroded metal was found on the lower left of the elevation as well as visible specks of colored paint scattered on the elevation. The baseboard installed on this side is painted white with some chipping paint and scattered black scuff marks.

Towards the midsection of this elevation (B), soiling is prevalent. Alligatoring of the paint as well as flaking and chipping also continue. In certain regions weakened paint areas are exposing the layer of black under the white paint. The midsection of the elevation consists of freestanding flames. These flames are attached to the plaster using ferrous wires. Some of the free standing flames are partially detached revealing composite material underneath the plaster layer. Some flames have entirely detached, leaving their structural ferrous wire exposed. A non-ferrous extruding nail closer to the wall is also present. A piece of detached plaster with black paint measuring approximately four and a half inches was found in this region. A large crack is also present along the joint where the chimney and wall meet.

The upper region of the elevation (C) also has soiling and alligatoring. Areas of flaking and chipped paint are present, exposing paint layers and the plaster substrate. Flaking is especially severe adjacent to the cove. The cove above has spalled exposing a non-ferrous mesh, while a medium sized crack is present between the chimney and wall. Two medium sized cracks are also visible in the lower center region and middle left region of the elevation **(Figure 7)**.




Chanler Fireplace:
North and East Elevations

***East Elevation (Face of Mantel):***

The lower portion of this elevation **(Figure 8)** has paint drippings and various amounts of alligatoring paint. Soiling is concentrated directly above the mantle, where the fireplace transitions into plaster and to the left of the mantel. The majority of the horizontal space directly above the mantel has extreme flaking and chipping exposing under layers of paint. There are also areas of broken plaster, specifically on the face of a snake at the center and flames on both the right and left side of the snake in the plaster region.

On the right side of the mantle there are areas of paint loss on both the bronze flames and brick wall. The chipping of paint ranges from minimal to severe where the substrate is exposed. On the hearth and mantel area, there are exposed areas of metal, brick, and metallic leaf. A hole is present within a brick on the left top side of the mantle and various locations show scraping possibly from earlier studies. This scraping is particularly pronounced on the metal flames on the upper left and right. The upper right side of the elevation also shows signs where paint has been chemically removed, exposing a brick substrate. This is from an earlier study.

At the center of the mantel, vertical drips of candle wax extends from the shelf to the metal flames. The wax drippings are also visible on the flames located on the left side of the mantel. Exposed bronze has a green patination. Fasteners found holding the bronze flames to the chimney are ferrous closer to the hearth, while those on the upper regions of the mantle appear to be bronze. The metal flames on the lower region are loose as the fasteners are detaching from the fireplace. The bronze baseboards are in excellent condition and were installed using non-ferrous fasteners. They also have chipped paint, scratches and specks of colored paint on their surfaces.

On the midsection of the east elevation (B) **(Figure 9)**, heavy soiling is present. There is also significant alligatoring, flaking, and chipping paint, particularly in a vertical region measuring forty-three inches, located on the right side. This exposed an under layer of paint while other chipped areas expose metallic leaf. There are areas of scraped paint and specks of red paint throughout the elevation. A crack is also present on the left side.

On the upper area of the east elevation (C) **(Figure 10)**, there is heavy soiling particularly in the horizontal direction present about three-fourths from the bottom of the section. Alligatoring paint is found in varying degrees which range from slight crazing to severe flaking and chipping. The most severe example is near the prominent horizontal patch of soiling.

Additionally, areas of chipping paint expose metal leaf, specifically on the upper region of the elevation. Vertical small cracks are visible in various areas of the upper part of the chimney. Yellow staining is visible on the right side of the chimney and the ceiling which has water damage causing a powdery textured bloom to occur in addition to the flaking **(Figures 4, 5, and 6)**.

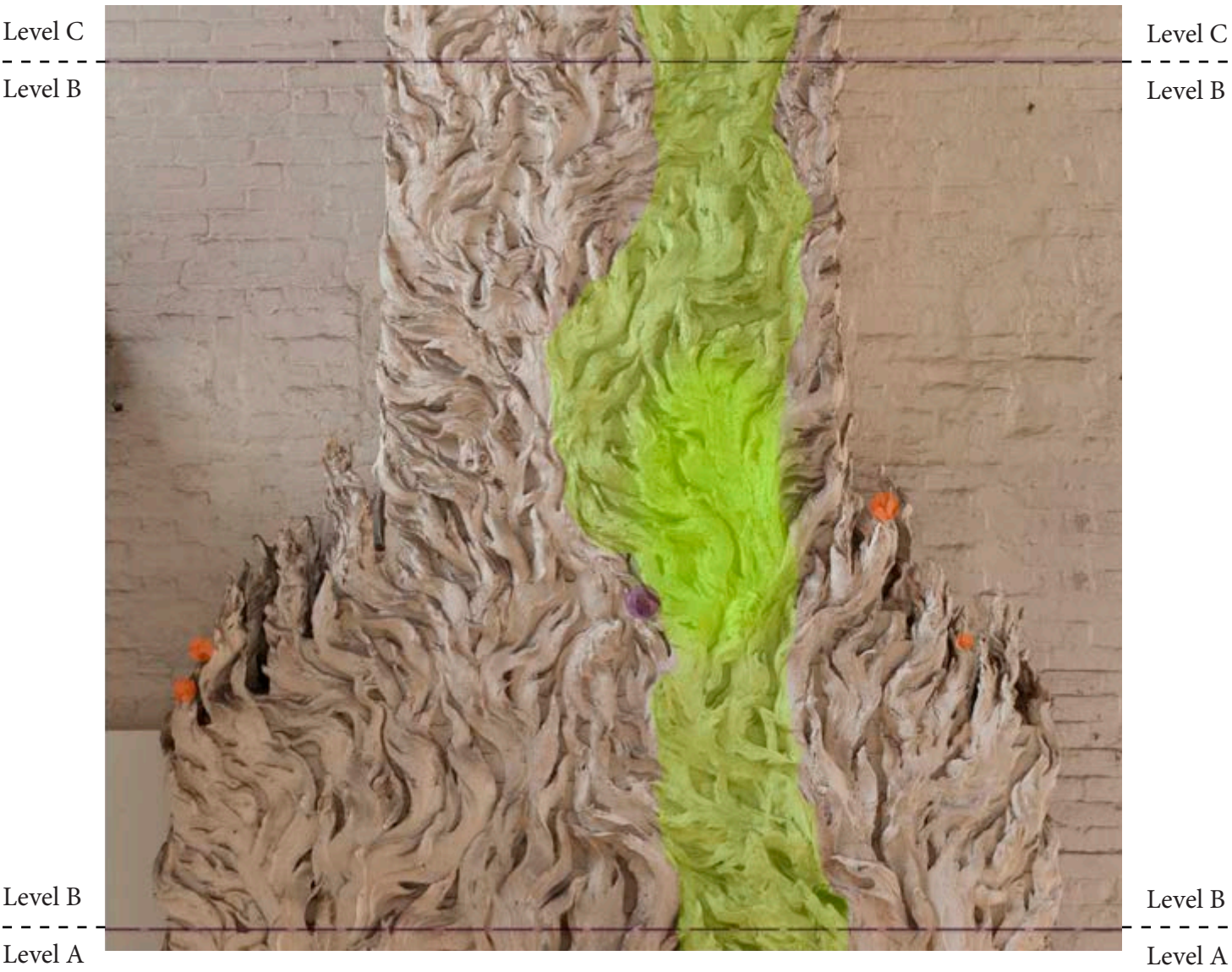
Chanler Fireplace:
East Elevations, Level A

Key

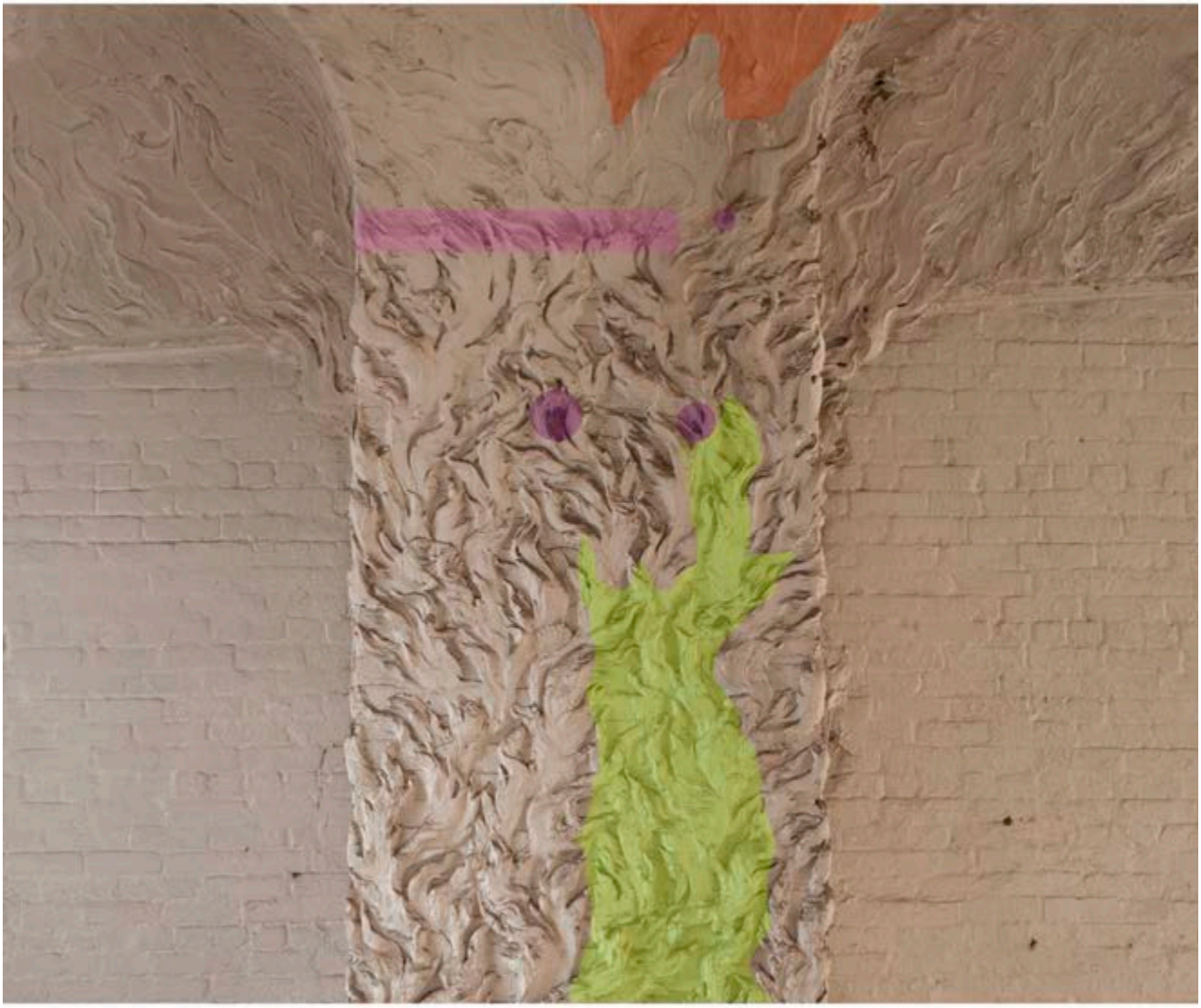
= Previous Reveals

= Paint Loss

= Extreme Alligatoring and Flaking Paint




Chanler Fireplace:
East Elevations, Level B



Chanler Fireplace:
East Elevations, Level C

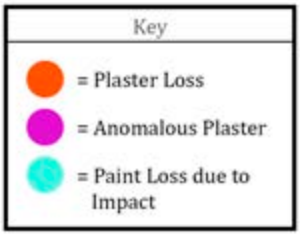
***South Elevation:***

The lower area of the south elevation (A) **(Figure 11)** is mainly covered with flames cast in bronze. Moving up the fireplace the metal transitions into plaster. The plaster on this elevation displays a marked lack of sculptural detail in comparison with the other two elevations. Scattered heavy soiling is present throughout the elevation with concentrated areas on the lower metal region and upper plaster region. Alligatoring paint is prevalent throughout, with regions of flaking and chipping that expose the bronze substrate, metal leaf, and brick. The baseboard has soiling, chipped corners, black marks, and specks of green and yellow paint.

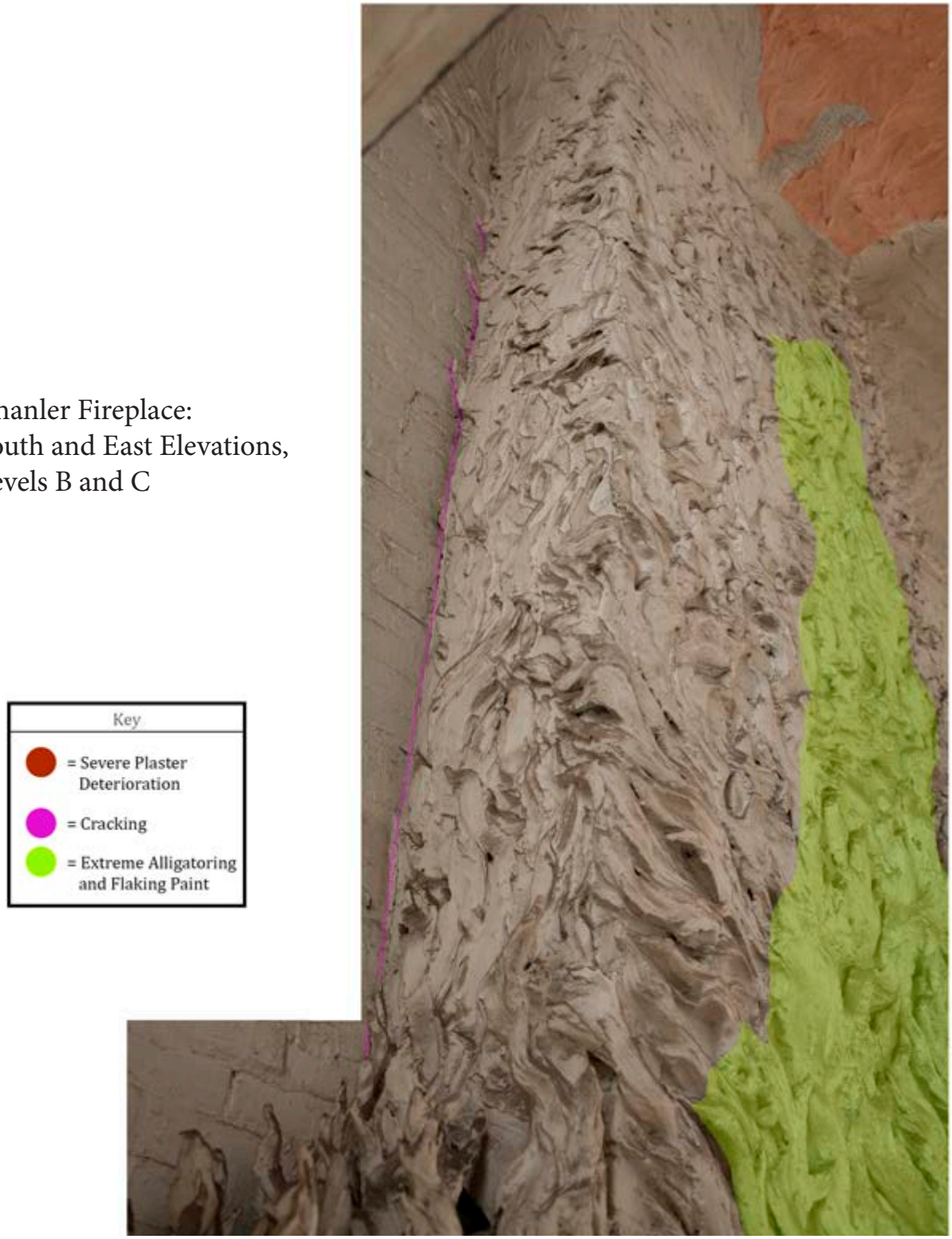
The middle of the south elevation (B) **(Figure 12)** has free standing plaster flames. A few of these flames have partially loosened while others have entirely detached exposing their structural ferrous wire. Heavier soiling is visible around the freestanding flames than is found on the flames and motifs along the base of the fireplace. Light alligatoring as well as scattered pink paint specks are found on the base and free standing flames. A medium sized crack also runs along the joint between the chimney and wall.

The upper region of this elevation (C) **(Figure 13)** has alligatoring of paint as well as soiling though these are more prominent on the lower middle region. Flaking and chipping of paint has exposed brick and metallic leaf. Medium sized cracks are present around the flames at the joining section of the wall and chimney.

Chanler Fireplace:
South and East Elevations, Levels A and B



Chanler Fireplace:
South and East Elevations,
Levels B and C



Section V.

# Finishes Analysis

## FINISHES ANALYSIS

### Findings

#### *Photomicrographic Examination*

To better understand the historic finishes on the Chanler Fireplace, cross sections of samples were closely analyzed microscopically. Viewing cross sections using the Leica Microscope and photomicrograph setting (in normal and ultraviolet mode) allowed the conservation team to view the layering structure, colors, and opacity of the paints, leaves, and glazes. Seventy cross sections taken from three different substrates were analyzed. The substrates range from bronze and brick on the bottom-most level (A) of the structure to plaster and brick on the upper two levels (B and C). Twelve of these cross sections, approximately 17% of the total number, were found to be incomplete. Of the remaining valid samples, nine samples (15%) were taken from brick, twelve samples (21%) from metal, and thirty-seven (64%) from plaster. [Appendix D, Figure 1]

Decorative effects were achieved using complex finishes of tinted preparatory paint layers, size, aluminum or copper leaf, and glazes. The leaf and paint layers were often glazed. Anywhere from two to ten finishes total were found within a cross section sample. More finishes were represented in the cross sections from the base of the fireplace and fewer finishes or reworkings at the top of the fireplace.

A wide variety of colors were represented within the cross sections, though most of these were found to be muted or subdued in hue and saturation, despite initial speculations of Chanler preferring a brighter palette. An initial finish layer with blue and red particles is found on both brick and plaster substrates and appears gray-brown to pink-brown in cross section. This is represented in twenty-six samples, 45% of the valid samples or 57% of the brick and plaster samples. This layer may be the pastel blue-gray, light purple, or light pink paint discovered in the reveals. This underlines the amount of reworking that took place, since this layer is completely covered by later finishes and has no relationship to the proposed final color scheme. Of the valid samples, only nine, or 15%, had strong colors such as bright green, red, and yellow. However, these were restricted to early finishes and were only found in samples near the base of the fireplace. Since these strong colors were found underneath leaf layers, they should be considered a component of a complex finish.

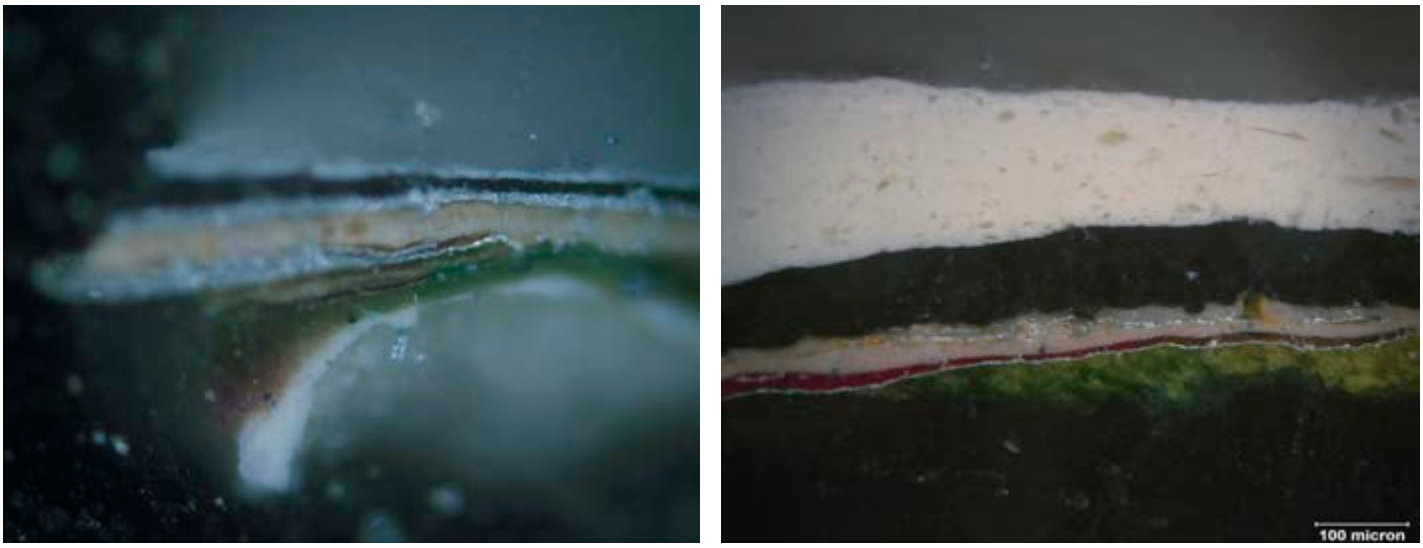
Chanler himself reworked the finishes on the fireplace several times over the five years of its creation. It appears he evolved from using pastels to using bright colors, but eventually he tended towards a more subdued and subtle color scheme as he reworked the fireplace and ceiling. The colors found on the upper half of Level B and all of Level C are consistent with those found by Ms. Lauren Drapala on the Whitney Studio Ceiling, as cited in her 2008 report.

As a final note, it is believed that the black paint may have been applied during a period when the Whitney Studio was leased as a private studio, between 1950 and 1980. This black paint does not cover the entire fireplace, rather ending about halfway up Level C. The final layers found in cross section consist of up to three layers of white overpaint.

***Instrumental Analysis***

Scanning Electron Microscopy (SEM) and Energy Dispersive Spectroscopy (SEM-EDS), Fourier Transform Infrared Spectroscopy (FTIR) provided the conservation team information on many of the specific materials and pigments used by Chanler.

Ten samples were selected as a subset for analysis using the SEM-EDS located at the Conservation Center. Elemental mapping enabled the visualization of the locations and qualitative amount of different elements. At this time, aluminum and copper leaf were identified, with up to three aluminum layers and one copper layer present within one sample. Other elements found to be present include silicon, sulfur, lead, calcium, titanium, and iron. Spot elemental analysis with EDS discovered trace elements in the aluminum leaf to include tin and arsenic, while trace elements within the copper leaf include zinc, nickel, and arsenic. Gold was also present in minute quantities within both types of leaf. [Appendix D, Figure 2]




NYSS011 (left in cross sectional photomicrograph) and NYSS024 (right in cross sectional photomicrograph) were analyzed by Raman, FTIR, and high-resolution SEM-EDS at the Metropolitan Museum of Art.

Selected cross sections NYSS011 and NYSS024 (pictured above) were analyzed at the Metropolitan Museum of Art with Marco Leona by Raman and FTIR. SEM of these cross sections was also performed on location with the MMA' s higher-resolution instrument under the supervision of Federico Caro. The SEM analysis performed at the MMA of sample NYSS011 resulted in more precise and detailed information pertaining to each paint layer [Appendix D, Image 3]. The analysis of layer 1 of the sample detected lead and zinc, indicative of materials used to prime plaster for additional finish layers. A blue grain in layer 2 was identified as lazurite, of the pigment lapis lazuli. Layer 4 of the sample, a thin greenish-blue contained copper, chlorine, oxygen and iron, typical of copper corrosion products. Layer 5, the gold-colored leaf was found to be copper, and the yellow of layer 10 detected lead, chromium, and oxygen, indicative of chrome yellow. Lastly the top layer of overpaint, layer 18, was found to contain titanium. [Appendix D, Image 4]

FTIR was utilized as a supplemental technique to SEM. The signal from layer 4 of sample NYSS011, a thin green layer, was found to match that of copper stearate [Appendix D, Image 5]. The signal from layer 13 of sample NYSS024, also a thin green layer, was found to match that of cupric palmitate [Appendix D, Image 6]. Both of the matches for NYSS011 and NYSS024 are copper corrosion products.

The red layer in NYSS024 was identified through Raman spectroscopy to be a bright, synthetic pigment such as Hansa red. The composition of the pink layer within NYSS011 was still in question, even after the use of these techniques. Thanks to Marco Leona, who further analyzed this layer with Surfaced Enhanced Raman Spectroscopy, it can be identified as a pink dye.

Though FTIR and Raman analysis of pigments was largely successful, medium analysis could not be performed because the layers of size, paint, and glaze could not be isolated from each other.

### *Paint Reveals*

Paint reveals using both paint strippers and mechanical methods were undertaken in order to try to understand the macroscopic appearance of the Robert Chanler finish scheme. The reveals were undertaken both in-situ at the Institute of Fine Art's Conservation Center and at the Whitney Studio on various regions of the fireplace.

These reveals were only partially successful in determining the placement and design of paint layers. These efforts did, however, uncover an early pastel-colored finish layer ranging from blue-gray to light purple to light pink in tone which had not been anticipated from cross section analysis alone. Moreover, the transition between the fireplace and the ceiling is lower than originally expected. The pastel finish layer seems to extend from the ceiling down through at least Level C.  Also, what seems to be the final finish layer ranging from gold to tan to brown in color exhibits more uniformity and less variability in color than predicted.

### **Reveals at the Conservation Center, IFA**

#### *Reveal 1*

A flame fragment that had previously detached from the fireplace was brought into the Conservation Center in order to conduct microscopic analysis as well as paint reveals. The paint reveals helped to determine an appropriate stripper for in-situ reveals on the Chanler Fireplace.

For the paint reveals, Citrus Strip and 3M Safest Stripper were applied with a brush and left on the surface for timed intervals. Initially, the strippers were left for ten minutes. The gels were then removed with Q-tips and cleared with water. This appeared to have no effect. Over a thirty minute span, the paint appeared to have lightened and could be pushed around the surface with the Q-tip. After leaving the strippers for one hour, however, they both dried out and were difficult to remove from the surface. Therefore it was decided leave the strippers for one hour under tented foil to retard evaporation.

Ultimately, it was concluded that Citrus Strip removed the white overpaint more easily, and the Safest Stripper removed the black overpaint more easily. A second testing of the two paint strippers for one hour while covered with tented foil determined that the Safest Stripper appeared to more fully remove both colors of overpaint. Despite removing the overpainted areas, the strippers were unable to remove the gold-toned aluminum layer underneath. Therefore, the reveal was unsuccessful in exposing the initial finishes application methods used by Robert Chanler. It should be noted that there are methods of reveals which are slower and may have been more effective, but due to time constraints commercial paint strippers were used for experimentation and eventually used for in-situ reveals.

***Reveal 2: Level A***

3M Safest Stripper was applied on a five-by-four inch region on the left side of the hearth on the east elevation. After each application, the test area was covered with Saran Wrap for the duration of its dwell time in order to retain moisture. The stripper was applied in four thirty-minute increments. After the first two applications, only the white overpaint was removed. By the third application the black paint directly under the white layer was exposed. Finally, on the fourth application, in a small area, gold and silver leaf was revealed while the other section contained thinned layers of the white and black paint.

The first reveal was extended below the original region to garner more information about the finishes. It was the same size as the section above it and was conducted using 3M Safest Stripper. This was done in order to see if the same finishes pattern continued down the fireplace. Similar to the first reveal, after each application of the stripper Saran Wrap was used to cover the coated area. Two applications of the stripper were applied for one-hour intervals. The first application removed white overpaint exposing specks of the black layer underneath. The second application removed the black layer showing patches of a gold- and silver-colored leaf. Bits of aluminum leaf also came off after the second application, revealing a reddish-copper glaze that seemed to be directly adhered to the backs of the leaf. The reveal in this area proved that some paint layers and sections are more tenacious than others and that removing the later decoration will undoubtedly damage or remove the original finish applications as well.

The reveals on Level A illustrated that multiple applications of 3M Safest Stripper were ineffective in revealing the earliest finishes layers. The black and gold-toned aluminum leaf layers are hard to remove and may need stronger chemicals for effective removal.

***Reveal 3: Level B***

The reveal on the right side of the east elevation on a very flaky region of the fireplace was approximately four-by-four inches. 3M Safest Stripper was initially applied for five minutes on the entire region and was left to dwell

uncovered. This application allowed for the white paint to come off. The stripper was then applied for another five minutes on the entire region, partially removing the black paint. At this time the aluminum leaf with the gold-colored resinous layer began to show.

In an attempt to distinguish the hypothesized multiple layers of finishes, the reveal area was then divided into four even sections for a stepped reveal. 3M Safe Stripper was first applied for ten minutes on three-fourths of the square revealing further the silver and gold resin/varnish that was already exposed. The stripper was next applied for another ten minutes on the lower half of the square, revealing a beige color on top of the leaf. Finally, for the last fourth of the reveal space, the stripper was applied for ten minutes causing no further exposure.

The reveal was extended down. It was the same size as the space above, on a partially flaky and partially non-flaky region of the fireplace. 3M Safest Stripper was applied for a continuous thirty-minute period. The region was always covered for the duration of the dwell time. The first application entirely removed the upper white overpaint layers exposing black and small patches of gold. The stripper however, did not remove the white paint on the non-flaky region located on the edge of a lizard tail. For the next thirty minute period, gold and silver was seen on the previously flaky area while the lizard tail was partially black. A final thirty minute application revealed a red layer on the previously flaky region.

The reveals on Level B illustrated that on flakier regions 3M Safest Stripper was effective in uncovering the original finish layers. Longer dwell times allowed the stripper to penetrate the white, black, and gold-toned aluminum leaf layers more effectively. However, this does not apply to regions where the white paint is not flaking, which is the majority of the fireplace.

***Reveal 4: Level C***

Traditional approaches such as mechanical scraping commonly utilized by architectural conservators were also employed on the upper half of Level C. The first attempt at mechanical scraping revealed light pinks and browns underneath the top most white and its subsequent black layer.

**Analysis and Discussion**

Our findings raised questions about period materials and Chanler's techniques. For instance, lapis lazuli is relatively rare and would have been relatively expensive: it is therefore an unusual pigment to find within a decorative piece. The discovery of synthetic dye pigments seems to be similarly unusual, and both of these findings together suggests that Chanler was mixing up his own paints. The use of these materials speaks to Chanler's fine arts background and mixed-media approach.

The bronze installation is unusual for Chanler. This is his only use of bronze as a medium, which was perhaps due to its difficulty to rework after casting compared with plaster, which is much easier to rework. It is also possible, however, that Chanler chose to use metal, as it was a material practically suited to a functioning fireplace.

Regarding the copper stearate and palmitate products found, though they represent corrosion, this could be a result of degradation of the copper leaf layers or a component of a bronzing powder within a glaze layer. However, there is no evidence for the latter hypothesis. The presence of trace elements found within the aluminum

and copper leaf may be either due to impurities or deliberate alloying of the metal. It is also possible that they are components of adjacent layers that were picked up by analysis.

The understanding of decorative techniques from cross sectional analysis posed significant challenges: much reworking took place, and the decorative techniques are complex and not faithfully represented microscopically. Therefore, the chronology of the fireplace in conjunction with the ceiling and the rest of the room is still difficult to discern. However, a tentative chronology can be proposed for the installation. The lower part of the mantle was reworked extensively, suggesting that it was an early feature. Moreover, the bronze flames have a different character than the ones above, sculpted in plaster. This means the bronze may have been considered a finished artwork that was later incorporated into a greater scheme.

We hypothesize that the scheme with the brighter colors seen on Level A and part of Level B was created first. The bright colors on Levels A and B were applied in various phases in conjunction with the installation of the bronze and plaster flames. It is likely that following these first phases, the ceiling was created utilizing a pastel palette. The fireplace and ceiling were then integrated, resulting in the pastel colors continuing onto the upper part of the fireplace from the ceiling. The number of reworkings was an attempt to create a better transition between fireplace and ceiling. However, this may also reflect the five-year time span required to produce the fireplace, during which Chanler's style and aims for the project may have evolved. Finally, both the earlier pastel scheme and bright colors were discarded and replaced with variations on a gold tone subtly modeled with a variety of brown glazes (Appendix E, Figures 2 and 3). Such a final finish layer is similar to the final appearance of the reconstruction created by Lauren Drapala. Furthermore, Chanler's reworking of the fireplace and ceiling to emphasize subtle contrasts in glazed leaf finishes is reminiscent of his work in other media. He may have drawn inspiration from the working methods required for Asian lacquerware in which multiple finish layers are built up and sanded down to achieve gradations of hue and gloss. Lastly, such a finish was likely in keeping with the tastes of his time period.

Section VI.

# Analysis, Recommendations and Remaining Questions

## RECOMMENDATIONS

First and foremost, it is recommended that annual inspection of the roof and flashing be conducted, with particular attention paid to the latter. Areas of potential water infiltration should be sealed or otherwise corrected if found. Preventing water infiltration will retard or halt further powdering and blooming of plaster, reduce the risk of continued flaking and alligatoring paint such as on the right side of level B and C, and prevent the discoloration of plaster seen currently on the south elevation of level C.

The institution of a general cleaning and maintenance program is also recommended. Ideally, accumulated dust and dirt should be removed at least bi-annually.

The chemical and mechanical revealing techniques tested were difficult to control, and attempts to remove more recent finishes or overpaint layers risk further deterioration of the fireplace, powdering of plaster, and the removal and destruction of multiple finish layers. Therefore, it is not advised to perform more *mechanical* removal the overpaint layers. Although the entire fireplace cannot be easily stripped, further testing could be carried out with specially formulated cleaning gels to control large scale chemical reveals (2' x 2') in order to better understand the complex decorative effects Chanler created.

## REMAINING QUESTIONS

A significant number of unanswered questions still remain due to lack of archival documentation and the complex nature of the object. Several of these questions pertain to Chanler's working methods and the physical creation of the fireplace.

Chanler must have had assistance in the construction and installation of the work. Were the same artisans involved throughout the entire project? Did these individuals work with the artist on other projects as well? Does the construction of the free-standing plaster and compo flames have any corollaries in Chanler's other documented working methods?

The use of bronze is an anomaly for Chanler, so he must have consulted with specialists regarding the bronze castings. With whom did he consult, and when and where were the castings completed? The circumstances of the installation of the bronze elements at the base of the fireplace also remain unclear. Did these elements initially constitute a fully-conceived finished work, which was integrated into a larger scheme afterwards? It is difficult to determine whether any patina is the result of natural corrosion or of human intervention, but the bronze surface could be further examined with this distinction in mind.

Equally enigmatic is the hypothesized deterioration of the copper leaf application. It cannot be determined whether the corrosion of the copper leaf was apparent during the five years of the fireplace's creation or whether the alteration occurred later. If the alteration was unforeseen, did Chanler himself perhaps observe the aging characteristics of the earlier decorative schemes and change the materials he used accordingly? In any case, Chanler seems to have been dissatisfied with the appearance of this finish, as he continued to rework the surface.

A related inquiry pertains to the types of pigments and/or decorative bronzing powders available to Chanler at the time of the fireplace's decoration, though suggested in Lauren Drapala's analysis of the ceiling, evidence of bronzing powders was not discovered during the assessment of the fireplace.

In relation to the appearance of the fireplace, were the figures decorated in a style distinct from the background flames? Though early finish layers seem to suggest that they were, the most recent original schemes seem to be somewhat more monochromatic. Chanler himself wrote, "I have had Rudolph glaze the ceiling and now it is no longer patchy."[1] Perhaps such glazes were utilized to even out color and texture.

The relationship of the fireplace to the room as a whole remains indistinct. The upper part of the fireplace does indeed seem to match the ceiling in its modeling and finishes. Moreover, the brick wall adjacent to and north of the fireplace showed evidence of some silver-colored leaf underlying many campaigns of overpaint. As this was outside the scope of the project, further research should be done to determine how the fireplace and the wall were integrated.

Finally, if an original and final color scheme is to be determined, the distinction between original finishes and overpaint is crucial. The black layer of paint found over much of the fireplace is clearly not Chanler's work, but is this the first layer of overpaint? Or, is there a layer prior to the black which could be overpaint as well? This question must be answered in order to state with any certainty what the fireplace would have looked like at the end of the five-year period of its inception.

[1] Lizzie Frasco, "The Chanler Fireplace Project: Historic Assessment," 2013, 11.

Section VII.

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Appendix A.

# Sample Location Index

| Sample | Description | Location | Substrate | Category | Analysis (M, S, F, R)* |
|---|---|---|---|---|---|
| 1 | Baseboard | North elevation, A | Metal | Background | M |
| 2 | Flame below head | North elevation, A | Metal | Flame | M |
| 3 | Dragon snout | North elevation, A | Metal | Animal | M |
| 4 | Snake head | North elevation, A | Metal | Animal | M |
| 5 | Beak | North elevation, A | Metal | Animal | M, S |
| 6 | Brick behind metal | North elevation, A | Brick | Background | M |
| 7 | Brick wall on R wall | North elevation, A | Brick | Background | M |
| 8 | Flame | North elevation, A | Metal | Flame | M |
| 9 | Dog | North elevation, A | Metal | Animal | M |
| 10 | Metal flame | North elevation, A | Metal | Flame | M |
| 11 | Adjacent metal flame | North elevation, A | Plaster | Flame | M, S |
| 12 | Lion face | North elevation, A | Plaster | Animal | M |
| 13 | Baseboard side | East elevation, A | Metal | Background | M |
| 14 | Base of bottom flame | East elevation, A | Metal | Flame | M |
| 15 | Brick behind metal | East elevation, A | Brick | Background | M |
| 16 | Flame close to hearth | East elevation, A | Metal | Flame | M |
| 17 | Flame end | East elevation, A | Metal | Flame | M |
| 18 | Brick behind center flame | East elevation, A | Brick | Background | M |
| 19 | Center snake | East elevation, A | Metal | Animal | M |
| 20 | Middle flame | East elevation, A | Metal | Flame | M |
| 21 | Interior of metal in hearth | East elevation, A | Metal | -- | M |
| 22 | Brick mantle | East elevation, A | Brick | Background | M |
| 23 | Dragon face | East elevation, A | Metal | Animal | M |
| 24 | Flame left of mantle | East elevation, A | Metal | Flame | M, S |
| 25 | Flame close to hearth | East elevation, A | Plaster | Flame | M |
| 26 | Flame tip | East elevation, A | Plaster | Flame | M, S |
| 27 | Snake face | East elevation, A | Plaster | Animal | M, S |
| 28 | Elephant | South elevation, A | Plaster? | Animal | M |
| 29 | Anomalous plaster | South elevation, A | Plaster | Flame | M, S |
| 30 | Flame base | South elevation, A | Plaster | Flame | M |
| 31 | Brick behind flame | South elevation, A | Brick | Background | M |
| 32 | Mid-flame | South elevation, A | Metal | Flame | M, S |
| 33 | Brick | North elevation, B | Brick | Background | M |
| 34 | Compo/plaster flame | North elevation, B | Plaster | Flame (standing) | M |
| 35 | Flame adjacent to wall | North elevation, B | Plaster | Flame | M, S |
| 36 | Fish | East elevation, B | Plaster | Animal | M, S |

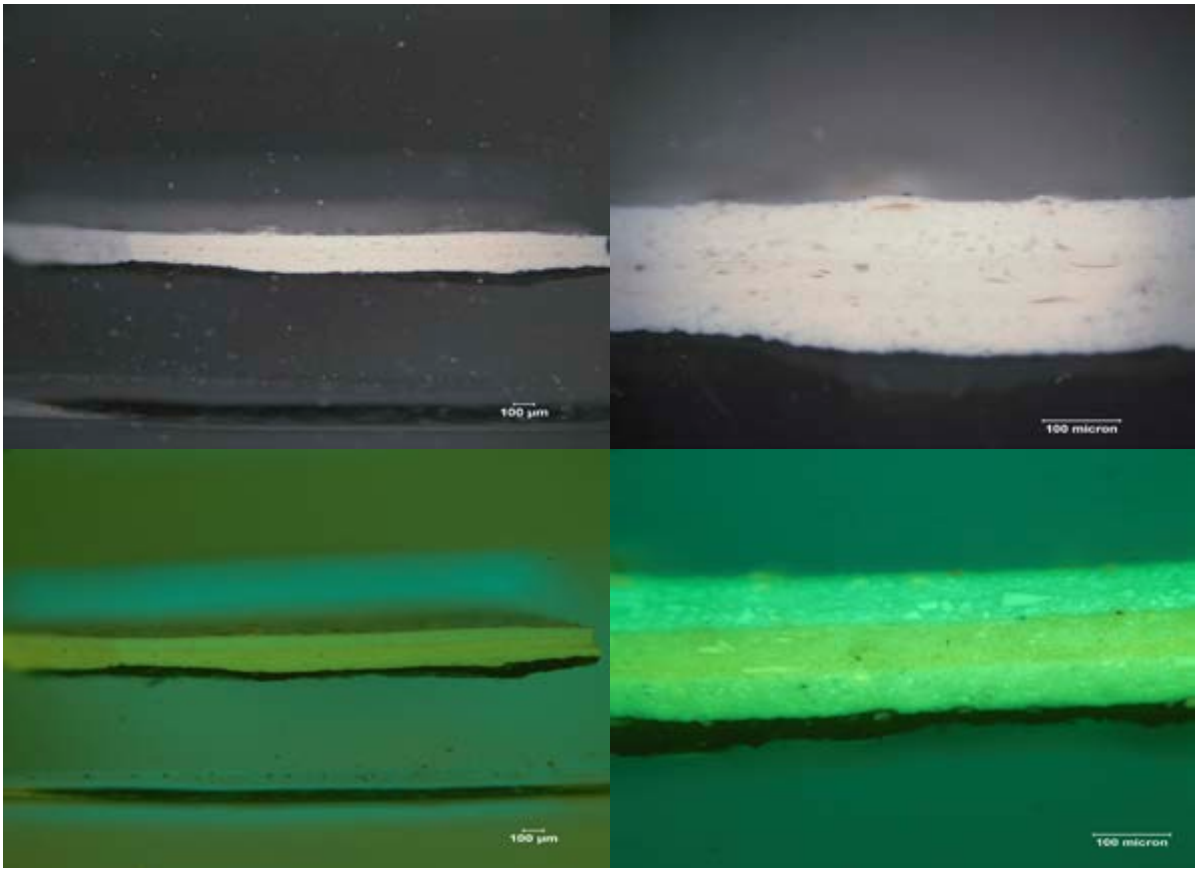
| Sample | Description | Location | Substrate | Category | Analysis (M, S, F, R)* |
|---|---|---|---|---|---|
| 37 | Flame center | East elevation, B | Plaster | Flame | M, S |
| 38 | Grotesque face | East elevation, B | Plaster | Human (mask) | M, S |
| 39 | Flame tip | East elevation, B | Plaster | Flame | M |
| 40 | Alligator | East elevation, B | Plaster | Animal | M |
| 41 | Back brick | East elevation, B | Brick | Background | M |
| 42 | Brick | South elevation, B | Brick | Background | M |
| 43 | Flame | South elevation, B | Plaster | Flame | M |
| 44 | Flame tip | South elevation, B | Plaster | Flame | M |
| 45 | Brick | North elevation, C | Brick | Background | M |
| 46 | Flame base | North elevation, C | Plaster | Flame | M |
| 47 | Flame tip | North elevation, C | Plaster | Flame | M |
| 48 | Man's head | North elevation, C | Plaster | Human | M |
| 49 | Fish | East elevation, C | Plaster | Animal | M |
| 50 | Flame | East elevation, C | Plaster | Flame | M |
| 51 | Above transition | East elevation, C | Plaster | ? | M |
| 52 | Mid-transition | East elevation, C | Plaster | ? | M |
| 53 | Bottom of transition | East elevation, C | Plaster | ? | M, S |
| 54 | Brick | East elevation, C | Brick | Background | M |
| 55 | Flame | East elevation, C | Plaster | Flame | M |
| 56 | Flame transition | East elevation, C | Plaster | Flame | M |
| 57 | Above transition | East elevation, C | Plaster | ? | M |
| 58 | Snake | South elevation, C | Plaster | Animal | M |
| 59 | Brick | South elevation, C | Plaster | Background | M |
| 60 | Bird | East elevation, B | Plaster | Animal | M, S |
| 61 | Dragon claw | East elevation, C | Plaster | Animal | M |
| 62 | Background behind dragon | East elevation, C | Plaster | Background | M |
| 63 | Flame under bird | East elevation, C | Plaster | Flame | M |
| 64 | Tip of bird mane | East elevation, C | Plaster | Animal | M |
| 65 | Flame of ceiling | East elevation, C | Plaster | Flame | M |
| 66 | Flame under seahorse | East elevation, C | Plaster | Flame | M |
| 67 | Seahorse chest | East elevation, C | Plaster | Animal | M |
| 68 | Background on deteriorated plaster, above seahorse | East elevation, C | Plaster | Background | M |
| 69 | Above man's hand | East elevation, C | Plaster | Background | M |
| 70 | Ceiling between flames on right side | East elevation, C | Plaster | Background | M |

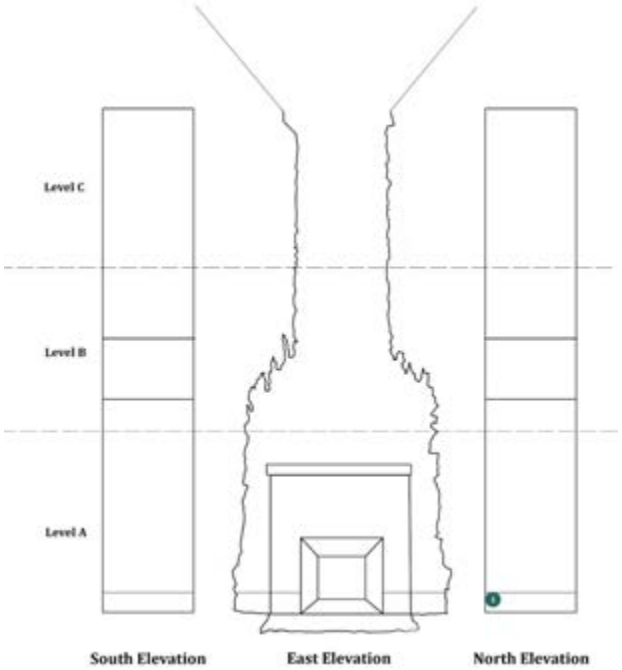
*The analytical methods conducted include Microscopy (M), SEM-EDS (S), FTIR (F), and Raman Spectroscopy (R)

Appendix B.

# Photomicrographs and Finish Stratigraphies

| **Sample:** | NYSS.001 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-14-13 |
| **Description:** Baseboard: North Elevation, Level A | | | | **Analyzed by:** Alafia Akhtar | |



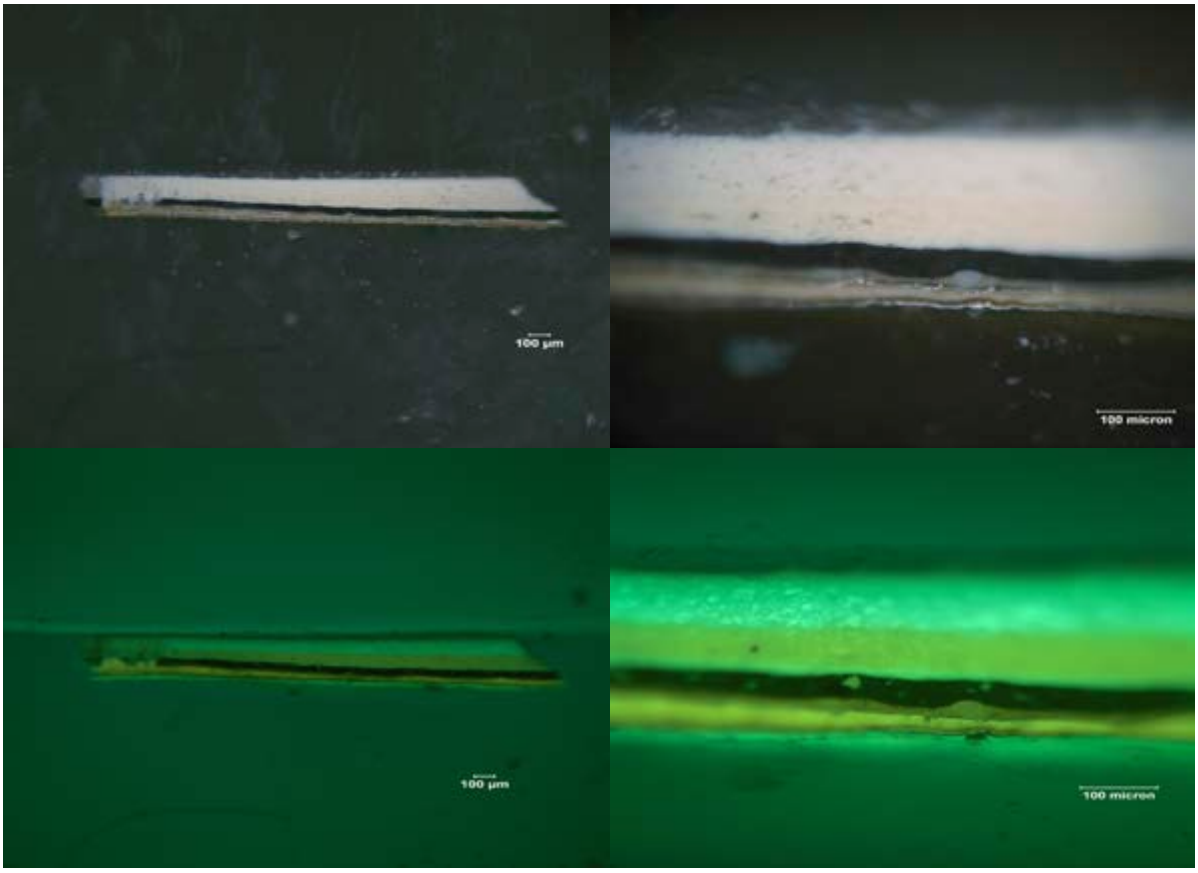
| **Sample:** | NYSS.001 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-14-13 |
| **Description:** Baseboard: North Elevation, Level A | | | | **Analyzed by:** Alafia Akhtar | |

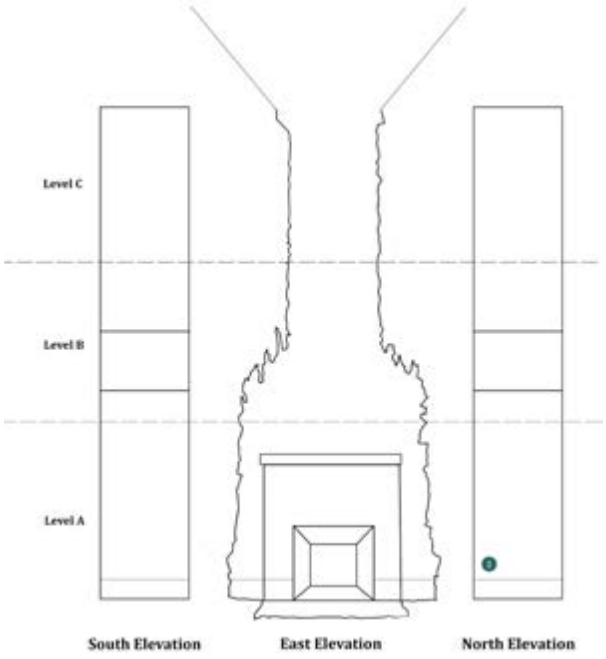
| **Layer Number** | **Color** | **Description** | **Finish Type**[1] |
|---|---|---|---|
| 1 | Silver-colored | Opaque, discontinuous, thin. | 1. Metallic leaf |
| 2 | Dark Brown | Translucent, discontinuous, thin. | 1. Glaze |
| 3 | Black | Opaque, continuous and thick; various sized particles visible under UV. | Overpaint |
| 4 | White | Opaque, continuous, thick. | Overpaint |
| 5 | Yellow-White | Opaque, continuous, thick. | Overpaint |
| 6 | White | Opaque, continuous, thick. | Overpaint |

**Notes:** Sample incomplete. This particular sample was extracted from the baseboard of the north elevation on A level of the Chandler fireplace. The baseboard appears to have a metal substrate. This was observed when the sample was extracted as well as through sound testing the region.

[1] The "Finish" type column presents the finishes in order of application. Those numbered "1." were applied in the first campain in the order of their "layer number" (See first column).

| **Sample:** | NYSS.002 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-14-13 |
| **Description:** Flame below Head: North Elevation, Level A | | | | **Analyzed by:** Alafia Akhtar | |



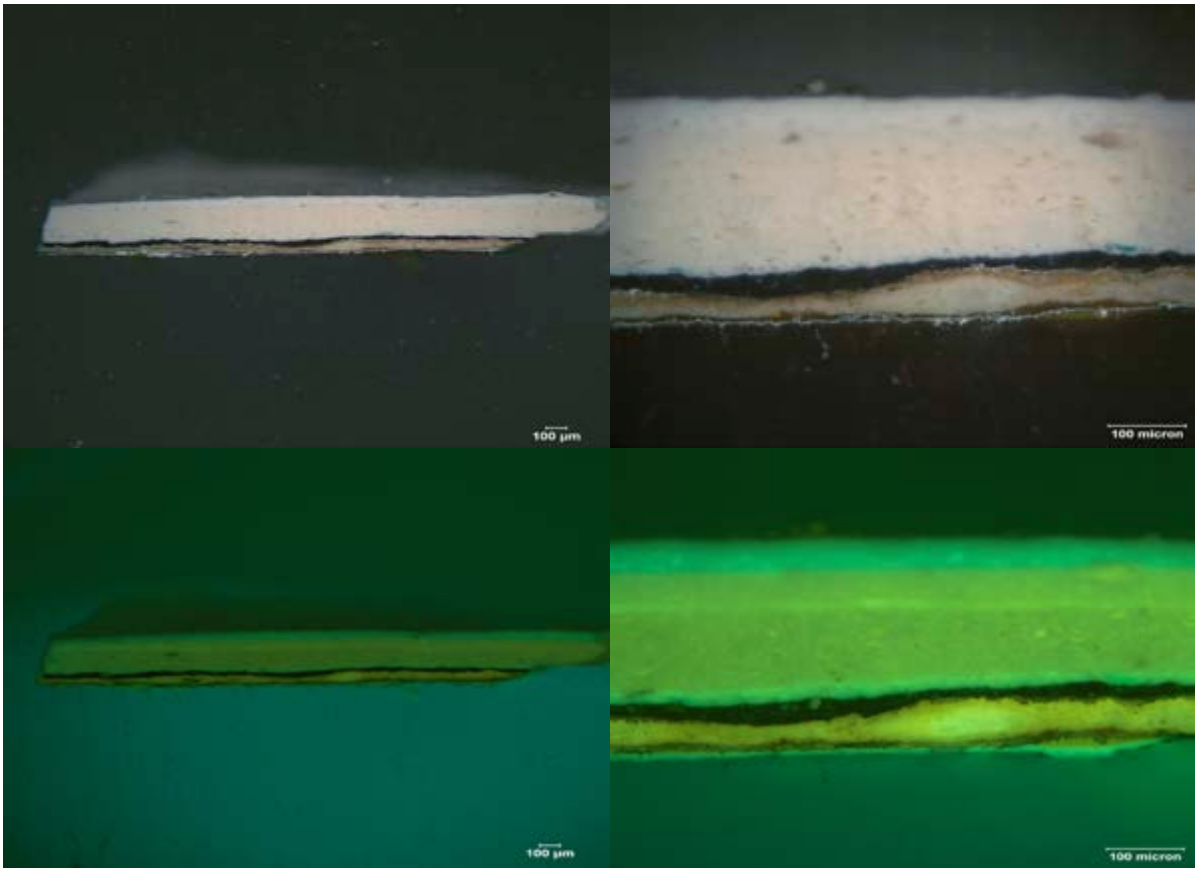



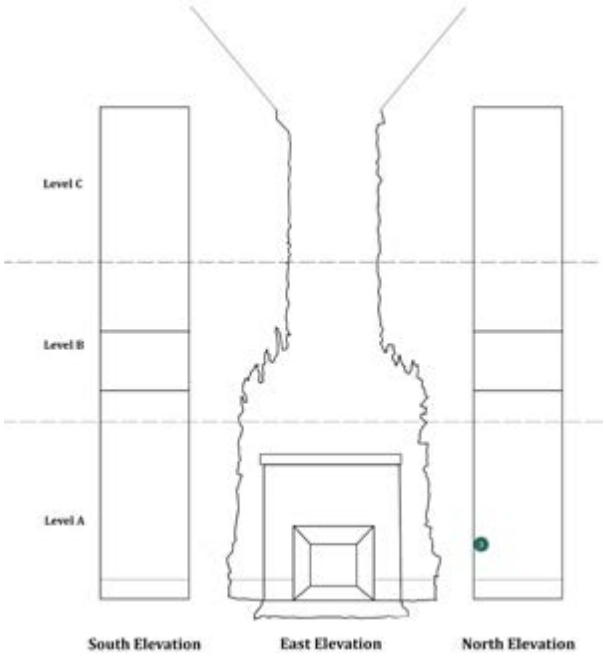
| **Sample:** | NYSS.002 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-14-13 |
| **Description:** Flame below Head: North Elevation, Level A | | | | **Analyzed by:** Alafia Akhtar | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | Light Yellow-Brown | Semi-opaque, semi-continuous, fine. | 1. Patina? |
| 2 | Green | Semi-opaque, discontinuous, thin; interface with above is indistinct in areas (could be due to blending). | 1. Patina? |
| 3 | Silver-colored | Opaque, continuous, fine; metallic leaf has areas of green blended into it. | 2. Metallic leaf |
| 4 | Dark Brown | Translucent, continuous, thin. | 2. Glaze |
| 5 | White | Opaque, continuous, medium-thick. | 3. Primer? |
| 6 | Light Brown | Translucent, discontinuous, fine. | 4. Size |
| 7 | Silver-colored | Opaque, continuous, fine. | 4. Metallic leaf |
| 8 | Dark Brown | Translucent, continuous, thin; layer follows the line created by the metallic leaf underneath it. | 4. Glaze |
| 9 | Gray-White | Semi-opaque, continuous, medium-thick. | 5. Paint |
| 10 | Black | Opaque, continuous thick; various shaped particles visible under UV. | Overpaint |
| 11 | White | Opaque, continuous, medium-thick. | Overpaint |
| 12 | Pink-White | Opaque, continuous, thick. | Overpaint |
| 13 | White | Opaque, continuous, thick; various shaped particles visible under UV | Overpaint |

**Notes:** This sample was taken as the base of a flame on the lower part of the north elevation of level A. The substrate to this section was bronze that seemed to have a patina on it. Additionally, when observed under the microscope, the silver-colored leaf layer, the one closest to the substrate shows hints of discontinuous green.

| **Sample:** | NYSS.003 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-14-13 |
| **Description:** Dragon Snout: North Elevation, Level A | | | | **Analyzed by:** Alafia Akhtar | |

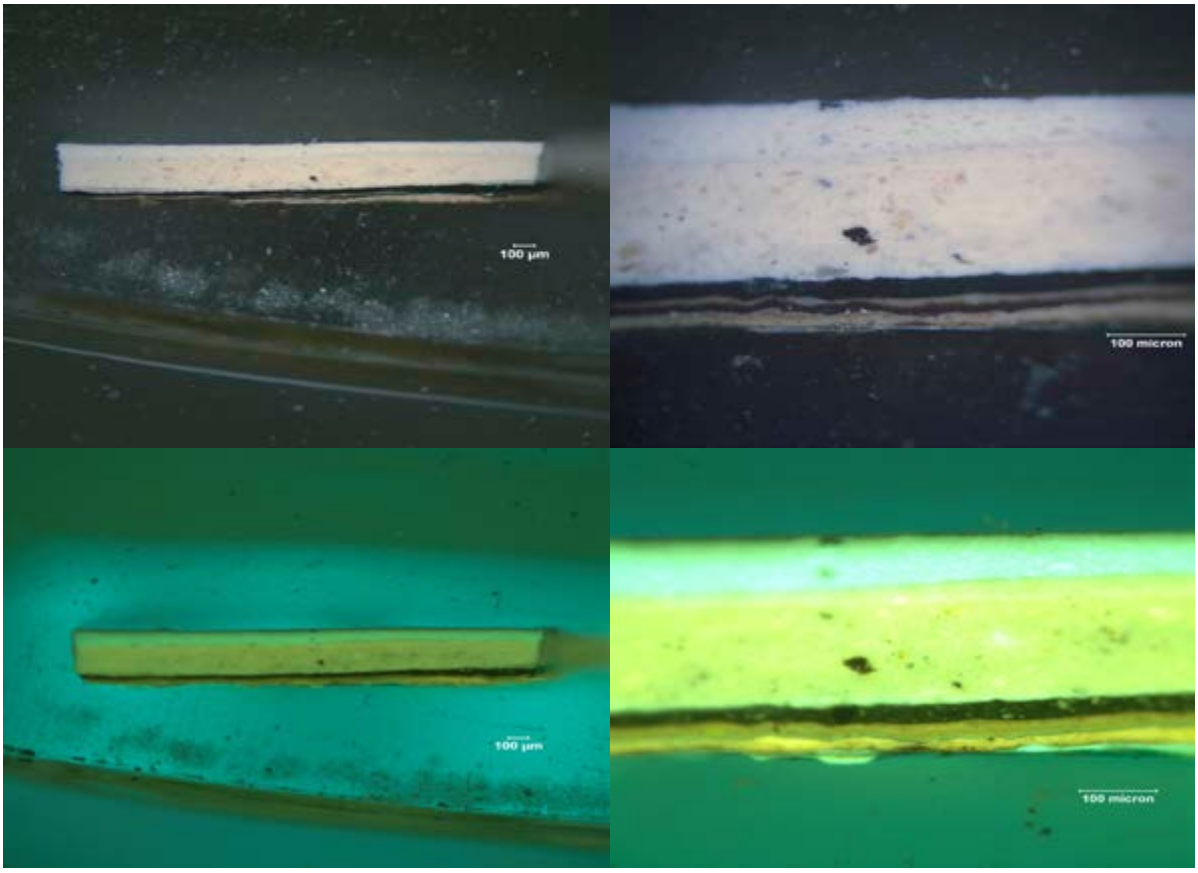


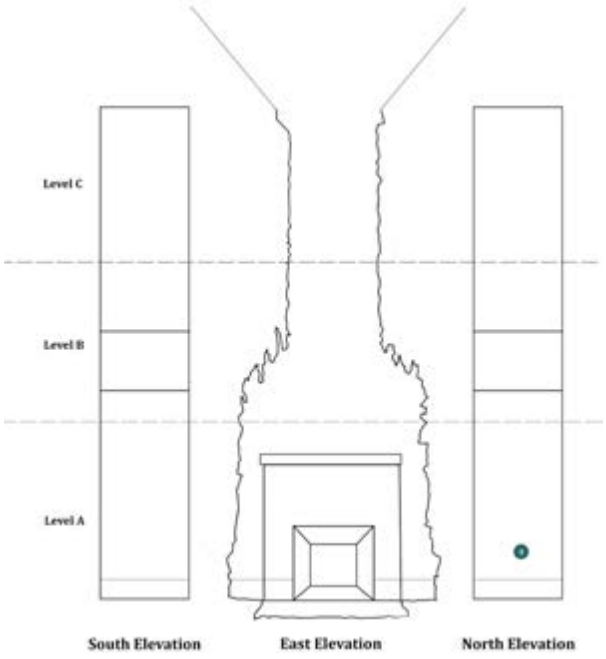



| **Sample:** | NYSS.003 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-14-13 |
| **Description:** Dragon Snout: North Elevation, Level A | | | | **Analyzed by:** Alafia Akhtar | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | Dark Brown | Translucent dark, continuous; varying thickness. | 1. Patina or paint |
| 2 | Light Brown | Translucent, discontinuous, thin. | 2. Size |
| 3 | Silver-colored | Opaque, continuous, fine; the metallic leaf appears above and below this layer indicating that detachment might have occurred. | 2. Metallic leaf |
| 4 | Dark Brown | Translucent, continuous, thin. | 2. Glaze |
| 5 | White | Translucent, continuous, varying thickness: thin-to-medium-thick. | 3. Glaze? |
| 6 | Light Brown | Translucent, continuous, thin. | 4. Size |
| 7 | Silver-colored | Opaque, discontinuous, fine; interface with above is jagged; metallic leaf layer does not have a smooth interface adjacent layers is jagged. | 4. Metallic leaf |
| 8 | Dark Brown | Translucent, discontinuous, fine. | 4. Glaze |
| 9 | Black | Opaque, continuous, medium-thick; various sized particles visible under UV. | Overpaint |
| 10 | White | Opaque, continuous, medium-thick; Green particles visible. | Overpaint |
| 11 | Pink-White | Opaque, continuous, thick; various sized particles visible. | Overpaint |
| 12 | Pink-White | Opaque, continuous, medium-thick; visible under UV light in both 5x and 20x magnification. | Overpaint |
| 13 | White | Opaque, continuous, medium-thick. | Overpaint |

| **Sample:** | NYSS.004 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-14-13 |
| **Description:** Snake Head: North Elevation, Level A | | | | **Analyzed by:** Alafia Akhtar | |



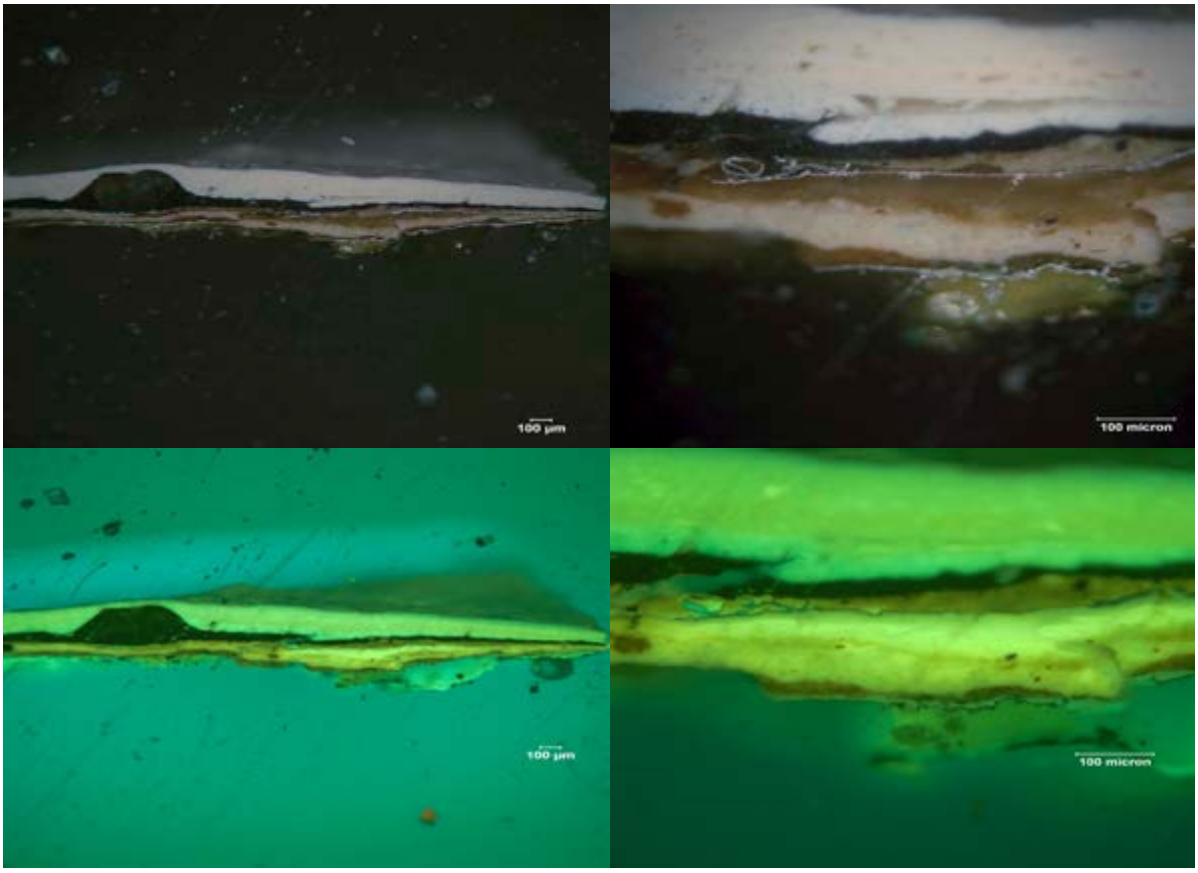



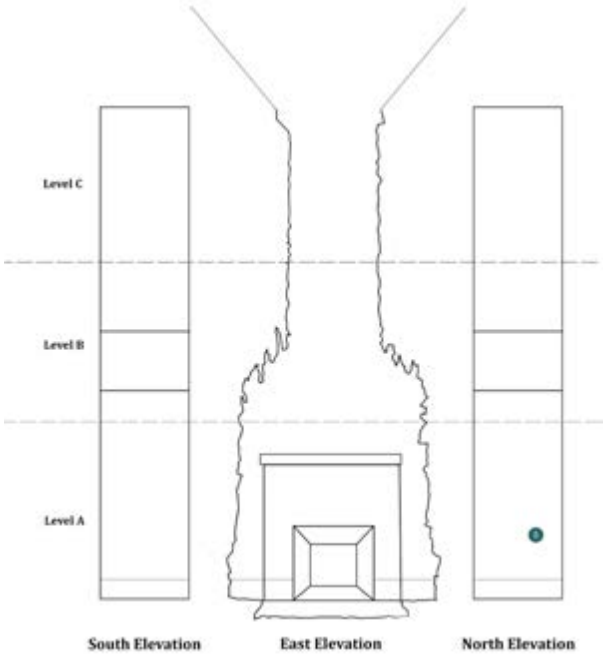
| **Sample:** | NYSS.004 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-14-13 |
| **Description:** Snake Head: North Elevation, Level A | | | | **Analyzed by:** Alafia Akhtar | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | Blue-Green [**Munsell: 7.5G 2/6**] | Semi-opaque, thin, discontinuous. | 1. Corrosion/paint |
| 2 | Dark Brown | Translucent, discontinuous, thin. | 2. Size |
| 3 | Silver-colored | Opaque, discontinuous, fine. | 2. Leaf |
| 4 | Orange-Brown | Semi-translucent, discontinuous, fine. | 2. Glaze |
| 5 | White | Opaque, continuous, medium-thick. | 3. Primer? |
| 6 | Yellow-Brown | Translucent, continuous, thin. | 4. Size |
| 7 | Silver-colored | Opaque, continuous, fine; leaf overlapping in areas. | 4. Metallic leaf |
| 8 | Dark Red [**Munsell: 10R 2/4**] | Opaque, continuous, medium-thick. | 5. Paint |
| 9 | Gray-White | Opaque, continuous, medium-thick. | 6. Paint |
| 10 | Black | Opaque, continuous, medium-thick; various sized particles visible under UV | Overpaint |
| 11 | White | Opaque, continuous, thick; various sized particles visible | Overpaint |
| 12 | Pink-White | Opaque, continuous, medium-thick; various sized particles visible | Overpaint |
| 13 | White | Opaque, continuous, thin; various sized particles visible, with black inclusions close to the surface of the sample. | Overpaint |

**Notes:** Fine layer of gray-black seen on the top layer of sample under UV light. This is most probably soiling that has accumulated on the surface of the region from which the sample was collected.

| **Sample:** | NYSS.005 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-14-13 |
| **Description:** Beak: North Elevation, Level **A** | | | | **Analyzed by:** Alafia Akhtar | |

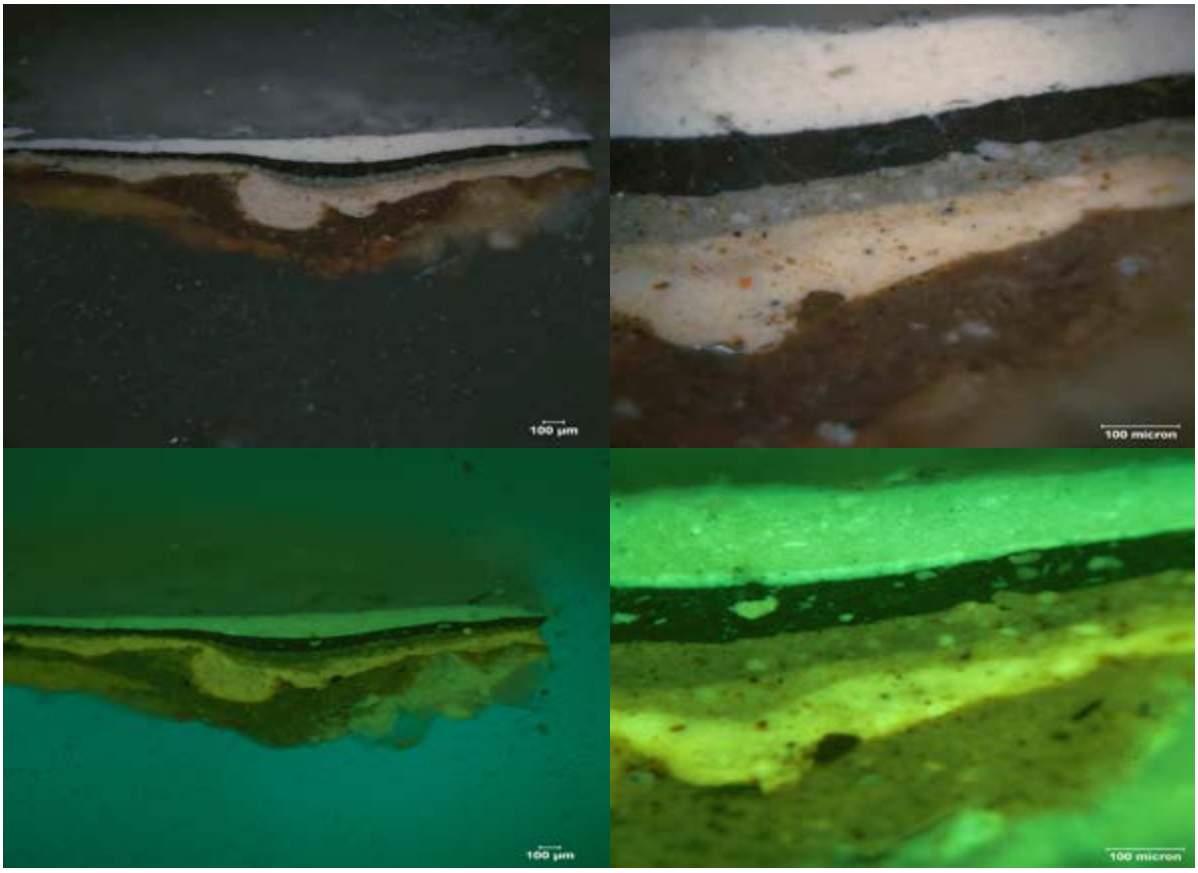


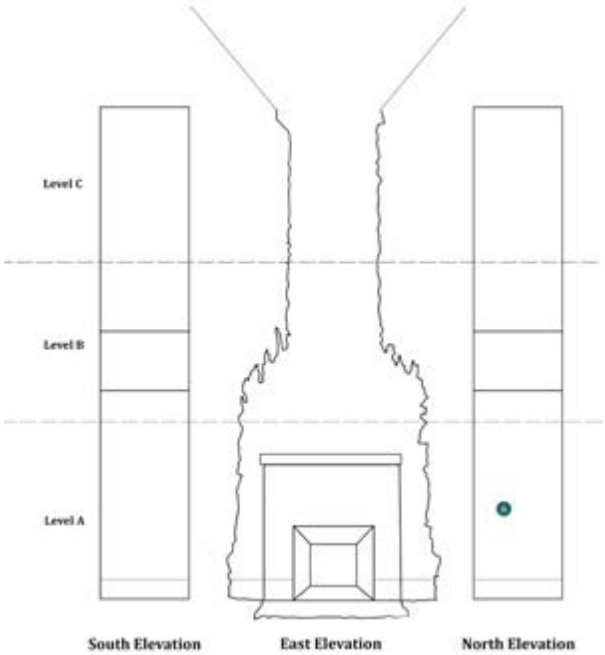



| **Sample:** | NYSS.005 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-14-13 |
| **Description:** Beak: North Elevation, Leve**l A** | | | | **Analyzed by:** Alafia Akhtar | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | Blue-Green | Semi-opaque, thin, discontinuous. | 1. Corrosion/paint |
| 2 | Copper-colored | Translucent, discontinuous, fine. | 2. Metallic leaf |
| 3 | Dark Brown | Translucent, semi-continuous, thin. | 2. Glaze |
| 4 | Yellow-Green | Semi-opaque, discontinuous, thick; interface with above copper leaf indistinct in certain regions (possibly indicates that corrosion is present on the copper leaf. | 2. Size |
| 5 | Silver-colored | Opaque, continuous, fine. | 3. Metallic leaf |
| 6 | Copper-colored | Opaque, discontinuous, fine; metallic leaf seems to be along the same layer as the Silver-colored with the green layer underneath it (chronology indeterminate). | 3. Alternate metallic leaf |
| 7 | Red [Munsell: 10R 5/14] | Opaque, discontinuous, thin; pigment appears in one region where the copper- and silver-colored leaves overlap. | 4. Paint |
| 8 | Medium Brown | Opaque, discontinuous, thin. | 5. Paint |
| 9 | White | Opaque, continuous, medium-thick; various sized particles visible. | 6. Paint |
| 10 | Light Brown | Translucent, continuous, medium-thick; interface with above is indistinct in areas. | 7. Size |
| 11 | Silver-colored | Opaque, semi-continuous, fine; interface with above is indistinct in areas. | 7. Metallic leaf |
| 12 | Dark Brown | Translucent, semi-continuous, fine; flecks of red visible within the layer. | 7. Glaze |
| 13 | Light Brown | Opaque, continuous, thin; different sized particles (black, white, and orange) visible. | 8. Paint |
| 14 | Black | Opaque, continuous, thin. | Overpaint |
| 15 | White | Opaque, continuous, thin. | Overpaint |

| **Sample:** | NYSS.006 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Brick | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-14-13 |
| **Description:** Brick Behind Metal: North Elevation, Level A | | | | **Analyzed by:** Alafia Akhtar | |



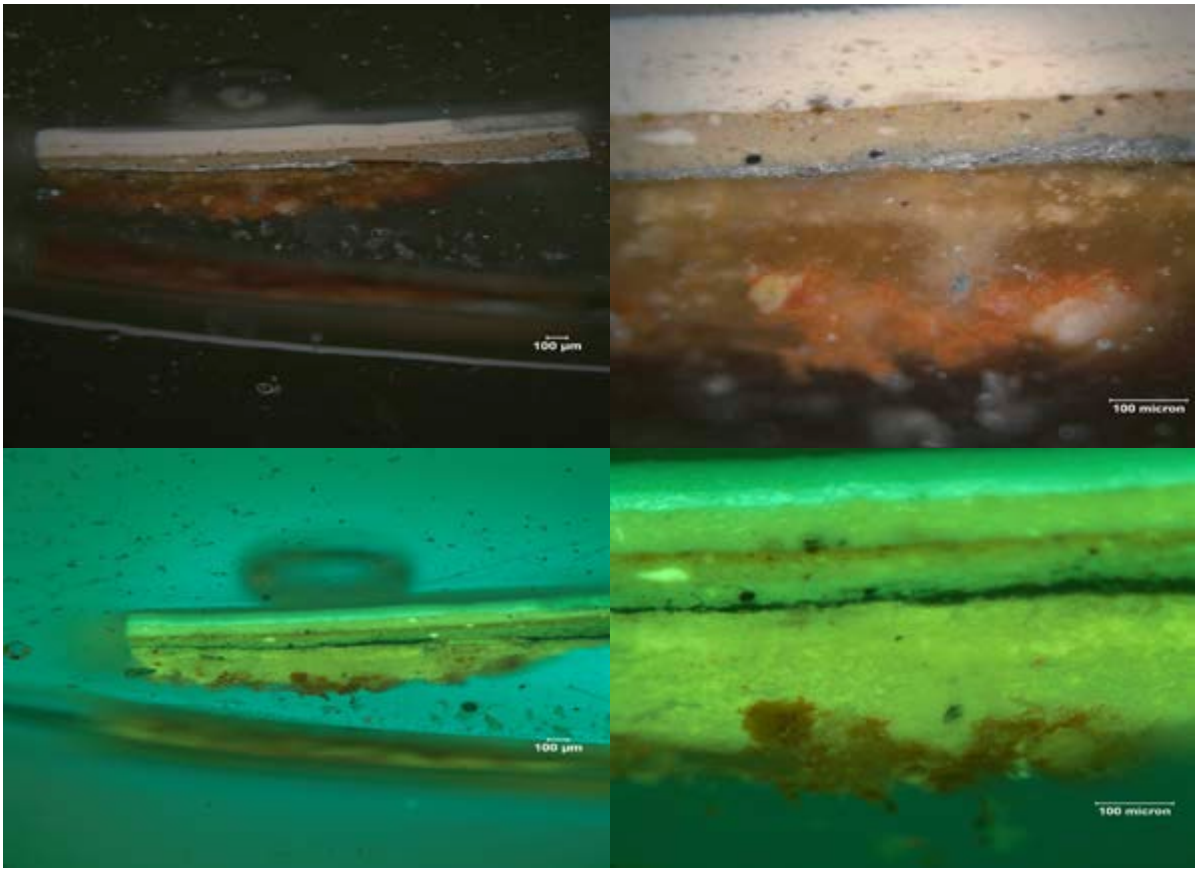



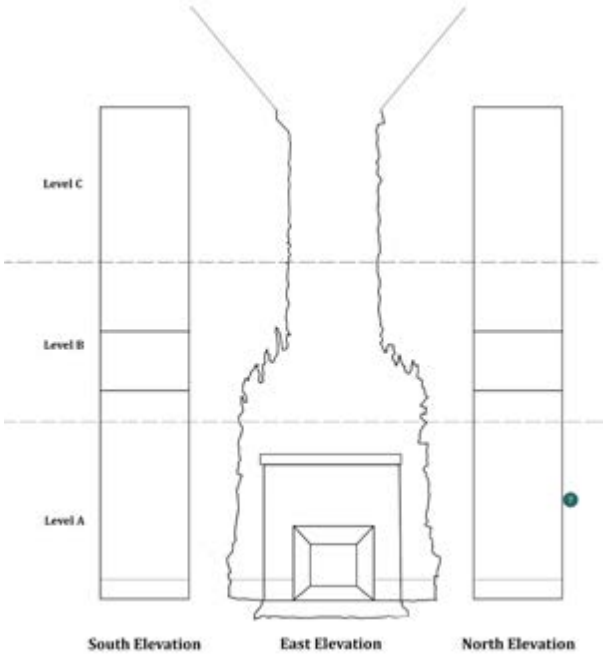
| **Sample:** | NYSS.006 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Brick | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-14-13 |
| **Description:** Brick Behind Metal: North Elevation, Level A | | | | **Analyzed by:** Alafia Akhtar | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | Pink-White | Opaque, continuous, thick, uneven; bleeding into light-brown layer below and, in some areas, into the brick substrate; small particles and pieces of discontinuous leaf visible within. | 1. Primer |
| 2 | Light Brown | Opaque, continuous, medium-thick. | 2. Paint |
| 3 | Gray | Opaque, continuous, medium-thick; scattered particles visible | 3. Paint |
| 4 | Black | Opaque, continuous, medium-thick; scattered particles visible under UV. | Overpaint |
| 5 | White | Opaque, continuous, medium-thick. | Overpaint |
| 6 | White | Opaque, continuous, thick. | Overpaint |

**Notes:** This sample was taken out of the brick on the fireplace in order to assess if certain layers were continuous throughout the fireplace.

| **Sample:** | NYSS.007 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Brick | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-14-13 |
| **Description:** Brick from North Wall: North Elevation, Level A | | | | **Analyzed by:** Alafia Akhtar | |



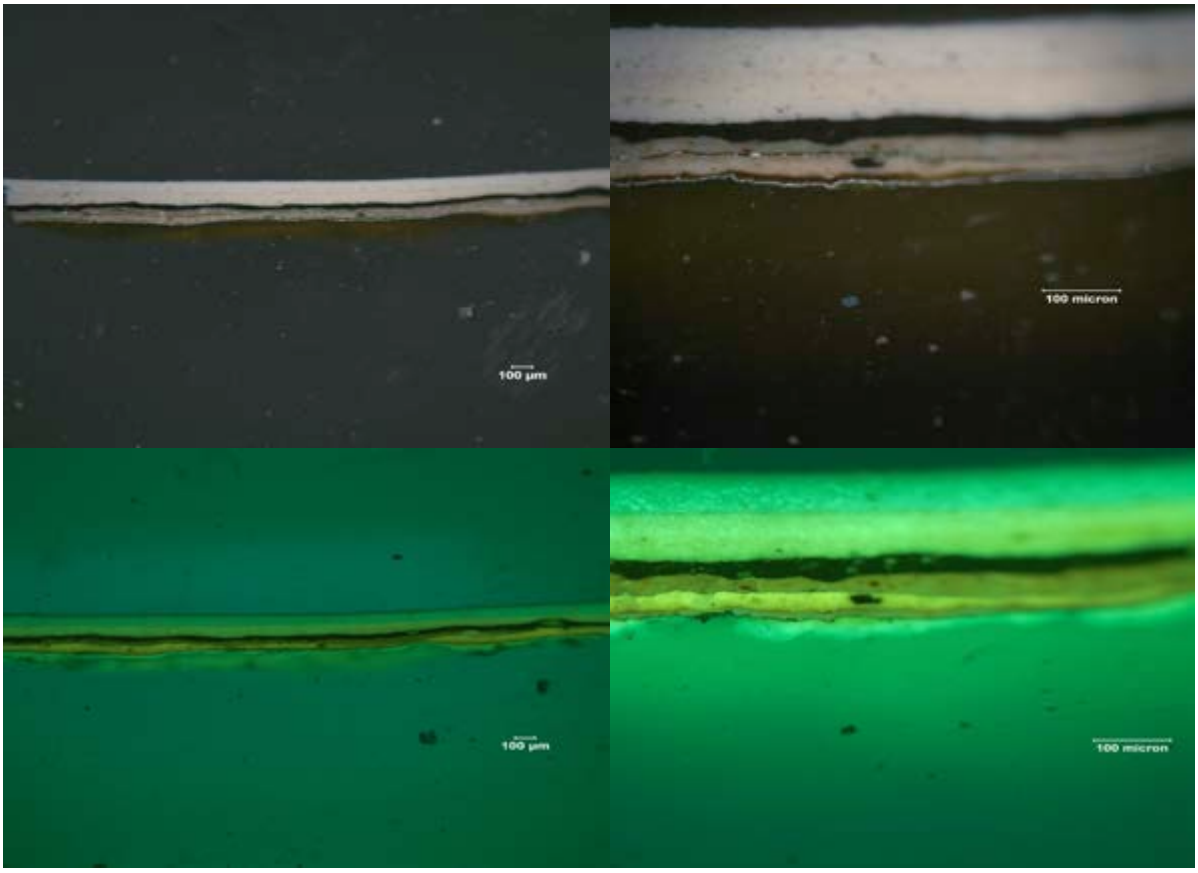



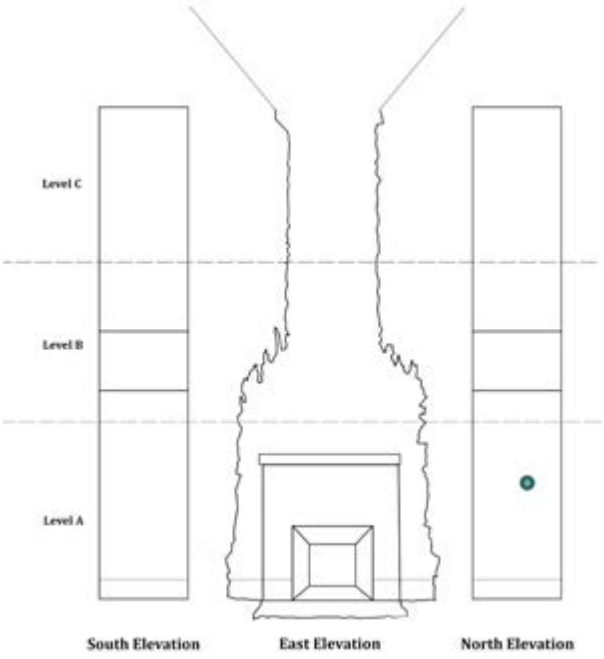
| **Sample:** | NYSS.007 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Brick | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-14-13 |
| **Description:** Brick from North Wall: North Elevation, Level A | | | | **Analyzed by:** Alafia Akhtar | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | Light Brown | Translucent, semi-continuous, thick. | 1. Preparatory layer |
| 2 | Dark Brown | Opaque, semi-continuous, thin. | 1. Preparatory layer |
| 3 | Silver-colored | Opaque, semi-continuous, thin. | 1. Metallic leaf |
| 4 | Light Red | Translucent, semi-continuous, thin; layer is right below two regions where the Silver-colored have split. | 1. Glaze |
| 5 | Dark Red-Brown | Translucent, semi-continuous, thin layer; layer is between two regions of the silver-colored leaf and directly above the light red layer. | 1. Glaze |
| 6 | Light Brown | Opaque, continuous, medium-thick; scattered particles visible. | 2. Primer |
| 7 | Yellow-Brown | Opaque, continuous, medium-thick; various sized particles visible. | 3. Paint |
| 8 | Pink-White | Opaque, continuous, medium-thick. | 4. Paint |
| 9 | White | Opaque, continuous, medium-thick. | Overpaint |

**Notes: T**his sample is from the adjacent wall from the north elevation on level A of the fireplace. It was taken to assess whether similar layers found on the fireplace were continued to regions outside of the architectural piece. Upon analysis it was observed that there is a continuation of the silver-colored leaf and the light red and reddish brown layers. Under ultraviolet light these layers look very distinctive.

| **Sample:** | NYSS.008 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-14-13 |
| **Description:** Flame: North Elevation, Level A | | | | **Analyzed by:** Alafia Akhtar | |

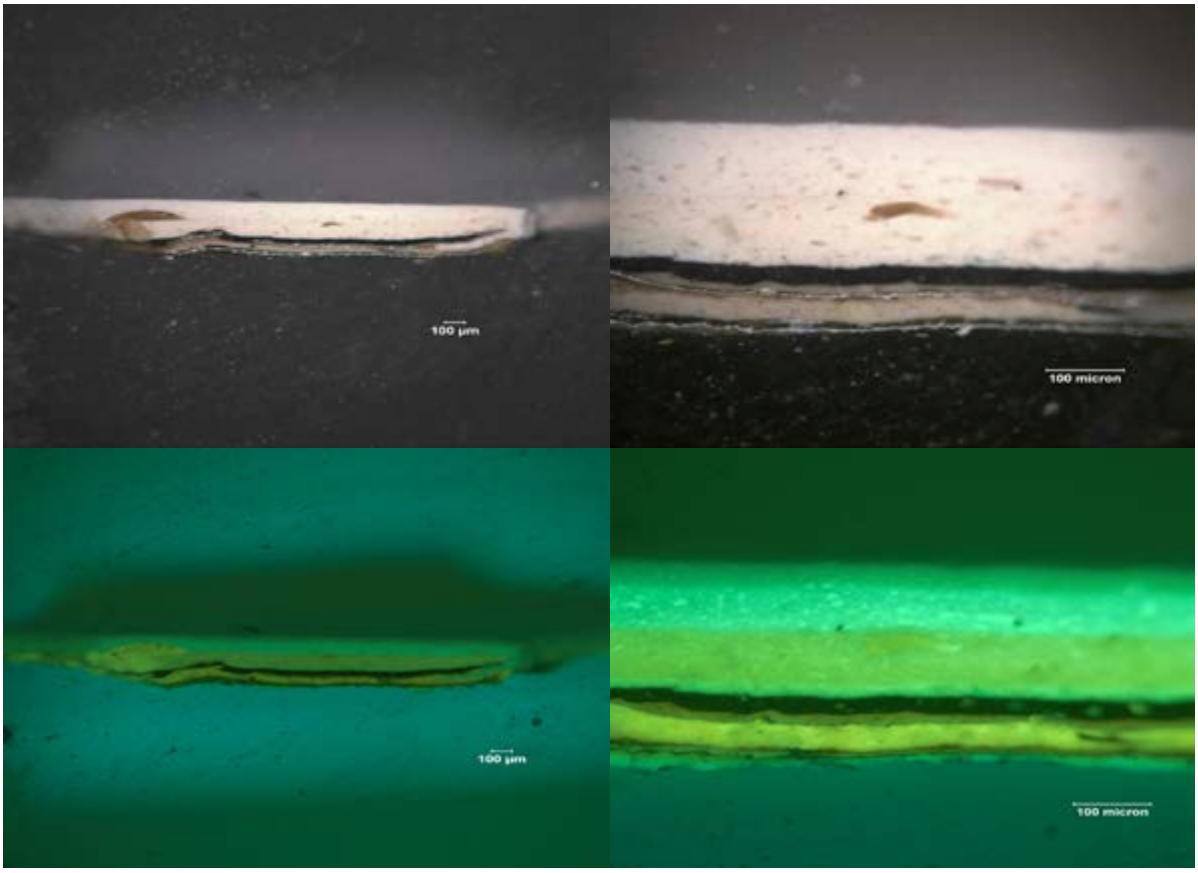


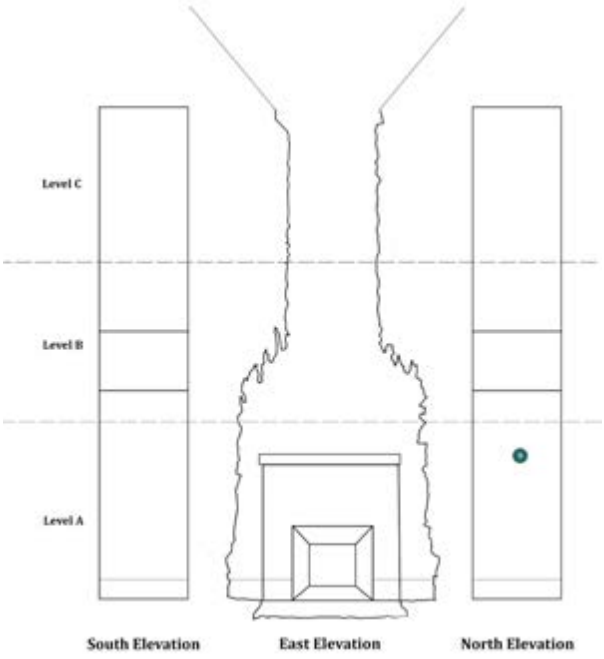



| **Sample:** | NYSS.008 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-14-13 |
| **Description:** Flame: North Elevation, Level A | | | | **Analyzed by:** Alafia Akhtar | |

| Layer Number | Color | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | Red | Opaque, semi-continuous, thin; layer visible in a small discontinuous region and has a slight thickness. | 1. Paint |
| 2 | Yellow-Green | Translucent, semi-continuous, thin; layer found in a small region within the sample. | 2. Size/patina |
| 3 | Silver-colored | Opaque, continuous, fine. | 2. Metallic leaf |
| 4 | Dark Brown | Translucent, semi-continuous, thin. | 2. Glaze |
| 5 | Light Brown | Translucent, continuous, thin. | 2. Glaze |
| 6 | White | Opaque, continuous, medium-thick; large particles visible in areas. | 3. Paint |
| 7 | Light Brown | Translucent, continuous, thin. | 4. Size |
| 8 | Silver-colored | Opaque, continuous, fine. | 4. Metallic leaf |
| 9 | Green-Black | Opaque, semi-continuous, fine. | 5. Paint |
| 10 | Gray-White | Opaque, continuous, medium-thick; various sized particles visible. | 6. Paint |
| 11 | Black | Opaque, continuous, medium-thick; various sized particles visible under UV. | Overpaint |
| 12 | White | Opaque, continuous and medium-thick; various sized particles visible. | Overpaint |
| 13 | Pink-White | Opaque, continuous, medium-thick; smaller-sized particles visible. | Overpaint |
| 14 | White | Opaque, continuous, thick. | Overpaint |

| **Sample:** | NYSS.009 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-14-13 |
| **Description:** Dog: North Elevation, Level A | | | | **Analyzed by:** Alafia Akhtar | |

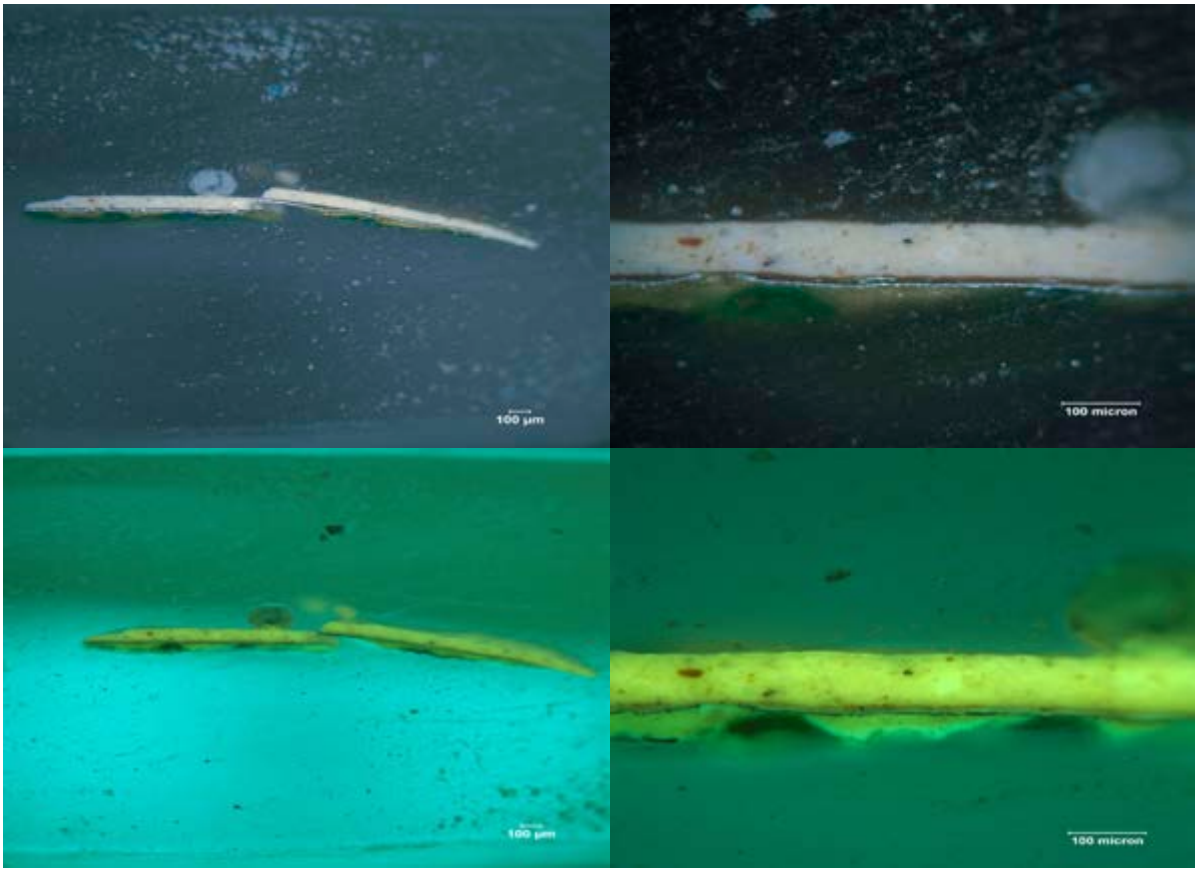


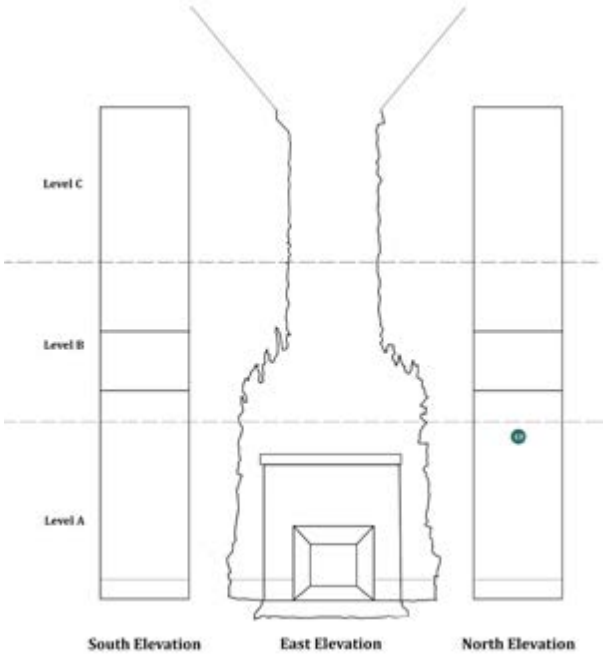



| **Sample:** | NYSS.009 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-14-13 |
| **Description:** Dog: North Elevation, Level A | | | | **Analyzed by:** Alafia Akhtar | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | Yellow-Green | Translucent, semi-continuous, thin. | 1. Patina/size/ corrosion |
| 2 | Silver-colored | Opaque, continuous, fine. | 2. Metallic leaf |
| 3 | Green-Black | Opaque, continuous, thin; small regions of red visible. | 3. Paint |
| 4 | White | Opaque, continuous, fine. | 4. Paint |
| 5 | Light Brown | Translucent, semi-continuous, medium-thick. | 5. Size |
| 6 | Silver-colored | Translucent, continuous, fine; metallic leaf folded in areas. | 5. Metallic leaf |
| 7 | Green-Black [**Munsell: 5Y 2/2**] | Opaque, semi-continuous, fine. | 6. Paint |
| 8 | Gray-White [**Munsell: 5GY 5/1**] | Opaque, continuous, thin. | 7. Paint |
| 9 | Black | Opaque, continuous, medium-thick; scattered particles visible under UV. | Overpaint |
| 10 | White | Opaque, continuous, thin; green is visible in a small region; various sized particles visible. | Overpaint |
| 11 | Pinkish-White | Opaque, continuous, thick; various sized particles, including two light-brown masses, visible; masses could be paint that was splattered onto the surface. | Overpaint |
| 12 | White | Opaque, continuous, medium-thick; various sized particles visible. | Overpaint |

| **Sample:** | NYSS.010 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-14-13 |
| **Description:** Flame: North Elevation, Level A | | | | **Analyzed by:** Alafia Akhtar | |

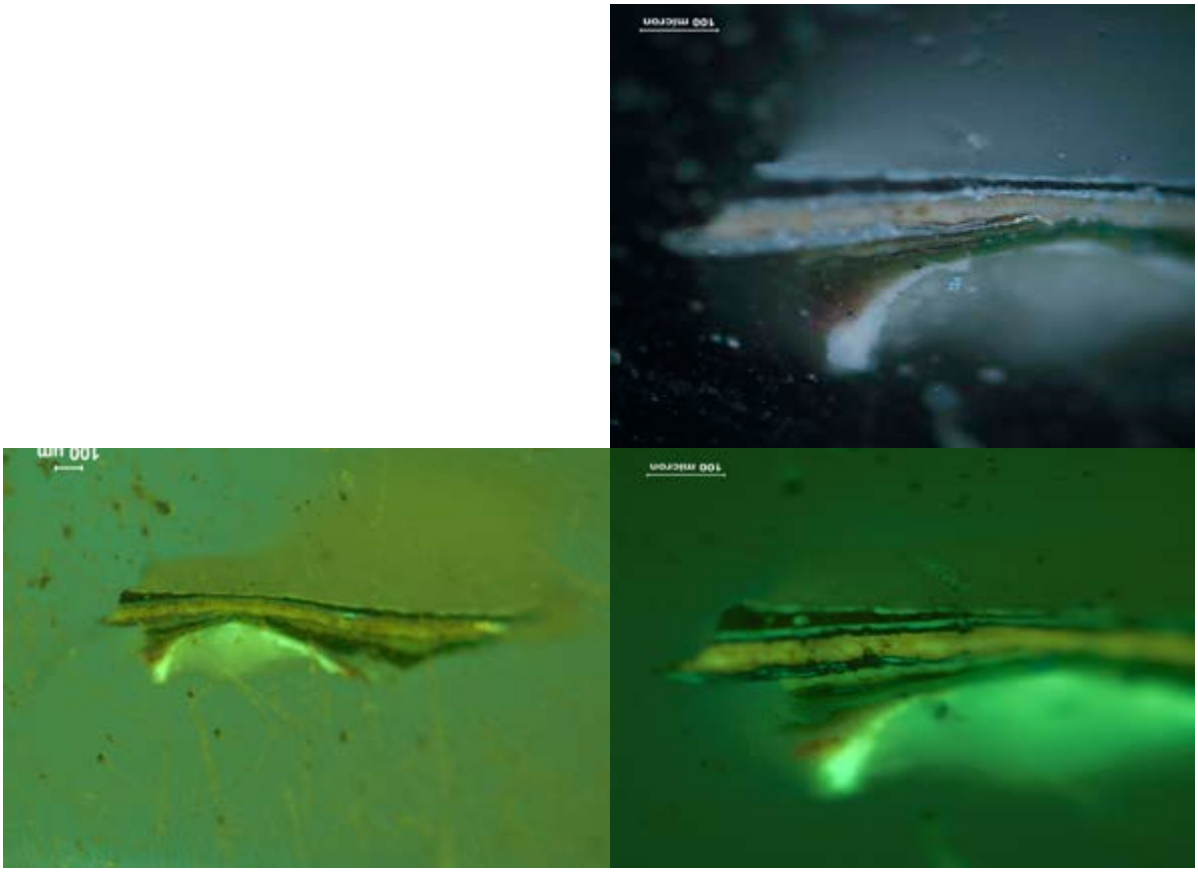


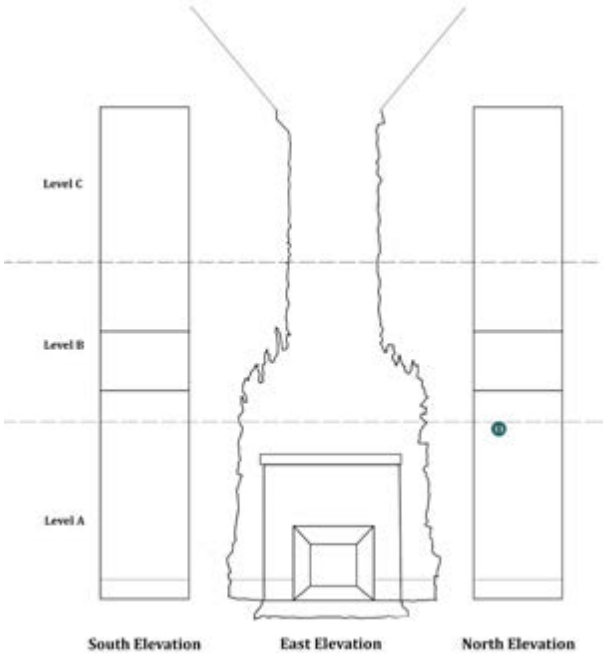



| **Sample:** | NYSS.010 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-14-13 |
| **Description:** Flame: North Elevation, Level A | | | | **Analyzed by:** Alafia Akhtar | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | Blue-Green | Translucent, continuous, thin. | 1. Paint |
| 2 | Yellow | Opaque, continuous, thick. | 2. Paint |
| 3 | Light Brown | Translucent, continuous, thin. | 3. Size |
| 4 | Silver-colored | Opaque, continuous, thin. | 3. Metallic leaf |
| 5 | Dark Red-Brown | Translucent, continuous, thin. | 3. Glaze |
| 6 | White | Opaque, continuous, thick. | Overpaint |
| 7 | White | Opaque, continuous, thick. | Overpaint |

| **Sample:** | NYSS.011 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-14-13 |
| **Description:** Adjacent to Metal Flame: North Elevation, Level A | | | | **Analyzed by:** Alafia Akhtar | |



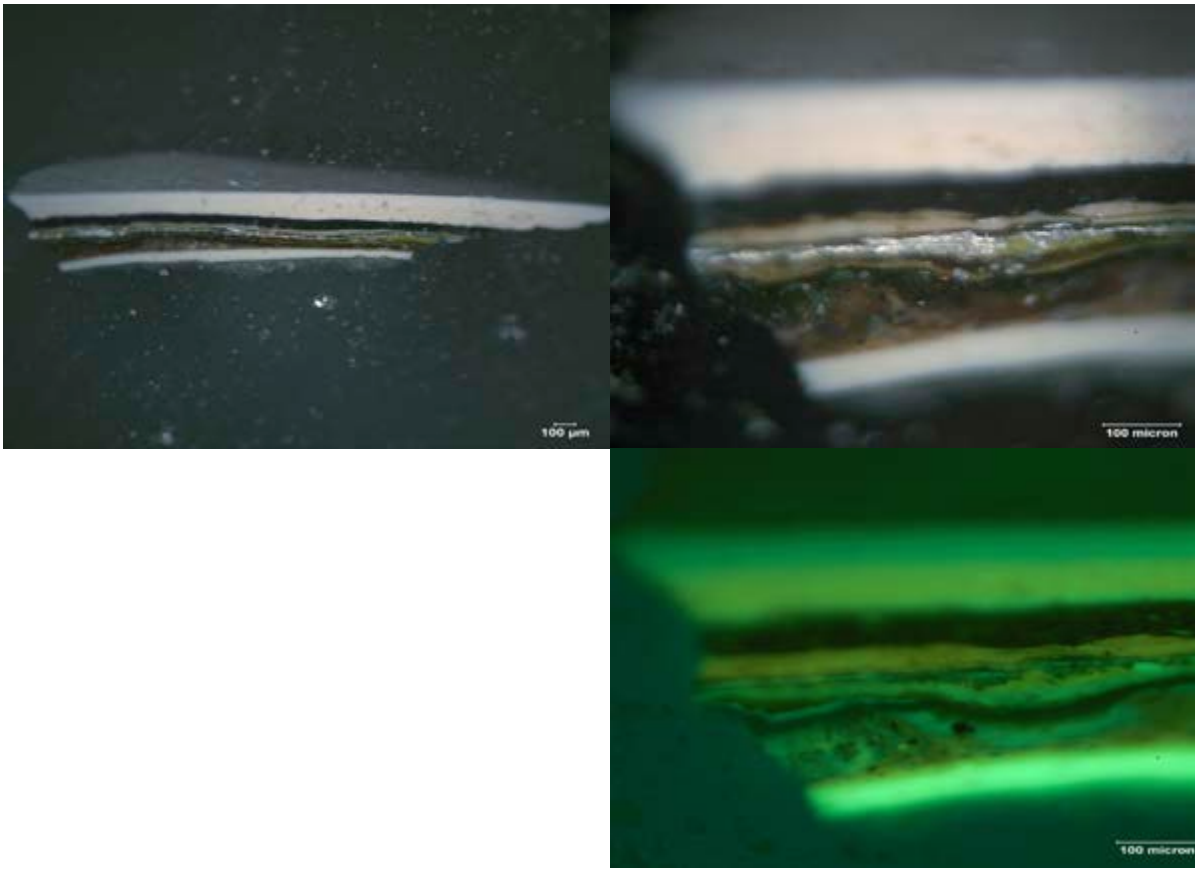


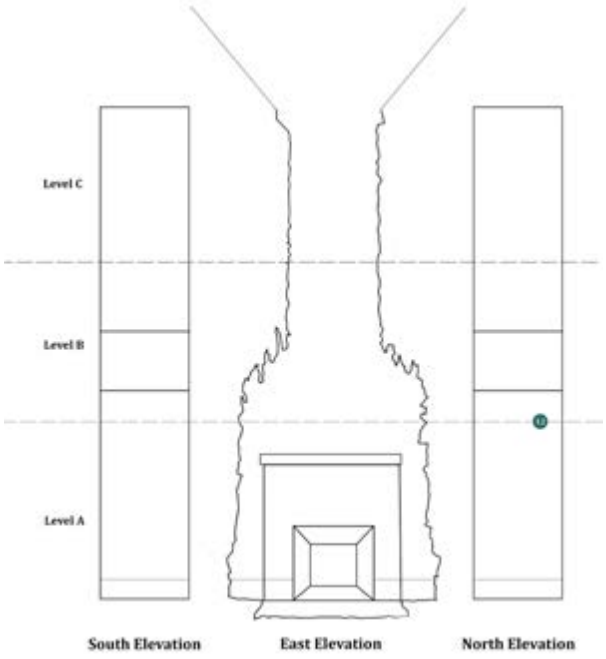
| **Sample:** | NYSS.011 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-14-13 |
| **Description:** Adjacent to Metal Flame: North Elevation, Level A | | | | **Analyzed by:** Alafia Akhtar | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, continuous, thick. | 1. Primer |
| 2 | Light Brown | Translucent, semi-continuous, medium-thick; various sized particles visible. | 1. Size |
| 3 | Red | Semi-opaque, discontinuous, thin | 1. Underpaint |
| 4 | Greenish-Blue | Opaque, discontinuous, thin. | 1. Corrosion/size |
| 5 | Copper-colored | Opaque, discontinuous, fine. | 1. Metallic leaf |
| 6 | Dark Brown | Translucent, continuous, thin. | 1. Glaze |
| 7 | Light Brown | Opaque, continuous, thin. | 2. Paint |
| 8 | Dark Brown | Opaque, discontinuous, thin. | 2. Size |
| 9 | Silver-colored | Opaque, semi-continuous, thin; possible overlap visible in leaf. | 2. Metallic leaf |
| 10 | Yellow | Translucent, discontinuous, thin; layer is adjacent to the silver-colored leaf in certain areas. | 2. Glaze |
| 11 | Dark Brown | Opaque, continuous, thin. | 3. Paint |
| 12 | White | Opaque, continuous, thin. | 3. Paint |
| 13 | Dark Brown | Translucent, continuous, thin. | 3. Size |
| 14 | Silver-colored | Opaque, discontinuous, thin. | 4. Metallic leaf |
| 15 | Black | Opaque, continuous, thick; various sized particles visible under UV | Overpaint |
| 16 | White | Opaque, continuous, thin; various sized particles visible. | Overpaint |
| 17 | Pinkish-White | Opaque, continuous, medium-thick; various sized particles visible. | Overpaint |
| 18 | White | Opaque, continuous, medium-thick. | Overpaint |

**Notes:** This sample marks the transition from the bronze flame pieces that are dominant on the A level to the plaster flames.

| **Sample:** | NYSS.012 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-14-13 |
| **Description:** Lion Face: North Elevation, Level A | | | | **Analyzed by:** Alafia Akhtar | |

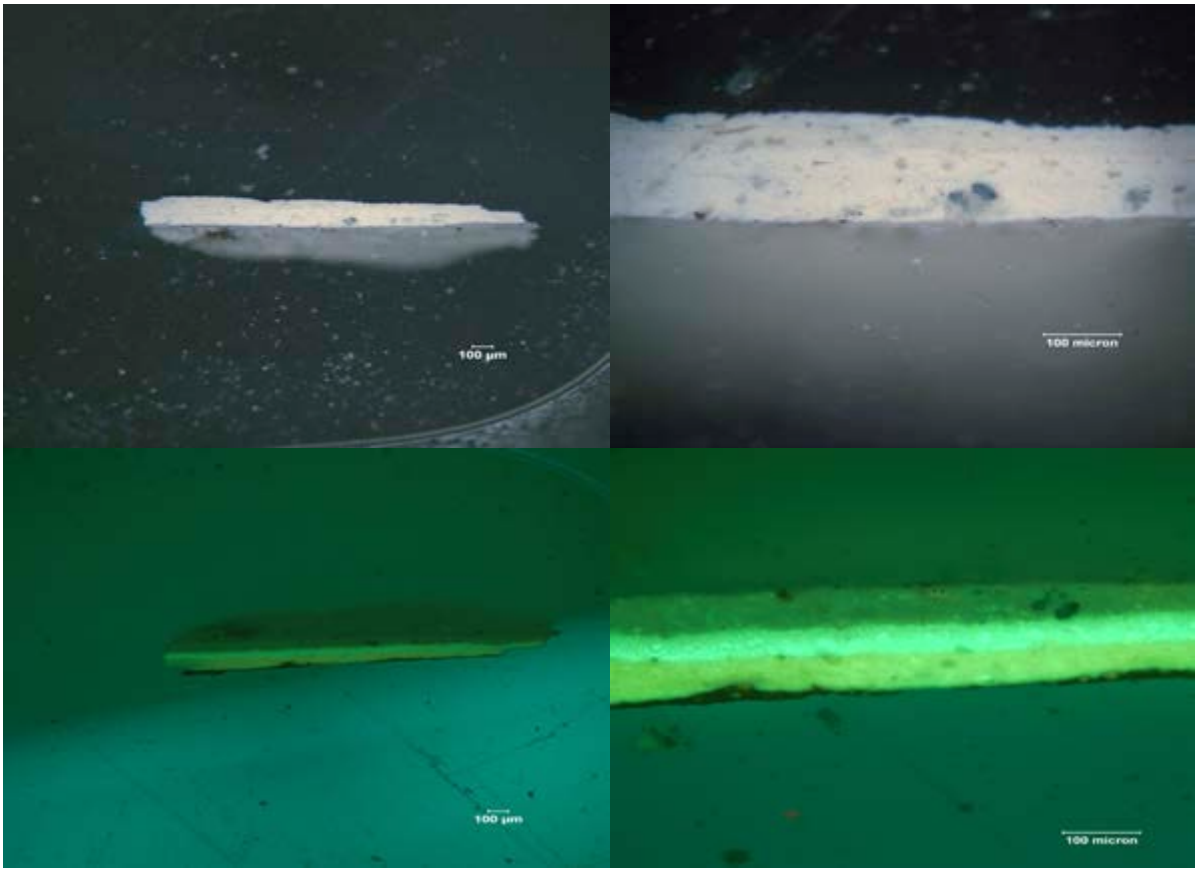


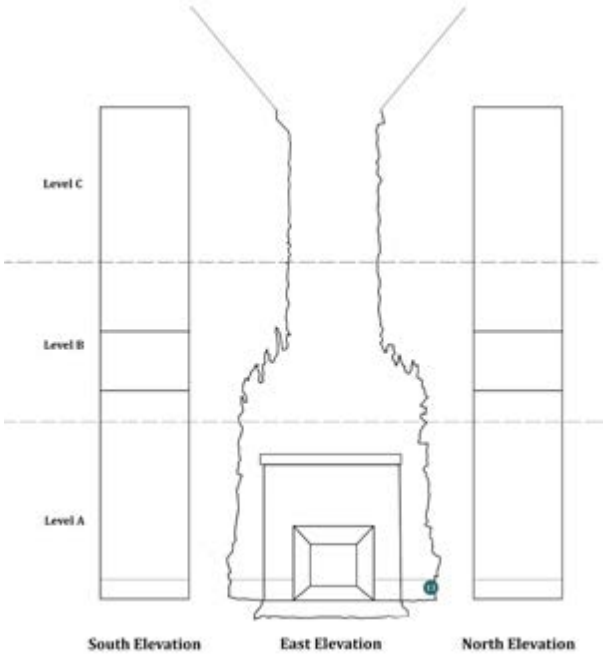



| **Sample:** | NYSS.012 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-14-13 |
| **Description:** Lion Face: North Elevation, Level A | | | | **Analyzed by:** Alafia Akhtar | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, continuous, thick. | 1. Primer |
| 2 | Gray-Brown [**Munsell: 5Y 5/1**] | Translucent, semi-continuous, medium thickness; various sized blue particles visible. | 1. Paint |
| 3 | Red | Semi-opaque, discontinuous, thin. | 1. Paint |
| 4 | Green-Blue | Opaque, discontinuous, thin. | 2(?). Corrosion/ paint |
| 5 | Copper-colored | Opaque, discontinuous, fine. | 3. Metallic leaf |
| 6 | Dark Brown | Translucent, continuous, thin. | 3. Glaze |
| 7 | Light Brown | Opaque, continuous, thin. | 4. Paint |
| 8 | Dark Brown | Opaque, discontinuous, thin. | 5. Size |
| 9 | Silver-colored | Opaque, semi-continuous, thin; overlap creates two layers of silver-colored leaf one on top of another. | 5. Metallic leaf |
| 10 | Yellow | Translucent, discontinuous, thin; adjacent to the silver-colored leaf in certain regions. | 5. Glaze |
| 11 | Dark Brown | Opaque, continuous, thin. | 6. Paint |
| 12 | White | Opaque, continuous, thin. | 7. Paint |
| 13 | Dark Brown | Opaque, discontinuous, fine. | 8. Paint |
| 14 | White | Opaque, discontinuous, thin. | 9. Paint |
| 15 | Black | Opaque, continuous, thick; various scattered particles visible under UV. | Overpaint |
| 16 | White | Opaque, continuous, thin; various sized particles visible. | Overpaint |
| 17 | Pink-White | Opaque, continuous, medium-thick; various sized particles visible. | Overpaint |
| 18 | White | Opaque, continuous, medium-thick. | Overpaint |

| **Sample:** | NYSS.013 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-15-13 |
| **Description: Side** Baseboard: East Elevation, Level A | | | | **Analyzed by:** Kari Rayner | |



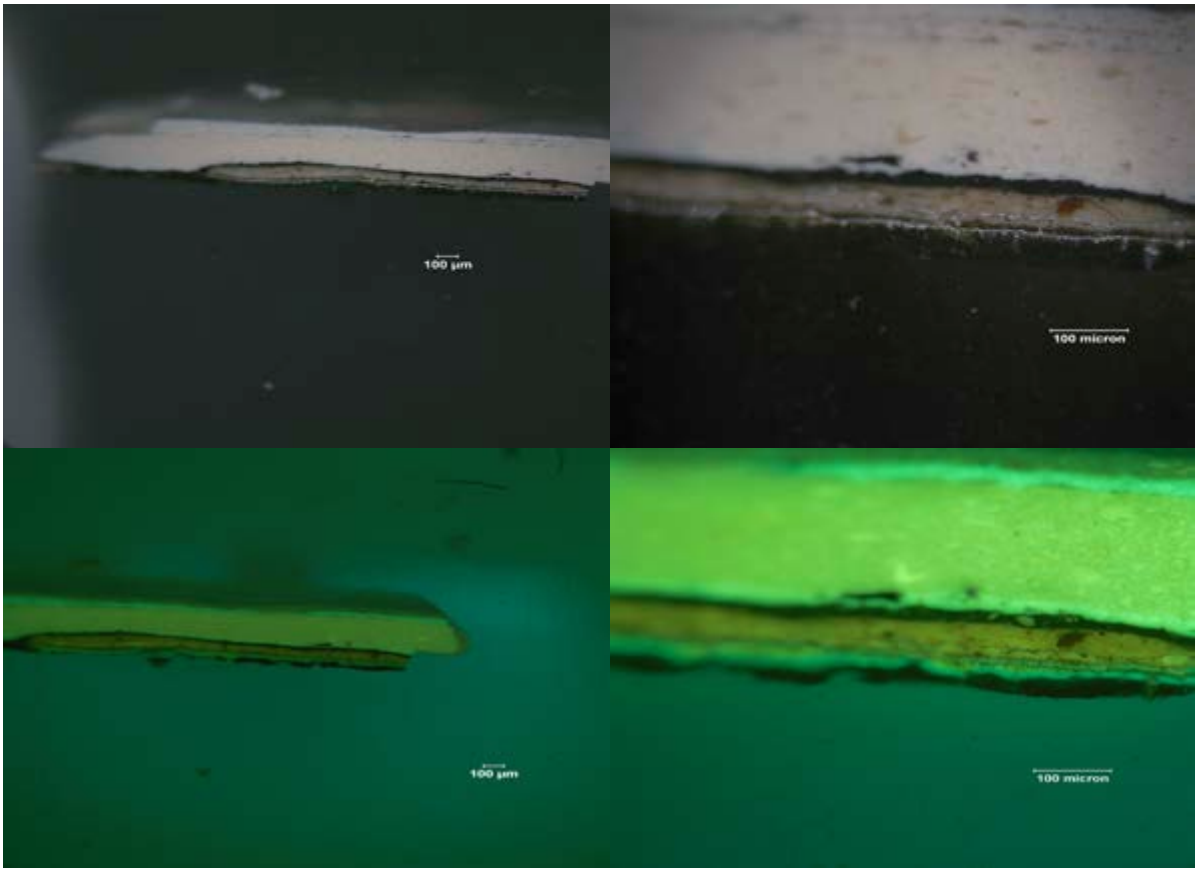



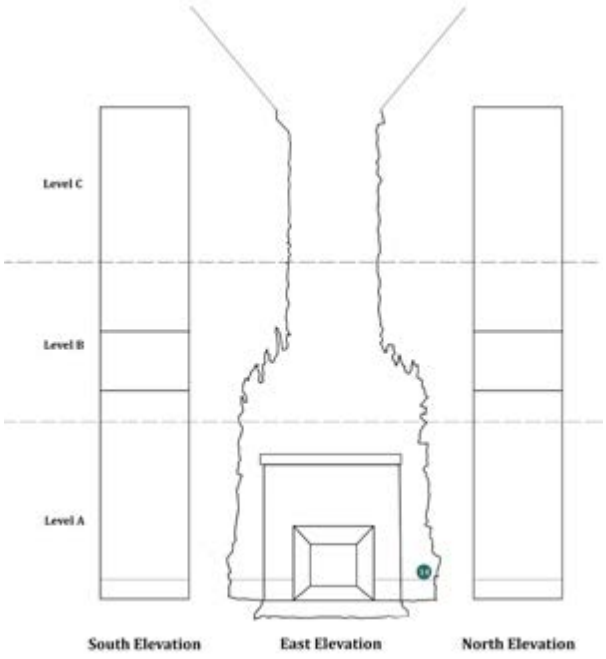
| **Sample:** | NYSS.013 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-15-13 |
| **Description: Side** Baseboard: East Elevation, Level A | | | | **Analyzed by:** Kari Rayner | |

| **Layer Number** | **Color** | **Description** |
|---|---|---|
| 1 | Green-Brown | Semi-transparent, discontinuous, thin; green particles visible within brown layer. |
| 2 | Gray | Opaque, discontinuous, thin. |
| 3 | Black | Opaque, discontinuous, thin, uneven; granular inclusions visible under UV. |
| 4 | White | Opaque, continuous, thin. |
| 5 | Yellow-White | Opaque, continuous, thick. |
| 6 | White | Opaque, continuous, thick. |
| 7 | White | Opaque, continuous, thick; light-gray particles visible |

**Notes:** Sample incomplete.

| **Sample:** | NYSS.014 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-31-13 |
| **Description: Base of Bottom** Flame: East Elevation, Level A | | | | **Analyzed by:** Kari Rayner | |



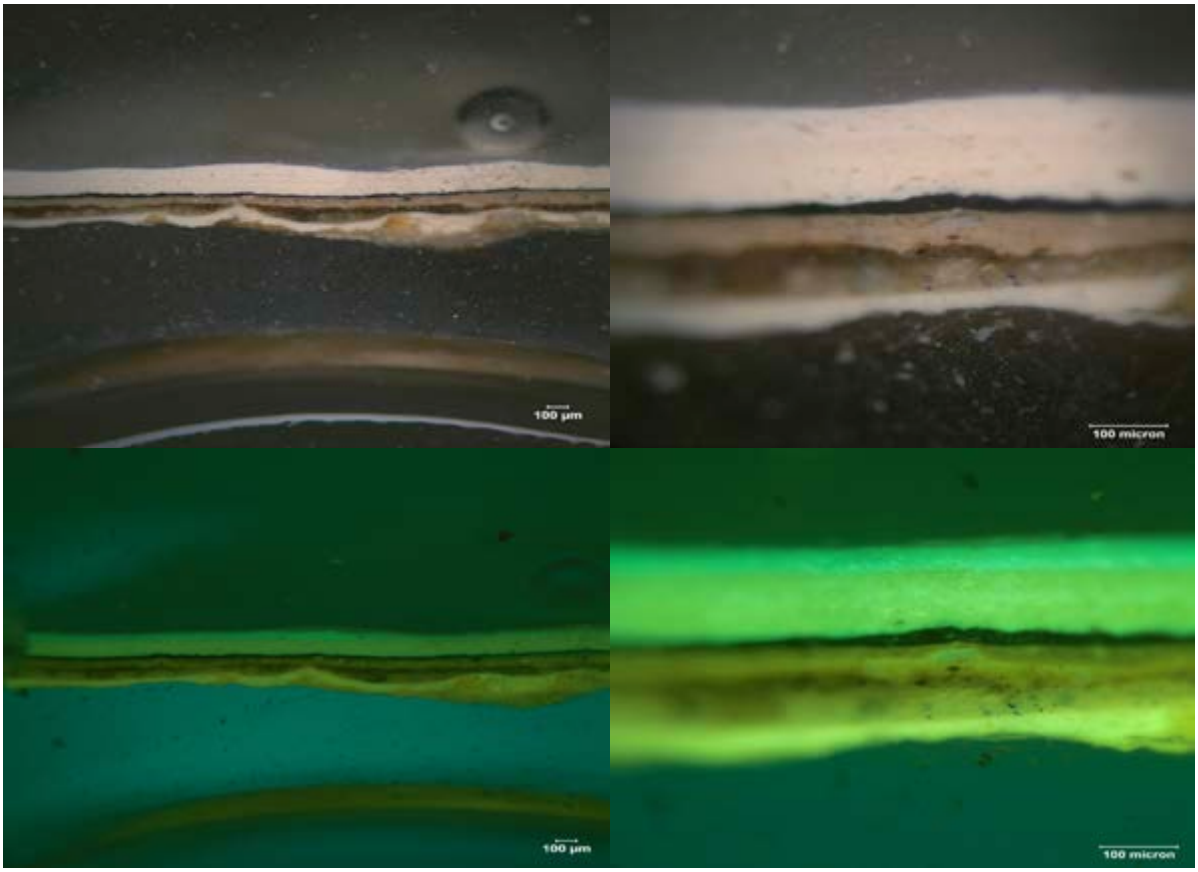



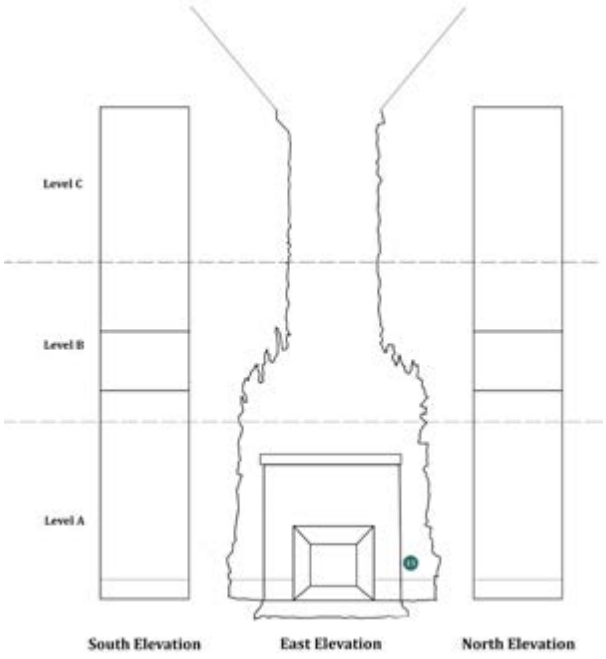
| **Sample:** | NYSS.014 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-31-13 |
| **Description:** Base of Bottom Flame: East Elevation, Level A | | | | **Analyzed by:** Kari Rayner | |

| **Layer Number** | | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | Dark Green | Translucent, discontinuous, thin. | 1. Paint |
| 2 | Yellow | Translucent, discontinuous, thin. | 1. Paint |
| 3 | Silver-colored | Opaque, fine, discontinuous. | 2. Metallic leaf |
| 4 | Brown-Black | Translucent, fine, discontinuous. | 2. Glaze |
| 5 | Dark Brown | Translucent, fine, discontinuous, uneven. | 2. Glaze |
| 6 | Brown | Opaque, fine, discontinuous, uneven. | 2. Glaze |
| 7 | Light Brown | Opaque, thin, discontinuous. | 3. Primer |
| 8 | Dark Brown | Translucent, fine, discontinuous. | 3. Size |
| 9 | Silver-colored | Opaque, fine, discontinuous. | 3. Metallic leaf |
| 10 | Light Brown | Translucent; red-brown particles visible. | 3. Glaze |
| 11 | Dark Brown | Translucent, very fine, discontinuous. | 3. Glaze |
| 12 | Light Brown | Opaque, thin, discontinuous. | 4. Primer |
| 13 | Dark Brown | Translucent, very fine, discontinuous. | 4. Glaze |
| 14 | Black | Opaque, thin, continuous, uneven. | Overpaint |
| 15 | White | Opaque, thin, continuous; black particles visible. | Overpaint |
| 16 | Yellow-White | Opaque, thick, continuous. | Overpaint |
| 17 | Brown-Black | Opaque, fine, discontinuous. | Soot? |
| 18 | White | Opaque, thin, discontinuous. | Overpaint |
| 19 | Brown-Black | Opaque, fine, discontinuous. | Soot? |
| 20 | White | Opaque, thin, continuous. | Overpaint |

**Notes:** The four layers of white are consistent in color and fluorescence with other samples, though the thickness and brownish black layers in between are not. The layers under the black overpaint seem to be built up for a specific area, unless a loss had occurred to the left side of the sample prior to application of the overpaint.

| **Sample:** | NYSS.015 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Brick | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Brick beneath Metal: East Elevation, Level A | | | | **Analyzed by:** Kari Rayner | |

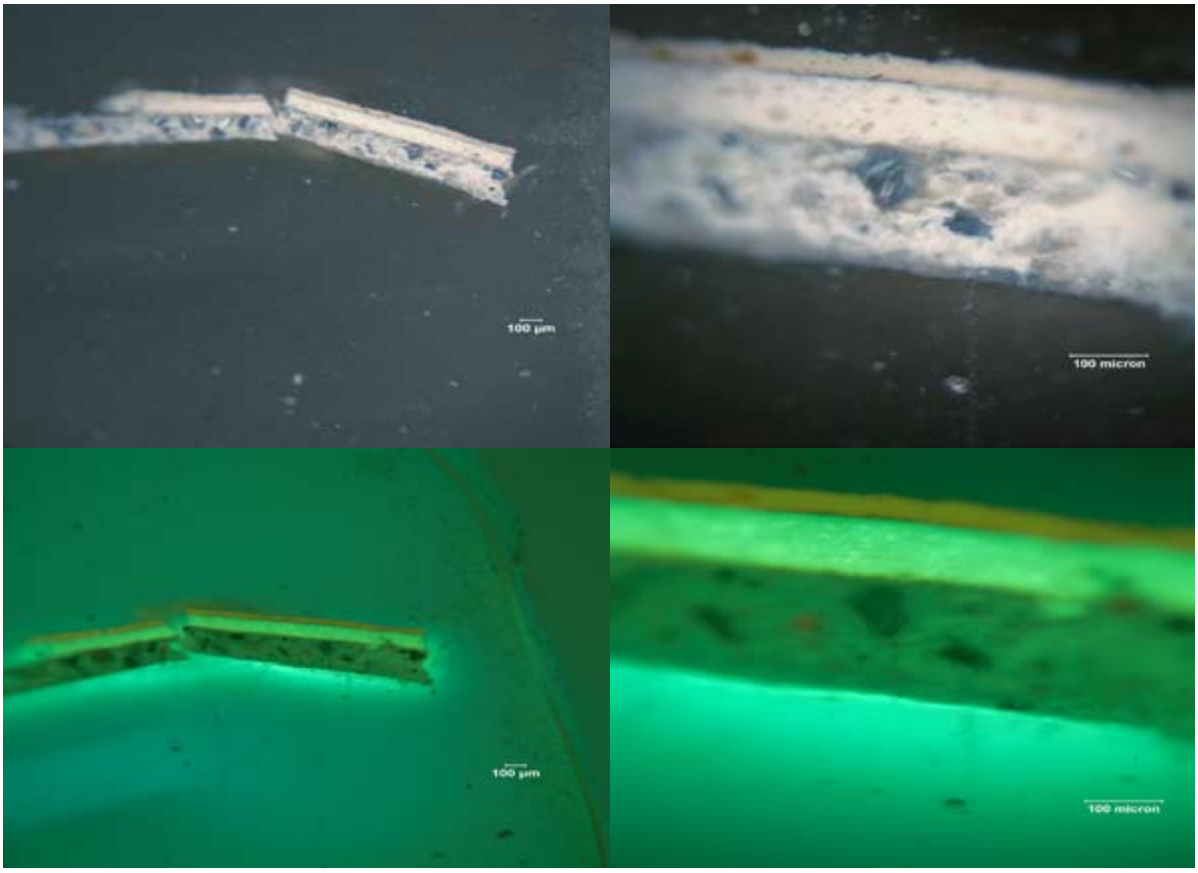


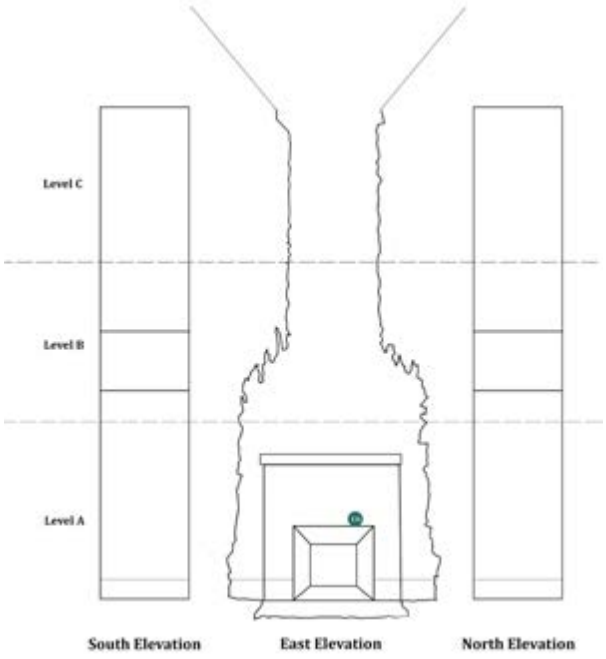



| **Sample:** | NYSS.015 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Brick | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Brick beneath Metal: East Elevation, Level A | | | | **Analyzed by:** Kari Rayner | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, thin, continuous. | 1. Primer |
| 2 | Gray-Brown | Semi-transparent, discontinuous, thin; fluorescent blue particles visible. | 1. Paint |
| 3 | Dark Brown | Opaque, thin, continuous, uneven; red and black particles visible. | 2. Paint |
| 4 | Light Brown | Translucent, thin, continuous; blue and red particles visible. | 2. Glaze |
| 5 | Dark Brown | Opaque, fine, discontinuous. | 2. Paint |
| 6 | Light Brown | Translucent, thin, continuous; blue and red particles visible; fluoresces slightly darker under UV than layer 5. | 2. Glaze |
| 7 | Black | Opaque, thin, continuous. | Overpaint |
| 8 | White | Opaque, medium-thick, continuous. | Overpaint |
| 9 | Yellow-White | Opaque, medium-thick, continuous. | Overpaint |
| 10 | White | Opaque, medium-thick, continuous. | Overpaint |
| 11 | White | Opaque, thin, discontinuous. | Overpaint |

| **Sample:** | NYSS.016 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Flame close to Hearth: East Elevation, Level A | | | | **Analyzed by:** Kari Rayner | |



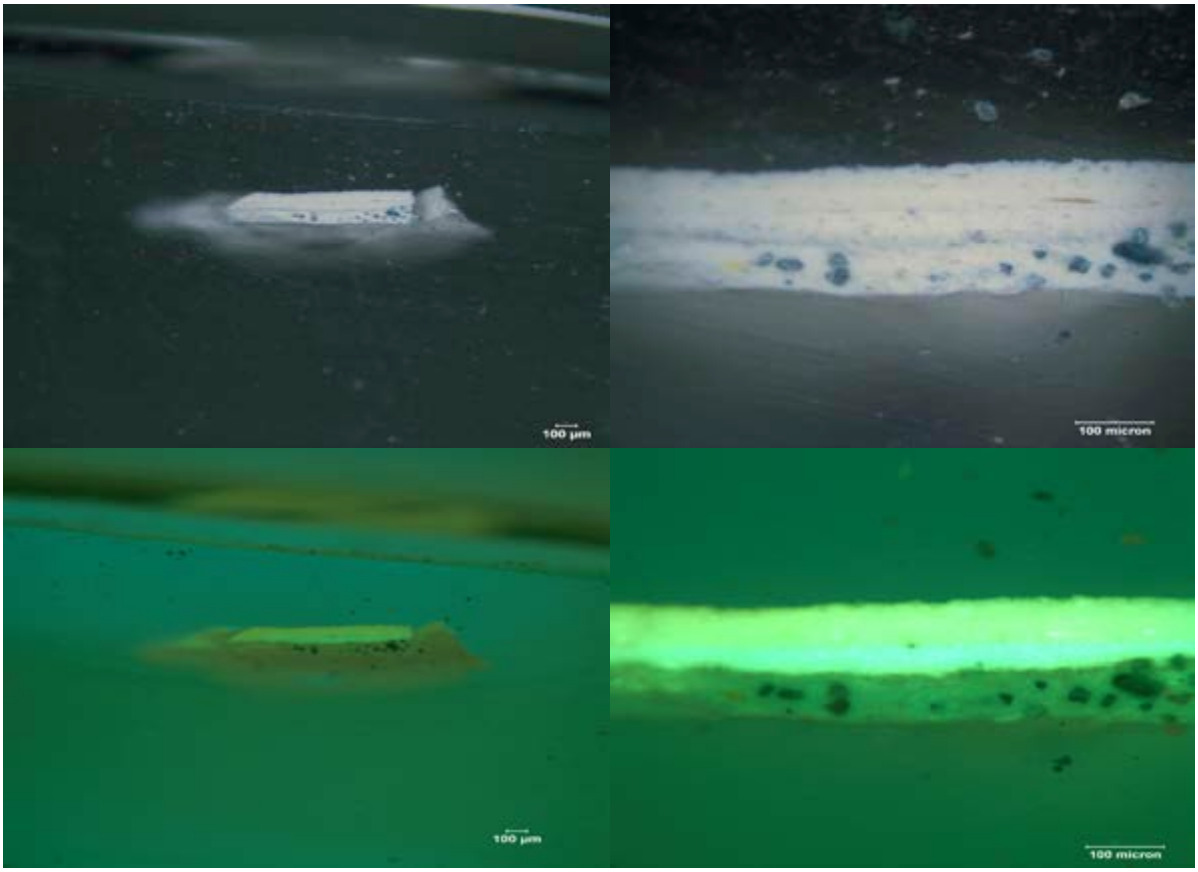



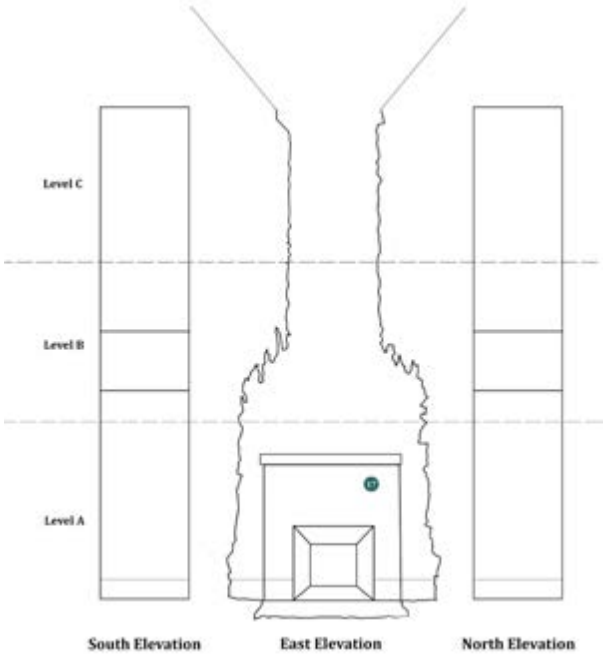
| **Sample:** | NYSS.016 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Flame close to Hearth: East Elevation, Level A | | | | **Analyzed by:** Kari Rayner | |

| **Layer Number** | **Color** | **Description** |
|---|---|---|
| 1 | White | Opaque, thick, continuous; large blue-gray particles visible. |
| 2 | White | Opaque, medium-thick, continuous; larger transparent particles visible. |
| 3 | Blue-Black | Opaque, fine, continuous. |
| 4 | Yellow-White | Opaque, thin, continuous. |

**Notes:** Sample incomplete. Direction of stratigraphy is indeterminate.

| **Sample:** | NYSS.017 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Flame Tip: East Elevation, Level A | | | | **Analyzed by:** Kari Rayner | |



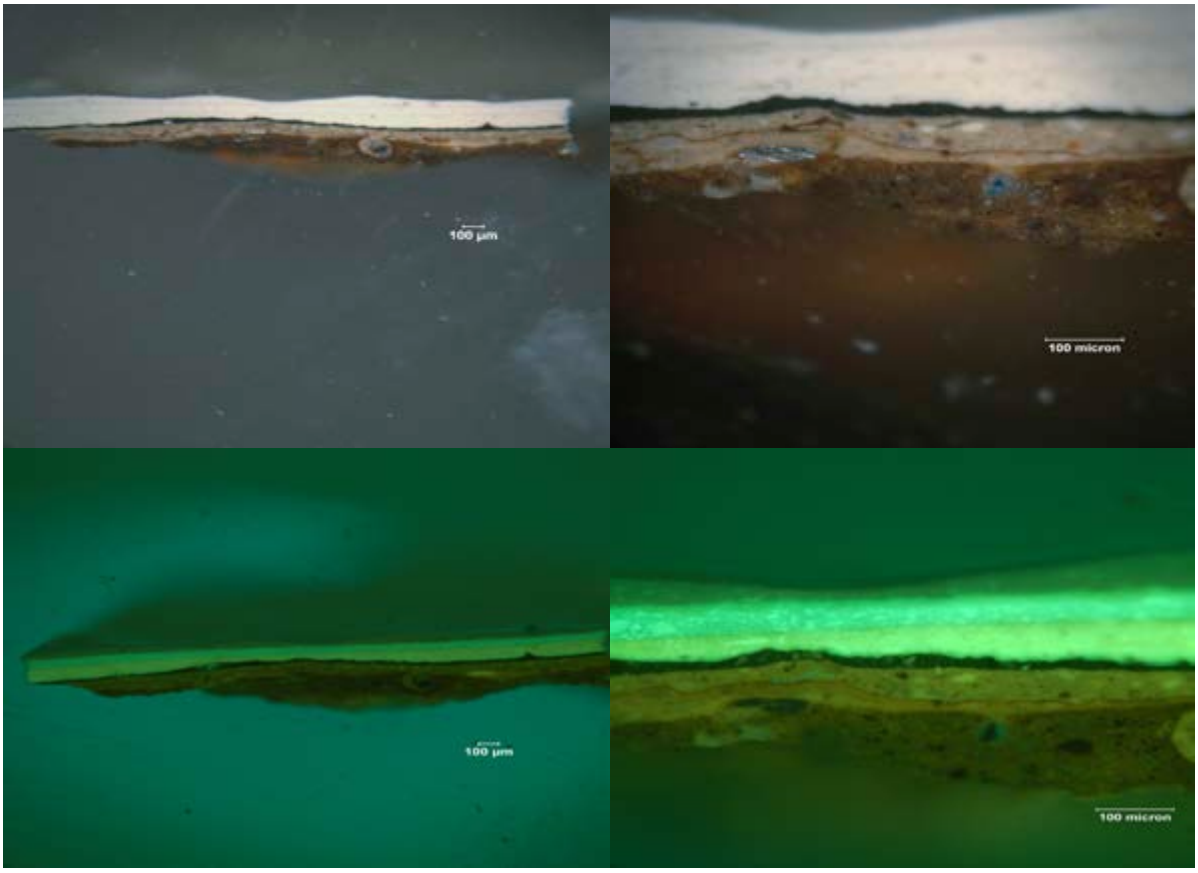



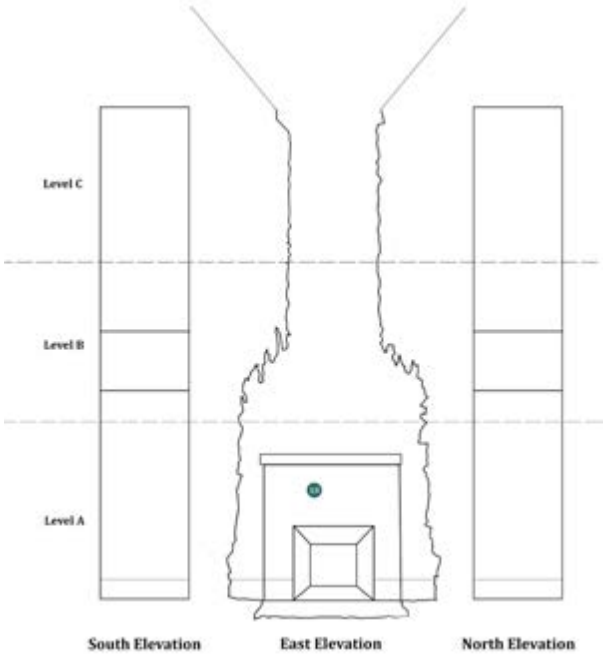
| **Sample:** | NYSS.017 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Flame Tip: East Elevation, Level A | | | | **Analyzed by:** Kari Rayner | |

| **Layer Number** | **Color** | **Description** |
|---|---|---|
| 1 | White | Opaque, thick, continuous; large blue-gray (and possibly yellow) particles visible. |
| 2 | Blue-Gray | Opaque, fine, continuous. |
| 3 | White | Opaque, medium-thick, continuous. |
| 4 | Blue-Gray | Opaque, fine, continuous. |
| 5 | White | Opaque, medium-thick, continuous; light-brown particles visible. |

**Notes:** Sample incomplete. This sample is very similar to Sample 16.

| **Sample:** | NYSS.018 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Brick | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Behind Center Flame: East Elevation, Level A | | | | **Analyzed by:** Kari Rayner | |



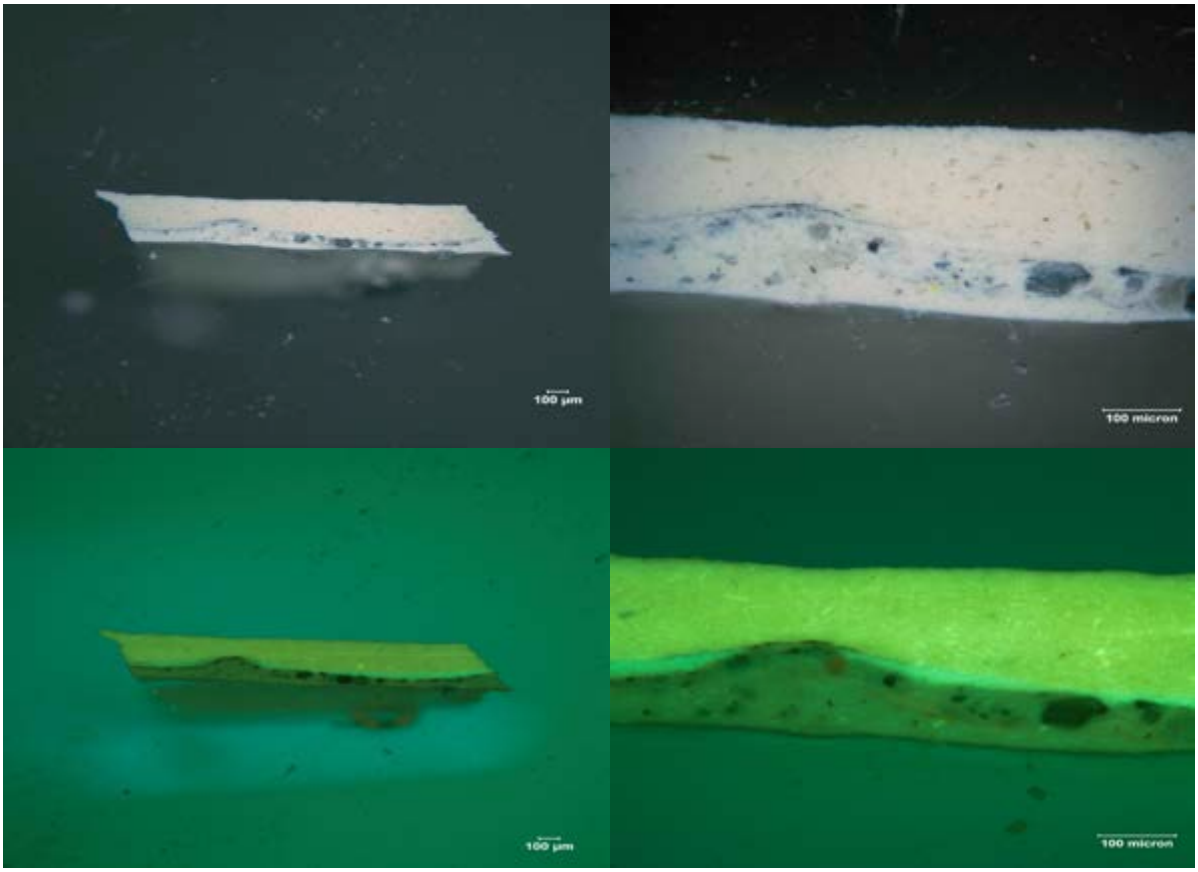



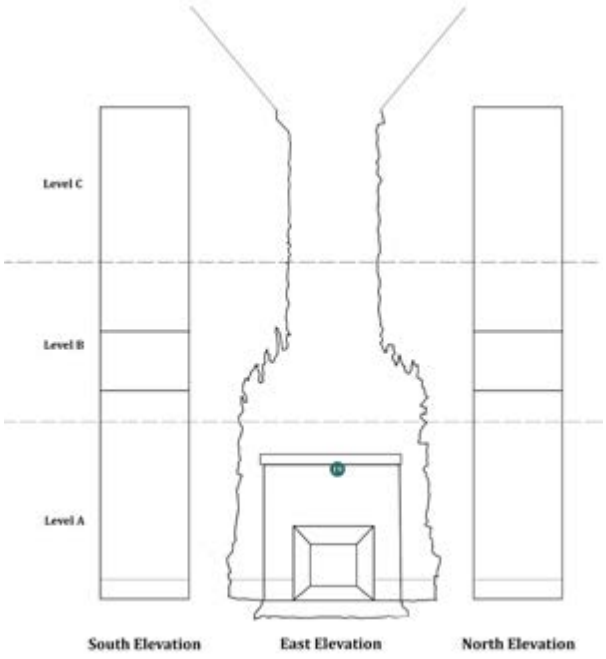
| **Sample:** | NYSS.018 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Brick | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Behind Center Flame: East Elevation, Level A | | | | **Analyzed by:** Kari Rayner | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | Light Brown | Opaque, thin, continuous, uneven; white-gray particles (and a possible silver-colored metallic leaf inclusion) visible. | 1. Primer |
| 2 | Yellow-Brown | Opaque, fine, continuous, uneven. | 1. Paint |
| 3 | Dark Brown | Translucent, fine, continuous layer. | 1. Glaze |
| 4 | Light Brown | Opaque, thin, continuous, uneven; white, brown, white and black inclusions visible; slightly grayer overall in color than layer 2. | 2. Paint |
| 5 | Black | Opaque, thin, continuous. | Overpaint |
| 6 | Yellow-White | Opaque, medium-thick, continuous. | Overpaint |
| 7 | White | Opaque, medium-thick, continuous. | Overpaint |
| 8 | White | Opaque, medium-thick, continuous. | Overpaint |

**Notes:** There is a very small segment of silver leaf included in layer 1, suggesting that the paint was applied adjacent to a leafed area.

| **Sample:** | NYSS.019 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Center Snake: East Elevation, Level A | | | | **Analyzed by:** Kari Rayner | |



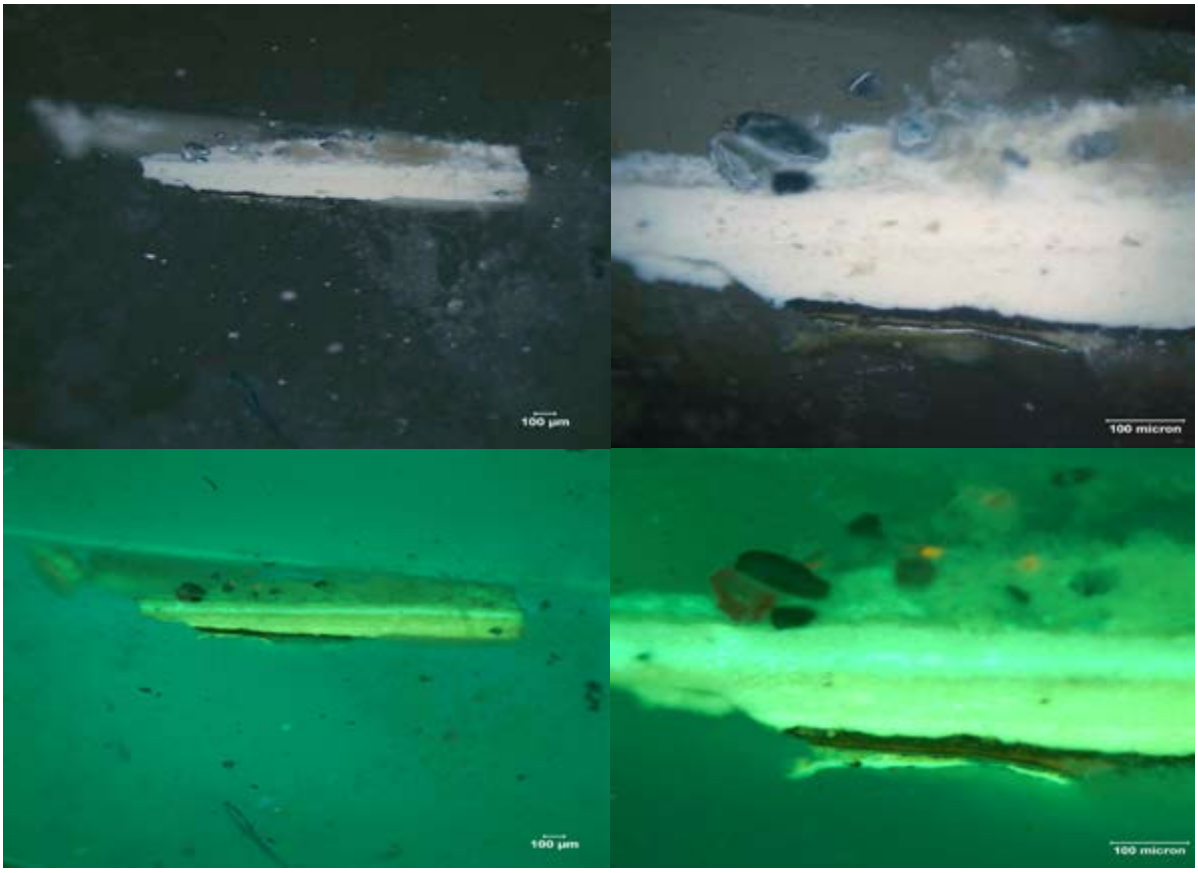



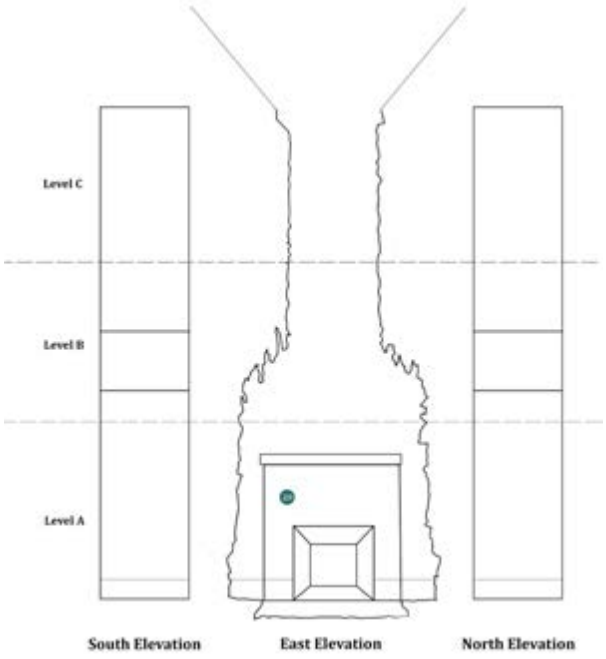
| **Sample:** | NYSS.019 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Center Snake: East Elevation, Level A | | | | **Analyzed by:** Kari Rayner | |

| **Layer Number** | **Color** | **Description** |
|---|---|---|
| 1 | Yellow-White | Opaque, thick, continuous, uneven; blue-gray and yellow particles visible. |
| 2 | White | Opaque, thick, continuous; blue, gray, and very large blue-gray particles visible. |
| 3 | White | Opaque, thin, discontinuous. |
| 4 | Blue-Black | Opaque, fine, discontinuous, soot? |
| 5 | Yellow-White | Opaque, thick, continuous. |

**Notes:** Sample incomplete.

| **Sample:** | NYSS.020 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Middle of Flame: East Elevation, Level A | | | | **Analyzed by:** Kari Rayner | |

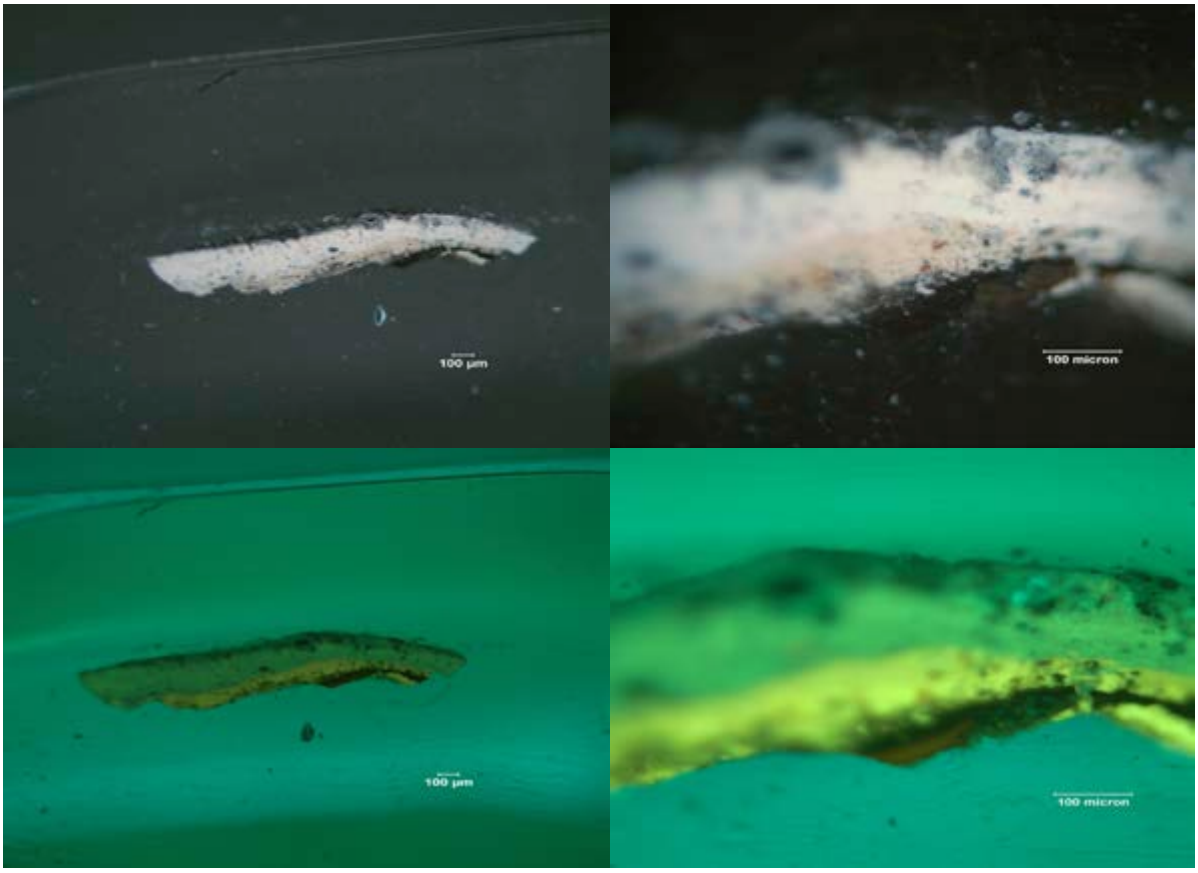


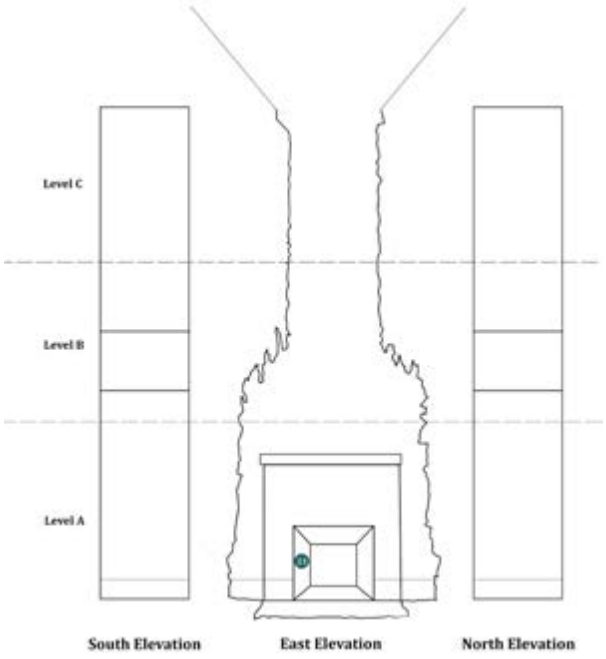



| **Sample:** | NYSS.020 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Middle of Flame: East Elevation, Level A | | | | **Analyzed by:** Kari Rayner | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | Dark Green-Brown | Transparent, thin, discontinuous. | 1. Patina/corrosion |
| 2 | Dark Yellow-Brown | Transparent, thin, discontinuous. | 1. Patina/corrosion |
| 3 | Gray-Yellow | Translucent, thin, discontinuous; fluoresces yellow; red particles visible. | 2. Size |
| 4 | Silver-colored | Opaque, fine, discontinuous. | 2. Metallic leaf |
| 5 | Brown-Black | Opaque, thin, discontinuous. | 3. Paint |
| 6 | White | Opaque, thin, discontinuous. | 4. Paint |
| 7 | Brown-Black | Opaque, thin, discontinuous. | 5. Paint |
| 8 | Black | Opaque, thin, uneven layer, discontinuous. | Overpaint |
| 9 | White | Opaque, thin, continuous. | Overpaint |
| 10 | Yellow-White | Opaque, medium-thick, continuous. | Overpaint |
| 11 | White | Opaque, thin, continuous. | Overpaint |
| 12 | White | Opaque, thin, continuous; very large blue-gray particles visible. | Overpaint |

| **Sample:** | NYSS.021 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Interior of Hearth: East Elevation, Level A | | | | **Analyzed by:** Kari Rayner | |



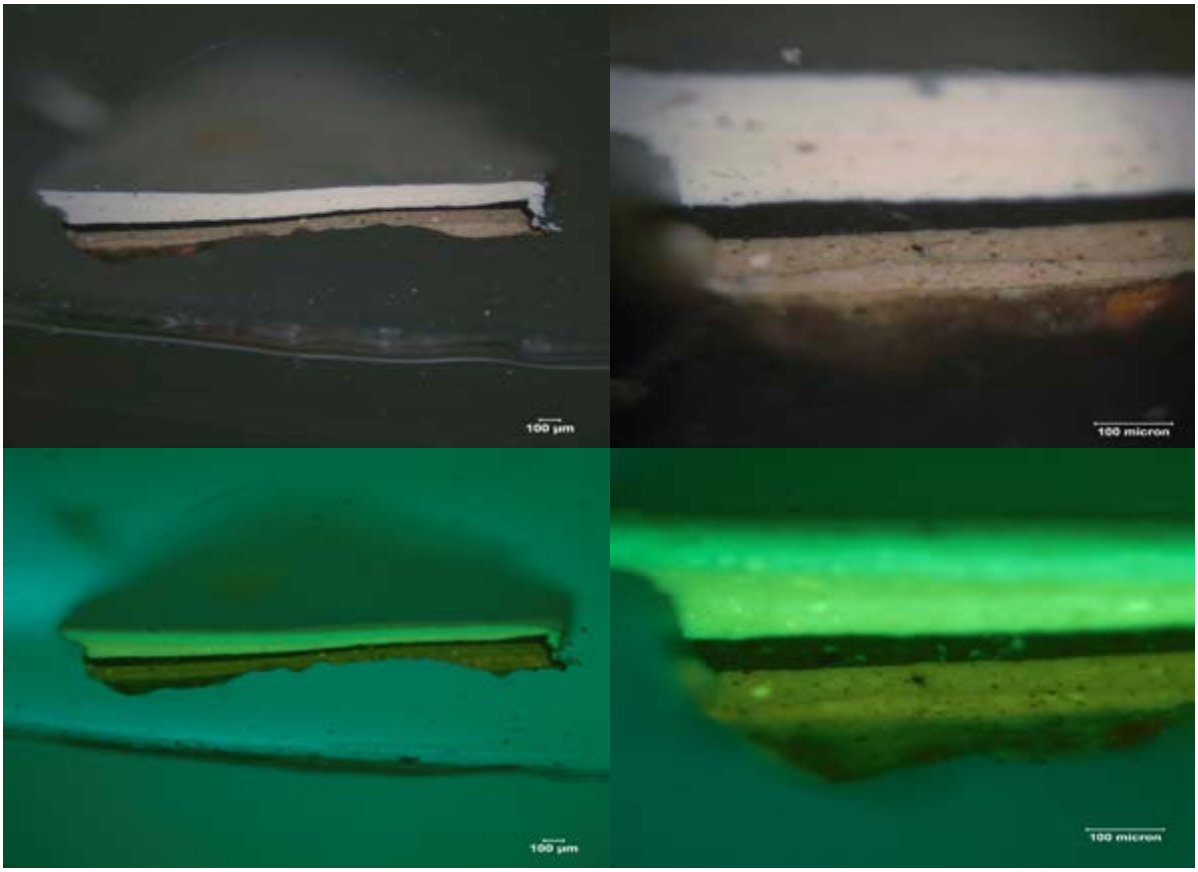



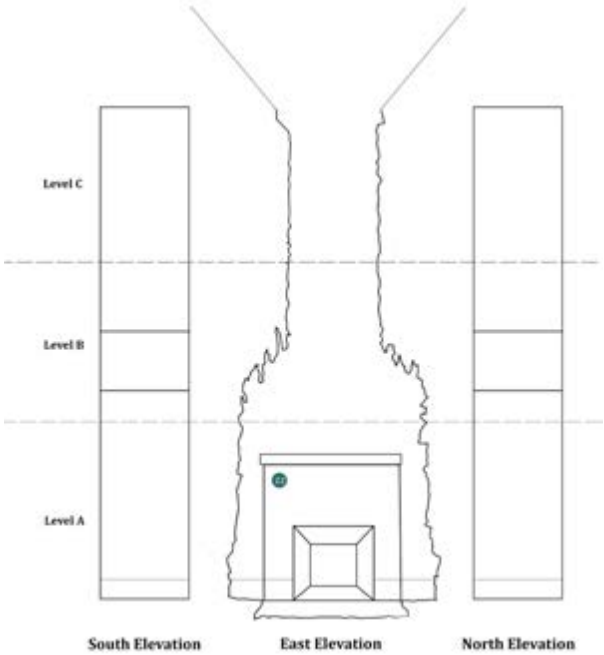
| **Sample:** | NYSS.021 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Interior of Hearth: East Elevation, Level A | | | | **Analyzed by:** Kari Rayner | |

| **Layer Number** | **Color** | **Description** |
|---|---|---|
| 1 | White | Opaque, thin, discontinuous, uneven. |
| 2 | Light Reddish-Brown | Opaque, thin, discontinuous, uneven. |
| 3 | Red-Brown | Opaque, thin, discontinuous. |
| 4 | Red-Black | Opaque, thin, discontinuous, uneven. |
| 5 | Light Yellow-Brown | Opaque, medium thick, continuous, uneven; red, black and gray particles visible. |
| 6 | White | Opaque, thick, continuous; red, black, and gray particles visible. |
| 7 | Gray | Opaque, thin, discontinuous,; red, black, and blue-gray particles visible. |

**Notes:** Sample incomplete. Fiber protruding from the right side of the base of the sample. Layers 6 and 7 are only distinguishable under UV light.

| **Sample:** | NYSS.022 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Brick | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Back Mantle: East Elevation, Level A | | | | **Analyzed by:** Kari Rayner | |



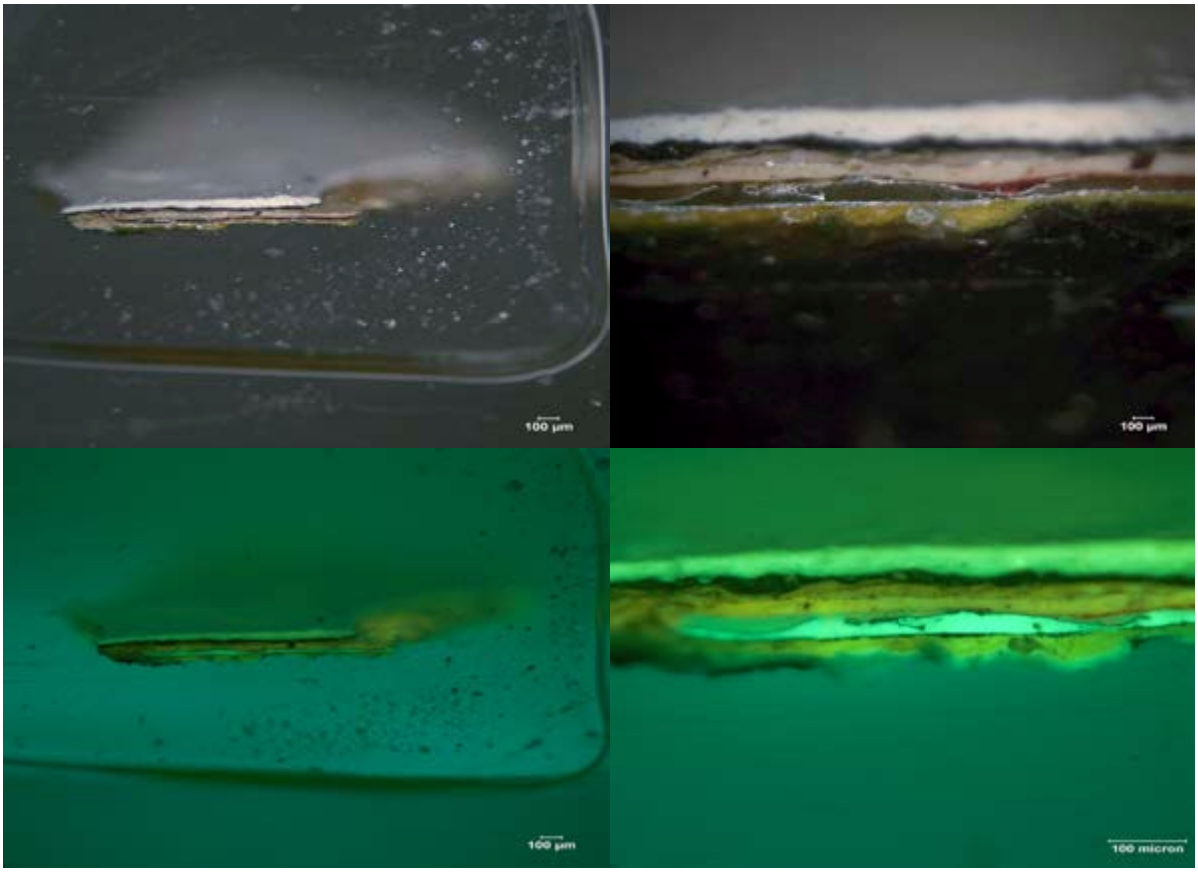



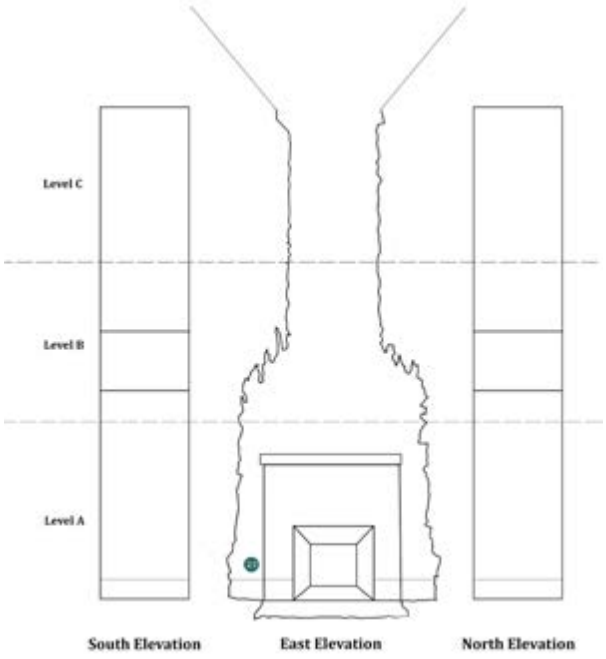
| **Sample:** | NYSS.022 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Brick | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Back Mantle: East Elevation, Level A | | | | **Analyzed by:** Kari Rayner | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | Light Brown | Opaque, thin-to-medium-thick, continuous, uneven. | 1. Primer? |
| 2 | Brown | Translucent, fine, continuous, glaze? | 1. Glaze |
| 3 | Light Brown | Opaque, medium-thick, continuous; orange-red, yellow-brown, brown and black particles visible. | 2. Primer? |
| 4 | Dark Brown | Translucent, fine, continuous, glaze? | 2. Glaze |
| 5 | Light Brown | Opaque, medium-thick, continuous; brown, black, and white particles visible. | 3. Paint |
| 6 | Black | Opaque, medium-thick, continuous. | Overpaint |
| 7 | White | Opaque, thin-to-medium-thick, continuous. | Overpaint |
| 8 | Yellow-White | Opaque, thin-to-medium-thick, discontinuous. | Overpaint |
| 9 | White | Opaque, medium-thick, continuous. | Overpaint |
| 10 | White | Opaque, thin-to-medium-thick, continuous. | Overpaint |

**Notes:** There seems to have been a previously existing crack at the right side of the paint layers prior to layer 6, with the black layer and upper white layers now filling it.

| **Sample:** | NYSS.023 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-03-13 |
| **Description:** Dragon Face: East Elevation, Level A | | | | **Analyzed by:** Kathryn Brugioni | |

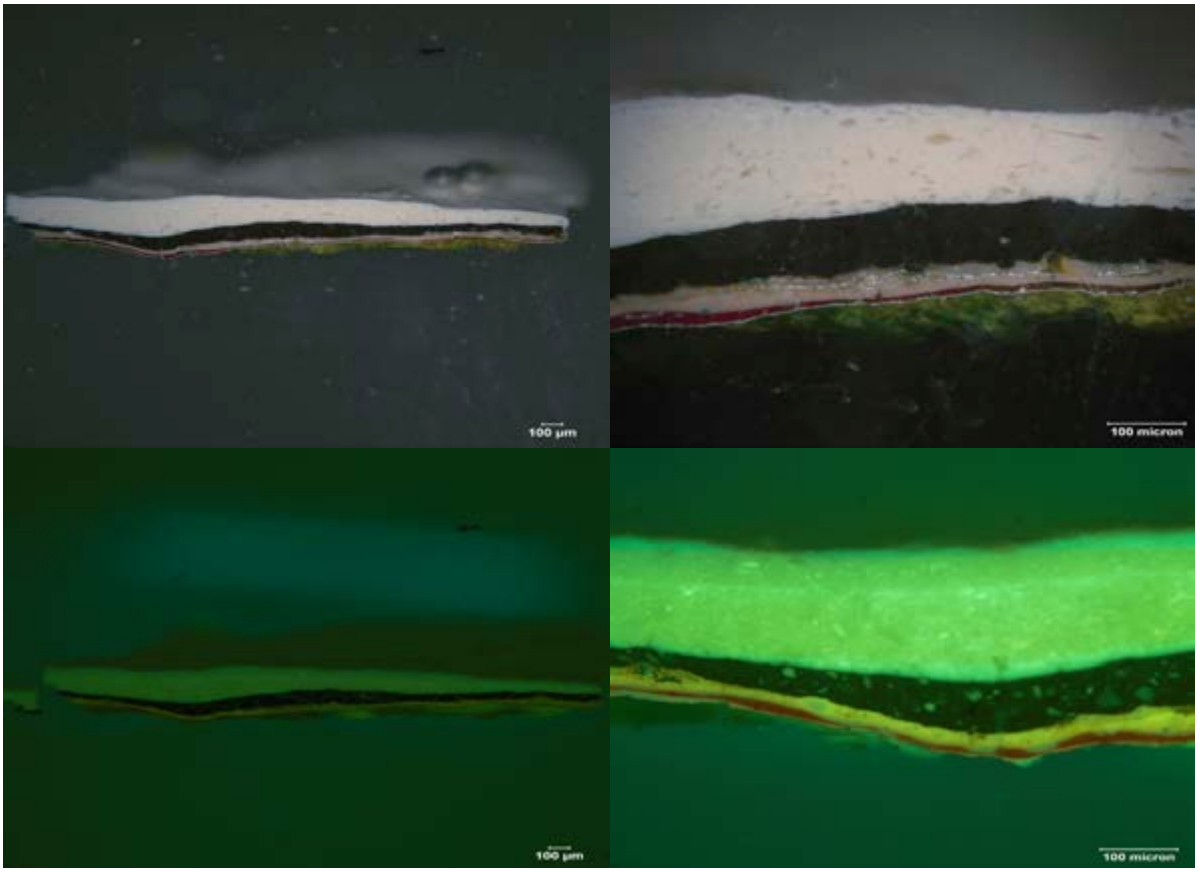


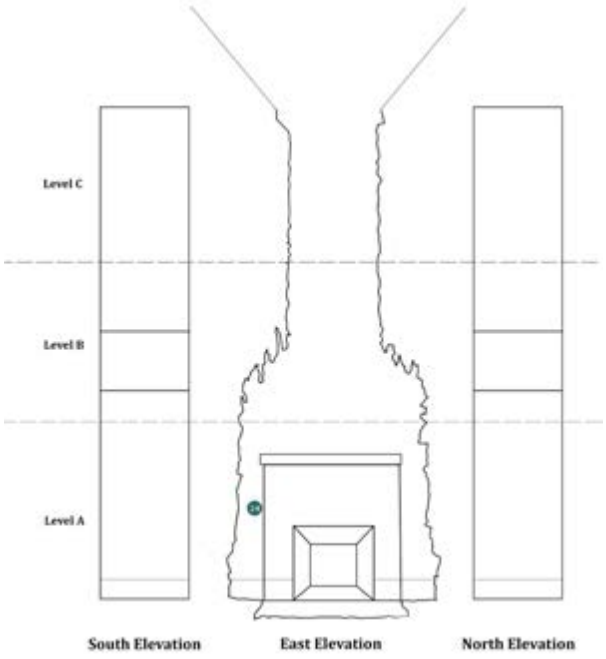



| **Sample:** | NYSS.023 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-03-13 |
| **Description:** Dragon Face: East Elevation, Level A | | | | **Analyzed by:** Kathryn Brugioni | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | Dark Green | Translucent, discontinuous, thick; indistinct interface with above. | 1. Patina/corrosion |
| 2 | Green | Translucent, continuous, thick. | 1. Patina/corrosion/ glaze |
| 3 | Yellow | Translucent, continuous, medium-thick. | 1. Patina/corrosion/ glaze |
| 4 | Silver-colored | Opaque, continuous, fine. | 2. Metallic leaf |
| 5 | Green-Brown | Translucent, discontinuous, thin. | 2. Size |
| 6 | Silver-colored | Opaque, discontinuous, fine. | 2. Metallic leaf |
| 7 | Green-Brown/ Red | Translucent, continuous, medium-thick. | 3. Paint |
| 8 | White | Opaque, continuous, medium-thick; light-orange-to-dark-red inclusions visible. | 4. Paint |
| 9 | Light Brown | Translucent, continuous, thin. | 5. Size |
| 10 | Silver-colored | Opaque, continuous, fine. | 5. Metallic leaf |
| | White | Opaque, continuous, medium-thick. | 6. Paint |
| 12 | Black | Opaque, continuous layer, medium-thick; grainy inclusions visible. | Overpaint |
| 13 | White | Opaque, continuous layer, medium-thick; blue inclusions visible. | Overpaint |

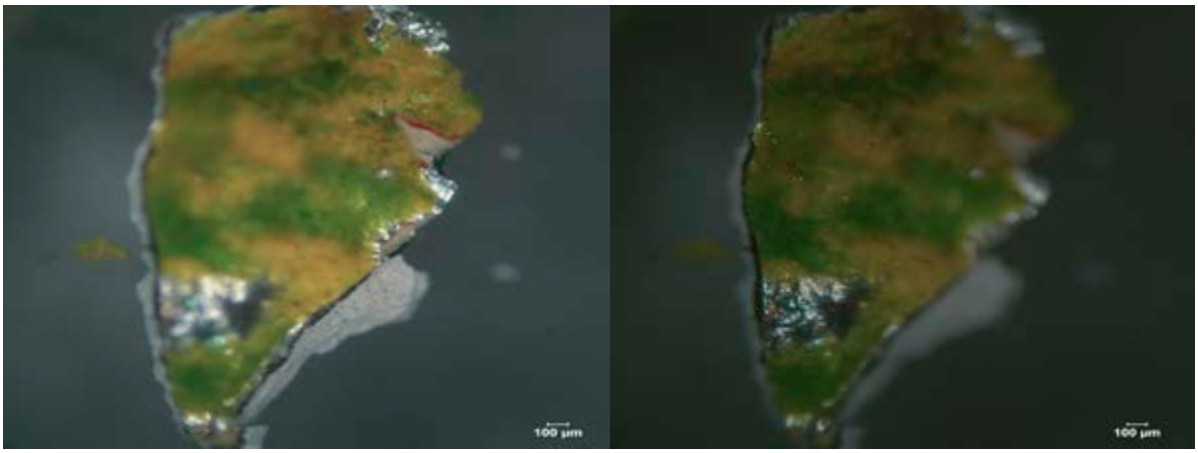
| **Sample:** | NYSS.024 | **Magnification:** | 5x and 20x | **Date Sampled:** | **1-08-13** |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | **2-03-13** |
| **Description: F**lame: East Elevation, Level A | | | | **Analyzed by:** Kathryn Brugioni | |



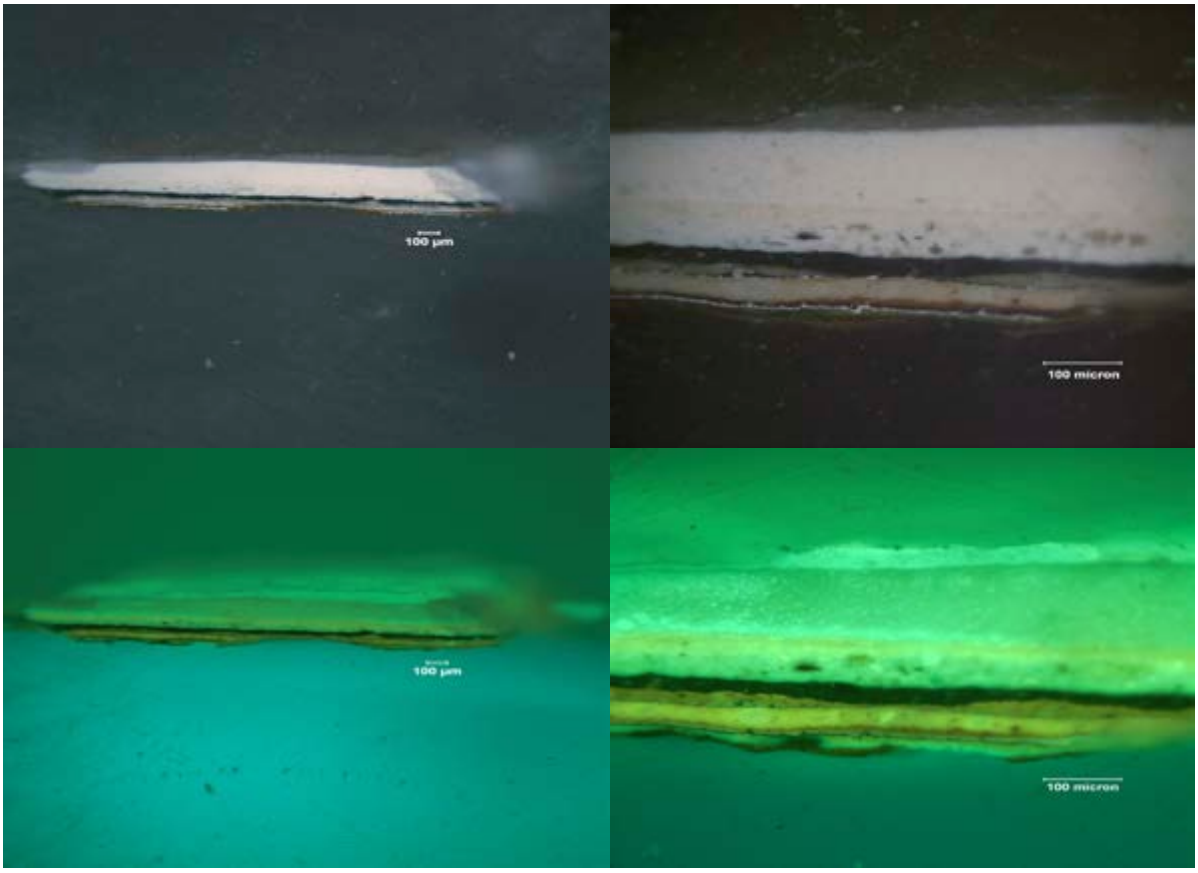



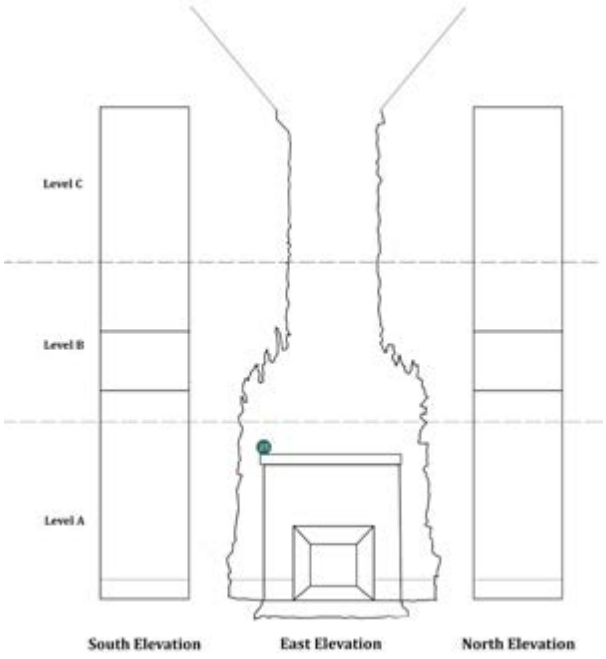
| **Sample:** | NYSS.024 | **Magnification:** | 5x and 20x | **Date Sampled:** | **1-08-13** |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | **2-03-13** |
| **Description: F**lame: East Elevation, Level A | | | | **Analyzed by:** Kathryn Brugioni | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | Green | Translucent, discontinuous sample, medium-thick, mottled; indistinct interface with above. | 1. Patina/corrosion? |
| 2 | Yellow | Translucent, discontinuous sample, medium-thick, mottled. | 1. Size |
| 3 | Silver-colored | Opaque, continuous, fine. | 1. Metallic leaf |
| 4 | Red | Translucent, continuous, thin. | 1. Paint |
| 5 | White | Opaque, continuous, thin. | 2. Paint |
| 6 | Orange | Translucent, discontinuous, fine. | 2. Size |
| 7 | Silver-colored | Opaque, discontinuous, fine. | 2. Metallic leaf |
| 8 | Blue-White | Opaque, continuous, thin. | 3(?). Paint |
| 9 | Black | Opaque, continuous, relatively thick; large inclusions visible under UV. | Overpaint |
| 10 | Blue-White | Opaque, continuous, thin; blue inclusions visible. | Overpaint |
| 11 | Yellow-White | Opaque, continuous, thick; light yellow-brown inclusions visible; interface with above only visible under UV. | Overpaint |
| 12 | Yellow-White | Opaque, continuous, medium thickness; light yellow-brown inclusions visible; interface with below only visible under UV. | Overpaint |
| 13 | White | Opaque, continuous, thin, translucent; colorless inclusions visible. | Overpaint |



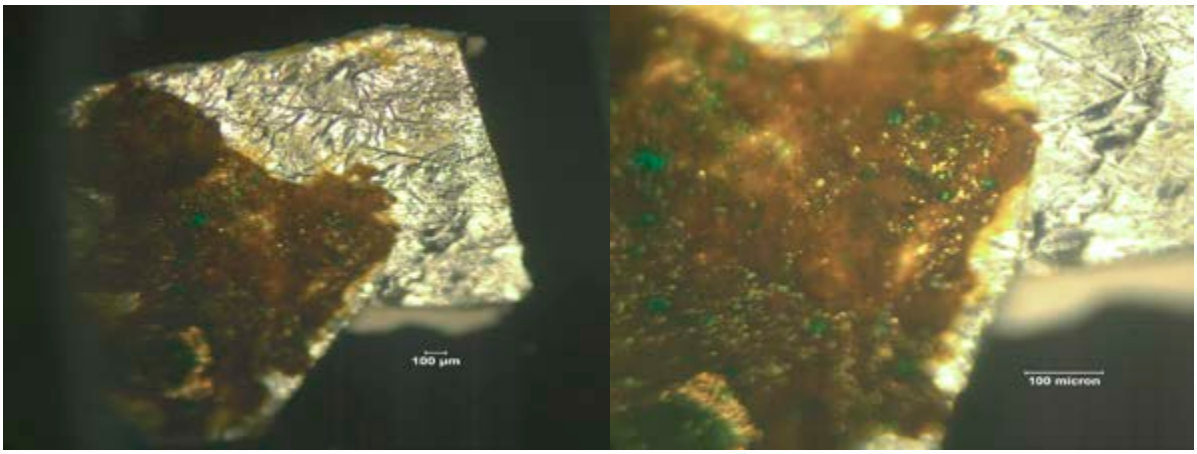
| **Sample:** | NYSS.025 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-03-13 |
| **Description:** Flame near Hearth: East Elevation, Level A | | | | **Analyzed by:** Kathryn Brugioni | |



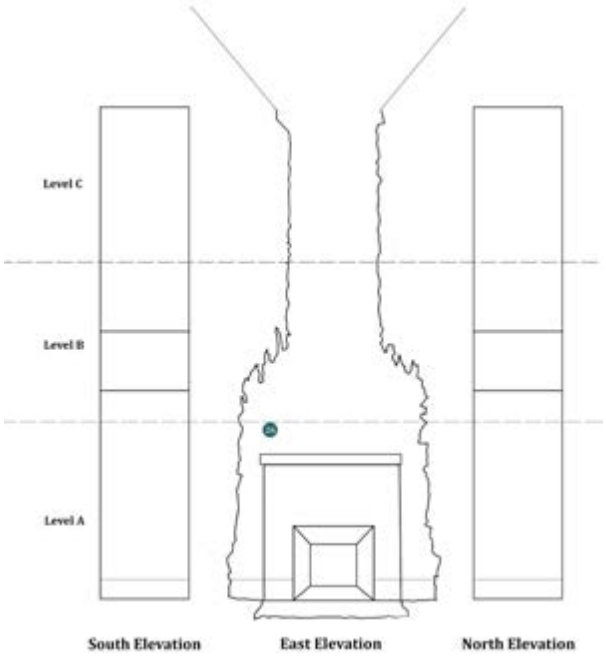
| **Sample:** | NYSS.025 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-03-13 |
| **Description:** Flame near Hearth: East Elevation, Level A | | | | **Analyzed by:** Kathryn Brugioni | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | Dark Orange-Brown | Opaque, discontinuous (due to sampling), thin. | 1. Glaze |
| 2 | Dark Red-Brown | Opaque, continuous, thin. | 1. Size |
| 3 | Green-Gray | Opaque, continuous (?), thin. | 1. Corrosion? |
| 4 | Silver-colored | Opaque, continuous, fine. | 1. Metallic leaf |
| 5 | Dark Red-Brown | Translucent, continuous, thin. | 1. Glaze |
| 6 | Orange-White | Opaque, continuous, thin. | 2. Paint |
| 7 | White | Opaque, continuous, medium-thick. | 2. Paint |
| 8 | Light Brown | Translucent, continuous, fine. | 2. Size |
| 9 | Silver-colored | Opaque, continuous, fine. | 2. Metallic leaf |
| 10 | Dark-Green | Translucent, discontinuous, thin. | 2. Glaze |
| 11 | Gray-White | Opaque, continuous, medium-thick. | 8. Paint |
| 12 | Black | Opaque, continuous, medium-thick. | Overpaint |
| 13 | Blue-White | Opaque, continuous, medium-thick; dark blue-gray inclusions visible. | Overpaint |
| 14 | Yellow-White | Opaque, continuous, medium-thick. | Overpaint |
| 15 | White | Opaque, continuous, thick. | Overpaint |




**Notes:** This is possibly an incomplete sample, although it appeared that the area was excised from over a plaster element. It appears that a copper or aluminum leaf is missing, from which the sample likely cleaved.

| **Sample:** | NYSS.026 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Flame Tip: East Elevation, Level A | | | | **Analyzed by:** Kari Rayner | |

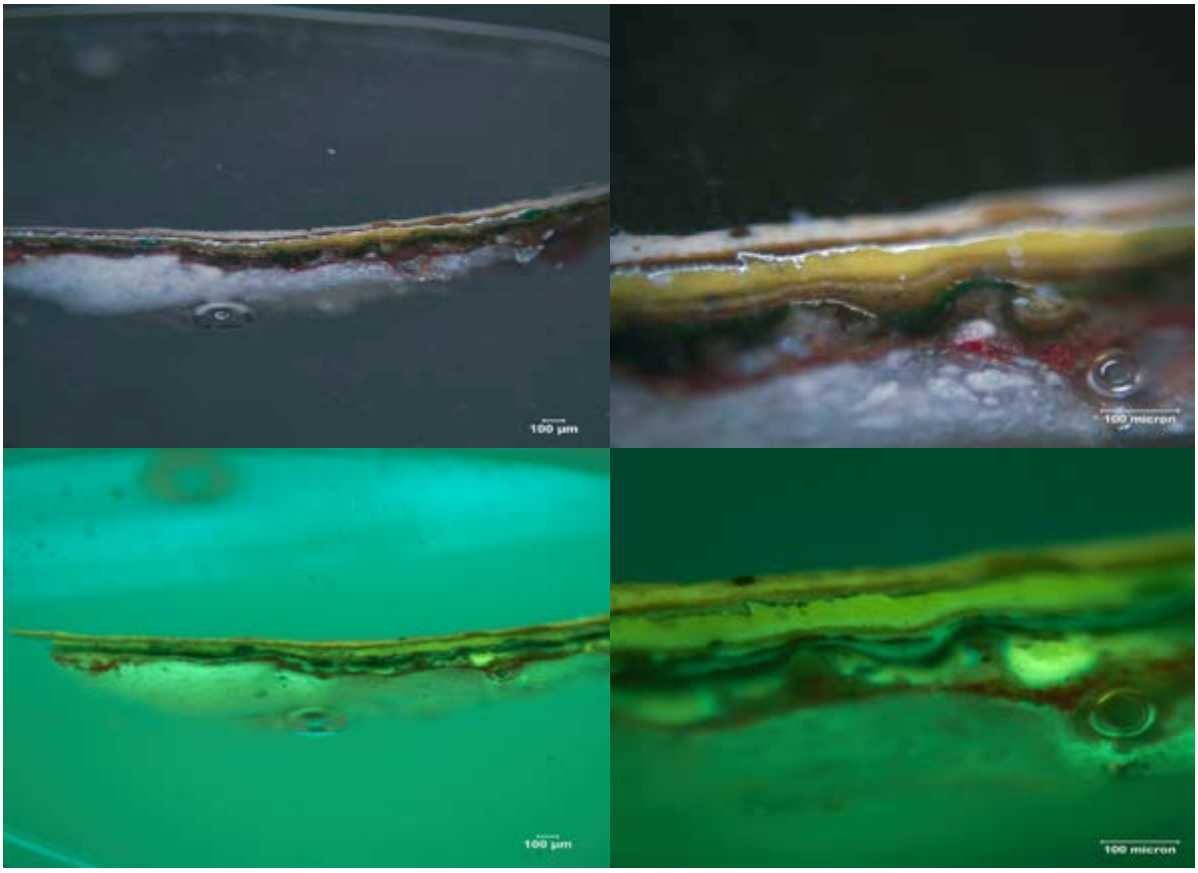


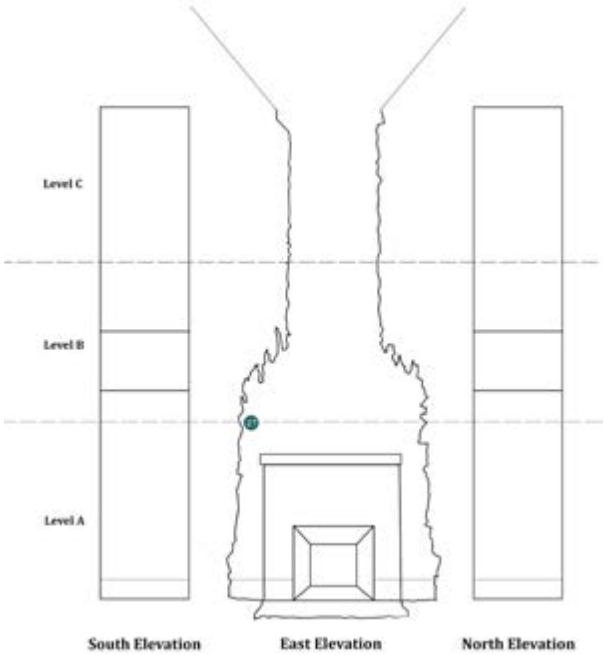
| **Sample:** | NYSS.026 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Flame Tip: East Elevation, Level A | | | | **Analyzed by:** Kari Rayner | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | Red | Opaque, fine, discontinuous; fluoresces red. | 1. Paint |
| 2 | Gray-Brown | Semi-transparent, thin, discontinuous, uneven; blue particles visible. | 2. Paint |
| 3 | Green-Brown | Semi-transparent, thin-to-medium-thick, discontinuous. | 3. Glaze |
| 4 | Dark Green-Brown | Translucent, thin, continuous; may contain powdered metal (such as bronzing powder). | 3. Glaze |
| 5 | Light Brown | Translucent, fine, discontinuous. | 4. Size |
| 6 | Copper-colored | Opaque, fine, discontinuous. | 4. Metallic leaf |
| 7 | Light Green-Brown | Semi-transparent, thin, continuous. | 5. Size |
| 8 | Silver-colored | Opaque, fine, continuous. | 5. Metallic leaf |
| 9 | Dark Redd-Brown | Semi-opaque, thin, continuous. | 6. Paint |
| 10 | Silver-colored | Opaque, fine, discontinuous. | 7. Metallic leaf |
| 11 | Brown | Translucent, fine, continuous. | 7. Glaze |
| 12 | Orange-White [**Munsell: 5Y 9/4**] | Opaque, thin to medium thick, continuous; white, dark brown, and orange particles visible. | 8. Paint |
| 13 | Red-Brown | Translucent, thin, discontinuous, uneven. | 9. Size |
| 14 | Silver-colored | Opaque, fine, discontinuous. | 9. Metallic leaf |
| 15 | Black | Opaque, fine, discontinuous. | 10. Paint |
| 16 | Yellow-Brown | Semi-transparent, fine-to-thin, discontinuous. | 10. Paint |
| 17 | Black | Opaque, thin, continuous. | Overpaint |
| 18 | White | Opaque, fine to thin, continuous. | Overpaint |
| 19 | Yellow-White | Opaque, thin to medium thick, continuous. | Overpaint |
| 20 | White | Opaque, thin to medium thick, continuous. | Overpaint |

**Notes:** This sample should be studied further. The composition of the metallic leaf campaigns was confirmed with SEM-EDS.

| **Sample:** | NYSS.027 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Snake Face: East Elevation, Level A | | | | **Analyzed by:** Kari Rayner | |



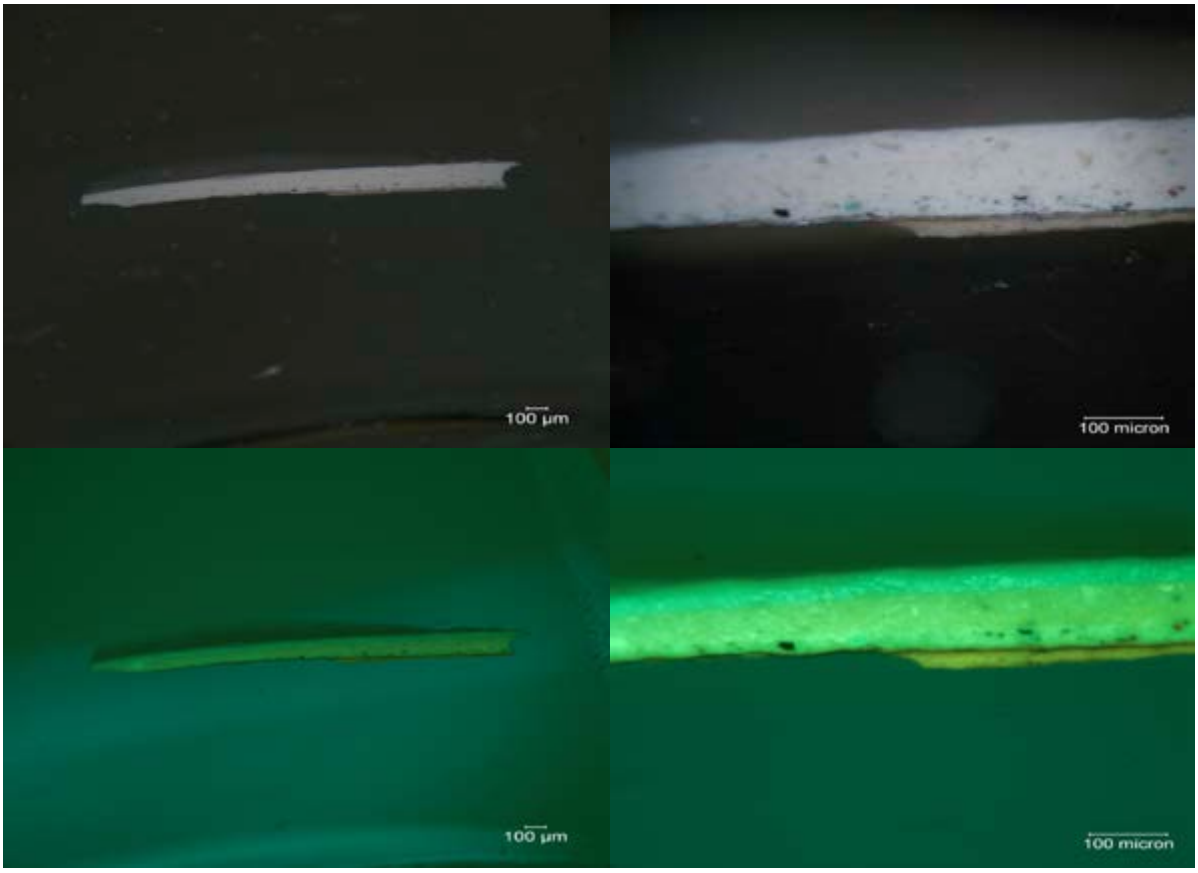



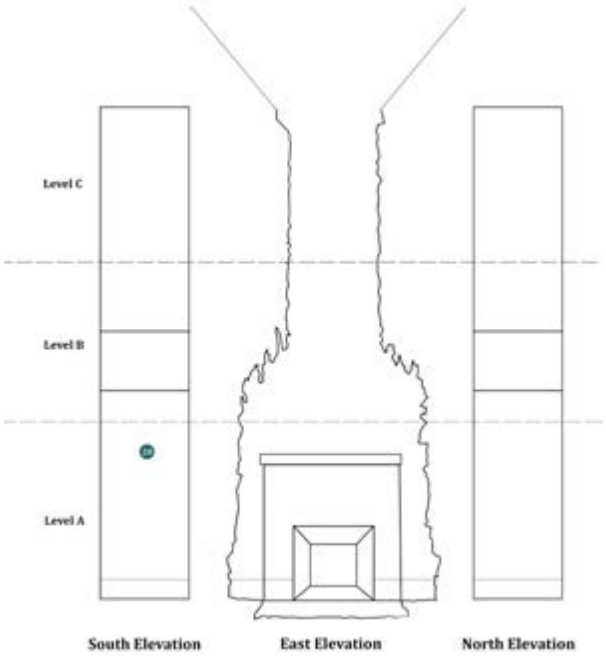
| **Sample:** | NYSS.027 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Snake Face: East Elevation, Level A | | | | **Analyzed by:** Kari Rayner | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | Red | Semi-transparent, fine-to-thin, continuous, uneven; fluoresces red under UV, appears grainy and contains blue particles. | 1. Paint |
| 2 | Gray-Brown | Translucent, thin-to-medium-thick, discontinuous; blue particles visible. | 2. Paint |
| 3 | Dark-Brown | Translucent, thin, discontinuous; fluoresces white under UV. | 2. Glaze |
| 4 | Green | Semi-transparent, fine-to-thin, discontinuous, uneven. | 2. Glaze |
| 5 | Copper-colored | Opaque, fine, discontinuous. | 3. Metallic leaf |
| 6 | Dark Red | Translucent, thin, discontinuous; red and blue particles visible. | 3. Glaze |
| 7 | Light Brown | Opaque, thin, continuous. | 4. Paint |
| 8 | Brown | Opaque, fine, continuous. | 4. Paint |
| 9 | Green | Semi-transparent, fine-to-medium-thick, discontinuous. | 5. Paint |
| 10 | Yellow | Opaque, thin to medium thick, discontinuous; a large metallic green particle visible. | 5. Paint |
| 11 | Light Brown | Translucent, continuous, thin. | 6. Size |
| 12 | Silver-colored | Opaque, fine, continuous. | 6. Metallic leaf |
| 13 | Dark Brown | Opaque, fine, discontinuous. | 6. Glaze |
| 14 | Yellow-Brown | Opaque, fine to thin, continuous. | 10. Paint |
| 15 | White | Opaque, thin, continuous. | Overpaint |
| 16 | White | Opaque, fine, discontinuous; only distinguishable under UV. | Overpaint |

**Notes:** The sample is probably missing upper layers of overpaint.

| **Sample:** | NYSS.028 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-19-13 |
| **Description:** Elephant: South Elevation, Level A | | | | **Analyzed by:** Megan Randall | |



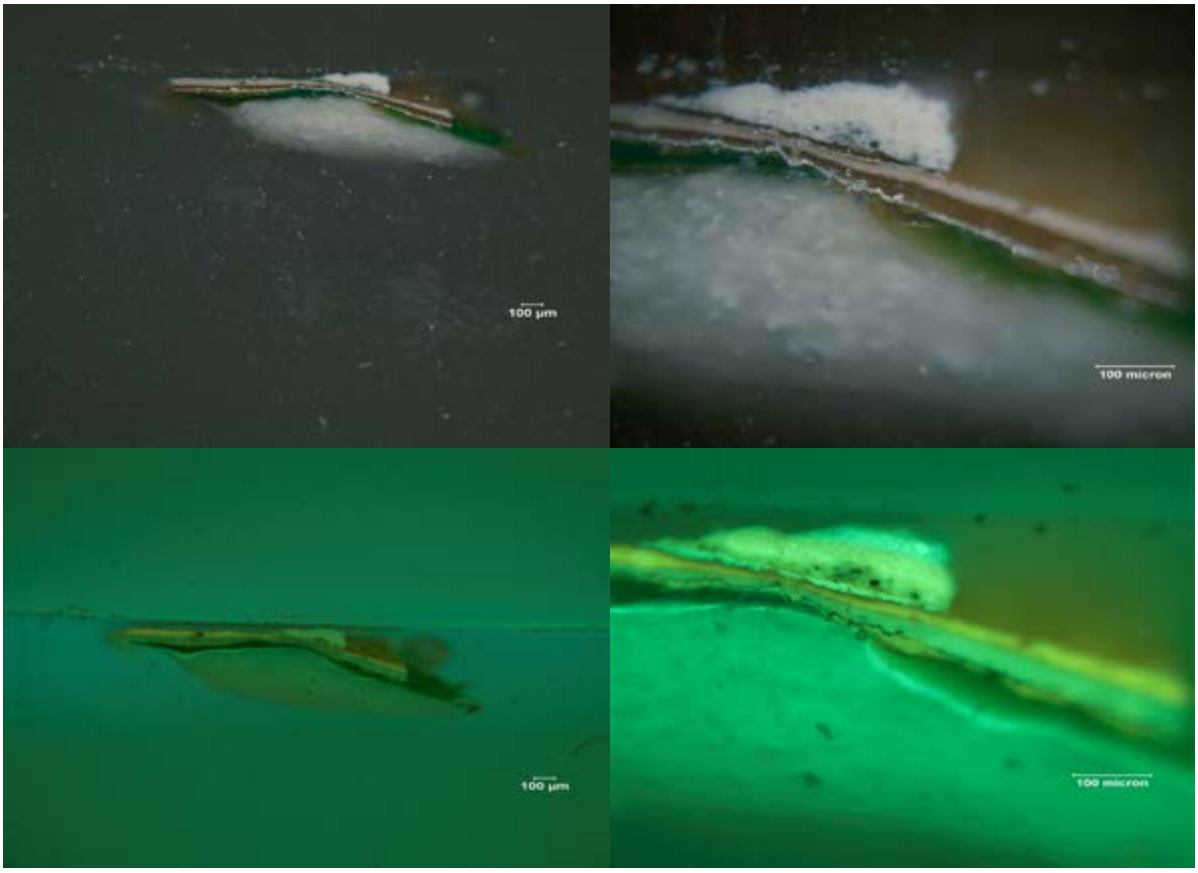



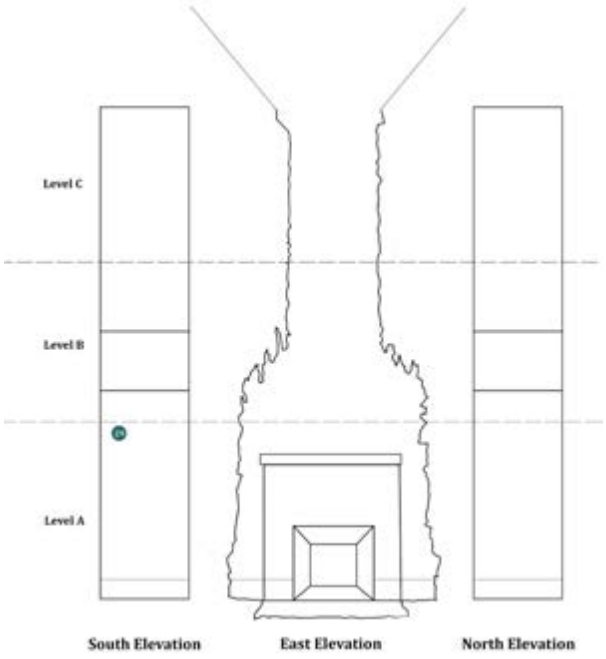
| **Sample:** | NYSS.028 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-19-13 |
| **Description:** Elephant: South Elevation, Level A | | | | **Analyzed by:** Megan Randall | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | Light Brown | Semi-transparent, discontinuous, thin. | 1. Size? |
| 2 | White | Opaque, discontinuous, medium-thick. | 2. Primer? |
| 3 | Light Brown | Transparent, discontinuous, thin. | 3. Size |
| 4 | Silver-colored | Opaque, continuous, thin. | 3. Metallic leaf |
| 5 | Light Brown | Semi-transparent, continuous, thin. | 3. Glaze |
| 6 | Dark Brown | Opaque, continuous, fine; visible in 20x darkfield and UV. | 3. Glaze |
| 7 | White | Opaque, continuous, medium-thick; large particles of varying pigmentation dispersed within layer. | Overpaint |
| 8 | Yellow-White | Opaque, continuous, thick; particles dispersed within layer. | Overpaint |
| 9 | White | Opaque, continuous, medium-thick; particles dispersed within layer. | Overpaint |

**Notes:** Sample incomplete. There is no black layer present in this sample.

| **Sample:** | NYSS.029 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plater | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-08-13 |
| **Description:** Anomalous Plaster Area: South Elevation, Level A | | | | **Analyzed by:** Kathryn Brugioni | |



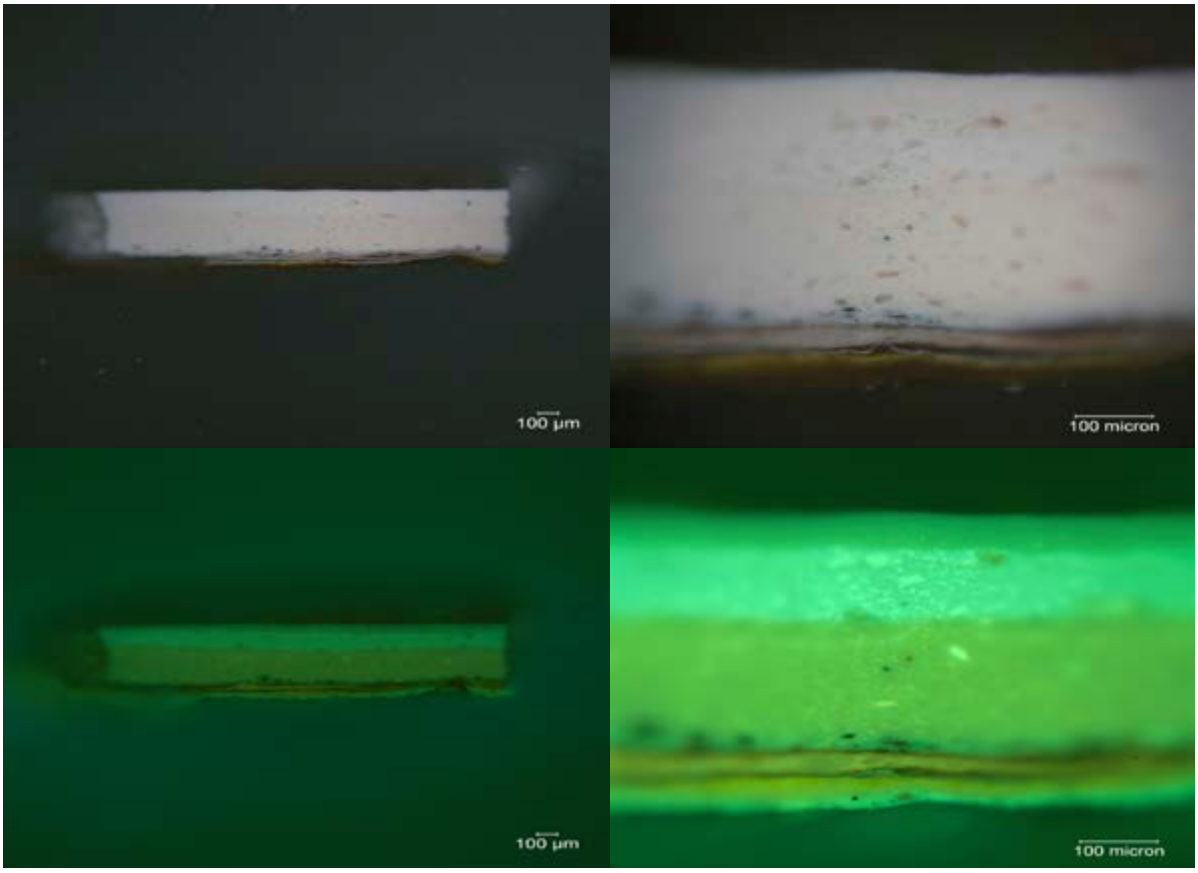



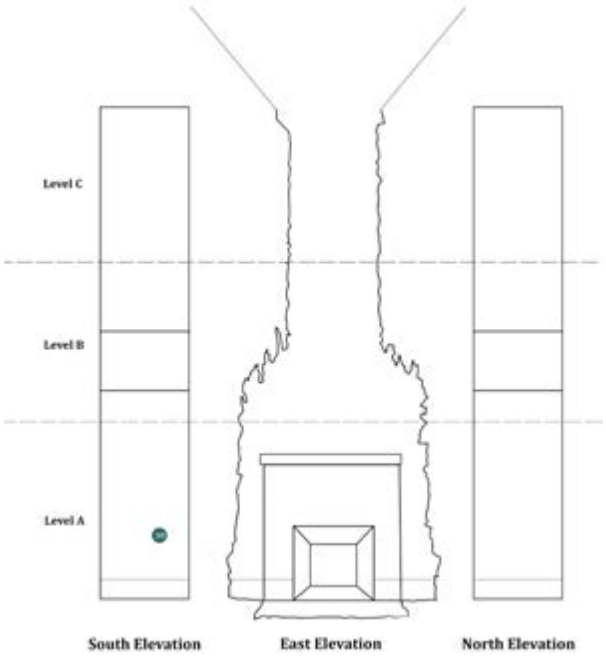
| **Sample:** | NYSS.029 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-08-13 |
| **Description:** Anomalous Plaster Area: South Elevation, Level A | | | | **Analyzed by:** Kathryn Brugioni | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | Green | Opaque, continuous, thick; indistinct interface above and below. | 1. Paint |
| 2 | Brown-Green | Opaque, continuous, thin. | 2. Size |
| 3 | Silver-colored | Opaque, continuous, fine. | 2. Metallic leaf |
| 4 | Brown | Opaque, continuous, medium-thick. | 3. Paint |
| 5 | White | Opaque, continuous, medium-thick. | 4. Paint |
| 6 | Orange-Brown | Opaque, discontinuous, fine. | 5. Size |
| 7 | Silver-colored | Opaque, discontinuous (due to sampling), fine. | 5. Metallic leaf |
| 8 | Dark Green-Brown | Opaque, discontinuous (due to sampling), thin. | 6. Paint |
| 9 | White | Opaque, discontinuous (due to sampling), medium-thick; blue inclusions visible. | Overpaint |
| 10 | Yellow-White | Opaque, discontinuous (due to sampling), medium-thick. | Overpaint |
| 11 | White | Opaque, discontinuous (due to sampling), medium-thick. | Overpaint |

**Notes:** Discontinuous over-paint layer is likely due to due to sampling. There is no black layer present in this sample.

| **Sample:** | NYSS.030 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-19-13 |
| **Description:** Flame Base: South Elevation, Level A | | | | **Analyzed by:** Megan Randall | |



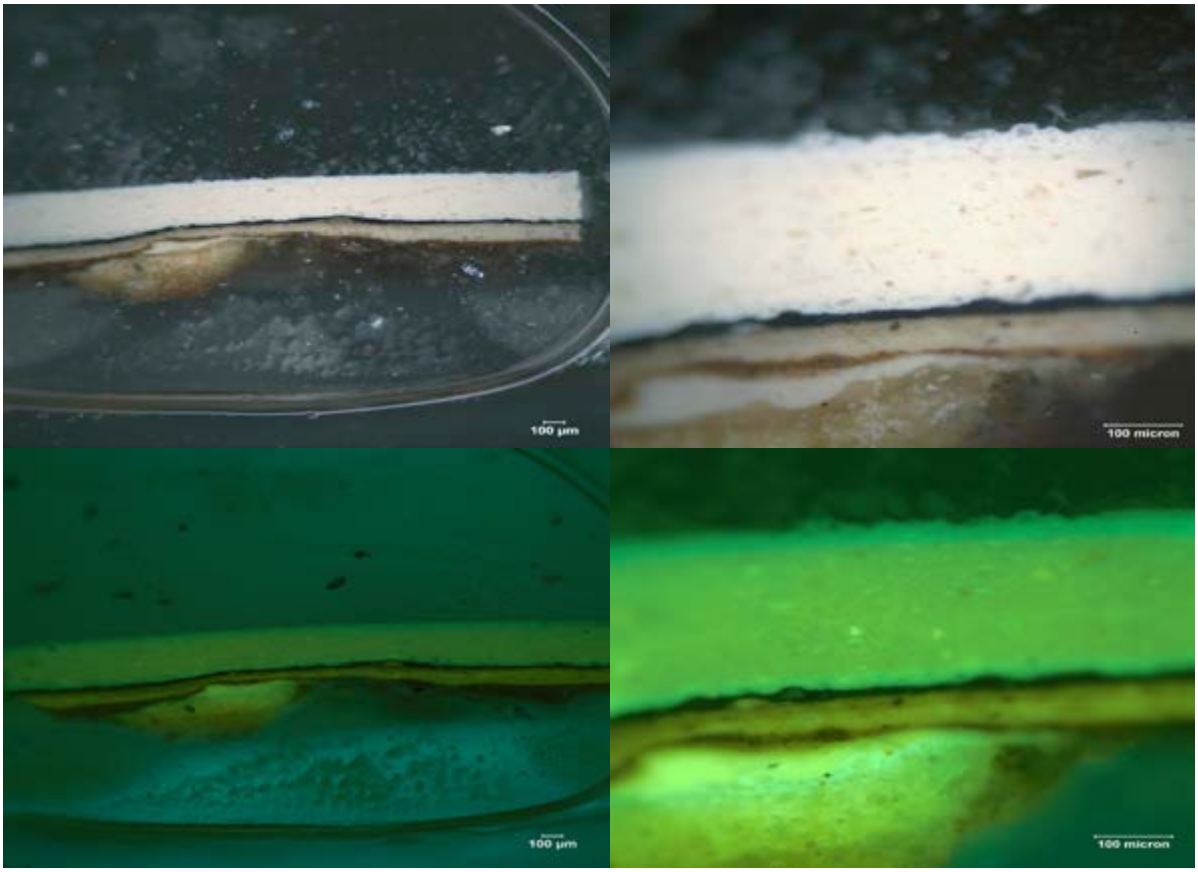



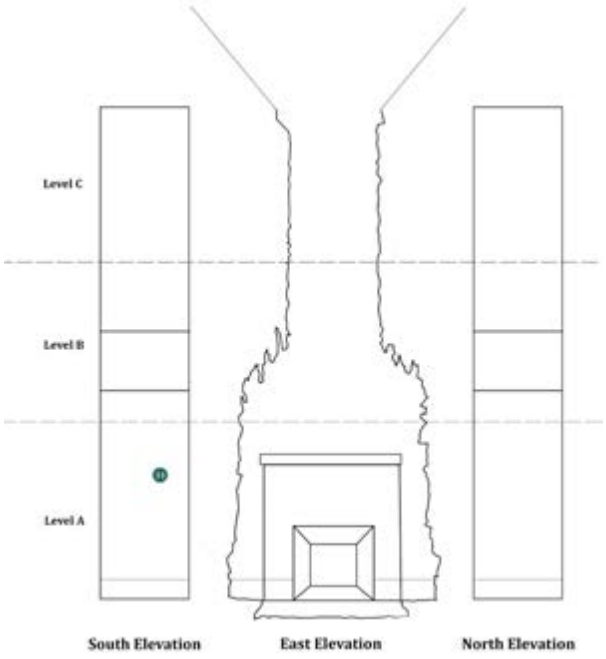
| **Sample:** | NYSS.030 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-19-13 |
| **Description:** Flame Base: South Elevation, Level A | | | | **Analyzed by:** Megan Randall | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | Red-Brown | Semi-transparent, discontinuous, thin; small blue and green particles dispersed within layer. | 1. Paint |
| 2 | Yellow-Brown | Semi-transparent, discontinuous, thin. | 1. Glaze |
| 3 | Red-Brown | Translucent, discontinuous, thin. | 2. Size |
| 4 | Silver-colored | Silver-colored leaf, discontinuous, thin. | 2. Metallic leaf |
| 5 | Green-Brown | Opaque, discontinuous, thin. | 2. Glaze |
| 6 | Light Brown | Translucent, discontinuous, thin; applied very unevenly over layer 5. | 2. Glaze |
| 7 | White | Opaque, discontinuous, medium-thick. | 3. Paint |
| 8 | Light Brown | Translucent, continuous, fine. | 4. Size |
| 9 | Silver-colored | Opaque, continuous, thin. | 4. Metallic leaf |
| 10 | Light Brown | Translucent, continuous, fine. | 4. Glaze |
| 11 | White | Opaque, continuous, medium-thick; large particles of varying pigmentation dispersed within layer. | Overpaint |
| 12 | Yellow-White | Opaque, continuous, thick; particles dispersed within layer. | Overpaint |
| 13 | White | Opaque, continuous, medium-thick; particles dispersed within layer. | Overpaint |

**Notes:** Sample incomplete. There is no black layer present in this sample.

| **Sample:** | NYSS.031 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Brick | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-03-13 |
| **Description:** Brick behind Flame: South Elevation, Level A | | | | **Analyzed by:** Kathryn Brugioni | |

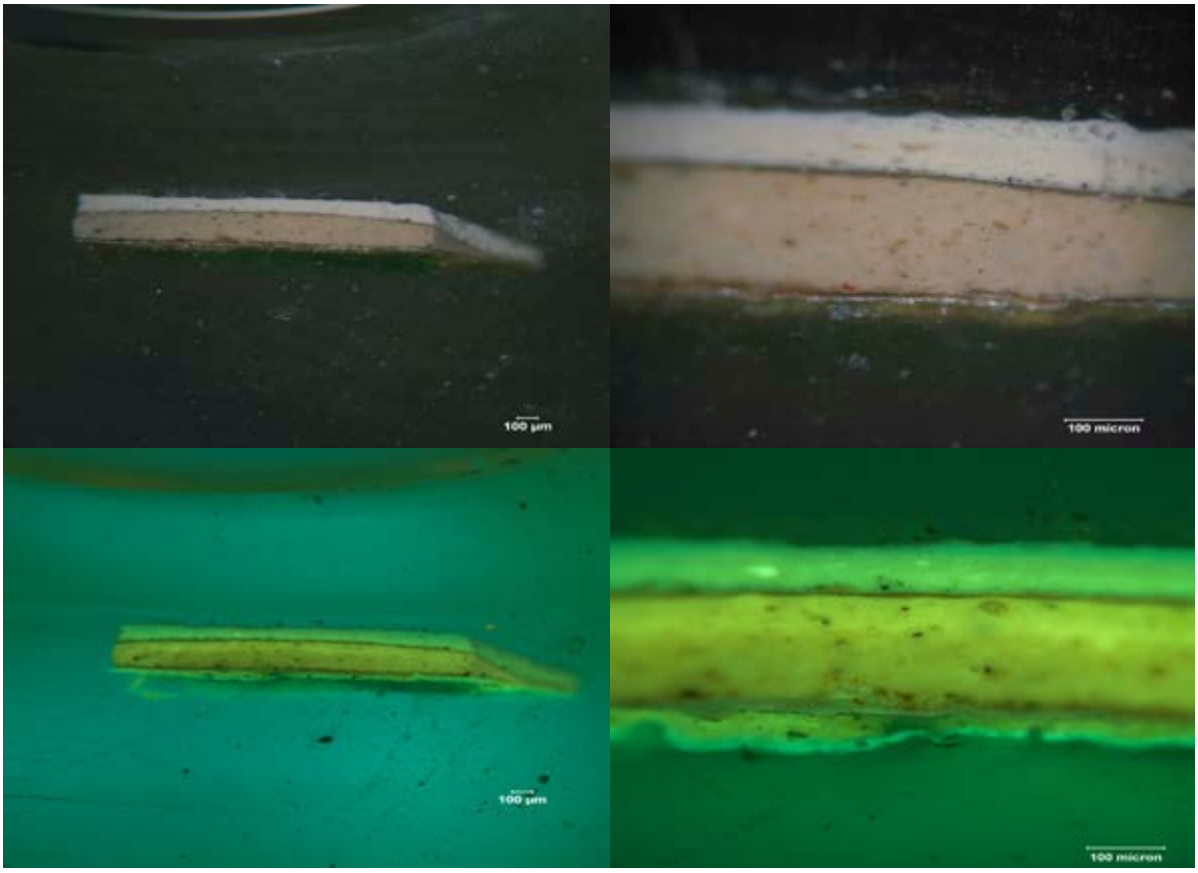


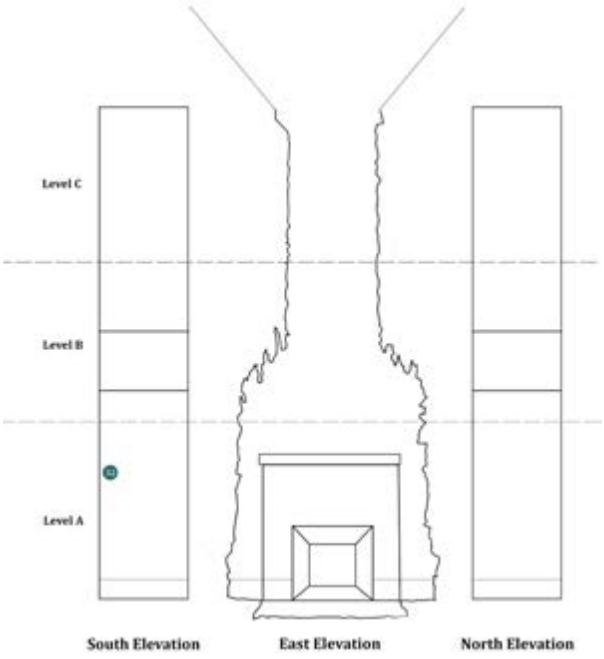



| **Sample:** | NYSS.031 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Brick | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-03-13 |
| **Description:** Brick behind Flame: South Elevation, Level A | | | | **Analyzed by:** Kathryn Brugioni | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, discontinuous, thin, uneven thickness. | 1. Primer |
| 2 | Gray-Brown | Opaque, continuous, thin; blue particles visible. | 1. Paint |
| 3 | Light Gray-Brown | Opaque, continuous, thick. | 2. Primer |
| 4 | Medium Gray-Brown | Opaque, continuous, medium-thick. | 2. Paint |
| 5 | Dark Gray-Brown | Translucent, continuous, thin. | 2. Glaze |
| 6 | Black | Opaque, continuous, thin. | Overpaint |
| 7 | Blue-White | Opaque, continuous, thin; blue inclusions visible. | Overpaint |
| 8 | Yellow-White | Opaque, continuous, thick. | Overpaint |
| 9 | White | Opaque, continuous, medium-thick. | Overpaint |

| **Sample:** | NYSS.032 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-03-13 |
| **Description: Middle of** Flame: South Elevation, Level A | | | | **Analyzed by:** Kathryn Brugioni | |



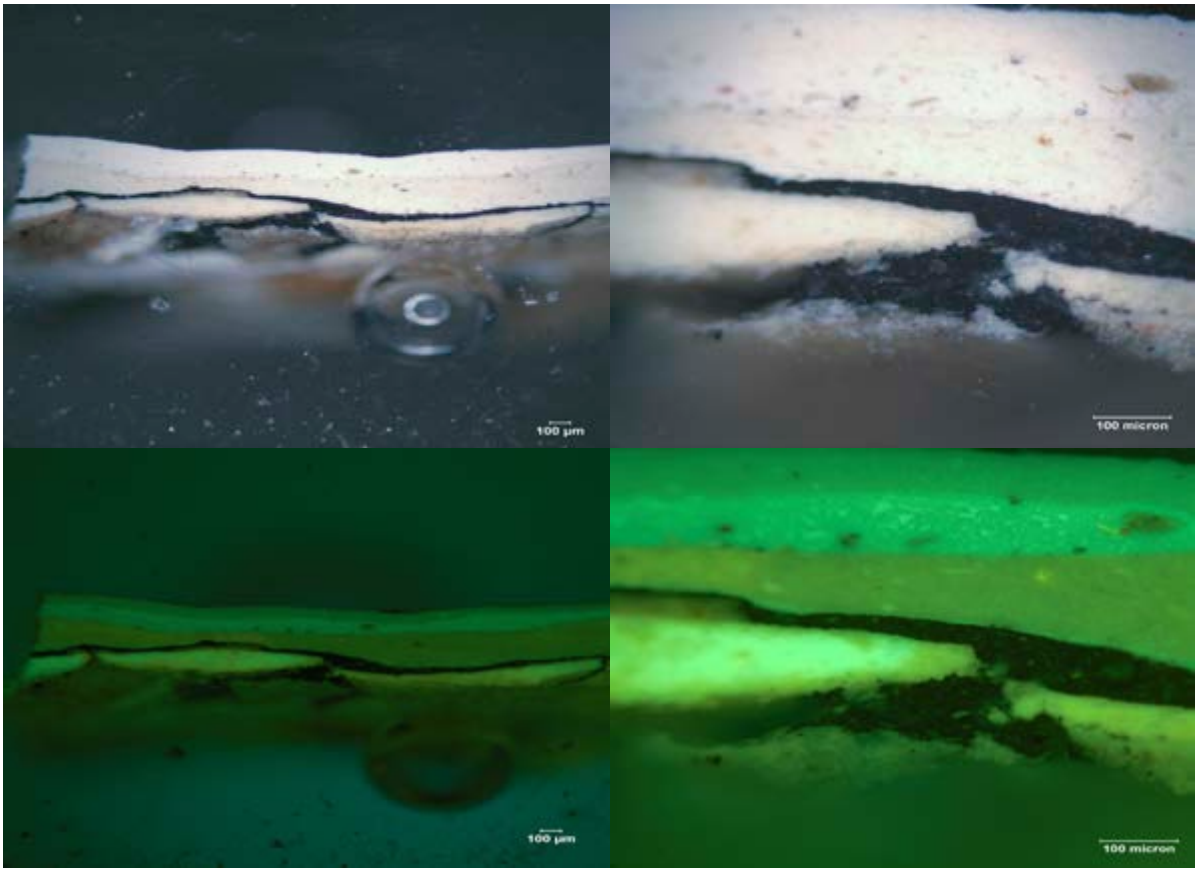



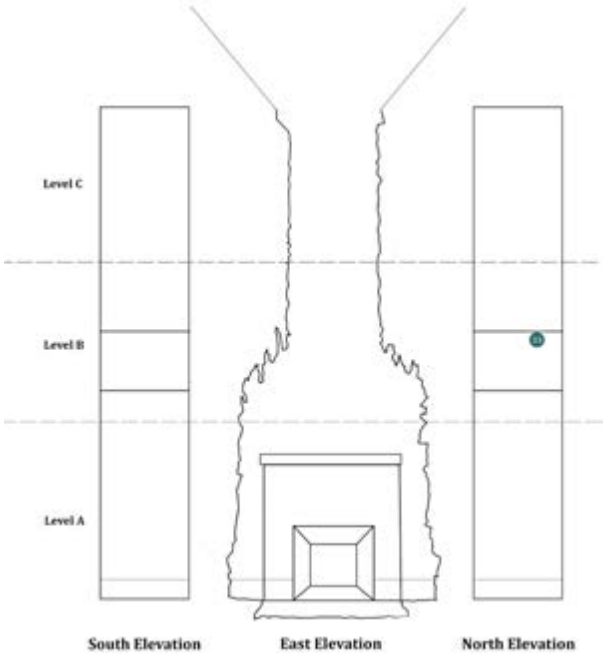
| **Sample:** | NYSS.032 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Metal | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-03-13 |
| **Description: Middle of** Flame: South Elevation, Level A | | | | **Analyzed by:** Kathryn Brugioni | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | Dark Green | Translucent, continuous, medium-thick. | 1. Patina/corrosion |
| 2 | Brown-Green | Translucent, continuous, medium-thick. | 1. Patina/corrosion |
| 3 | Silver-colored | Opaque, continuous, fine. | 2. Metallic leaf |
| 4 | Medium Yellow-Brown | Opaque, continuous, thin. | 3. Paint |
| 5 | Brown | Interpenetrating with above. | 3. Glaze |
| 6 | White | Opaque, continuous, thick; distinguishable from above under UV. | 4. Paint |
| 7 | White | Opaque, continuous, thick; distinguishable from below under UV. | 4. Paint |
| 8 | Yellow-Brown | Translucent, continuous; thin. | 5. Size |
| 9 | Silver-colored | Opaque, continuous, fine. | 5. Metallic leaf |
| 10 | Brown | Translucent, continuous, thin. | 5. Glaze |
| 11 | Blue-White | Opaque, continuous, medium-thick; blue inclusions visible. | Overpaint |
| 12 | Yellow-White | Opaque, continuous, thick. | Overpaint |
| 13 | White | Opaque, continuous, medium-thick; colorless inclusions visible. | Overpaint |

**Notes:** There is no black layer present in this sample.

| **Sample:** | NYSS.033 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Brick | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-03-13 |
| **Description:** Brick on Top Step: North Elevation, Level B | | | | **Analyzed by:** Kathryn Brugioni | |



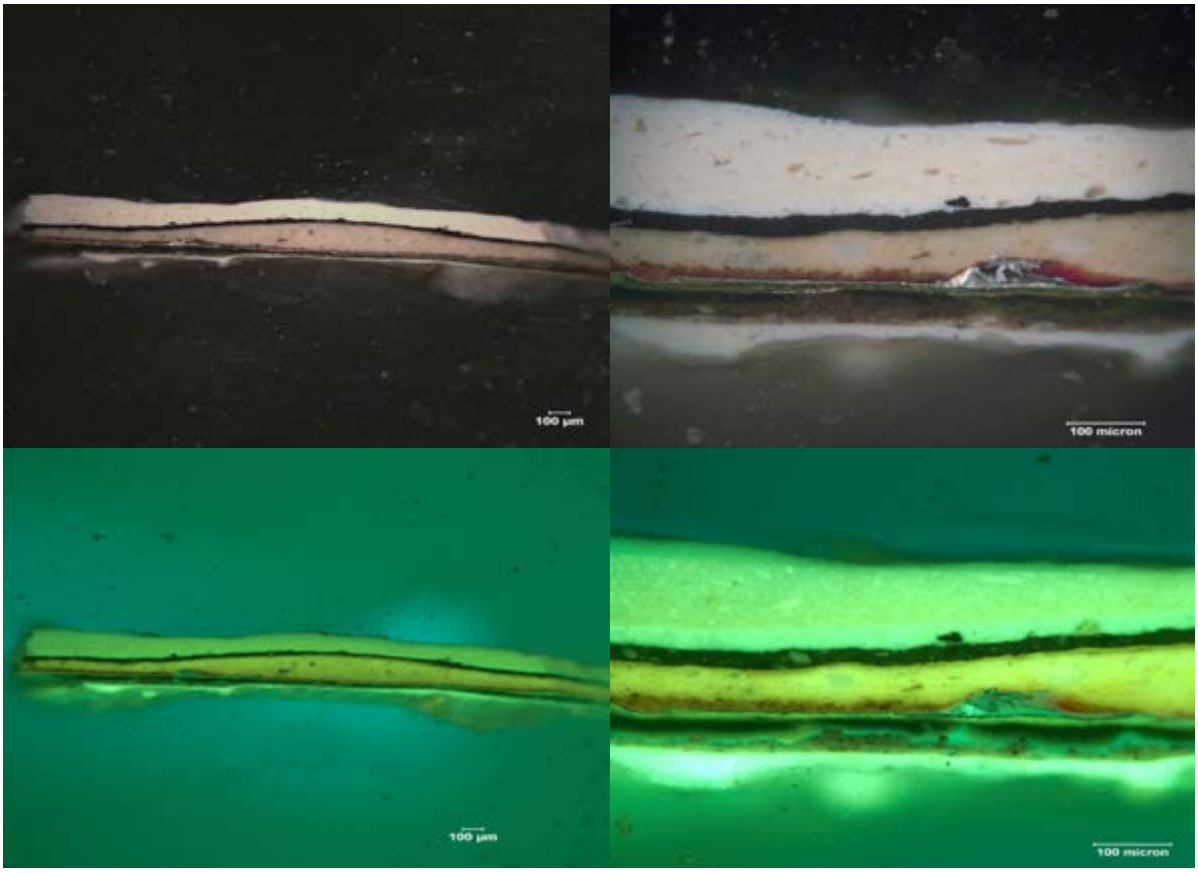



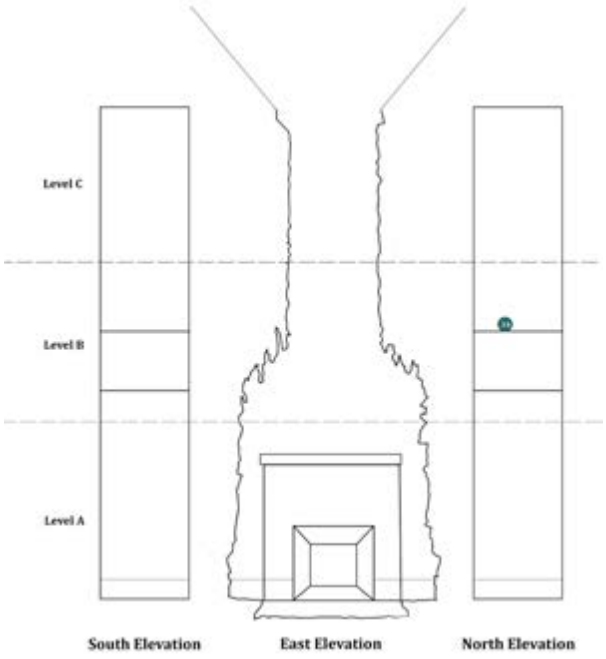
| **Sample:** | NYSS.033 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Brick | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-03-13 |
| **Description:** Brick on Top Step: North Elevation, Level B | | | | **Analyzed by:** Kathryn Brugioni | |

| **Layer Number** | **Color** | **Description** |
|---|---|---|
| 1 | Black | Opaque, discontinuous; thick, yellow-white islands visible within; fluoresces differently than all layers above. |
| 2 | Yellow-White | Opaque, continuous, thin; distinguishable from above under UV. |
| 3 | Yellow-White | Opaque, continuous, thick. |
| 4 | White | Opaque, continuous, medium-thick; distinguishable from above under UV. |
| 5 | White | Opaque, continuous, medium-thick. |

**Notes:** Sample incomplete. Damaged layers present. Bottom of sample is visible below the cross-section. Layer above "Black" is indistinguishable from the above Yellow-White layer at 20x magnification. If is possible, however, that this is a thin layer of the aforementioned Blue-White type. There are possibly some blue flecks of the same type present in this photomicrograph, but they are too small to be resolved and characterized satisfactorily.

| **Sample:** | NYSS.034 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Compo/Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-03-13 |
| **Description:** Standing Flame: North Elevation, Level B | | | | **Analyzed by:** Kathryn Brugioni | |

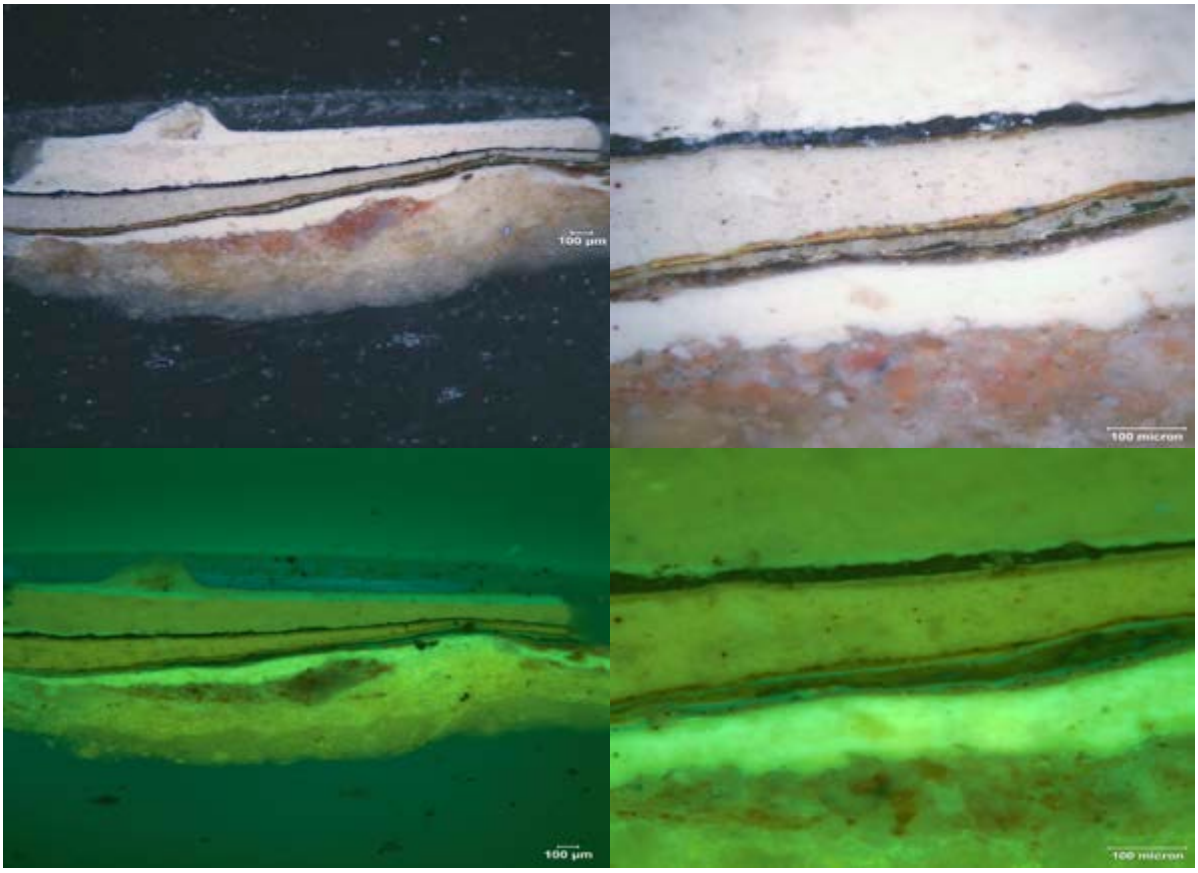


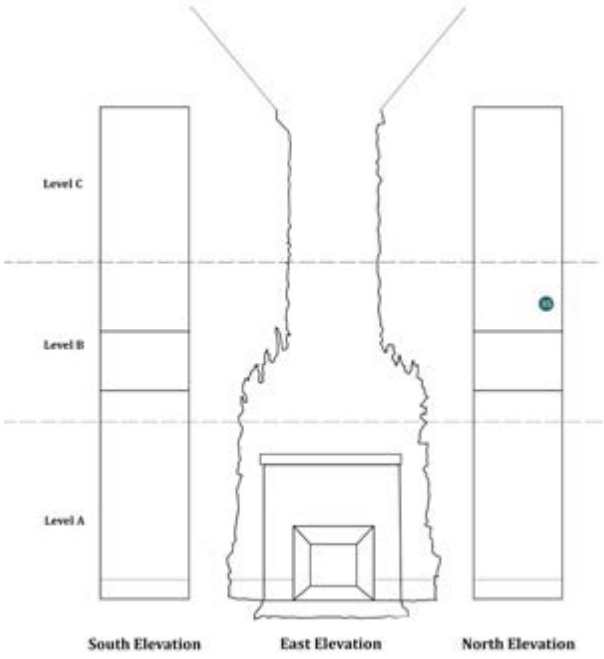



| **Sample:** | NYSS.034 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-03-13 |
| **Description:** Standing Flame: North Elevation, Level B | | | | **Analyzed by:** Kathryn Brugioni | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, continuous, medium-thick. | 1. Primer |
| 2 | Gray-Brown | Slightly translucent, continuous, thick; blue and red grainy inclusions visible under UV. | 1. Paint |
| 3 | Dark Brown | Opaque, continuous, thin. | 2. Size |
| 4 | Copper-colored | Opaque, continuous, thin. | 2. Metallic leaf |
| 5 | Light-Brown-Green | Translucent, continuous, thin. | 2. Glaze |
| 6 | Brown-Green | Translucent, continuous, thin. | 2. Glaze/corrosion |
| 7 | Light-Brown-Green | Opaque, continuous, thin. | 3. Size |
| 8 | Silver-colored | Opaque, continuous, thin. | 3. Metallic leaf |
| 9 | Red | Translucent, discontinuous, thin. | 3. Glaze |
| 10 | Dark Yellow-White | Opaque, continuous, thick. | 4. Primer |
| 11 | White | Opaque, continuous, thin. | 4. Paint |
| 12 | Black | Opaque, continuous, medium-thick. | Overpaint |
| 13 | White | Opaque, continuous, thick; blue-inclusions visible. | Overpaint |
| 14 | Yellow-White | Opaque, continuous, thick. | Overpaint |
| 15 | White | Opaque, continuous, medium thick. | Overpaint |

| **Sample:** | NYSS.035 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-03-13 |
| **Description:** Flame adjacent to wall: North elevation, Level B | | | | **Analyzed by:** Kathryn Brugioni | |

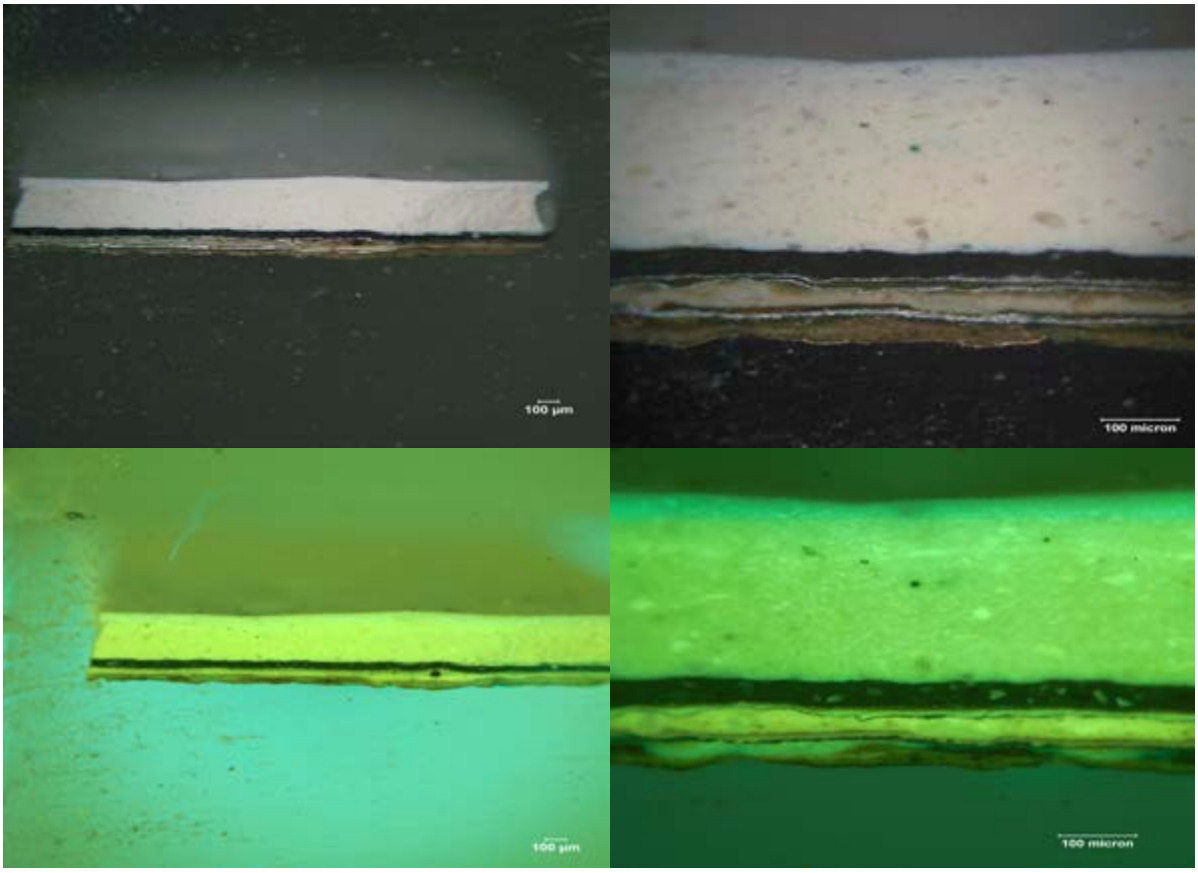


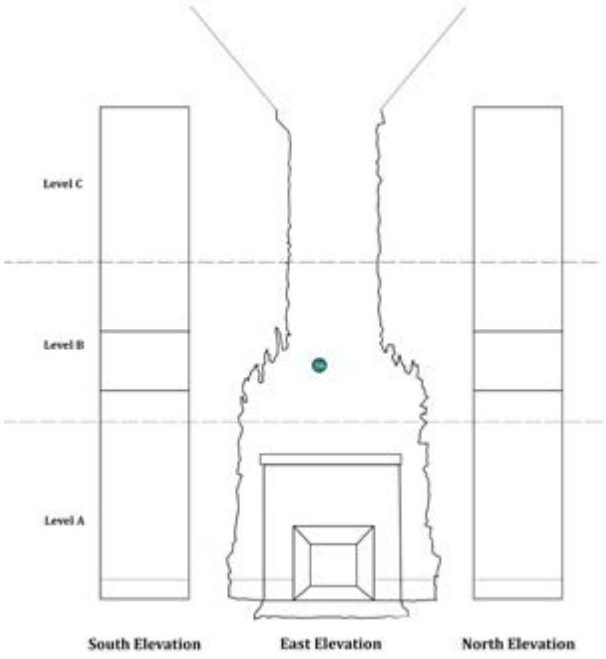



| **Sample:** | NYSS.035 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-03-13 |
| **Description:** Flame adjacent to wall: North elevation, Level B | | | | **Analyzed by:** Kathryn Brugioni | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | Gray-Brown | Translucent, continuous, thick, mottled. | 1. Paint seeping or added into plaster substrate |
| 2 | Yellow-Brown | Translucent, continuous, very thick; mottled blue and red grains visible. | 1. Paint seeping or added into plaster substrate |
| 3 | Red-Brown | Translucent, discontinuous, thick, mottled, grainy. | 1. Paint seeping or added into or plaster substrate |
| 4 | White | Opaque, continuous, thick. | 2. Primer |
| 5 | Gray-Brown | Grainy blue inclusions visible. | 2. Paint |
| 6 | Dark Brown | Opaque, continuous, thin. | 3. Size |
| 7 | Gold-colored | Opaque, discontinuous, fine; folded over into gray-brown layer above and dark-brown layer below. | 3. Metallic leaf |
| 8 | Gray-Brown | Opaque, continuous, medium-thick. | 4. Paint |
| 9 | Dark Brown | Translucent, continuous, thin. | 4. Glaze |
| 10 | Yellow | Opaque, continuous, thin. | 5. Paint |
| 11 | Medium Brown | Translucent, continuous, thin. | 5. Glaze |
| 12 | Yellow-White | Opaque, continuous, thick. | 6. Paint |
| 13 | Light-Gray-Brown | Translucent, continuous, thin. | 6. Glaze |
| 14 | Dark Brown | Opaque, continuous, thin. | 7. Paint |
| 15 | Black | Opaque, continuous, thick; blue inclusions visible. | Overpaint |
| 16 | Yellow-White | Opaque, continuous, thick,;distinguishable from above under UV. | Overpaint |
| 17 | Yellow-White | Opaque, continuous, thick. | Overpaint |
| 18 | White | Opaque, continuous, thin; blue-gray inclusions visible. | Overpaint |
| 19 | White | Opaque, continuous, thin; large inclusion visible near surface. | Overpaint |

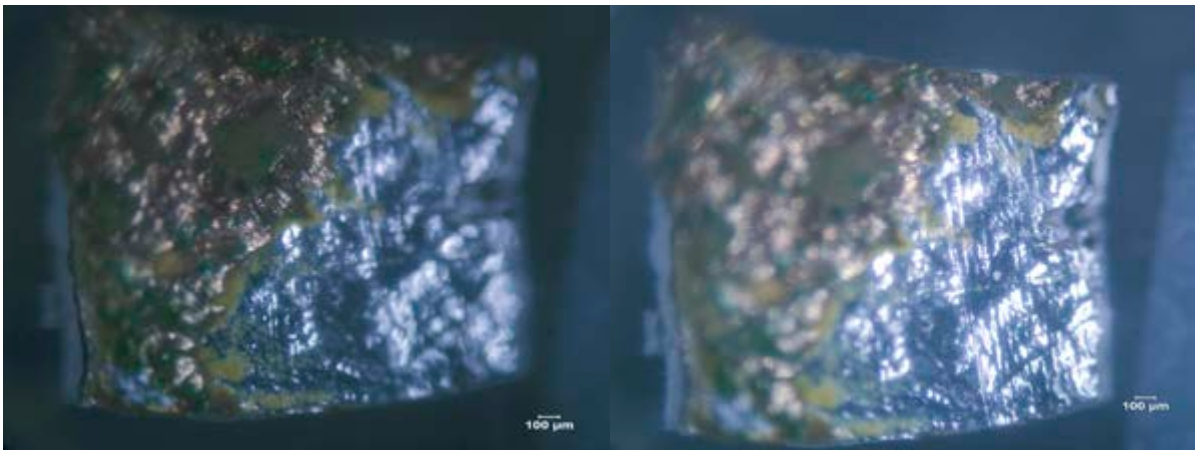
| | | | | | |
|---|---|---|---|---|---|
| **Sample:** | NYSS.036 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-15-13 |
| **Description:** Fish: East Elevation, Level B | | | | **Analyzed by:** Jessica Walthew | |



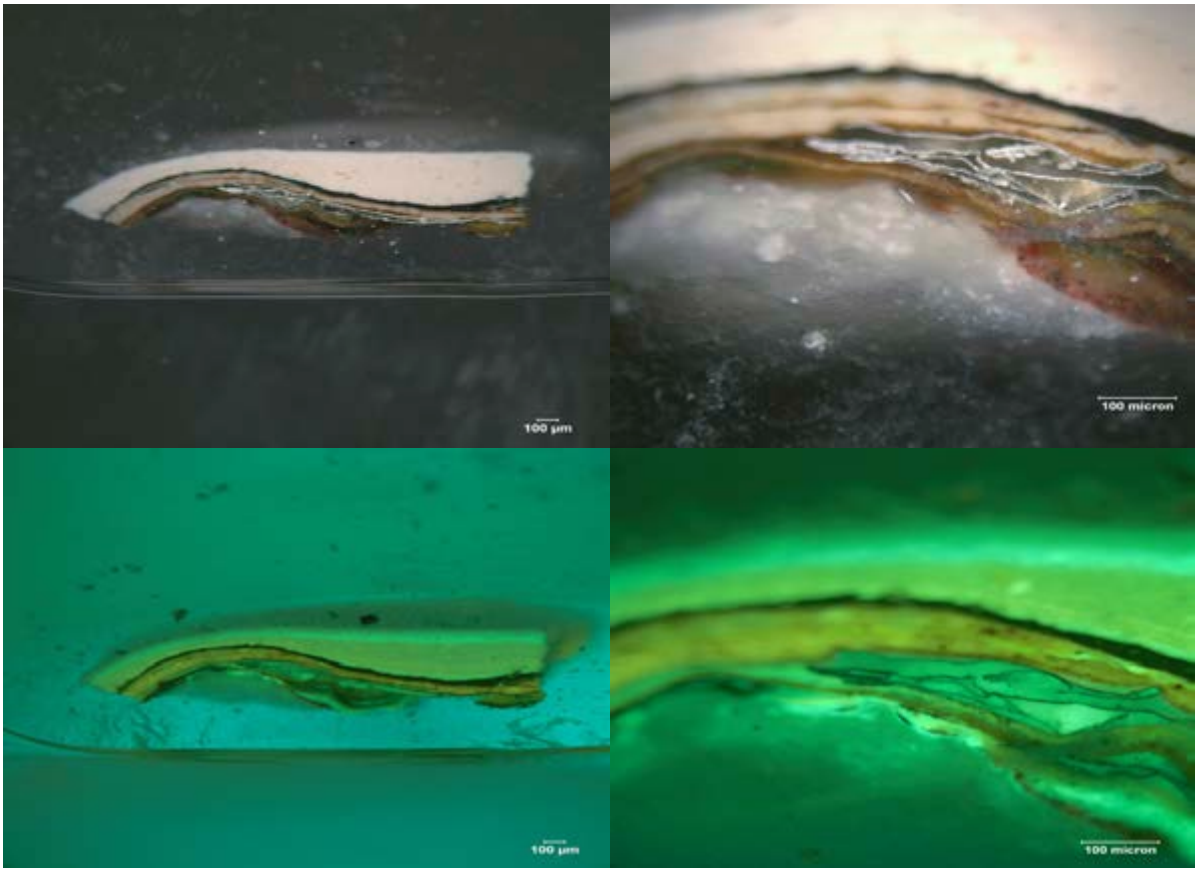
| **Sample:** | NYSS.036 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-15-13 |
| **Description:** Fish: East Elevation, Level B | | | | **Analyzed by:** Jessica Walthew | |

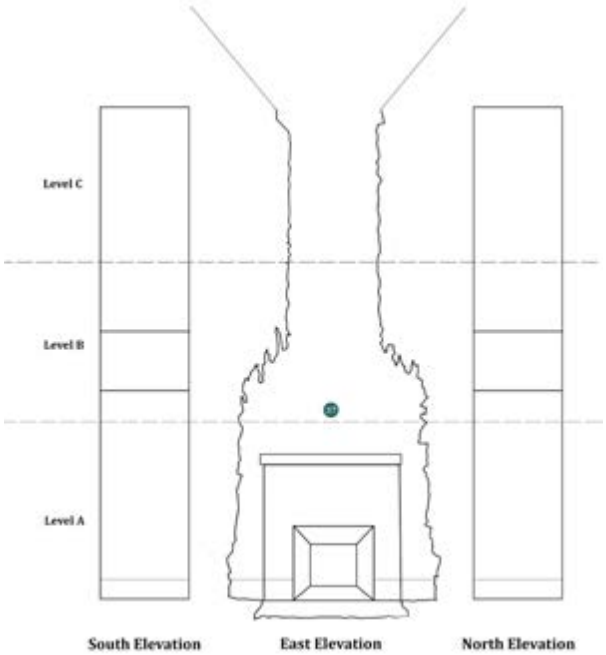
| Layer Number | Color | Description | Finish Type |
|---|---|---|---|
| 1 | Copper-colored | Opaque, fine, discontinuous. | 1. Metallic leaf |
| 2 | Dark Brown | Opaque, fine, continuous. | 1. Glaze |
| 3 | Light Brown | Semi-opaque, medium-thick, continuous, many inclusions of different colors visible. | 2. Paint |
| 4 | Red-Brown | Opaque, thin-to-fine, continuous with variable thickness; some inclusions visible. | 3. Size |
| 5 | Silver-colored | Opaque, fine, continuous. | 3. Metallic leaf |
| 6 | Red-Brown | Opaque, thin to fine, mostly continuous. | 3. Glaze |
| 7 | White | Opaque, medium thick, continuous; some inclusions visible. | 4. Paint |
| 8 | Light brown | Semi-opaque, thin, discontinuous, with subtle transition into layer below. | 5. Size |
| 9 | Silver-colored | Opaque, thin and crimped, continuous. | 5. Metallic leaf |
| 10 | Brown | Opaque, thin, continuous; slightly grainy in appearance. | 6. Glaze/size |
| 11 | Silver-colored | Opaque, fine and crimped (possibly a brown layer between 4-5?), continuous. | 6. Metallic leaf |
| 12 | Black | Opaque, medium-thick, continuous; some inclusions. | Overpaint |
| 13 | Light-Pink-Yellow | Opaque, very thick, continuous; flecks of inclusions and small voids visible. | Overpaint |
| 14 | White | Opaque, thin, continuous; fluoresces brightly. | Overpaint |
| 15 | Yellow-White | Opaque, thin, continuous. | Overpaint |




**Notes:** Substrate and first layers are missing. The copper foil is either compacted together, or it has been applied in multiple layers.

| **Sample:** | NYSS.037 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-14-13 |
| **Description:** Flame Center: East Elevation, Level B | | | | **Analyzed by:** Jessica Walthew | |



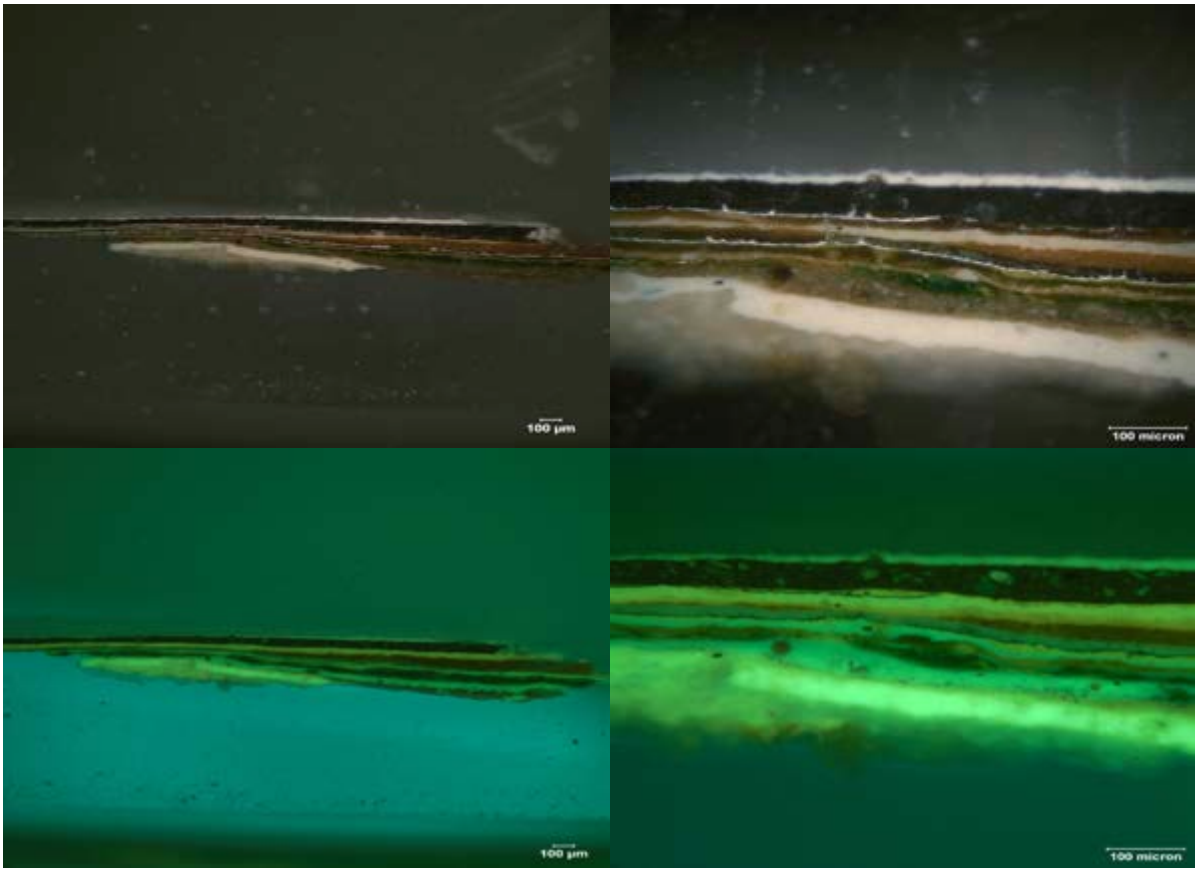



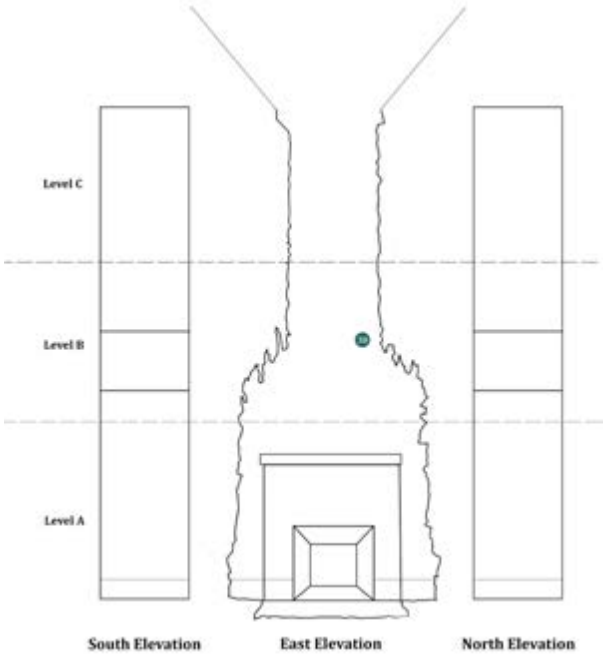
| **Sample:** | NYSS.037 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-14-13 |
| **Description:** Flame Center: East Elevation, Level B | | | | **Analyzed by:** Jessica Walthew | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | Red-Green-Yellow mixture | Transparent, medium thick, discontinuous; colors interspersed. | 1. Paint |
| 2 | Green-Black-Brown | Opaque at center, thin, discontinuous; colors interspersed. | 2. Size |
| 3 | Red-Green with copper-colored foil | Semi-transparent-to-opaque, thin, discontinuous; bronzing powder visible. | 2. Metallic leaf |
| 4 | Light-Yellow-Brown [**Munsell: 7.5Y 3/2**] | Semi-transparent, thin, continuous; many inclusions visible. | 2. Glaze |
| 5 | Green and partial leaf | Semi-transparent, thin, nearly continuous; many inclusions visible (leaf is opaque). | 2. Glaze |
| 6 | Silver-colored | Opaque, fine, discontinuous; crumpled layer folds back on itself, approx. 2/3 across. | 3. Leaf |
| 7 | Dark Brown | Opaque, fine to thin, nearly continuous. | 3. Glaze |
| 8 | Light-Yellow-Brown | Semi-opaque, thin, continuous; many inclusions visible. | 4. Paint |
| 9 | Light Brown | Semi-opaque fine, discontinuous. | 5. Size |
| 10 | Silver-colored | Opaque, thin, discontinuous; approximately half of sample. | 5. Metallic leaf |
| 11 | Silver-colored | Opaque, discontinuous. | 6. Metallic leaf |
| 12 | Light Yellow-Brown | Translucent, continuous, thin. | 6. Glaze |
| 13 | Black | Opaque, medium-thick, continuous; some inclusions visible | Overpaint |
| 14 | White | Opaque, thin-medium-thick, continuous. | Overpaint |
| 15 | Yellow-White | Opaque, medium-thick (very thick at right, with possible sublayer), continuous; some inclusions and voids visible. | Overpaint |
| 16 | White | Opaque, medium-thick, continuous, brightly fluorescent. | Overpaint |
| 17 | Yellow-White | Opaque, medium-thick, continuous. | Overpaint |

**Notes:** The primer layer is not present in the sample.

| **Sample:** | NYSS.038 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-14-13 |
| **Description:** Grotesque Face: East Elevation, Level B | | | | **Analyzed by:** Jessica Walthew | |

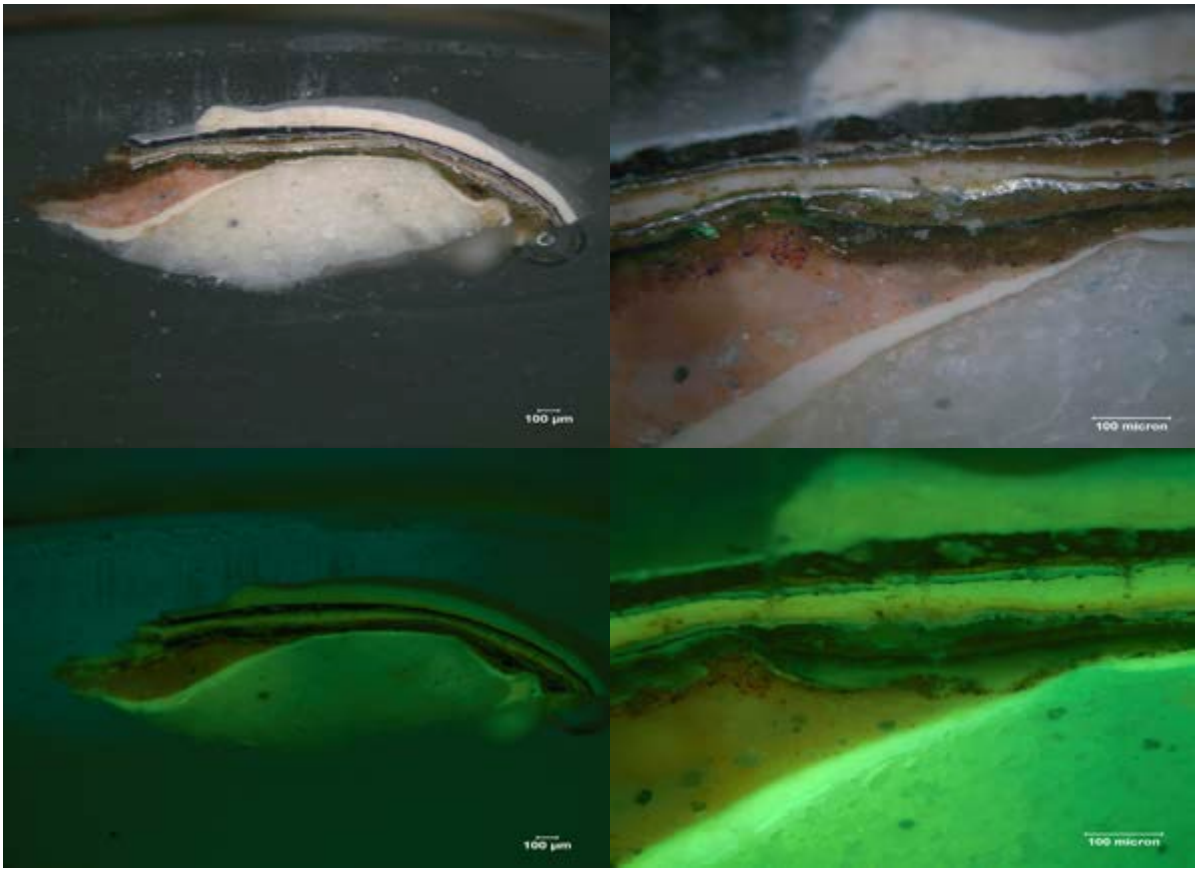


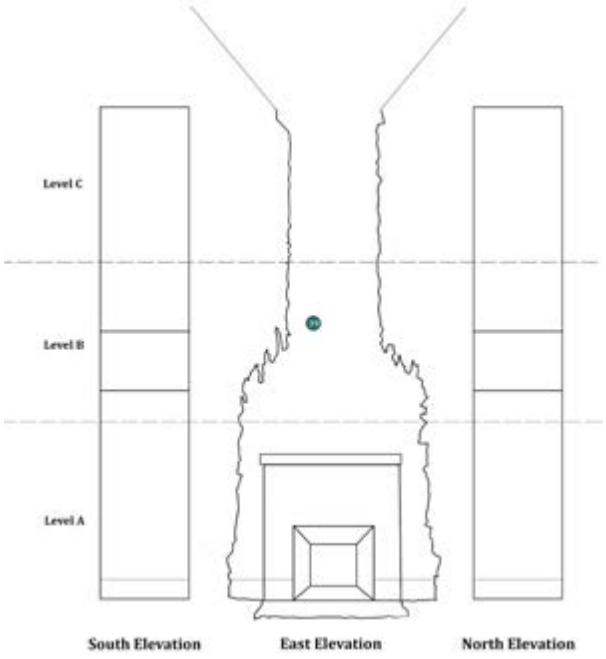



| **Sample:** | NYSS.038 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-14-13 |
| **Description:** Grotesque Face: East Elevation, Level B | | | | **Analyzed by:** Jessica Walthew | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, medium-thick, continuous . | 1. Primer |
| 2 | Light Gray-Yellow | Semi-transparent, medium-thick, continuous; large blue inclusions visible. | 1. Paint |
| 3 | Green-Yellow | Transparent, mixture across continuous layer. | 2. Size/corrosion? |
| 4 | Copper-colored | Opaque, continuous, thin. | 2. Metallic leaf |
| 5 | Light Brown | Opaque, thin, continuous; many inclusions, some large, visible. | 3. Paint |
| 6 | Brown | Translucent, thin, mostly continuous; islands of green and yellow visible. | 3. Glaze |
| 7 | Silver-colored | Opaque, thin, continuous. | 4. Metallic leaf |
| 8 | Brown | Translucent, thin, continuous. | 4. Glaze |
| 9 | Green | Distinct green specks visible (bronzing powder?) | 4. Glaze |
| 10 | Medium Yellow-Brown | Semi-transparent, thin, continuous; some small inclusions visible. | 5. Paint |
| 11 | White | Opaque, thin, continuous; some inclusions visible. | 6. Paint |
| 12 | Medium Yellow-Brown | Semi-transparent-to-opaque, thin, continuous, mottled. | 7. Size |
| 13 | Silver-colored | Opaque, thin, continuous. | 7. Metallic leaf |
| 14 | Dark Brown | Semi-opaque, very thin, continuous. | 7. Glaze |
| 15 | Black | Opaque, medium-thick, continuous; some inclusions visible. | Overpaint |
| 16 | White | Opaque, thin, continuous. | Overpaint |

| **Sample:** | NYSS.039 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-15-13 |
| **Description:** Flame Tip: East Elevation, Level B | | | | **Analyzed by:** Jessica Walthew | |

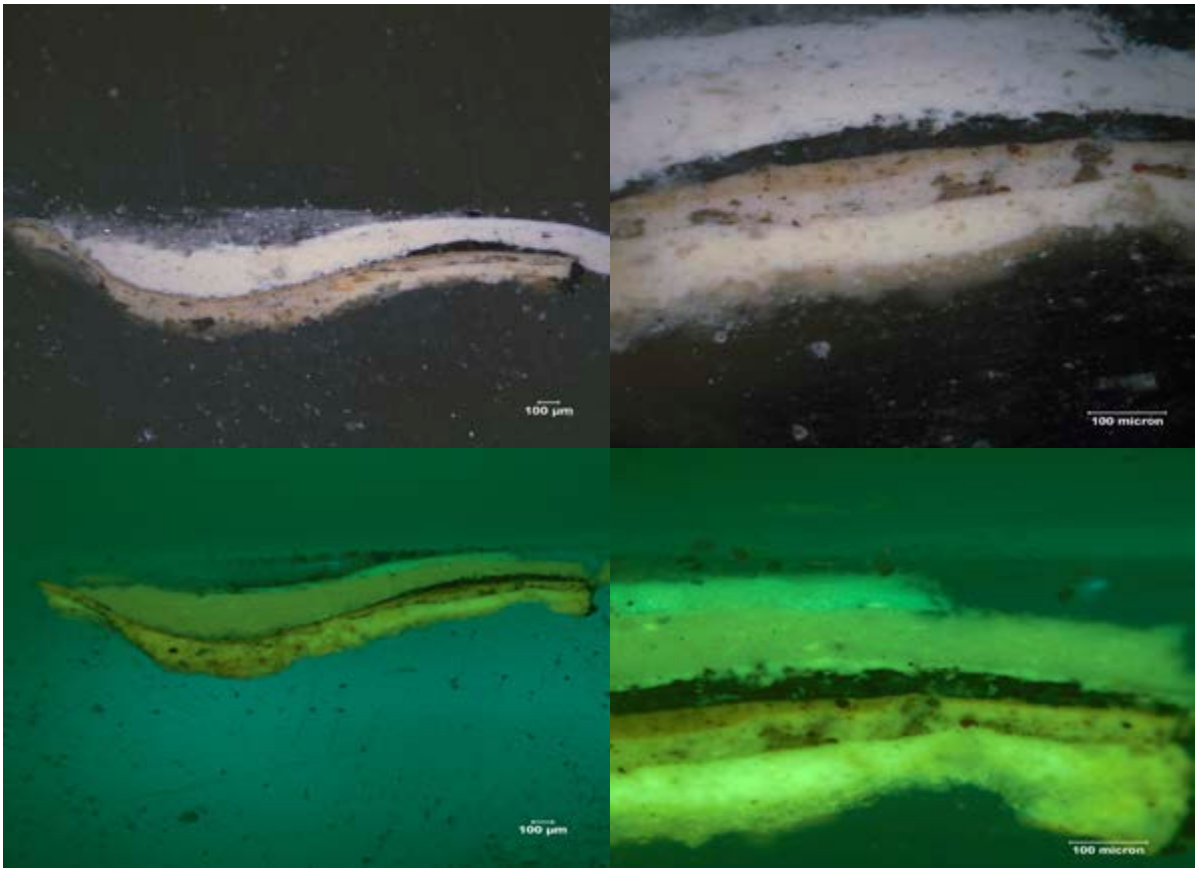


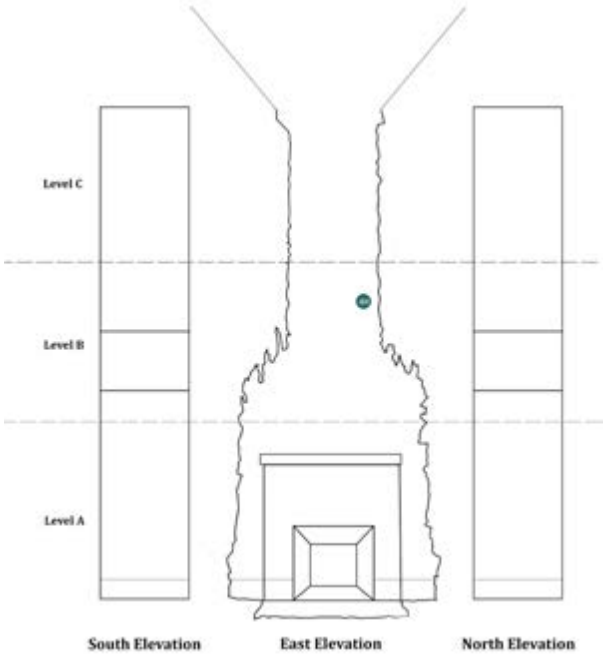



| **Sample:** | NYSS.039 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-15-13 |
| **Description:** Flame Tip: East Elevation, Level B | | | | **Analyzed by:** Jessica Walthew | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, thin-to-medium-thick, continuous. | 1. Primer |
| 2 | Red-Pink [**Munsell: 5R 8/4**] | Semi-transparent; very thick (pink layer is ~2/3 of sample); many inclusions visible, which are redder on top and pinker underneath; possible second layer visible under UV. | 1. Paint |
| 3 | Green-Yellow | Semi transparent, thin, continuous; mixture of green-, gold- and some red-colored (?) inclusions. | 2. Size/corrosion |
| 4 | Copper-colored | Opaque, continuous, thin. | 2. Metallic leaf |
| 5 | Silver-colored | Opaque, thin, continuous. | 2. Metallic leaf |
| 6 | Green-Brown | Translucent, thin, continuous; mottled color; some yellow visible. | 2. Glaze |
| 7 | Yellow-White | Opaque, medium-thick, continuous; some inclusions visible. | 3. Paint |
| 8 | Light Brown | Semi-transparent, thin-medium-thick, continuous. | 4. Size |
| 9 | Silver-colored | Opaque, thin, continuous. | 4. Metallic leaf |
| 10 | Dark Brown | Opaque, thin, continuous; some inclusions visible. | 4. Glaze |
| 11 | Silver-colored | Opaque, thin, continuous. | 5. Metallic leaf |
| 12 | Gray-White | Fairly opaque, thin, continuous. | 6. Paint |
| 13 | Black | Opaque, medium-thick, continuous; some inclusions visible. | Overpaint |
| 14 | Yellow-White | Opaque, medium-thick, continuous. | Overpaint |
| 15 | White | Opaque, medium-thick, continuous. | Overpaint |

| **Sample:** | NYSS.040 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-15-13 |
| **Description:** Alligator, East Elevation, Level B | | | | **Analyzed by:** Jessica Walthew | |



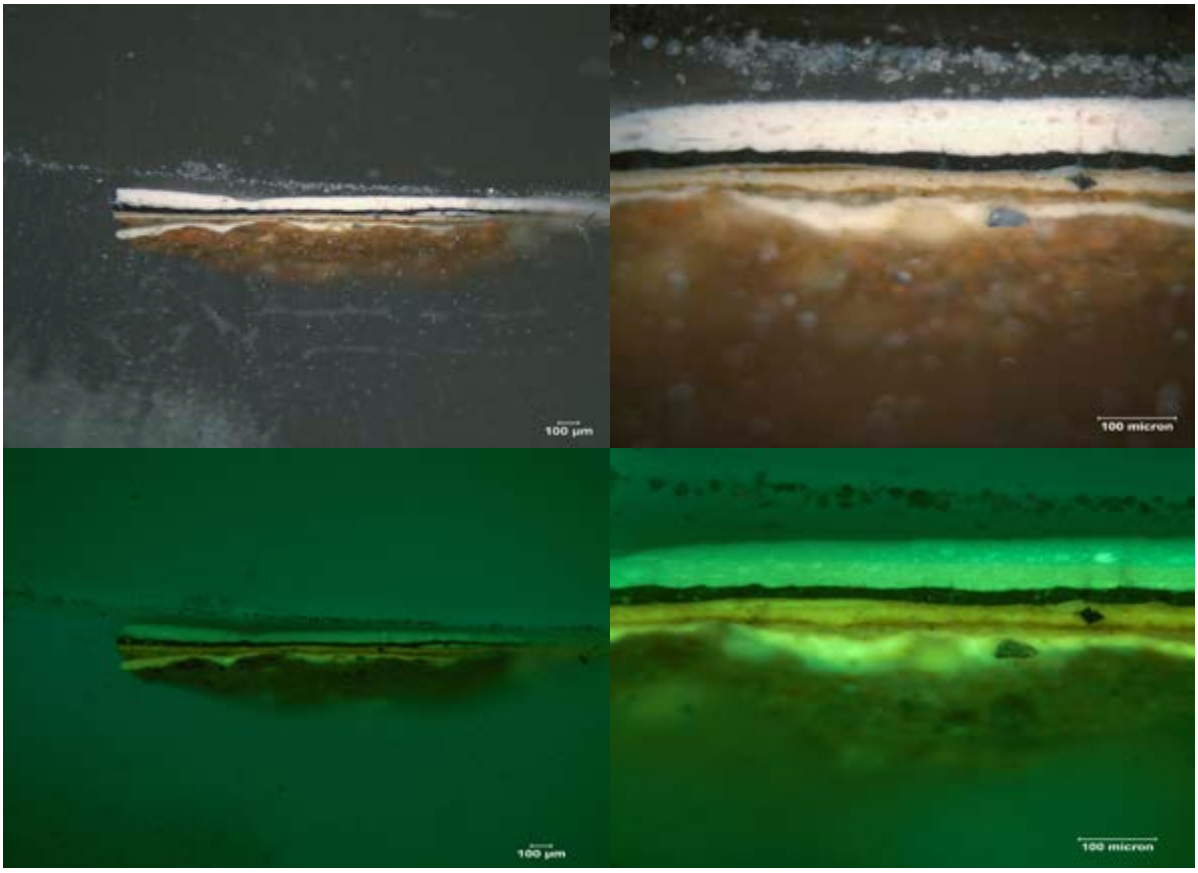



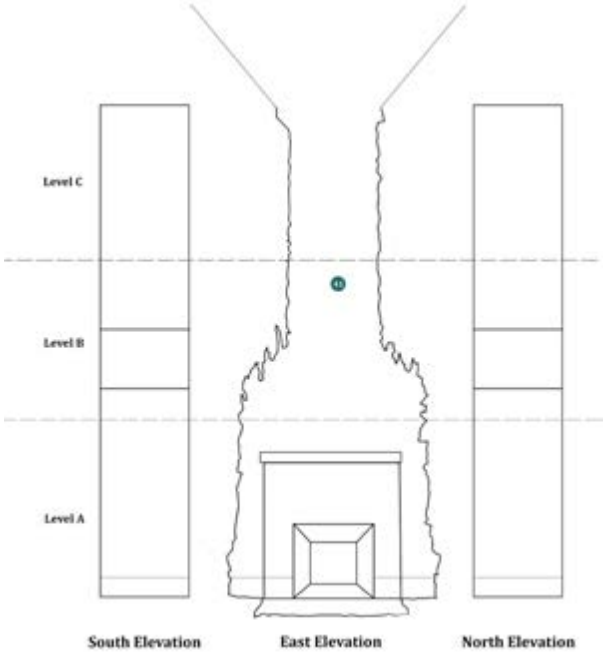
| **Sample:** | NYSS.040 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-15-13 |
| **Description:** Alligator, East Elevation, Level B | | | | **Analyzed by:** Jessica Walthew | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, thick, continuous; some inclusions visible. | 1. Primer |
| 2 | Gray-White | Opaque, medium-thick, continuous; many inclusions, including large brown ones (voids?), visible. | 1. Paint |
| 3 | Light Brown | Opaque, medium-thick, nearly continuous; inclusions visible. | 2. Paint |
| 4 | Black | Opaque, medium-thick, discontinuous; some inclusions visible; thin layer at bottom? (primer?) | Overpaint |
| 5 | White | Opaque, thin, continuous; better visibility under UV; primer? | Overpaint |
| 6 | Yellow-White | Opaque, thick, continuous; some inclusions visible. | Overpaint |
| 7 | White | Opaque, medium thick, continuous; brighter fluorescence. | Overpaint |
| 8 | Yellow-White | Opaque, thick, continuous; some inclusions visible. | Overpaint |

**Notes:** Although this sample is figural—representing an alligator— it appears that it was likely taken directly adjacent to the figure, as it more closely resembles the background, brick, color scheme.

| **Sample:** | NYSS.041 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Brick | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-15-13 |
| **Description:** Back Brick: East Elevation, Level B | | | | **Analyzed by:** Jessica Walthew | |

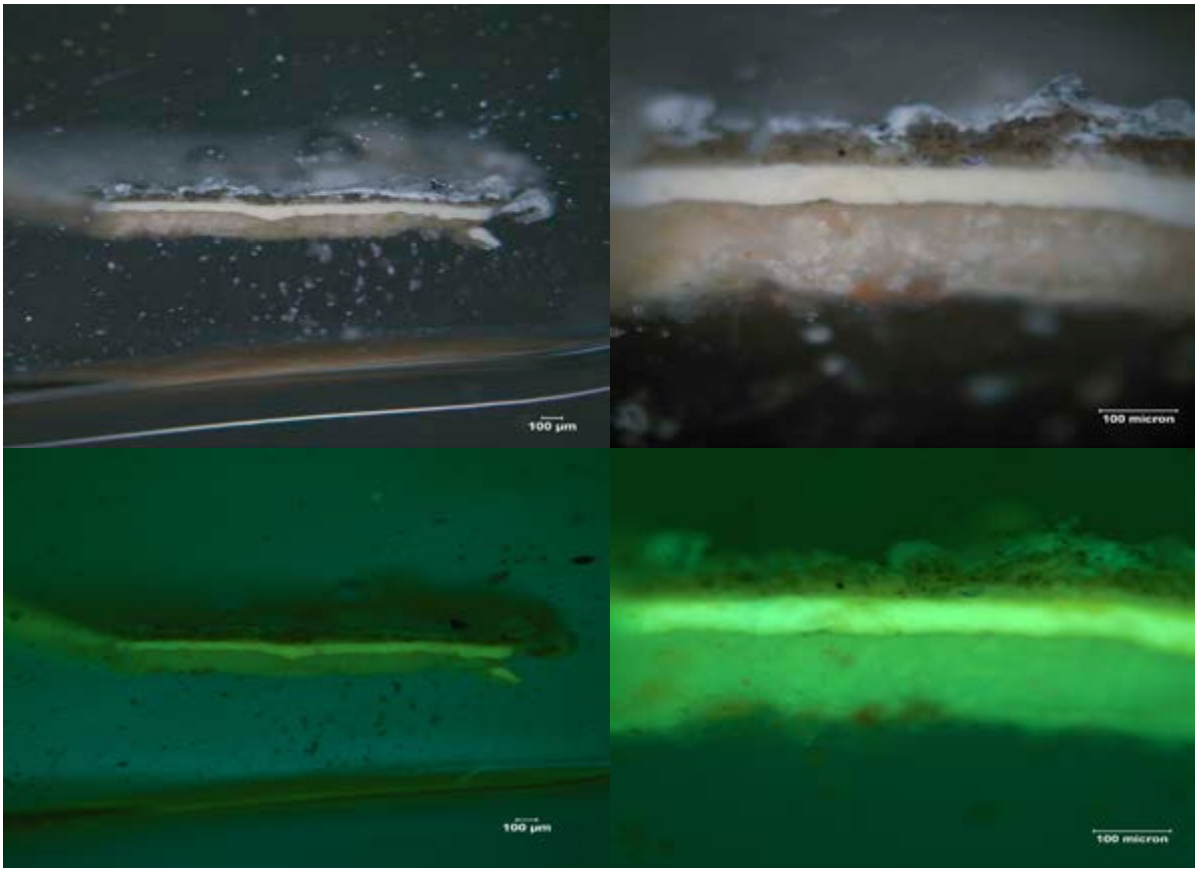


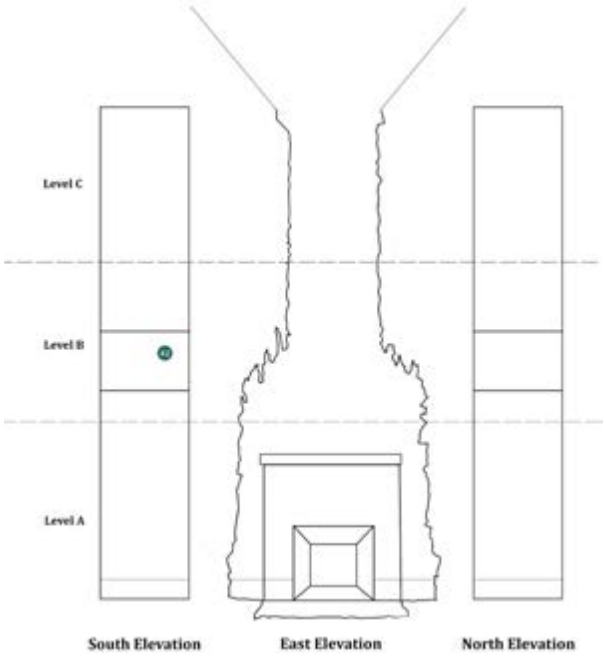



| **Sample:** | NYSS.041 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Brick | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-15-13 |
| **Description:** Back Brick: East Elevation, Level B | | | | **Analyzed by:** Jessica Walthew | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, thin to medium-thick, continuous. | 1. Primer |
| 2 | Light Brown-Gray | Opaque, medium-thick, continuous; many blueish inclusions visible (mixed layer). | 1. Paint |
| 3 | Medium Yellow-Brown | Opaque, medium-thick, continuous; many inclusions visible. | 2. Paint |
| 4 | Light Brown | Translucent, thin, discontinuous. | 2. Glaze |
| 5 | Brown-White | Translucent, fine, continuous. | 2. Glaze |
| 6 | Medium Yellow-Brown | Translucent, continuous, thin. | |
| 7 | Black | Opaque, medium-thick, some inclusions (grainy), continuous. | Overpaint |
| 8 | White | Opaque, medium-thick, continuous; many inclusions visible. | Overpaint |
| 9 | Yellow-White | Opaque, medium-thick, continuous; many inclusions visible. | Overpaint |

| **Sample:** | NYSS.042 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Brick | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-12-13 |
| **Description:** Brick: South Elevation, Level B | | | | **Analyzed by:** Jessica Walthew | |



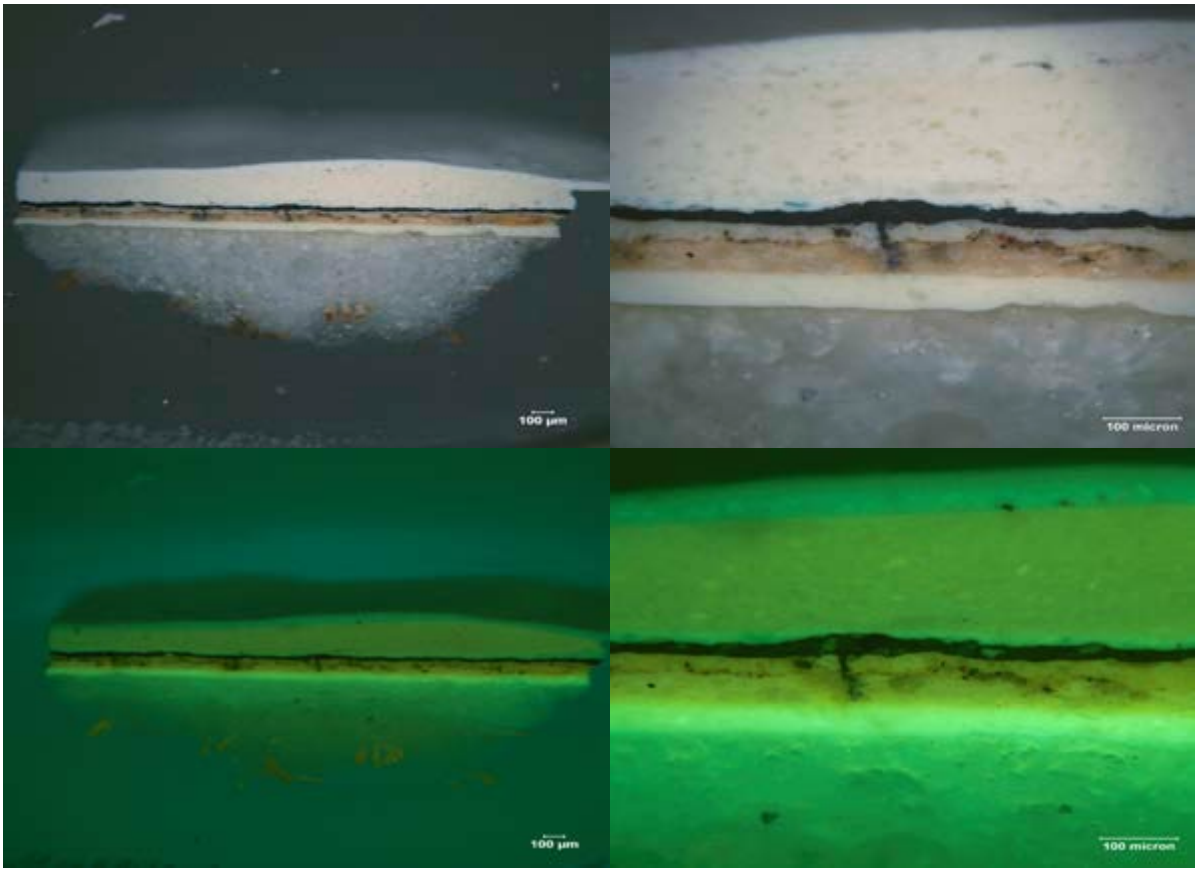



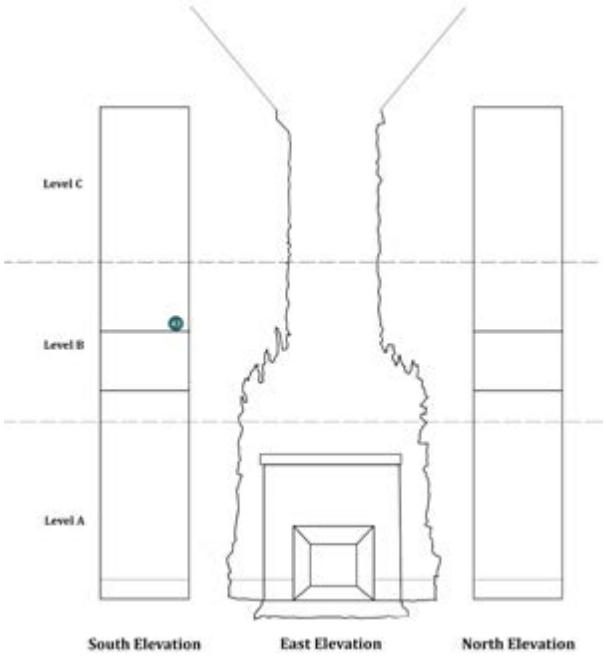
| | | | | | |
|---|---|---|---|---|---|
| **Sample:** | NYSS.042 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
| **Substrate:** | Brick | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-12-13 |
| **Description:** Brick: South Elevation, Level B | | | | **Analyzed by:** Jessica Walthew | |

| Layer Number | Color | Description |
|---|---|---|
| 1 | Gray-Brown | Transparent, thick, continuous; many particles (a few red), grainy |
| 2 | White | Opaque, medium-thick, continuous |
| 3 | Brown-Gray | Opaque, medium thick, continuous; many inclusions (mixed layer) visible |
| 4 | White | Opaque, thin, continuous; many inclusions (blue and gray) visible.. |

**Notes:** Sample incomplete.

| **Sample:** | NYSS.043 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-15-13 |
| **Description:** Flame: South Elevation, Level B | | | | **Analyzed by:** Jessica Walthew | |



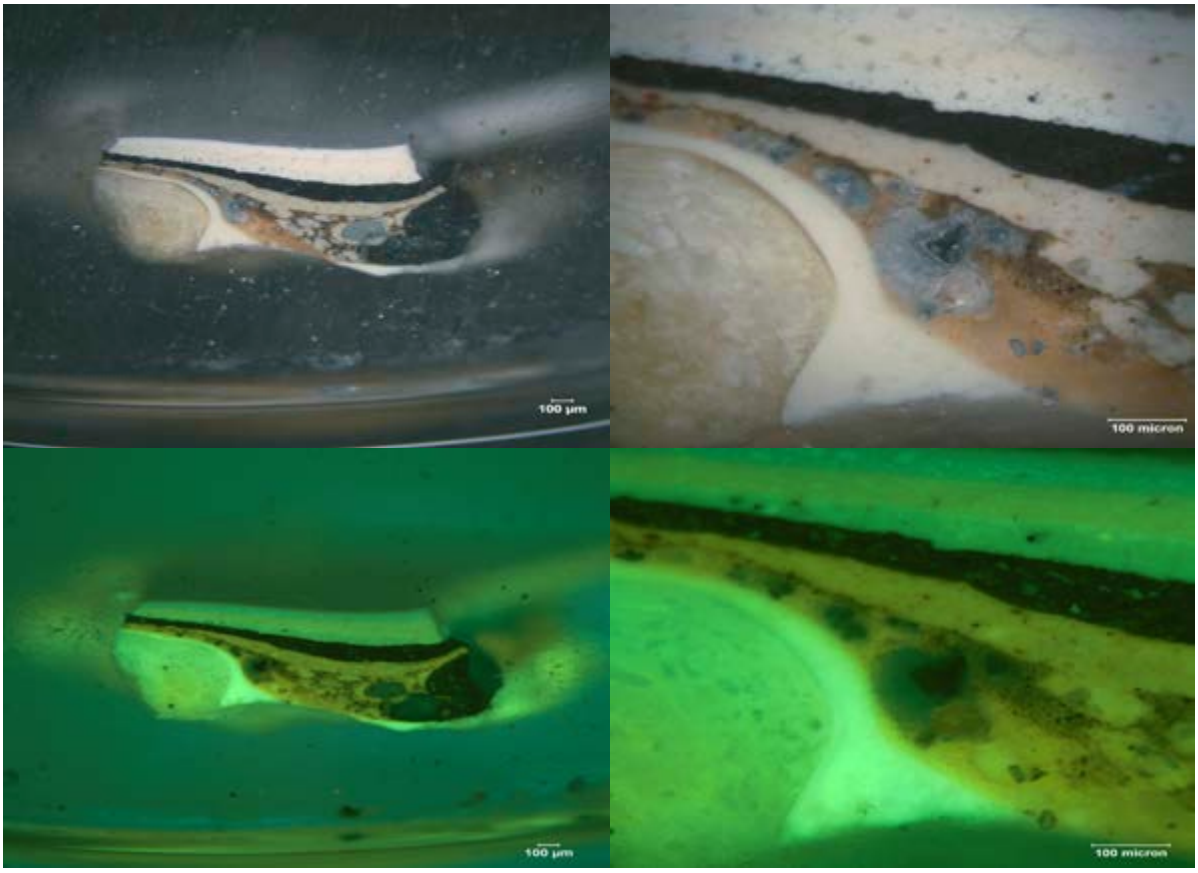



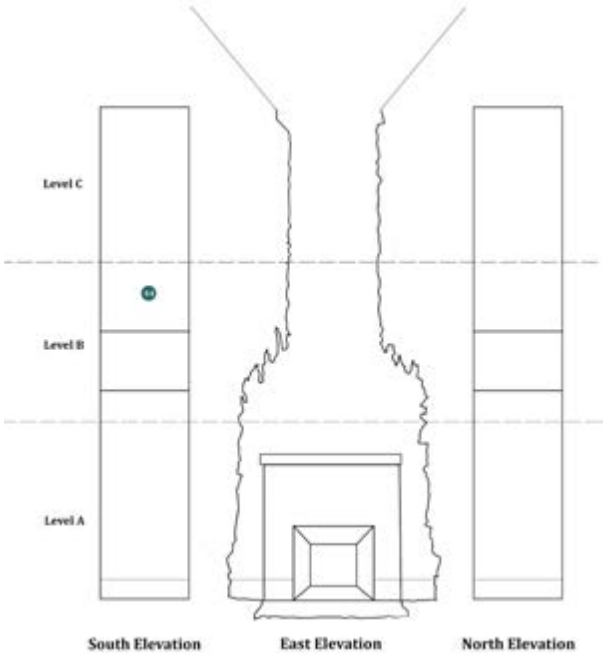
| **Sample:** | NYSS.043 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-15-13 |
| **Description:** Flame: South Elevation, Level B | | | | **Analyzed by:** Jessica Walthew | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, medium-thick, continuous. | 1. Primer |
| 2 | Medium Yellow-Brown | Semi-transparent, medium-thick, continuous; pinkish overall hue, with black, red and blue inclusions visible. | 1. Paint |
| 3 | Light Brown | Translucent, fine-to-thin, continuous; many blue and red inclusions visible. | 1. Glaze |
| 4 | Gray-White | Semi-transparent, thin, continuous; many inclusions visible. | 2. Paint |
| 5 | Black | Opaque, medium-thick, continuous; grainy. | Overpaint |
| 6 | White | Opaque, thin, continuous. | Overpaint |
| 7 | Yellow-White | Opaque, thick, continuous; pinkish overall hue, with inclusions visible. | Overpaint |
| 8 | White | Opaque, thin-to-medium-thick, continuous. | Overpaint |

**Notes:** Fibers appear to be woody and could possibly be inclusions in the compo layer.

| **Sample:** | NYSS.044 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-15-13 |
| **Description:** Flame Tip: South Elevation, Level B | | | | **Analyzed by:** Jessica Walthew | |

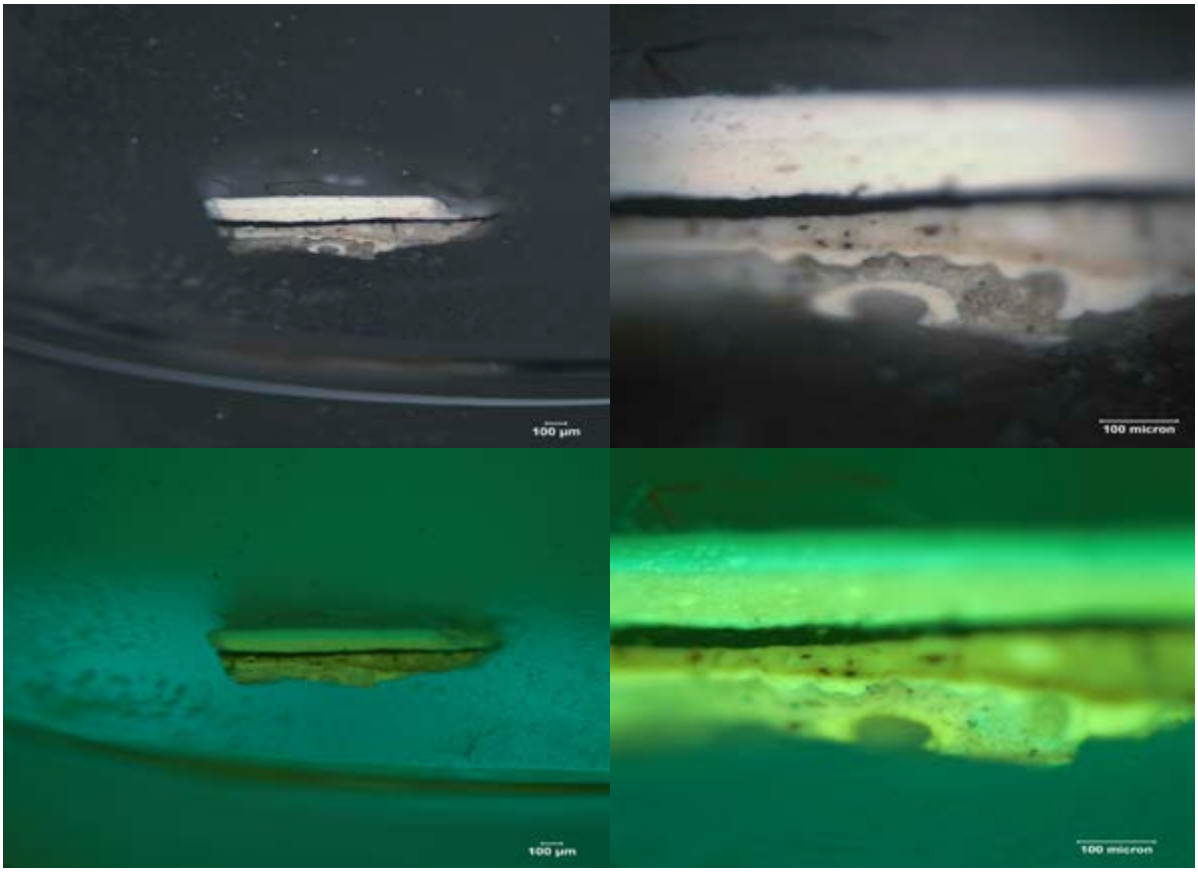


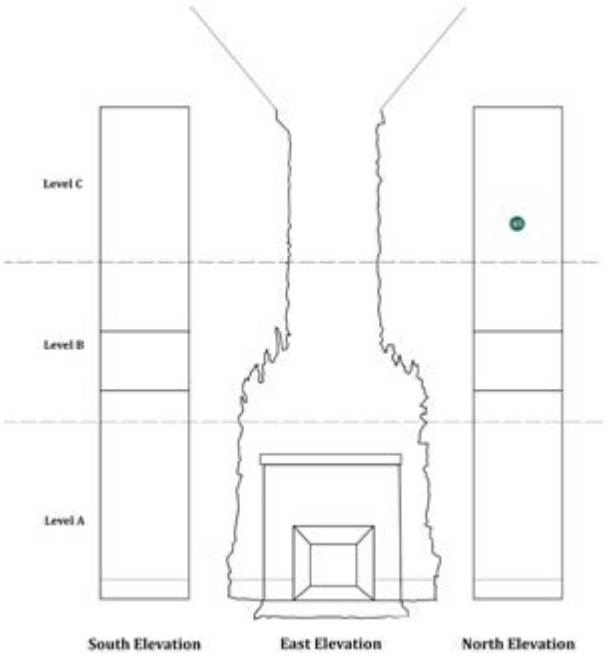



| **Sample:** | NYSS.044 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-15-13 |
| **Description:** Flame Tip: South Elevation, Level B | | | | **Analyzed by:** Jessica Walthew | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, thick, continuous, homogeneous. | 1. Primer |
| 2 | Gray-Brown | Opaque, continuous with varied thickness; orange-pink hue with silvery particles (possibly contamination from polishing), distorted layer, possible thin fluorescing layer between this layer and below. | 1. Paint |
| 3 | Light Brown | Translucent, varied thickness, continuous; very distorted: one side very thick, giant aggregate/ inclusion particles, otherwise finer, grainy opaque brown matrix. | 1. Glaze |
| 4 | White | Opaque, thick, continuous; inclusions visible. | 2. Paint |
| 5 | Black | Opaque, medium-to-thick, continuous. | Overpaint |
| 6 | White | Opaque, medium-thick, continuous; blue and black inclusions visible; top is more fluorescent. | Overpaint |
| 7 | Yellow-White | Opaque, thick, continuous; some inclusions visible. | Overpaint |
| 8 | White | Opaque, medium-thick, continuous. | Overpaint |

| **Sample:** | NYSS.045 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Brick | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-15-13 |
| **Description:** Brick: North Elevation, Level C | | | | **Analyzed by:** Jessica Walthew | |



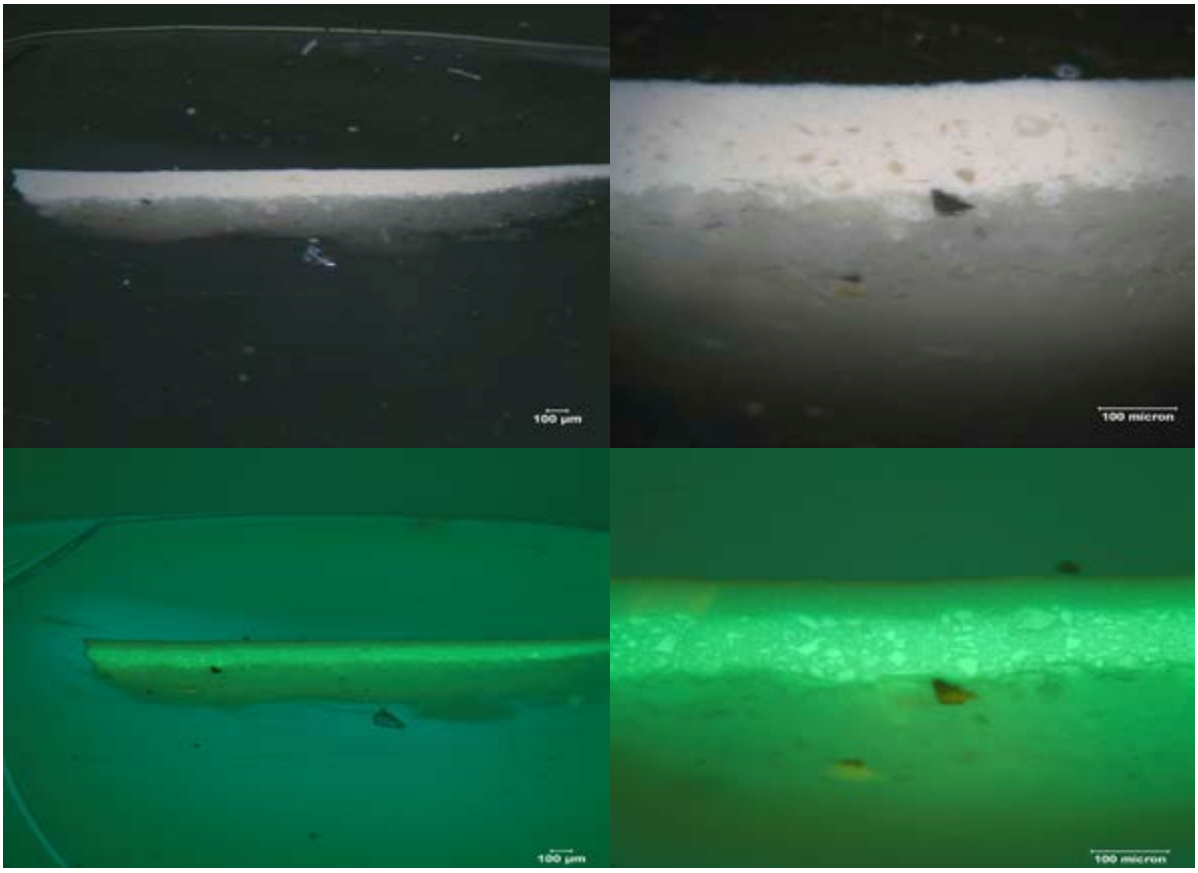



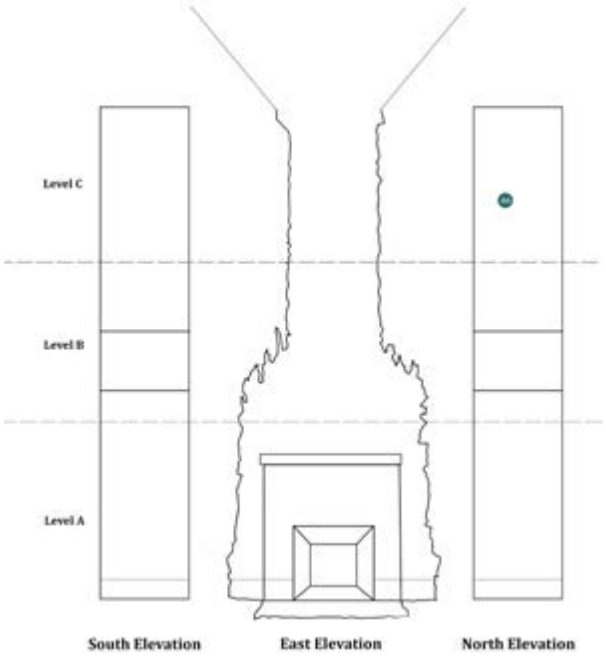
| **Sample:** | NYSS.045 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Brick | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-15-13 |
| **Description:** Brick: North Elevation, Level C | | | | **Analyzed by:** Jessica Walthew | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, medium-thick, discontinuous (big void?). | 1. Primer |
| 2 | Gray | Translucent, thick, continuous; gray-brown matrix with blue and brown particles visible therein. | 1. Glaze/paint? |
| 3 | White | Opaque, medium-thick, continuous. | 2. Primer |
| 4 | Brown-White | Opaque, medium-thick, continuous; gray-brown matrix containing large silvery particles (mortar?). | 2. Paint |
| 5 | Gray-White | Opaque, continuous, medium-thick; inclusions visible. | 3. Paint |
| 6 | White | Opaque, thin, continuous; bright under UV. | Overpaint |
| 7 | Yellow-White | Opaque, thick, continuous. | Overpaint |
| 8 | White | Opaque, medium-thick, continuous; brighter under UV . | Overpaint |
| 9 | Yellow-White | Opaque, medium-thick, continuous. | Overpaint |

**Notes:** White-colored bubble aberration is present below bottom gray-brown layer.

| **Sample:** | NYSS.046 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-15-13 |
| **Description:** Flame Base: North Elevation, Level C | | | | **Analyzed by:** Jessica Walthew | |



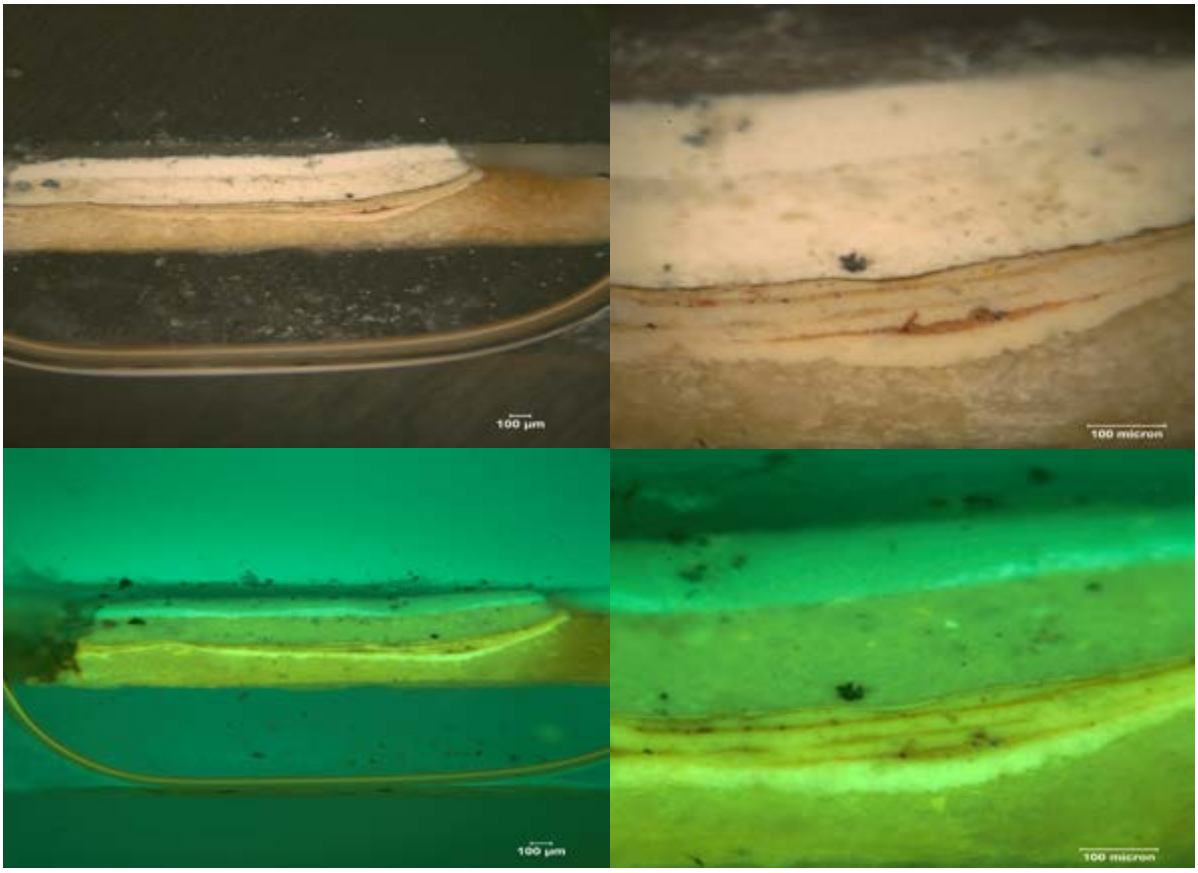



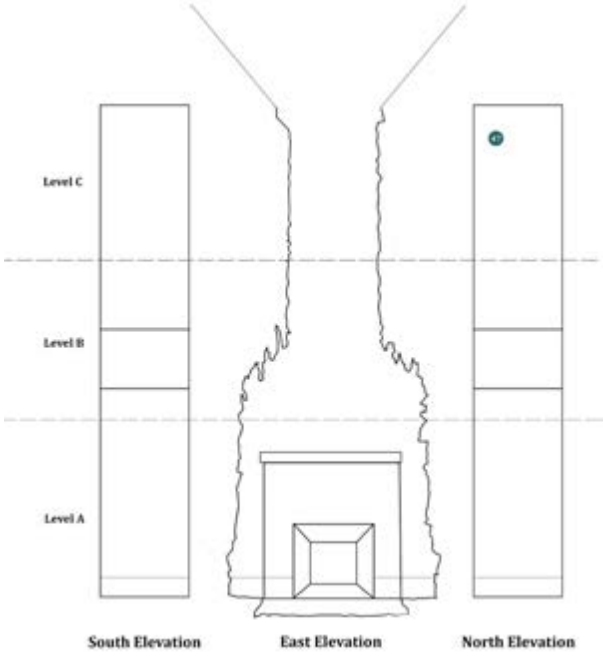
| **Sample:** | NYSS.046 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-15-13 |
| **Description:** Flame Base: North Elevation, Level C | | | | **Analyzed by:** Jessica Walthew | |

| **Layer Number** | **Color** | **Description** |
|---|---|---|
| 1 | Gray | Transparent, thick, continuous; plaster? |
| 2 | White | Opaque, thick, continuous; brighter fluorescence. |
| 3 | White | Opaque, medium thick, continuous. |

**Notes:** White-colored bubble aberration is present below bottom gray-brown layer.

| **Sample:** | NYSS.047 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-15-13 |
| **Description:** Flame Tip: North Elevation, Level C | | | | **Analyzed by:** Jessica Walthew | |

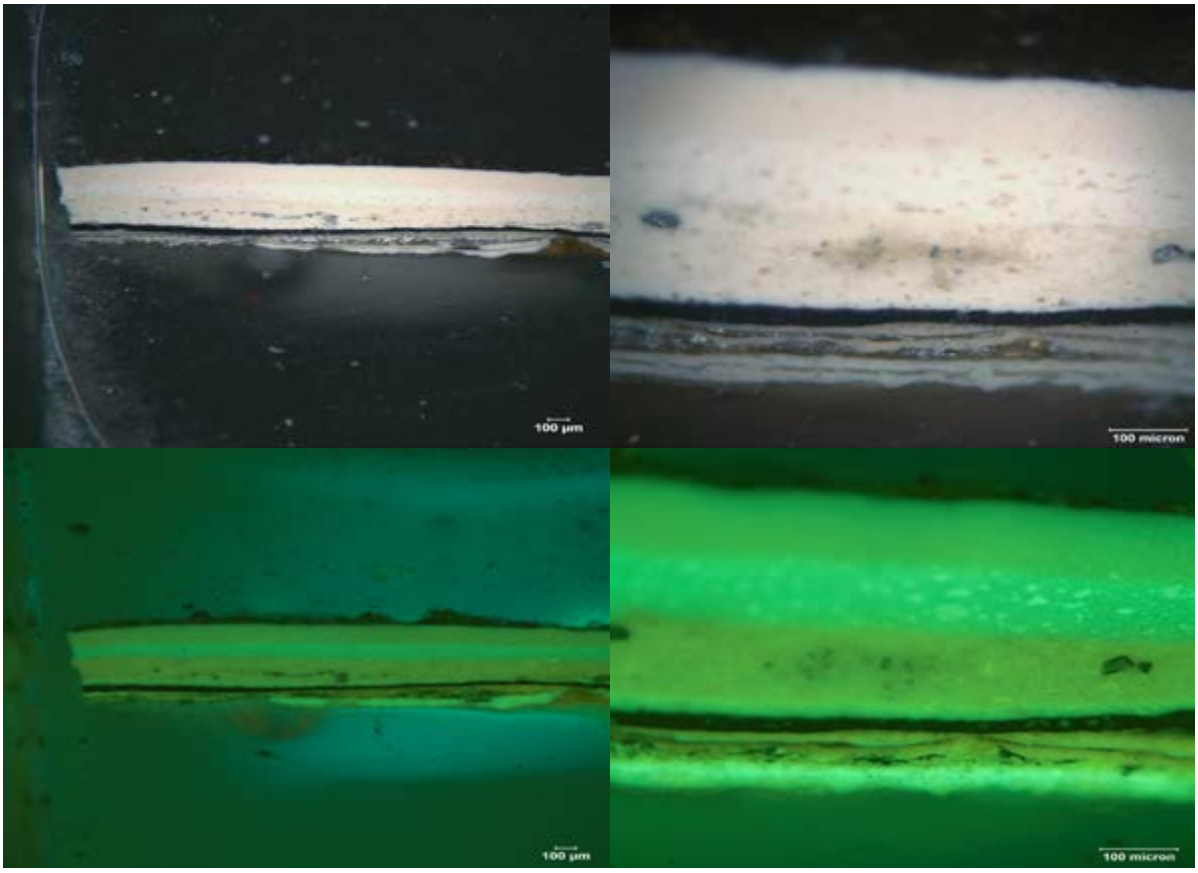


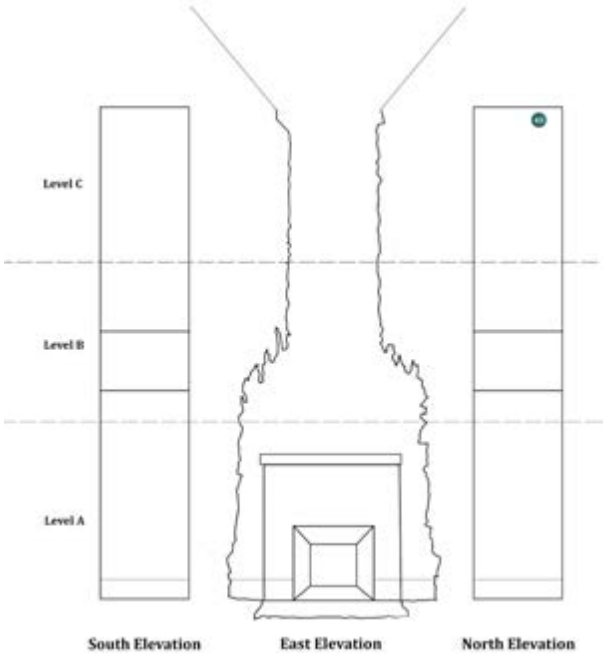



| **Sample:** | NYSS.047 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-15-13 |
| **Description:** Flame Tip: North Elevation, Level C | | | | **Analyzed by:** Jessica Walthew | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, thick, continuous. | 1. Primer |
| 2 | Gray-Brown | Opaque; variable thickness, continuous; some blue inclusions visible. | 1. Paint |
| 3 | White | Opaque, thick, continuous. | 1. Paint |
| 4 | Brown-White | Translucent, thin, continuous. | 1. Glaze |
| 5 | White | Opaque, thick, continuous. | 2. Paint |
| 6 | Brown-White | Translucent, thin, continuous. | 2. Glaze |
| 7 | Brown | Translucent, fine, continuous. | 2. Glaze |
| 8 | Yellow-White | Opaque, medium-thick, continuous. | 3. Paint |
| 9 | Brown-White | Translucent, thin, continuous. | 3. Glaze |
| 10 | Dark Brown | Translucent, thin, continuous. | 3. Glaze |
| 11 | White | Opaque, thick, continuous. | Overpaint |
| 12 | White | Opaque, thick, continuous; yellower in hue. | Overpaint |
| 13 | White | Opaque, thick, continuous. | Overpaint |

| **Sample:** | NYSS.048 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-15-13 |
| **Description:** Man's Head : North Elevation, Level C | | | | **Analyzed by:** Jessica Walthew | |



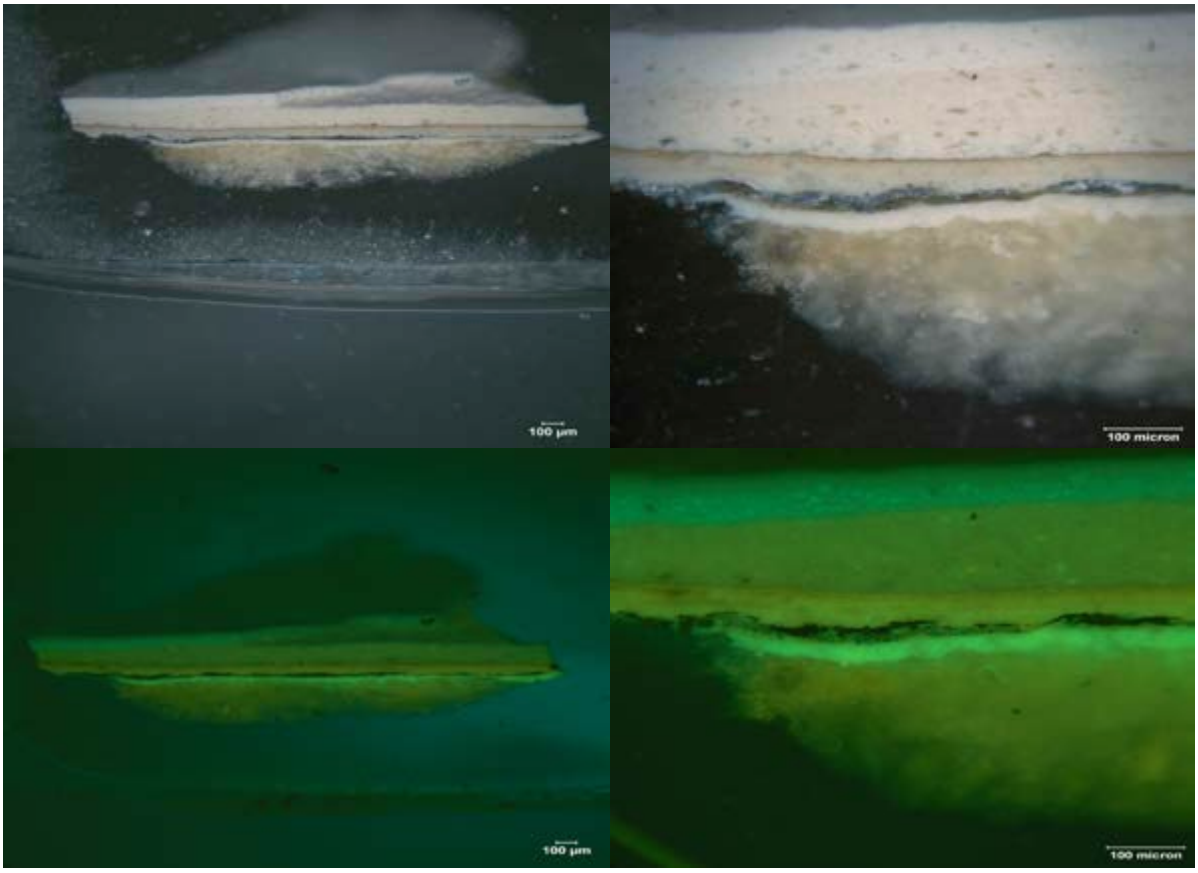



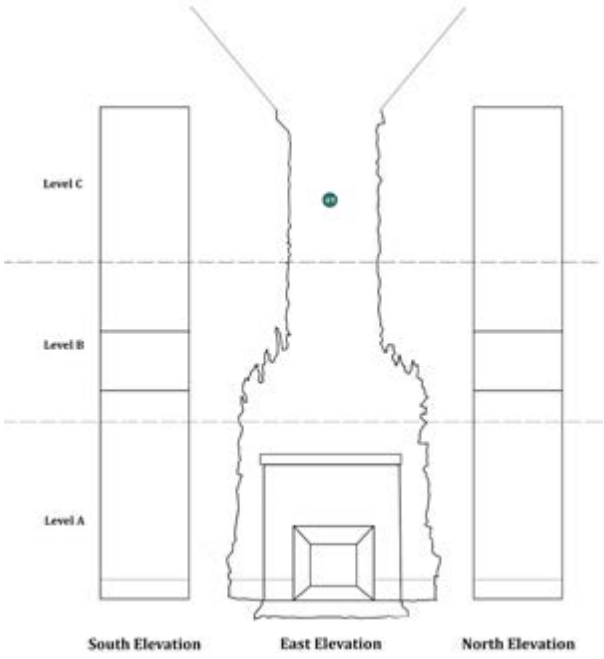
| **Sample:** | NYSS.048 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 1-15-13 |
| **Description:** Man's Head : North Elevation, Level C | | | | **Analyzed by:** Jessica Walthew | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, medium-thick, continuous. | 1. Primer |
| 2 | Gray | Translucent, thin, continuous; some blue particles visible. | 1. Paint |
| 3 | White | Opaque, medium thick, continuous; grayish on top, as above. | 2. Primer |
| 4 | Yellow-Brown | Translucent, thin, continuous. | 2. Size |
| 5 | Silver-colored | Opaque, thin, continuous. | 2. Metallic leaf |
| 6 | Yellow-Brown | Translucent, thin, continuous. | 2. Glaze |
| 7 | White | Opaque, medium-thick, continuous. | 3. Paint |
| 8 | Yellow-Brown | Translucent, thin, continuous. | 4. Size |
| 9 | Silver-colored | Opaque, thin, continuous. | 4. Metallic leaf |
| 10 | Yellow-Brown | Translucent, thin, continuous | 4. Glaze |
| 11 | Gray-White | Opaque, medium-thick, continuous; gradient within layer (top grayer). | 5. Paint |
| 12 | Black | Opaque, medium-thick, continuous. | Overpaint |
| 13 | White | Opaque, thin, continuous; bright (especially under UV). | Overpaint |
| 14 | Yellow-White | Opaque, very thick, continuous. | Overpaint |
| 15 | White | Opaque, thick, continuous; brighter. | Overpaint |
| 16 | Yellow-White | Opaque, thick, continuous; pinker. | Overpaint |

**Notes:** A layer appears to be missing after layer 4.

| **Sample:** | NYSS.049 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Fish: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |



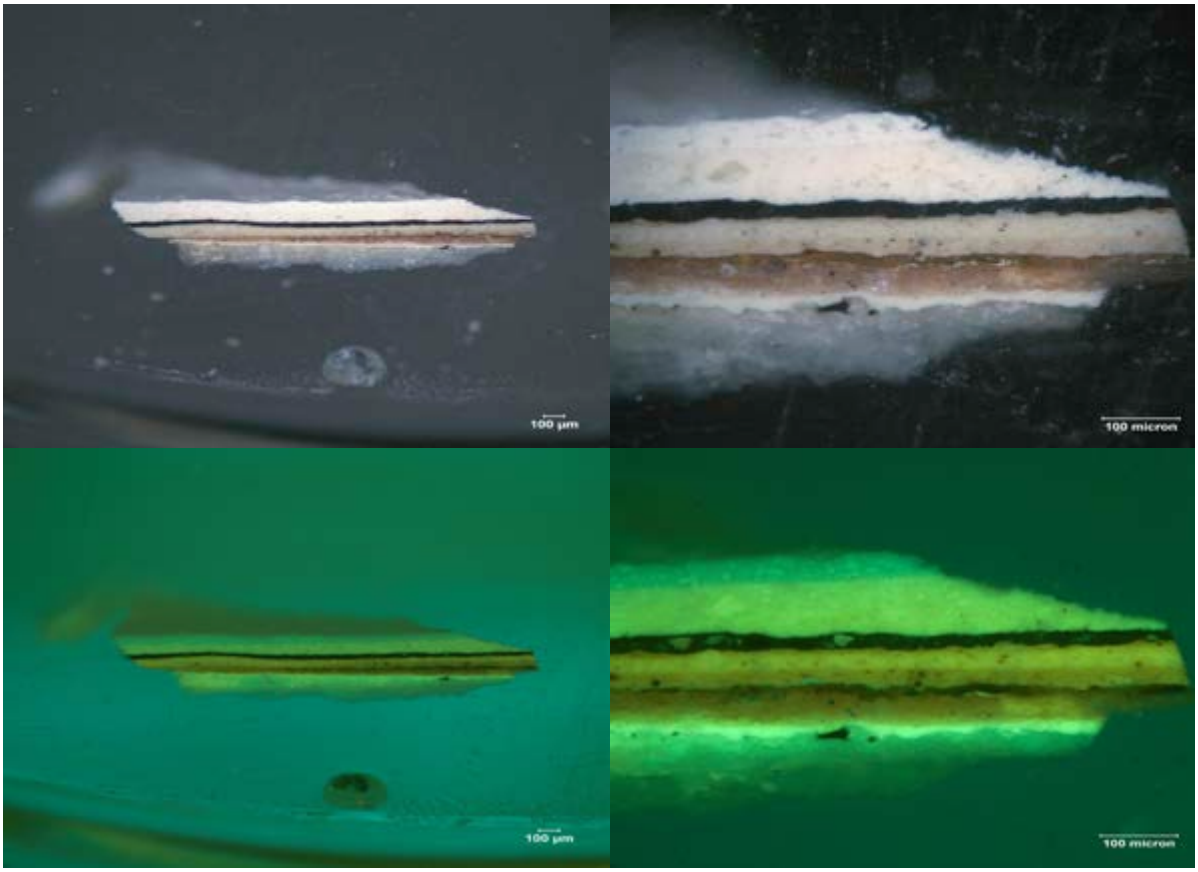



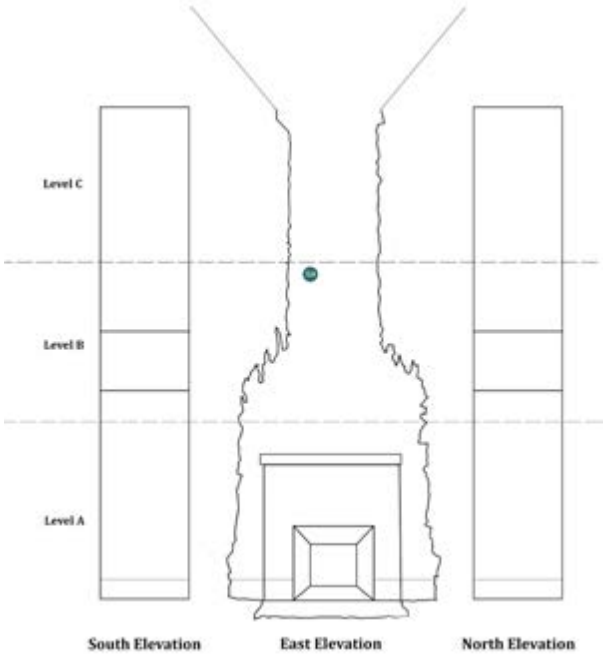
| **Sample:** | NYSS.049 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Fish: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, continuous, medium-thick, homogeneous. | 1. Primer |
| 2 | Gray-Brown | Semi-transparent, continuous, thin; discrete blue and brown pigments dispersed within layer. | 1. Paint |
| 3 | Silver-colored | Opaque, continuous, fine. | 2. Metallic leaf |
| 4 | Gray-White | Opaque, continuous, medium-thick; uniform with pigments dispersed within layer. | 3. Paint |
| 5 | Light Brown | Opaque, continuous, medium-thick; uniform with pigments dispersed within .layer | 3. Glaze |
| 6 | Light Yellow-Brown | Opaque, continuous, thin, uniform. | 4. Paint |
| 7 | Brown | Opaque, continuous, fine. | 4. Glaze |
| 8 | Yellow-White | Opaque, continuous, very thick; uniform with pigments dispersed within the layer. | Overpaint |
| 9 | Gray-White | Opaque, discontinuous, very thick; uniform with pigments dispersed within the layer. | Overpaint |
| 10 | White | Opaque, continuous, thick. | Overpaint |

**Notes:** This sample was taken in the transition area of the fireplace and the ceiling and is missing size and glaze layers between layer 4.

| **Sample:** | NYSS.050 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Flame: East Elevation, Level B | | | | **Analyzed by:** Megan Randall | |

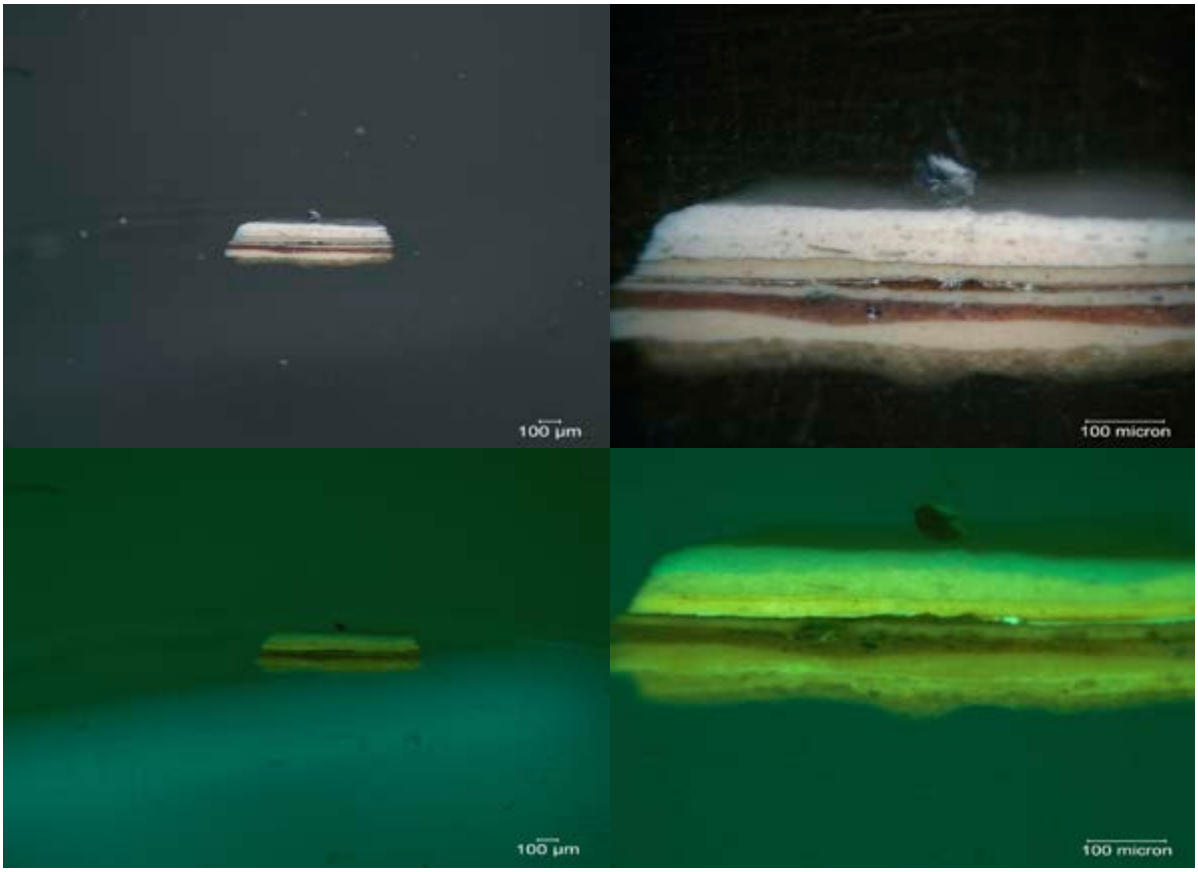


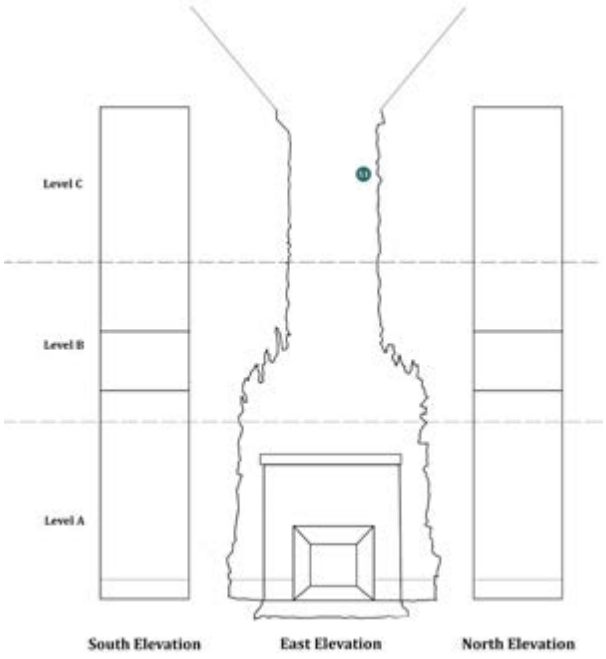



| **Sample:** | NYSS.050 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Flame: East Elevation, Level B | | | | **Analyzed by:** Megan Randall | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, continuous, medium-thick, uniform. | 1. Primer |
| 2 | Gray-Brown | Semi-transparent, continuous, thick-to-medium-thick; discrete blue and pink pigments dispersed within layer, tapers. | 1. Paint |
| 3 | Silver-colored | Opaque, discontinuous, fine. | 2. Metallic leaf |
| 4 | Light Yellow-Brown | Semi-transparent, continuous, medium-thick-to-thin, tapers. | 2. Glaze |
| 5 | Brown | Opaque, continuous, thin. | 2. Glaze |
| 6 | Light Brown | Opaque, continuous, medium-thick; uniform with pigments dispersed within layer. | 3. Paint |
| 7 | Light Yellow-Brown | Opaque, continuous, medium-thick; uniform with pigments dispersed within layer. | 4. Paint |
| 8 | Gray-White | Opaque, continuous, thin; dispersed particles visible under UV. | 5. Paint |
| 9 | Black | Opaque, continuous, medium-thick, uniform; dispersed particles visible under UV. | Overpaint |
| 10 | Pink-White | Opaque, continuous, very thick; uniform with pigments dispersed within the layer. | Overpaint |
| 11 | White | Opaque, continuous, medium-thick; uniform with particles dispersed within the layer. | Overpaint |

| **Sample:** | NYSS.051 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-19-13 |
| **Description:** Above Transition: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |



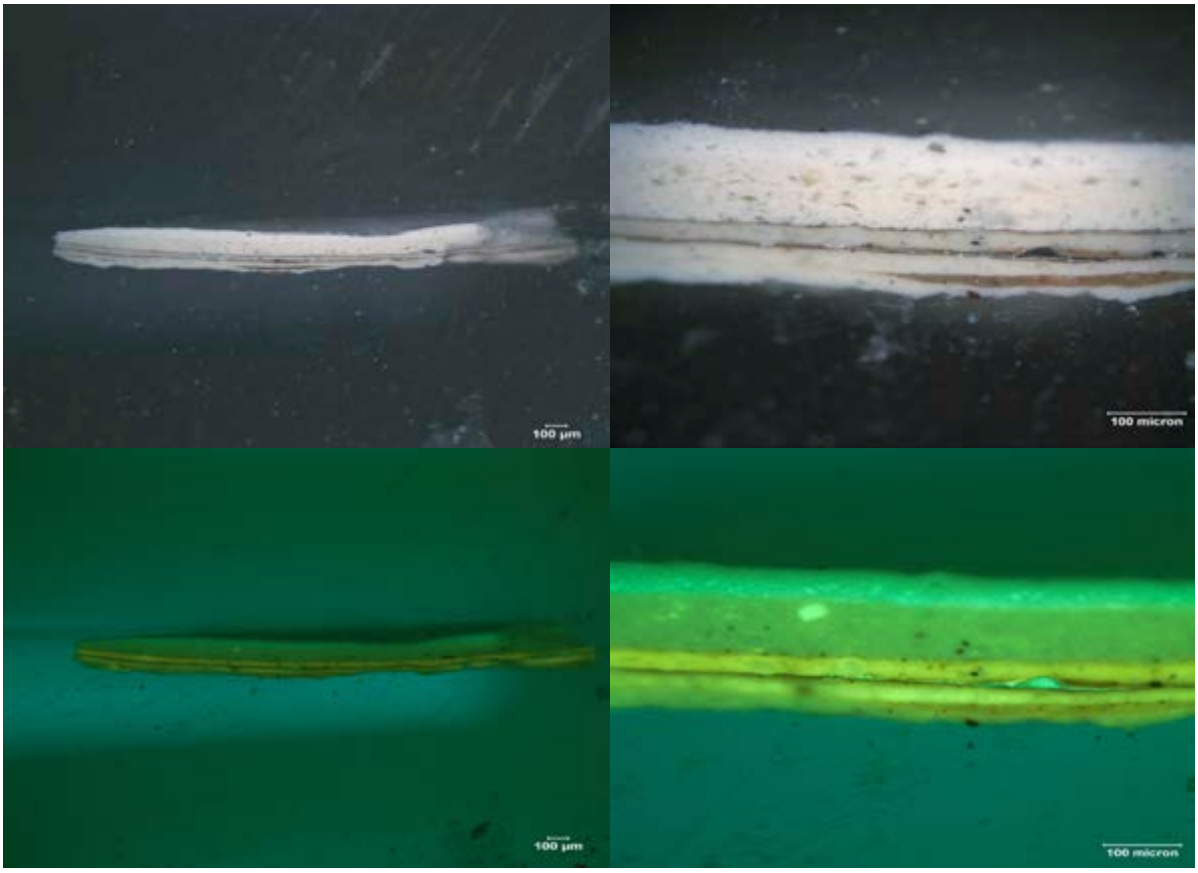



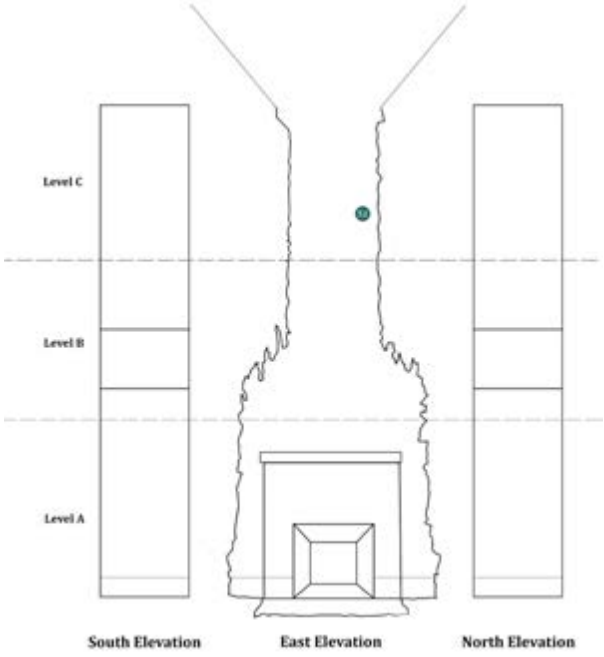
| **Sample:** | NYSS.051 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-19-13 |
| **Description:** Upper Fireplace: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, continuous, thick, homogeneous. | 1. Primer |
| 2 | Light Red | Semi-transparent, continuous, medium-thick; red and blue pigment particles dispersed within layer. | 1. Paint |
| 3 | Gray-Brown | Semi-translucent, continuous, thin. | 1. Glaze |
| 4 | Light Grayish-White | Opaque, continuous, medium-thick, uniform. | 2. Primer |
| 5 | Light Brown | Semi-transparent, continuous, thin. | 2. Size |
| 6 | Silver-colored | Opaque, continuous, thin. | 2. Metallic leaf |
| 7 | Light Brown | Semi-transparent, continuous, thin. | 2. Glaze |
| 8 | Light Brown-White | Opaque, continuous, medium-thick, uniform. | 3. Primer |
| 9 | Yellow-White | Opaque, continuous, thin. | 3. Paint |
| 10 | Brown | Opaque, continuous, fine. | 3. Glaze |
| 11 | Gray-White | Opaque, continuous, thick; some particles dispersed within layer. | Overpaint |
| 12 | White | Opaque, continuous, thick,;some particles dispersed within layer. | Overpaint |

**Notes:** This sample was taken from the top of the transition of the fireplace into the ceiling and is missing a paint layer after layer 4.

| **Sample:** | NYSS.052 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Mid-Transition: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |



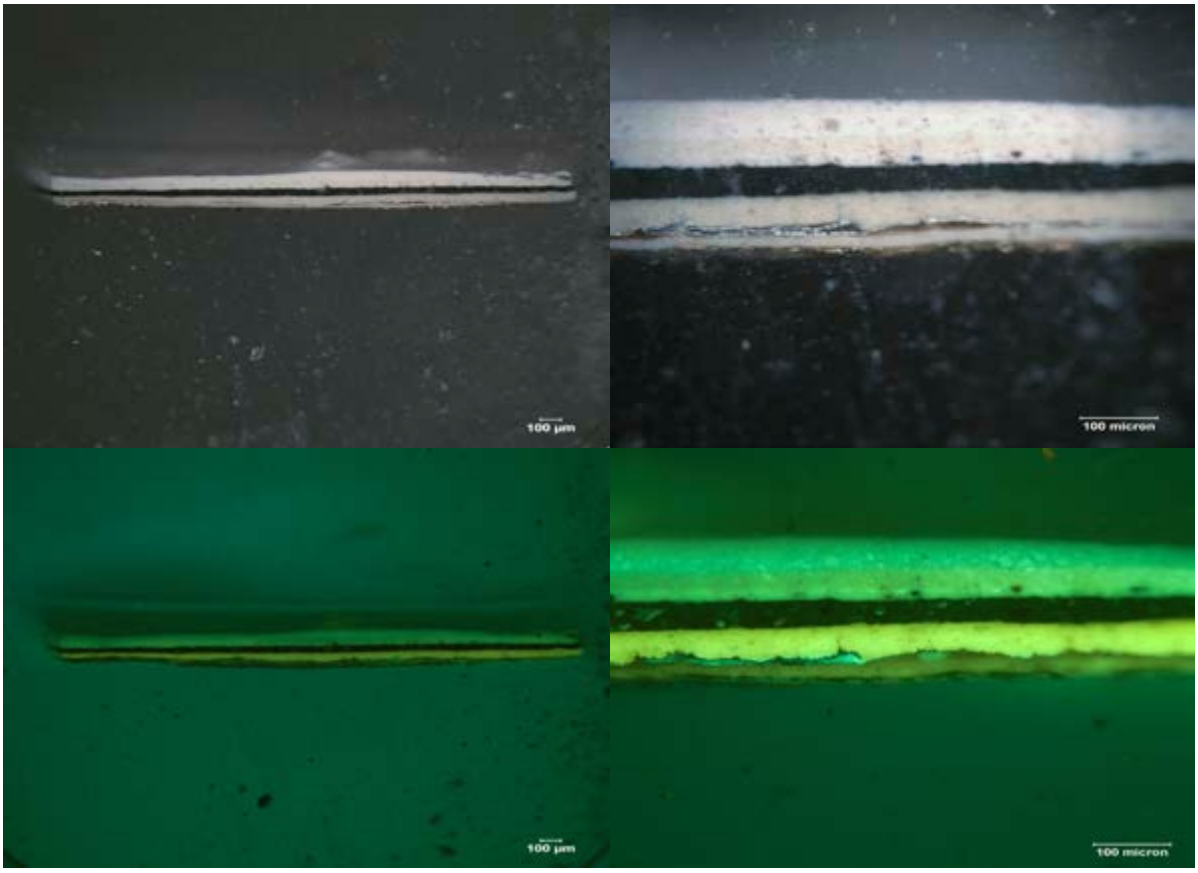



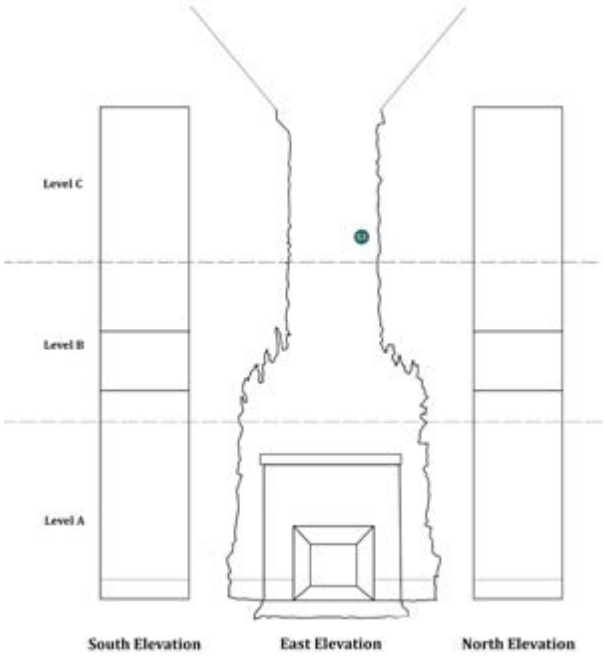
| **Sample:** | NYSS.052 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Mid-Transition: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, continuous, medium-thick; particles dispersed within layer. | 1. Primer |
| 2 | Gray-Brown | Semi-transparent, semi-continuous, medium-thick-to-thin; red pigments dispersed within layer. | 1. Paint |
| 3 | White | Opaque, continuous, medium-thick; particles dispersed within layer. | 2. Primer |
| 4 | Light Brown | Continuous, fine. | 2. Size |
| 5 | Silver-colored | Opaque, continuous, fine; torn and folded over on right edge of sample. | 2. Leaf |
| 6 | Light Brown | Semi-continuous, thin-to-fine. | 2. Glaze |
| 7 | White | Opaque, continuous, medium-thick; few particles dispersed within layer. | 3. Primer |
| 8 | Light Yellow-Brown | Opaque, continuous, fine. | 3. Paint |
| 9 | Yellow-White | Opaque, continuous, very thick; large particles dispersed within layer. | Overpaint |
| 10 | White | Opaque, continuous, thick; large particles dispersed within layer,. | Overpaint |

**Notes:** This sample was taken from the middle of the transition of the fireplace to the ceiling and is missing a paint layer after layer 3. No substrate is visible in the cross-section.

| **Sample:** | NYSS.053 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Bottom of Transition: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |



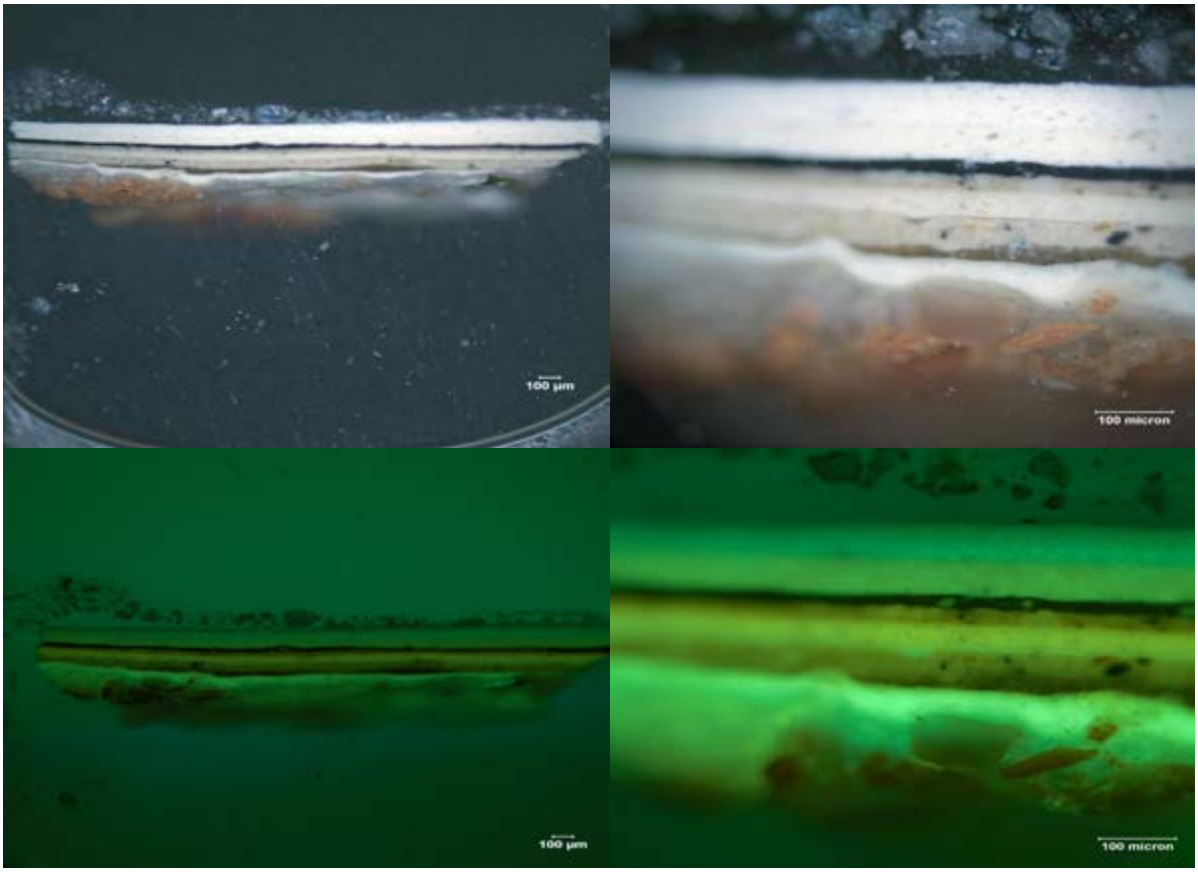



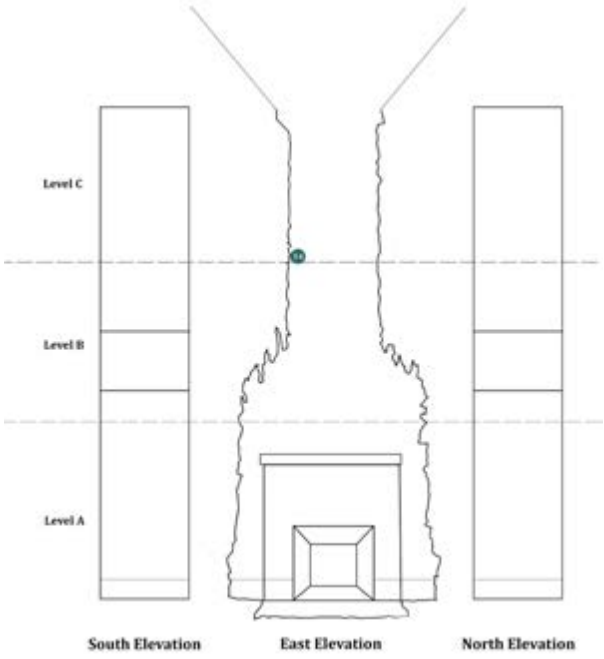
| **Sample:** | NYSS.053 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Bottom of Transition: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | Copper-colored | Opaque, continuous, fine | 1. Metallic leaf |
| 2 | White | Opaque, continuous, medium-thick; particles dispersed within layer. | 1. Paint/glaze |
| 3 | Light Yellow-Brown | Semi-transparent, semi-continuous, medium-thick-to-thin; red pigments dispersed within layer. | 1. Glaze |
| 4 | White | Opaque, continuous, medium-thick; particles dispersed within layer. | 2. Paint |
| 5 | Light Brown | Continuous, fine. | 3. Size |
| 6 | Silver-colored | Silver-colored leaf, continuous, fine; folded over on right edge of sample. | 3. Metallic leaf |
| 7 | Light Brown | Semi-continuous, thin-to-fine. | 3. Glaze |
| 8 | Gray-White | Opaque, continuous, medium-thick; few particles dispersed within layer. | 4. Paint/Overpaint? |
| 9 | Light-Yellow-Brown | Opaque, continuous, fine. | Overpaint |
| 10 | Light-Yellow-Brown | Opaque, continuous, very thick; large particles dispersed within layer. | Overpaint |
| 11 | White | Opaque, continuous, thick; large particles dispersed within layer. | Overpaint |

**Notes:** Sample incomplete. Sample was taken from the bottom of the transition of the fireplace into the ceiling. No substrate is visible in the cross-section. Layer 8 may have been applied in two coats, this is visible under UV light.

| **Sample:** | NYSS.054 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Brick | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Brick: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |



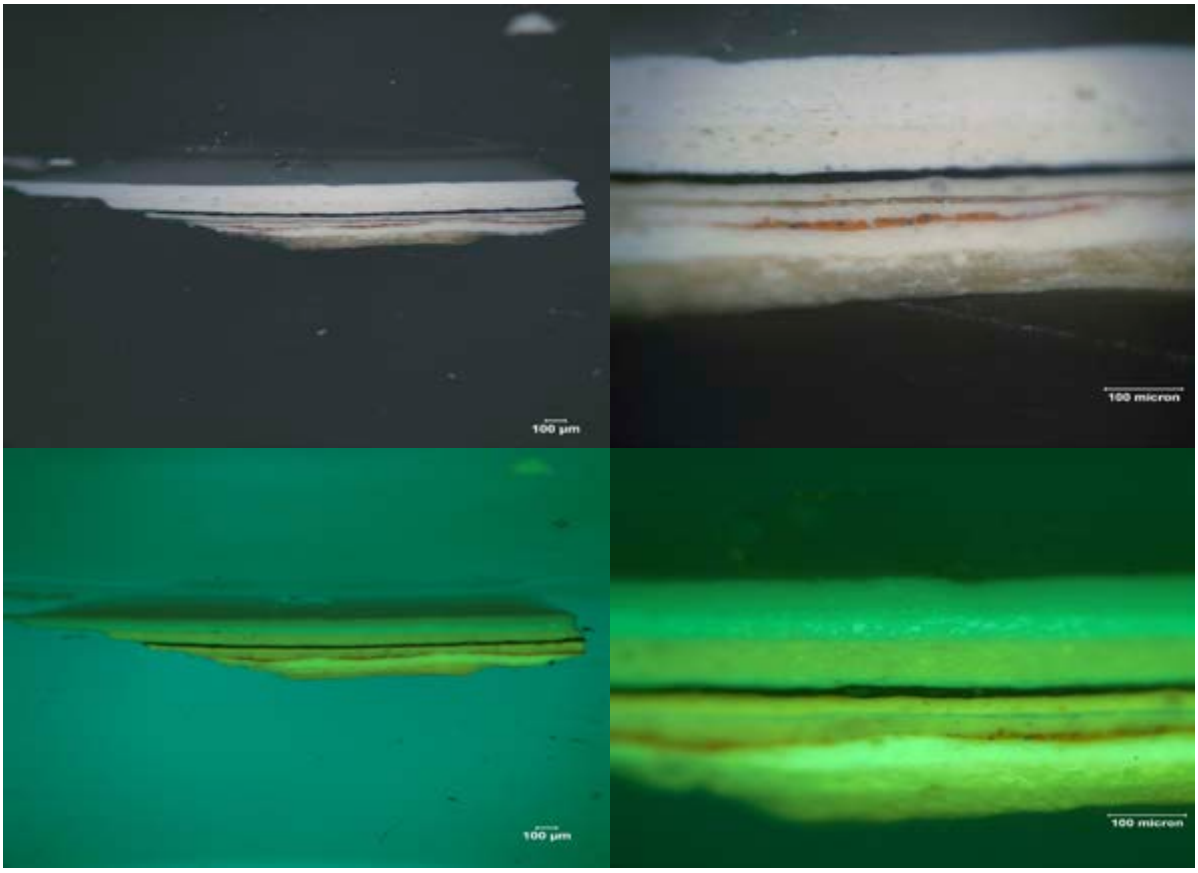



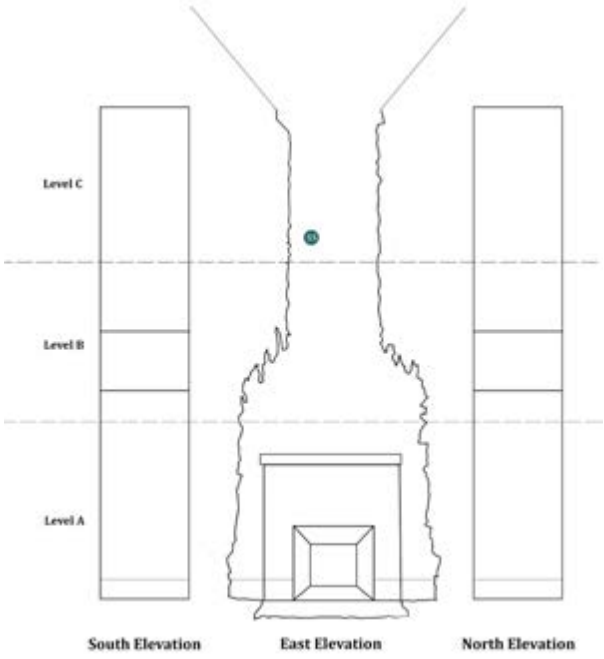
| **Sample:** | NYSS.054 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Brick | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Brick: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, continuous, medium-thick, uniform. | 1. Primer |
| 2 | Brown-Gray | Translucent, continuous, medium-thick-to-thin; blue and red particles dispersed within layer. | 1. Glaze |
| 3 | Brownish-White | Opaque, continuous, thick; discrete blue and yellow particles dispersed within layer. | 2. Paint |
| 4 | Light Brown | Opaque, continuous, fine. | 2. Glaze |
| 5 | Gray-White | Opaque, continuous, medium thick, uniform. | 3. Primer |
| 6 | Yellow-White | Opaque, continuous, medium-thick-to-thin; large semi-transparent globules dispersed within layer. | 3. Paint |
| 7 | Black | Opaque, continuous, medium-thick-to-thin, uniform; dispersed particles visible under UV. | Overpaint |
| 8 | Light Yellow-Brown | Opaque, continuous, thick; particles dispersed within layer. | Overpaint |
| 9 | White | Opaque, continuous, thick; particles dispersed within layer. | Overpaint |

**Notes:** Sample taken from brick in the middle of the transition of the fireplace into the ceiling.

| **Sample:** | NYSS.055 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Flame: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |

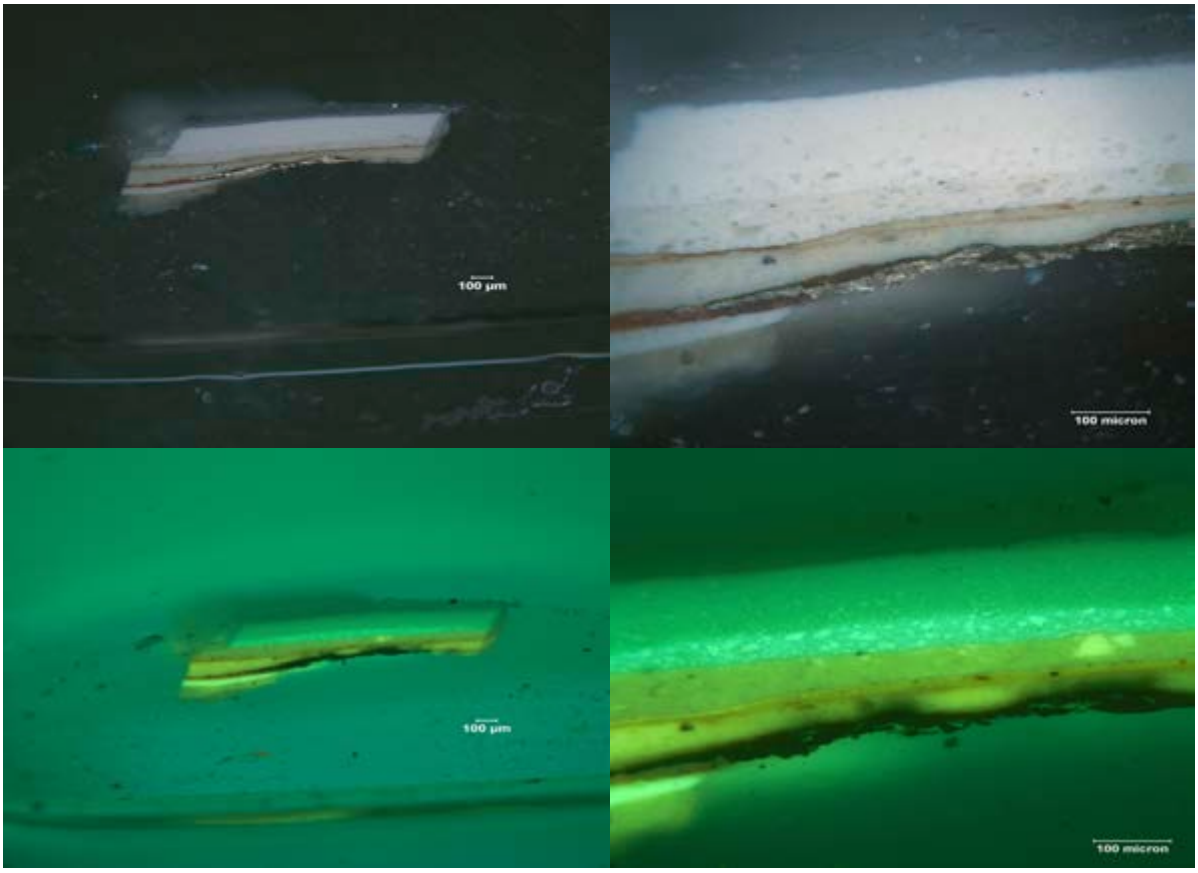


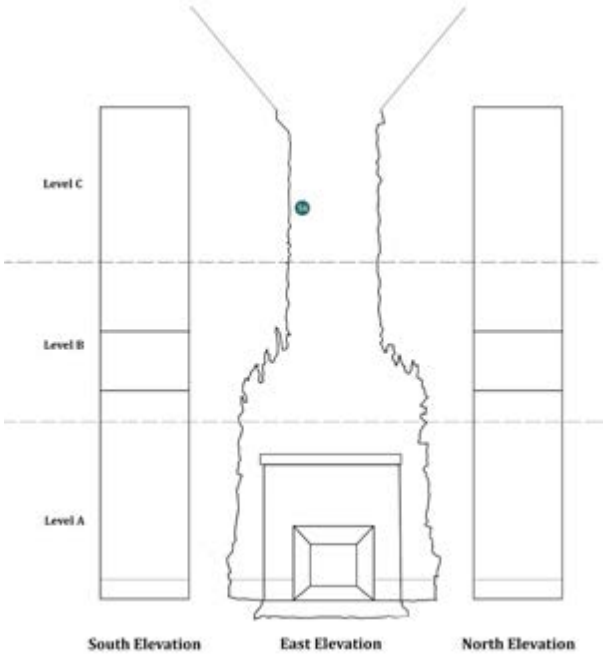



| **Sample:** | NYSS.055 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Flame: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, continuous, thick, uniform. | 1. Primer |
| 2 | Orange-Red [**Munsell: 10R 5/12**] | Semi-transparently, mostly continuous, medium-thick-to-thin; blue and red particles dispersed within layer. | 1. Paint |
| 3 | White | Opaque, continuous, medium-thick, uniform. | 2. Primer |
| 4 | Light Yellow-Brown | Translucent, continuous, thin. | 2. Glaze |
| 5 | White | Opaque, continuous, medium-thick. | 3. Paint |
| 6 | Black | Opaque, continuous, medium-thick, uniform | Overpaint |
| 7 | Light Pink-Yellow | Opaque, continuous, very thick; particles dispersed within layer. | Overpaint |
| 8 | White | Opaque, continuous, thick; particles dispersed within layer. | Overpaint |
| 9 | Gray-White | Opaque, continuous, thick, uniform. | Overpaint |

| **Sample:** | NYSS.056 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Flame: Transition: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |



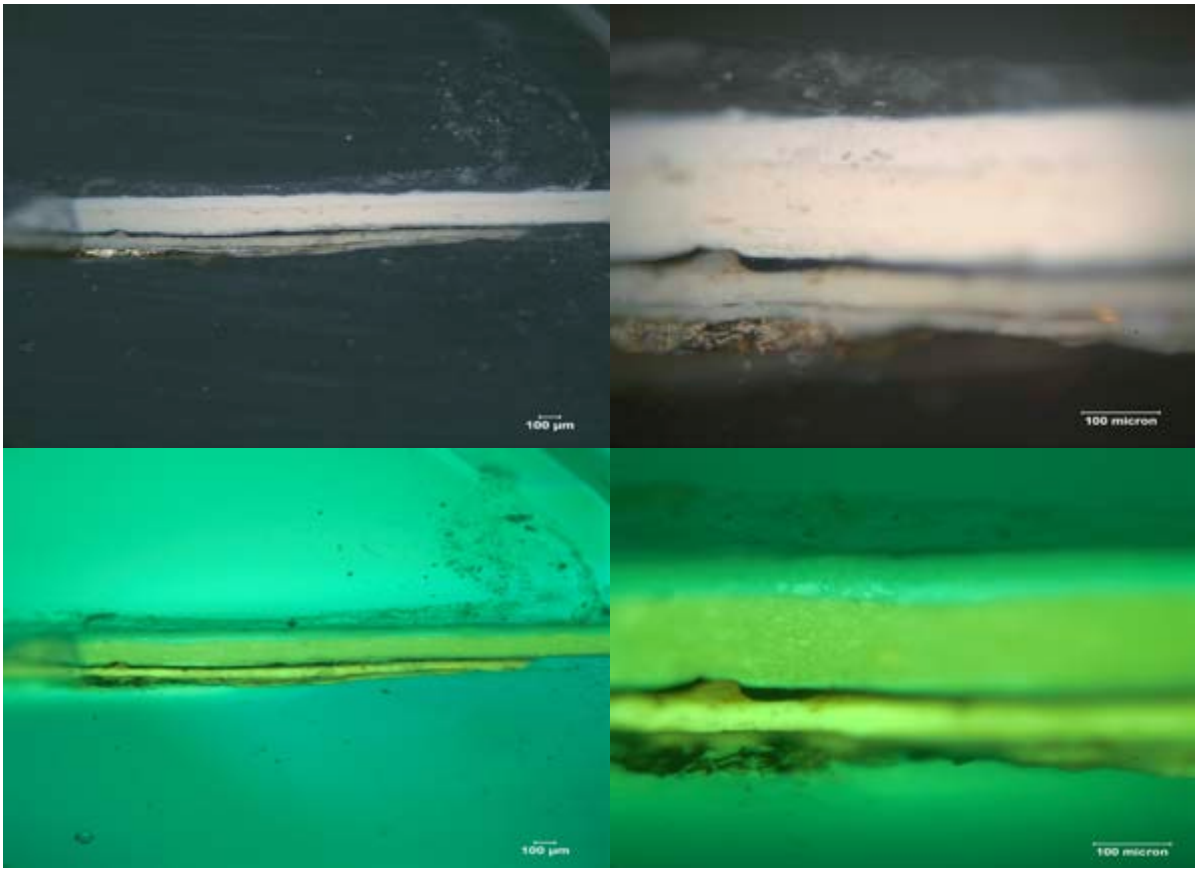



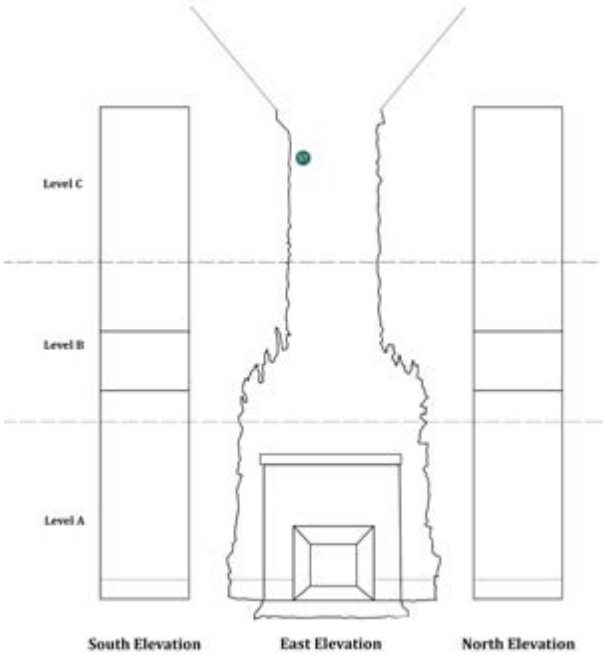
| **Sample:** | NYSS.056 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Flame: Transition: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, medium-thick. | 1. Primer |
| 2 | Red-Brown | Translucent, medium-thick; blue and red particles dispersed within layer. | 1. Paint |
| 3 | Silver-colored | Opaque, discontinuous, fine. | 2. Metallic leaf |
| 4 | Green-Brown | Translucent, discontinuous, thin. | 2. Glaze |
| 5 | Gray-White | Opaque, continuous, thin-to-fine. | 3. Primer |
| 6 | Yellow-White | Opaque, continuous, thick; particles dispersed within layer. | 3. Paint |
| 7 | Brown | Opaque, continuous, fine. | 3. Glaze |
| 8 | Brown-White | Opaque, continuous, medium-thick-to-thin; particles dispersed within layer. | 4. Primer |
| 9 | Medium Yellow-Brown [**Munsell: 2.5Y 7/6**] | Translucent, continuous, fine. | 4. Paint |
| 10 | Pink-White | Opaque, continuous, thick; large particles dispersed within layer. | Overpaint |
| 11 | White | Opaque, continuous, thick; large particles dispersed within layer. | Overpaint |
| 12 | Gray-White | Opaque, continuous, very thick, uniform. | Overpaint |

**Notes:** Sample taken from the middle of the transition of the fireplace into the ceiling.

| **Sample:** | NYSS.057 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Above Transition: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |



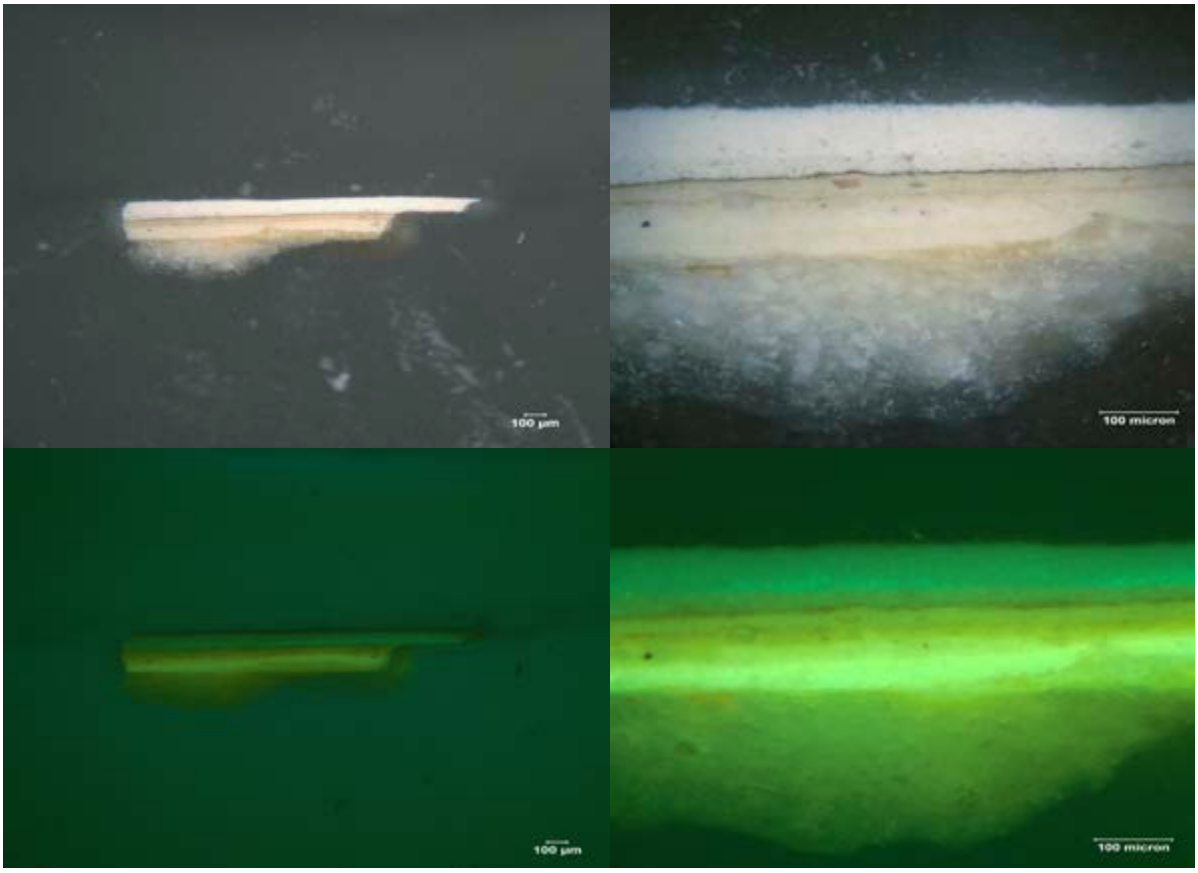



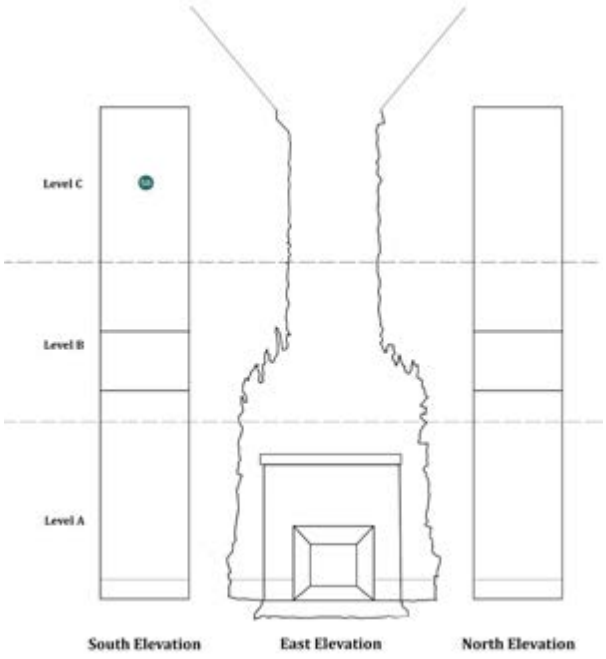
| **Sample:** | NYSS.057 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Upper Fireplace: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | Light Yellow-Brown | Translucent, discontinuous; particles dispersed within layer. | 1. Size |
| 2 | Copper-colored | Opaque, discontinuous, fine. | 1. Metallic leaf |
| 3 | White | Translucent, continuous, thin-to-medium thick, uniform. | 2. Primer |
| 4 | Light Brown | Translucent, discontinuous; particles dispersed within layer. | 2. Size |
| 5 | Silver-colored | Opaque, semi-continuous, fine. | 2. Metallic leaf |
| 6 | Yellow-White | Opaque, continuous, medium-thick; some particles dispersed within layer. | 3. Paint |
| 7 | Light Gray | Opaque, continuous, thin. | 4. Paint |
| 8 | Black | Opaque, continuous, thin-to-medium-thick, uniform. | Overpaint |
| 9 | White | Opaque, continuous, thin. | Overpaint |
| 10 | Yellow-White | Opaque, continuous, very thick; particles dispersed within layer. | Overpaint |
| 11 | White | Opaque, continuous, medium-thick; particles dispersed within layer. | Overpaint |
| 12 | Gray-White | Opaque, continuous, medium-thick, uniform. | Overpaint |

**Notes:** Sample taken from the top of the transition of the fireplace into the ceiling. Substrate not visible in cross-section.

| **Sample:** | NYSS.058 | **Magnification:** | 5x and 20x | **Date Sampled:** | **1-08-13** |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | **2-05-13** |
| **Description:** Snake: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |



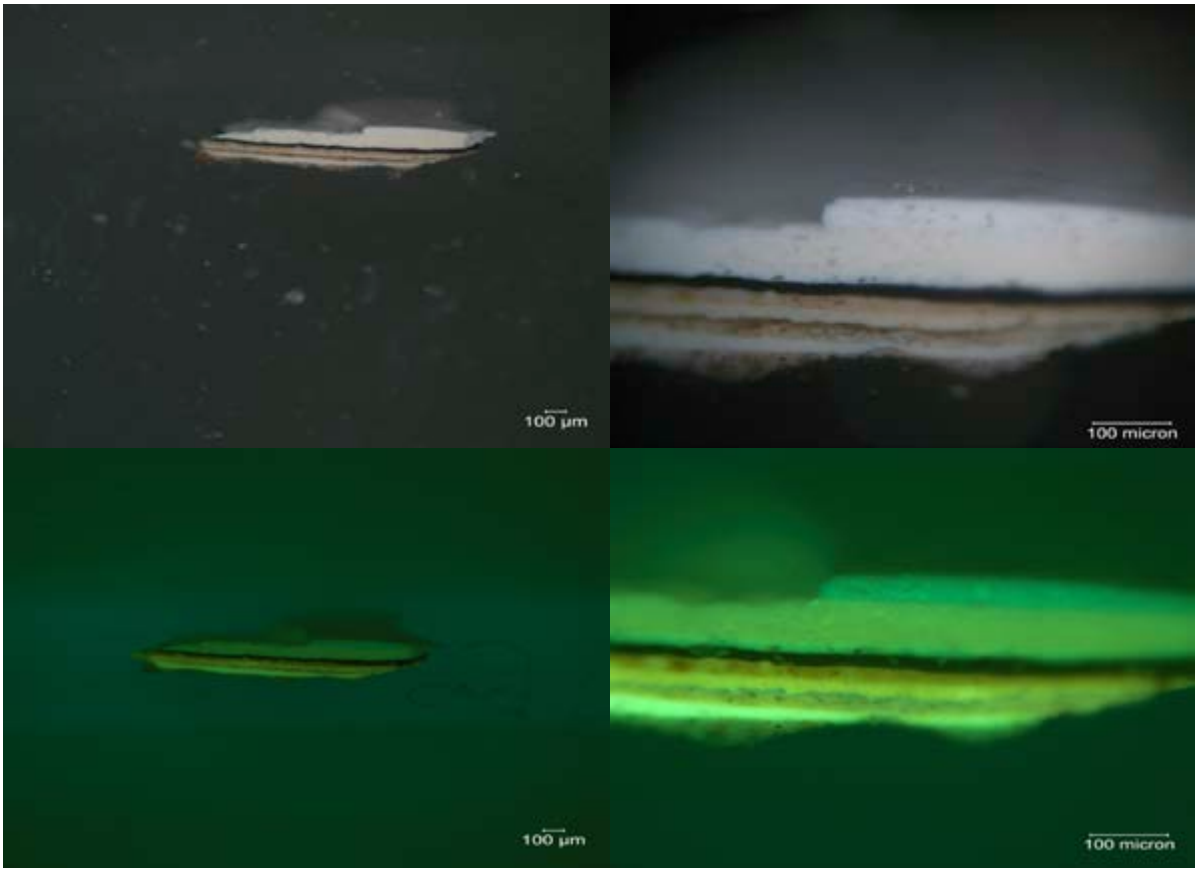



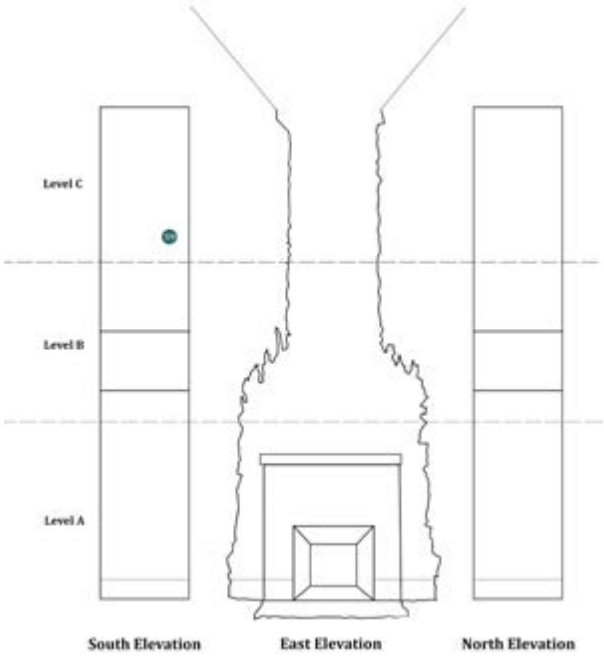
| **Sample:** | NYSS.058 | **Magnification:** | 5x and 20x | **Date Sampled:** | **1-08-13** |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | **2-05-13** |
| **Description:** Snake: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | Yellow-white | Opaque, continuous, thick, uniform. | 1. Primer |
| 2 | Yellow-white | Opaque, continuous, thick, uniform; visible under UV; may be additional coat of layer 2. | 1. Primer |
| 3 | Light Brown | Translucent, continuous, fine. | 1. Glaze |
| 4 | Brownish-white | Opaque, continuous, thick; uniform with pigments dispersed within layer. | 2. Primer |
| 5 | Light Brown | Translucent, continuous, fine. | 2. Glaze |
| 6 | Brown | Opaque, continuous, thin. | 3. Paint |
| 7 | Grayish-White | Opaque, continuous, medium-thick; uniform with pigments dispersed within the layer. | Overpaint |
| 8 | White | Opaque, continuous, very thick; uniform with pigments dispersed within the layer. | Overpaint |

**Notes:** Sample taken from a snake decoration at the bottom of the transition of the fireplace into the ceiling.

| **Sample:** | NYSS.059 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Brick | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-19-13 |
| **Description:** Brick: South Elevation, Level C | | | | **Analyzed by:** Megan Randall | |

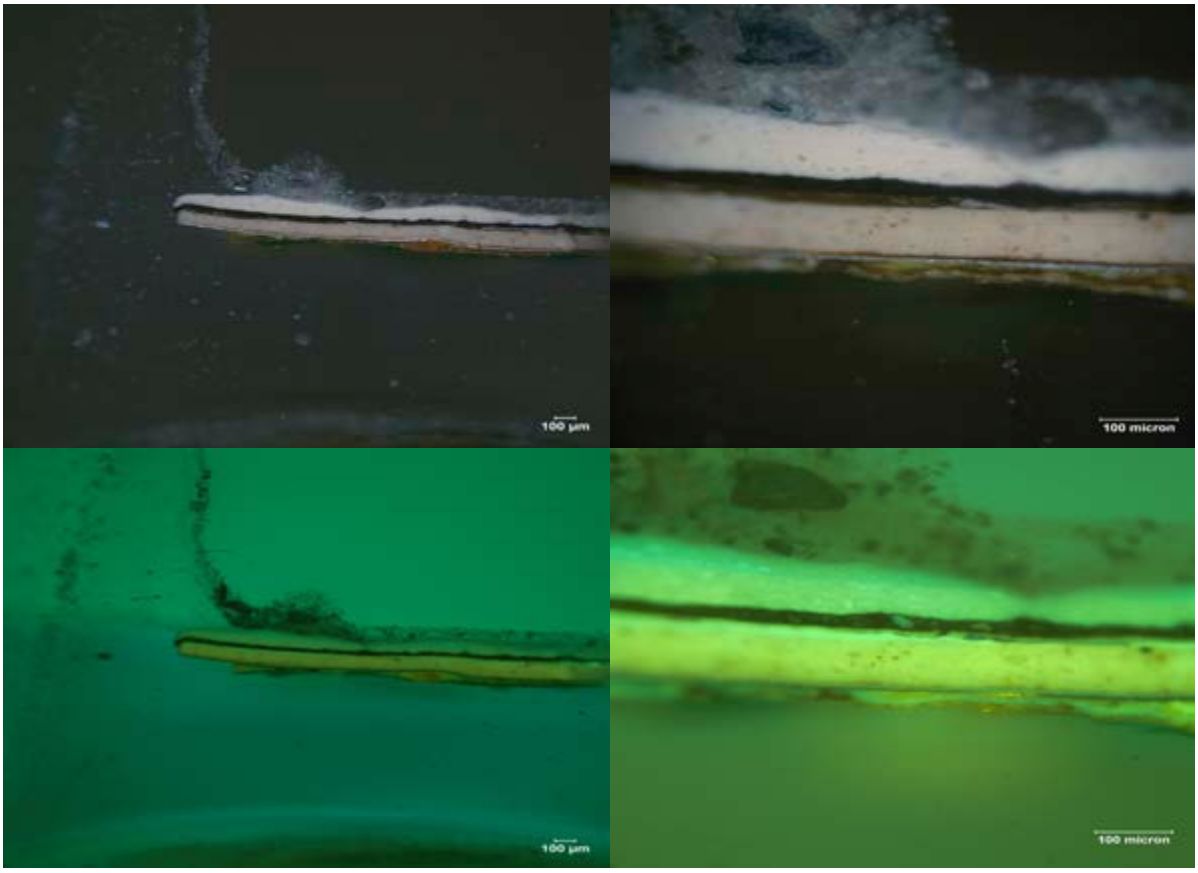


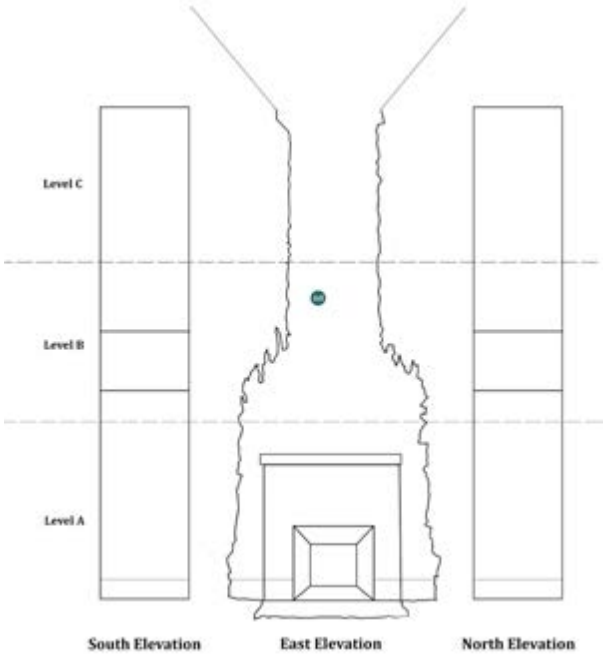



| **Sample:** | NYSS.059 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Brick | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-19-13 |
| **Description:** Brick: South Elevation, Level C | | | | **Analyzed by:** Megan Randall | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, continuous, medium-thick, uniform. | 1. Primer |
| 2 | Gray-Brown | Semi-transparent, continuous, medium thick; small blue particles dispersed within layer. | 1. Paint |
| 3 | Light Brown | Semi-transparent, continuous, thin. | 1. Glaze |
| 4 | White | Opaque, continuous, medium-thick, uniform. | 2. Primer |
| 5 | Light Orange-Brown | Opaque, continuous, medium-thick; various sized particles dispersed within layers. | 2. Paint |
| 6 | Black | Opaque, continuous, medium-thick; dispersed particles within layer visible under UV. | Overpaint |
| 7 | White | Opaque, continuous, medium-thick; large particles of varying pigmentation dispersed within layer. | Overpaint |
| 8 | Yellow-White | Opaque, continuous, thick; particles dispersed within layer. | Overpaint |
| 9 | White | Opaque, continuous, medium-thick; particles dispersed within layer. | Overpaint |

| **Sample:** | NYSS.060 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Bird: East Elevation, Level B | | | | **Analyzed by:** Megan Randall | |



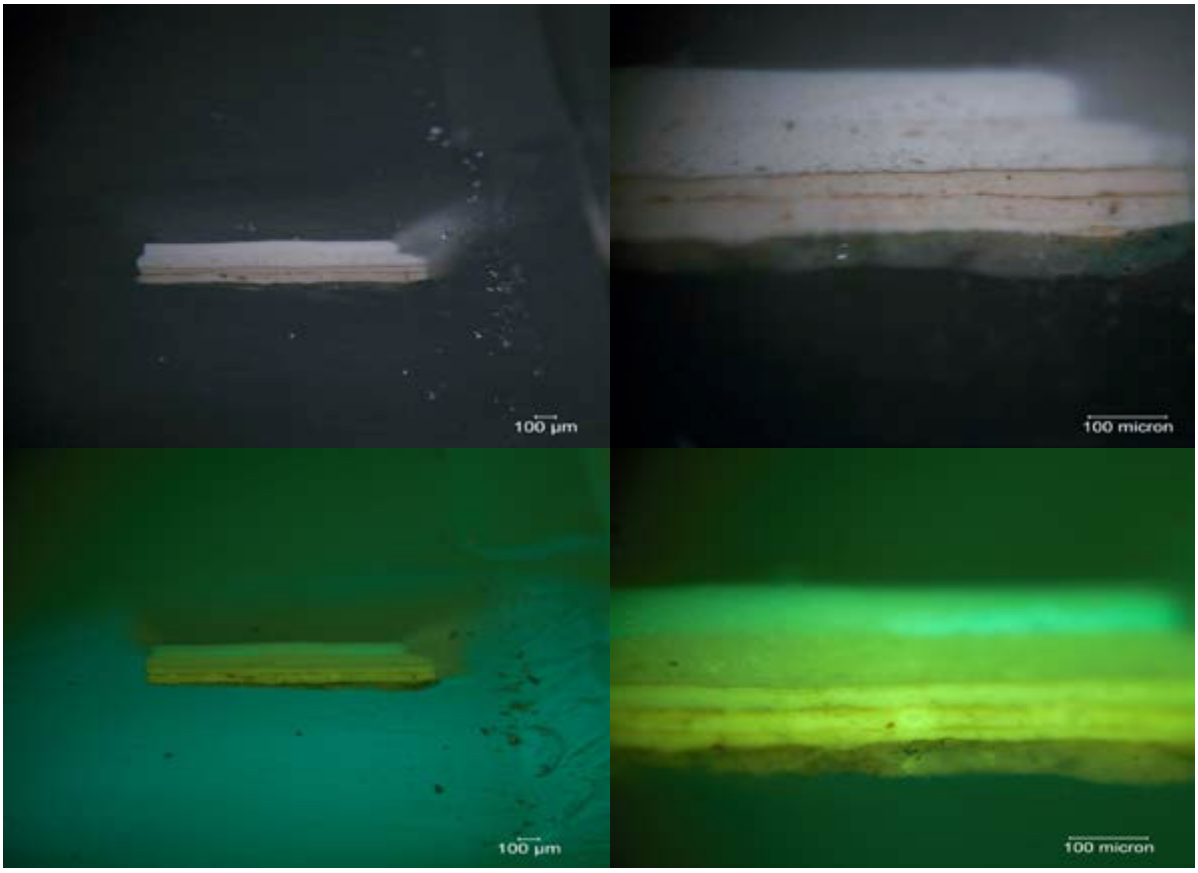



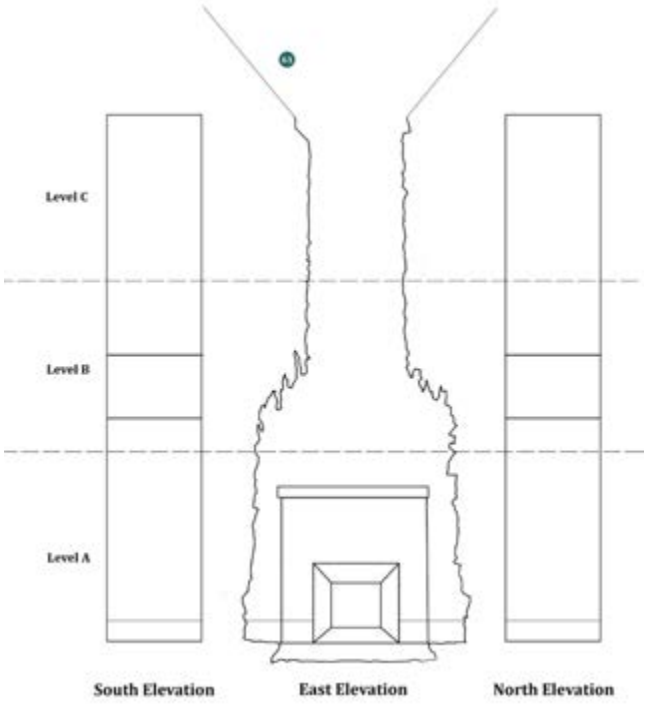
| **Sample:** | NYSS.060 | **Magnification:** | 5x and 20x | **Date Sampled:** | 1-08-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 2-05-13 |
| **Description:** Bird: East Elevation, Level B | | | | **Analyzed by:** Megan Randall | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | Copper-colored | Opaque, discontinuous, fine. | 1. Metallic leaf |
| 2 | Light Yellowish-Brown/Clear | Translucent, semi-continuous, medium-thick; large particles embedded across layer width. | 1. Glaze |
| 3 | Brown | Translucent, semi-continuous, thin-to-fine. | 1. Glaze |
| 4 | Light Yellowish-Green | Translucent, semi-continuous, fine. | 2. Size |
| 5 | Silver-colored | Opaque, continuous, thin. | 2. Metallic leaf |
| 6 | Dark Brown | Opaque, continuous, thin. | 2. Glaze |
| 7 | Brown | Opaque, continuous, fine. | 2. Glaze |
| 8 | White | Opaque, continuous, very thick; large particles dispersed within layer. | 3. Paint |
| 9 | Brown | Translucent, continuous, thin. | 4. Size |
| 10 | Silver-colored | Opaque, semi-continuous, fine. | 4. Metallic leaf |
| 11 | Black | Opaque, continuous, medium-thick, uniform. | Overpaint |
| 12 | Light Pink-Yellow | Opaque, continuous, medium-thick; small particles dispersed within sample. | Overpaint |
| 13 | White | Opaque, continuous, thick; small particles dispersed within sample. | Overpaint |

**Notes:** Substrate is not visible in the cross-section. Green bronzing powder or corrosion slightly visible below the first leaf layer (layer 1).

| **Sample:** | NYSS.061 | **Magnification:** | 5x and 20x | **Date Sampled:** | 3-20-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-25-13 |
| **Description:** Dragon Claw: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |



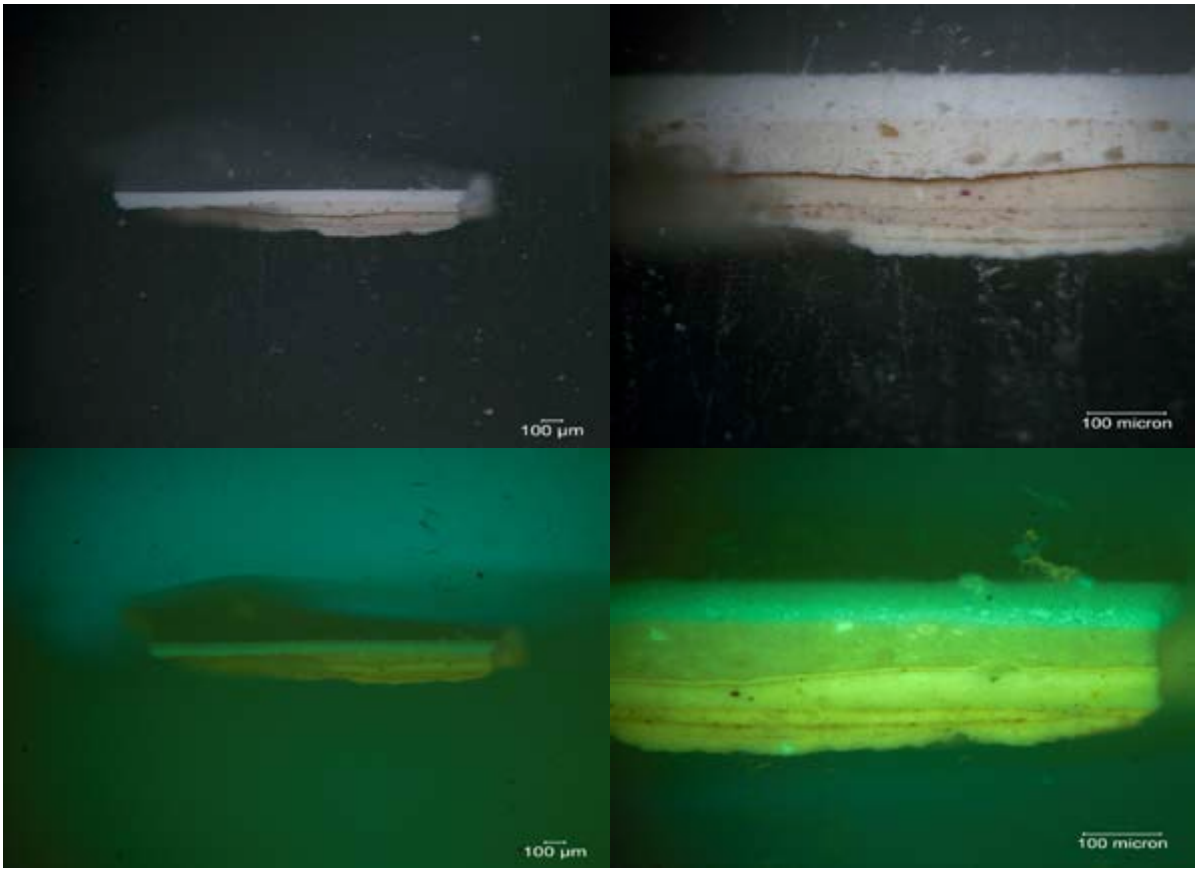



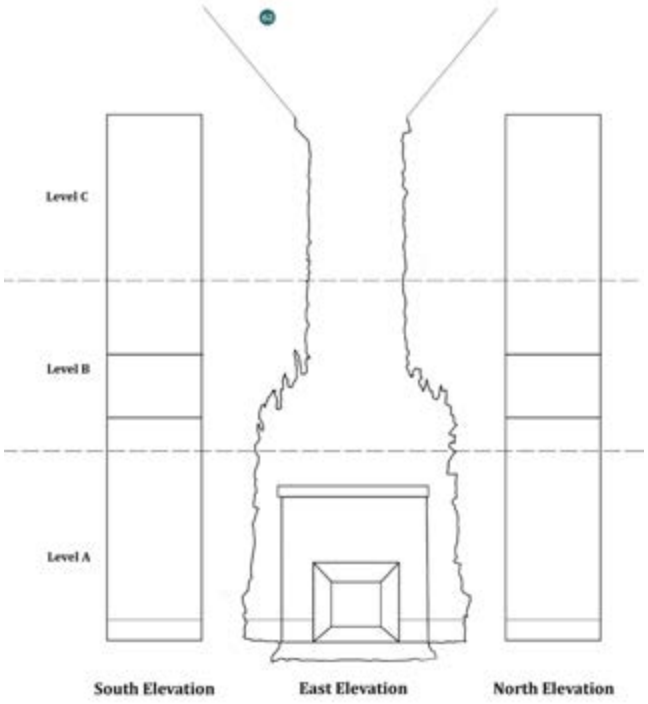
| **Sample:** | NYSS.061 | **Magnification:** | 5x and 20x | **Date Sampled:** | 3-20-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-25-13 |
| **Description:** Dragon Claw: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | Gray/Brown | Semi-transparent, continuous, thick-to-medium-thick; blue pigment particles dispersed within layer; some areas of this layer have a greenish tint. | 1. Paint |
| 2 | White | Opaque, continuous, thin. | 2. Primer |
| 3 | Brown-White | Opaque, continuous, medium-thick; some large particles dispersed within layer. | 2. Paint |
| 4 | Brown | Translucent, semi-continuous, fine. | 2. Glaze |
| 5 | Brown-White | Opaque, continuous, medium-thick; some large particles dispersed within layer. | 3. Paint |
| 6 | Brown | Translucent, continuous, fine. | 3. Glaze |
| 7 | Gray-White | Opaque, continuous, thick; medium-sized particles dispersed within layer. | Overpaint |
| 8 | White | Opaque, continuous, thick, uniform. | Overpaint |

**Notes:** Substrate is missing due to the deteriorated condition of plaster in this area.

| **Sample:** | NYSS.062 | **Magnification:** | 5x and 20x | **Date Sampled:** | 3-20-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-25-13 |
| **Description: Dragon** Background: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |



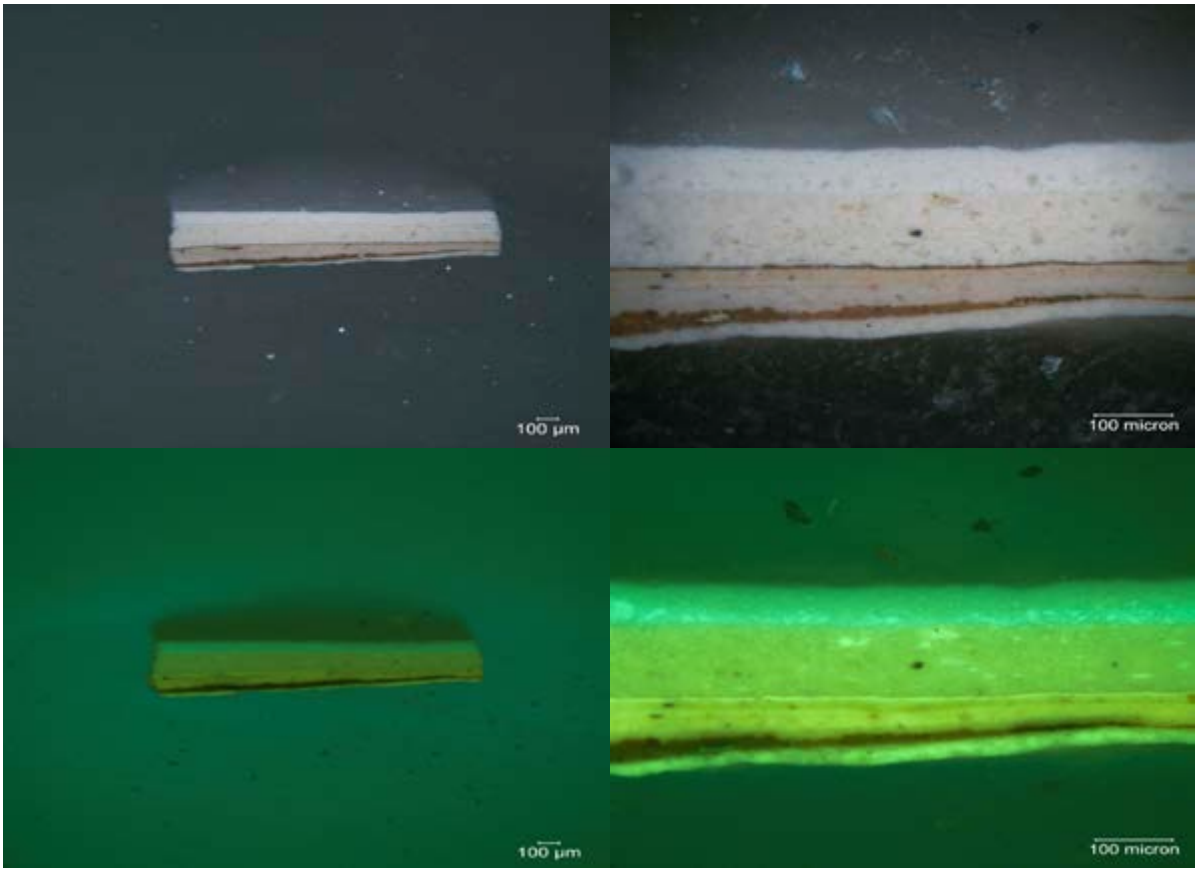



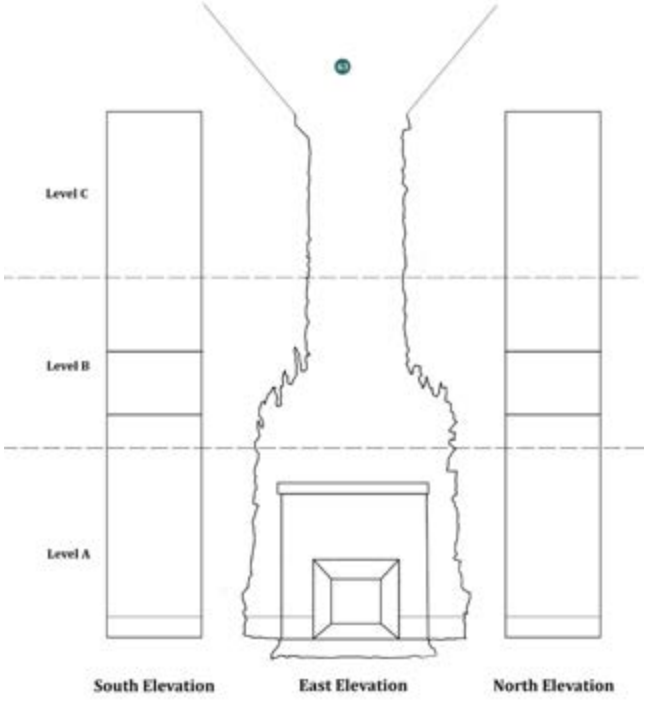
| **Sample:** | NYSS.062 | **Magnification:** | 5x and 20x | **Date Sampled:** | 3-20-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-25-13 |
| **Description:** Dragon Background: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, discontinuous, medium-thick. | 1. Primer |
| 2 | Gray-Brown | Semi-transparent, discontinuous, thin-to-fine. | 1. Paint |
| 3 | White | Opaque, discontinuous, medium-thick. | 2. Primer |
| 4 | Pink-Orange | Opaque, discontinuous, thin; blue and red particles dispersed within layer. | 2. Paint |
| 5 | Brown-White | Opaque, discontinuous, medium-thick. | 3. Primer |
| 6 | Light Brown | Opaque, discontinuous, fine. | 3. Paint/glaze |
| 7 | Brown-White | Opaque, discontinuous, thick. | 4. Paint |
| 8 | Light Brown | Translucent, discontinuous, thin; distinctive under UV. | 5. Paint |
| 9 | Yellow-Brown | Translucent, discontinuous, thin. | 5. Glaze |
| 10 | Light Yellow-White | Opaque, discontinuous, thick; large particles dispersed within layer. | Overpaint |
| 11 | White | Opaque, continuous, thick. | Overpaint |
| 12 | White | Opaque, continuous thick; distinct from layer 11 under UV. | Overpaint |

**Notes:** Substrate is missing due to the deteriorated condition of plaster in this area.

| **Sample:** | NYSS.063 | **Magnification:** | 5x and 20x | **Date Sampled:** | 3-20-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-25-13 |
| **Description:** Flame under Bird: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |



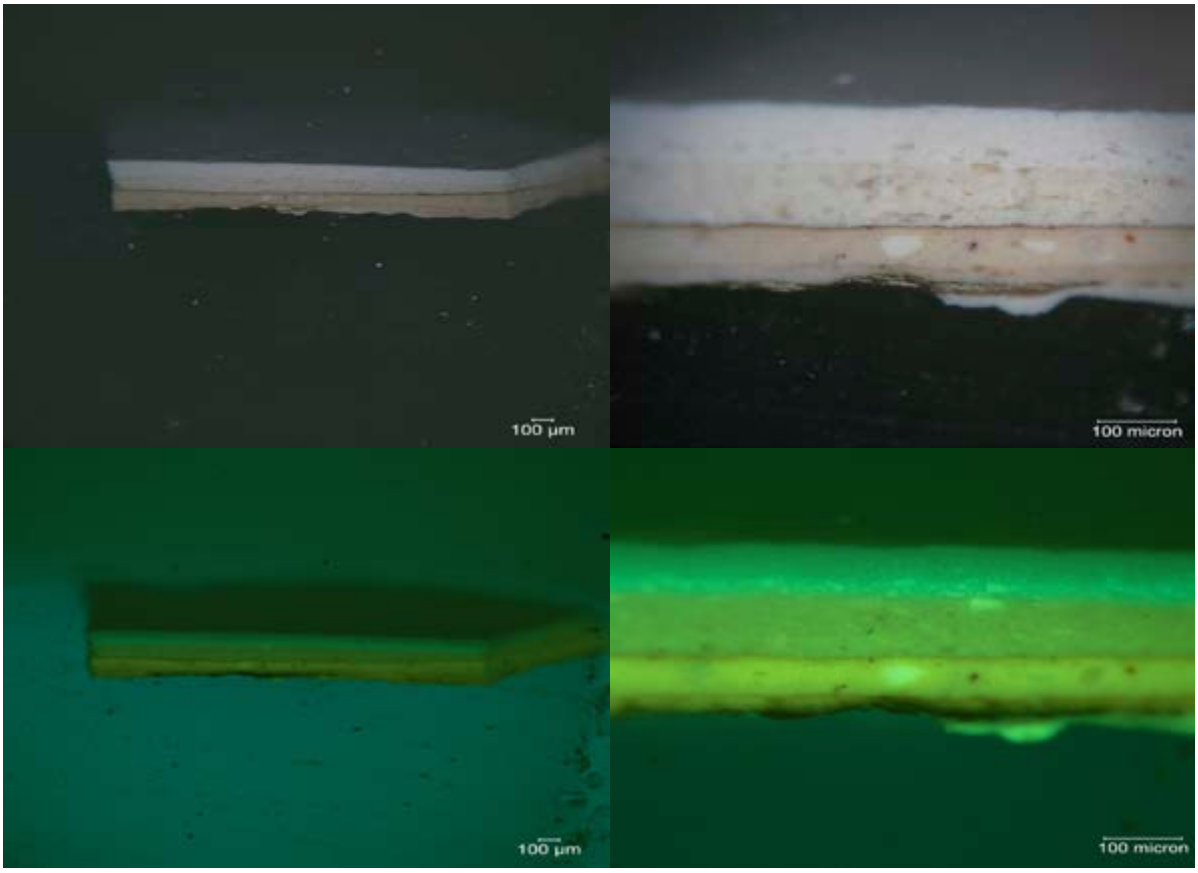



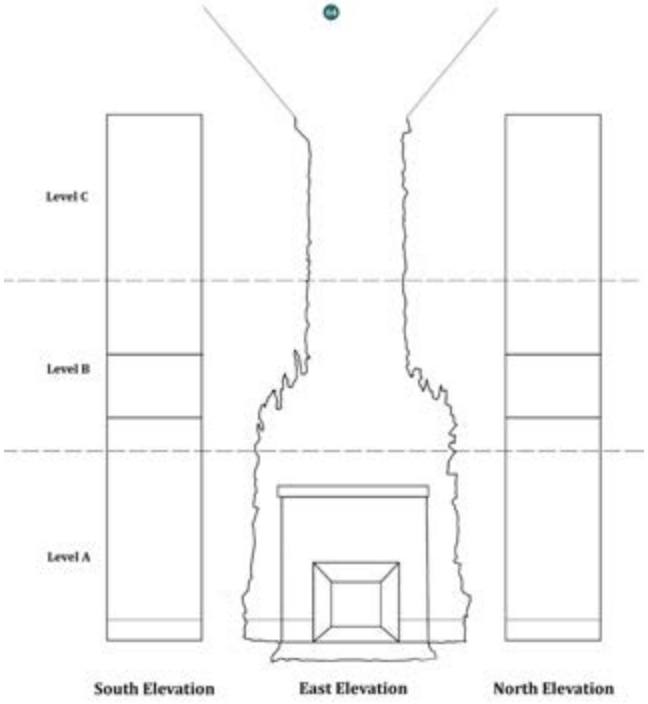
| **Sample:** | NYSS.063 | **Magnification:** | 5x and 20x | **Date Sampled:** | 3-20-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-25-13 |
| **Description:** Flame under Bird: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, continuous, medium thick. | 1. Primer |
| 2 | Silver-colored | Opaque, discontinuous, fine; embedded within layer 3. | 1. Metallic leaf |
| 3 | Orange-Brown | Translucent, continuous, medium-thick-to-thin; blue and red particles dispersed within layer. | 1. Glaze |
| 4 | White | Opaque, continuous, medium-thick. | 2. Primer |
| 5 | Brown-White | Opaque, continuous, medium-thick. | 2. Paint |
| 7 | Brown | Translucent, continuous, thin | 2. Glaze |
| 8 | White | Opaque, continuous, thick | 3. Primer |
| 9 | Brown | Translucent, continuous, thin | 3. Paint/glaze |
| 10 | Light Yellow-White | Opaque, continuous, thick; particles dispersed within layer. | Overpaint |
| 11 | White | Opaque, continuous, thick. | Overpaint |
| 12 | White | Opaque, continuous thick; distinct from layer 8 under UV. | Overpaint |

**Notes:** Substrate is missing due to the deteriorated condition of plaster in this area.

| **Sample:** | NYSS.064 | **Magnification:** | 5x and 20x | **Date Sampled:** | 3-20-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-25-13 |
| **Description:** Tip of Bird Crest: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |

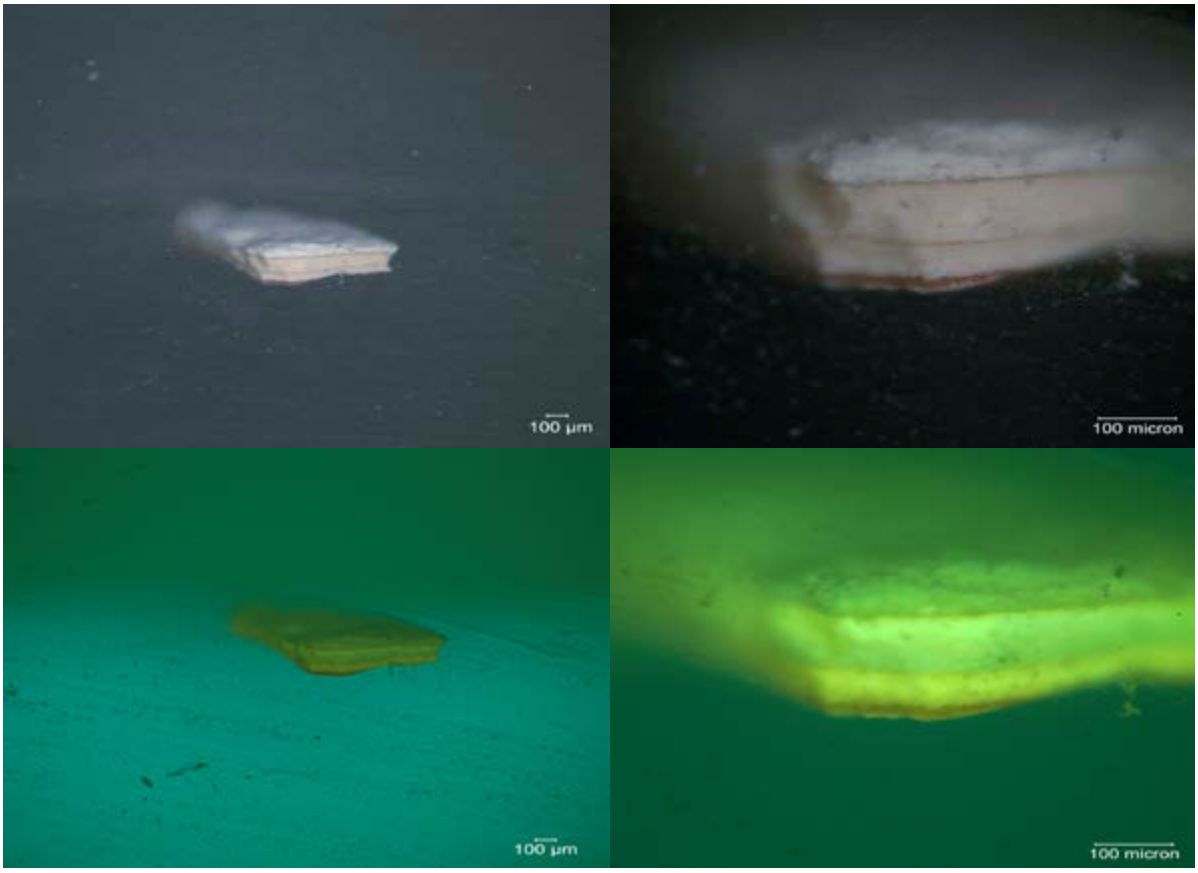


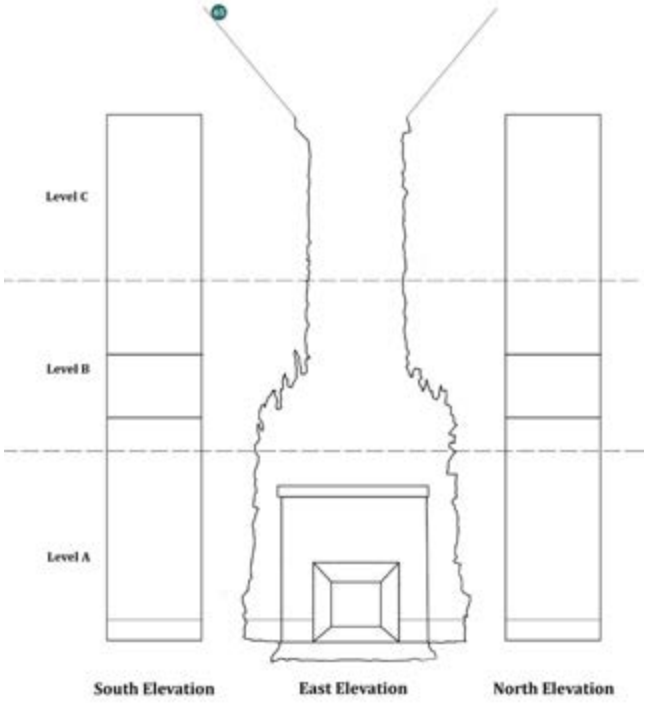



| **Sample:** | NYSS.064 | **Magnification:** | 5x and 20x | **Date Sampled:** | 3-20-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-25-13 |
| **Description:** Tip of Bird Crest: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, discontinuous, medium-thick. | 1. Primer |
| 2 | Copper-colored | Opaque, discontinuous, thin. | 1. Metallic leaf |
| 3 | Brown-White | Opaque, continuous, medium-thick. | 2. Primer |
| 4 | Brown | Translucent, continuous, fine. | 2. Glaze |
| 5 | Brown-White | Opaque, continuous, thick; large particles and some discrete pigments dispersed within layer. | 3. Paint |
| 6 | Brown | Translucent, continuous, thin. | 3. Glaze |
| 7 | Gray-White | Opaque, continuous, thick. | Overpaint |
| 8 | White | Opaque, continuous, thick. | Overpaint |
| 9 | White | Opaque, continuous thick; distinct from layer 8 under UV. | Overpaint |

| **Sample:** | NYSS.065 | **Magnification:** | 5x and 20x | **Date Sampled:** | 3-20-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-25-13 |
| **Description:** Flame on ceiling: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |



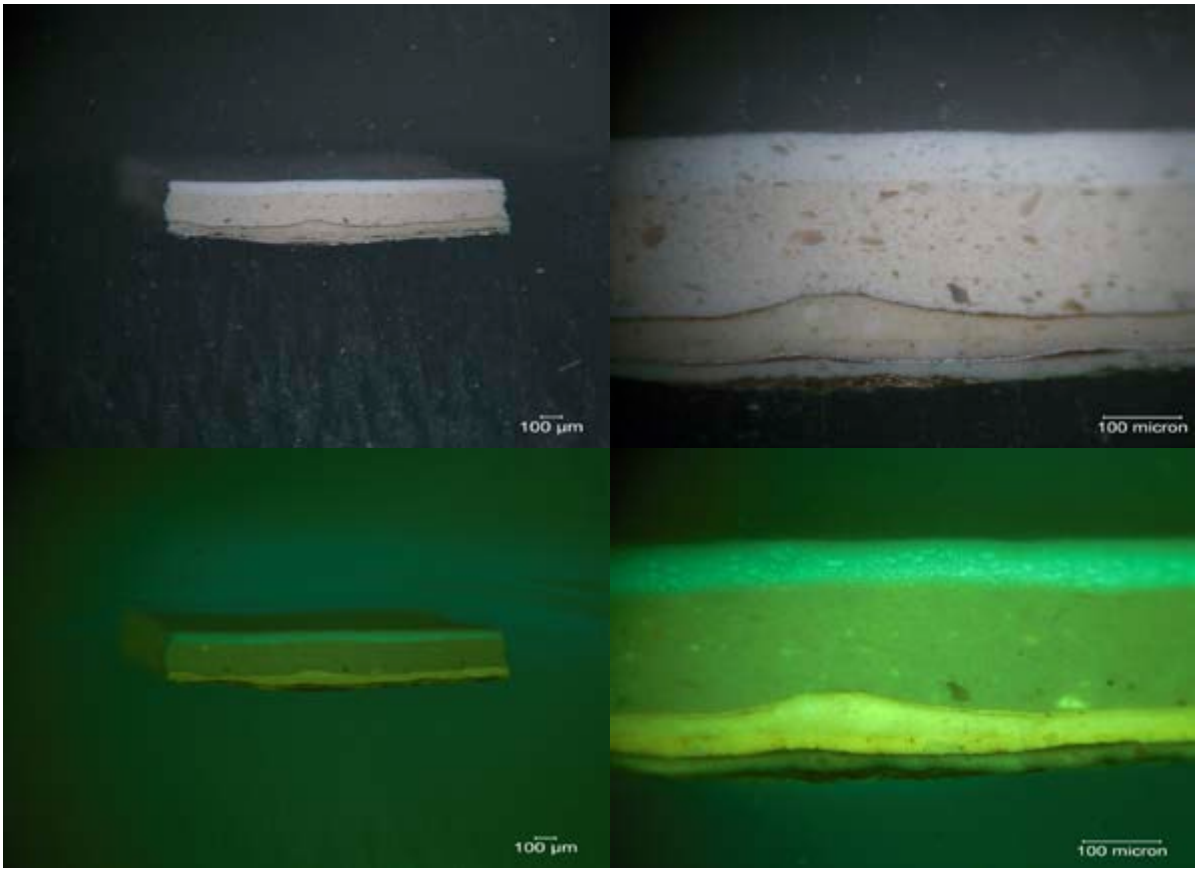



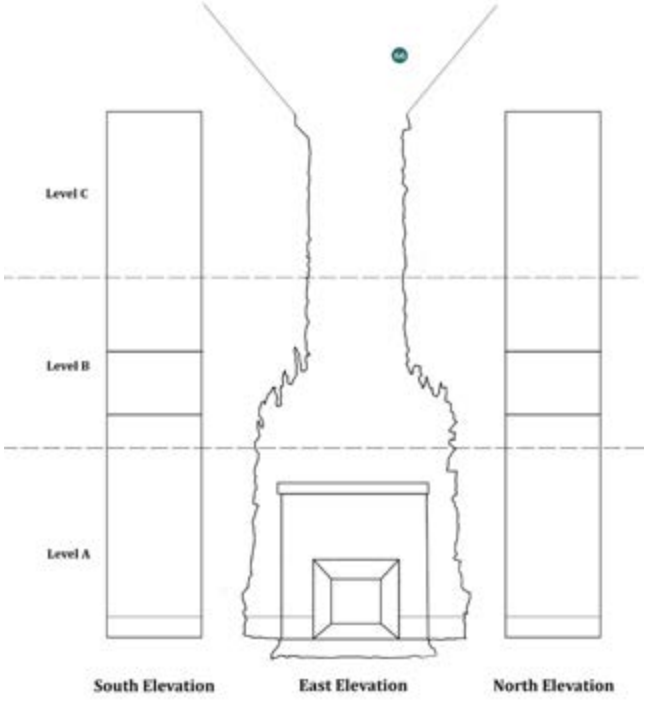
| **Sample:** | NYSS.065 | **Magnification:** | 5x and 20x | **Date Sampled:** | 3-20-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-25-13 |
| **Description:** Flame on ceiling: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, discontinuous, thin. | 1. Primer |
| 2 | Red-Orange | Translucent, discontinuous, thin; red and some blue discrete pigment particles dispersed within layer. | 1. Paint |
| 3 | Orange-White | Opaque, continuous, thick; uniformly dispersed. | 2. Primer |
| 4 | Brown | Translucent, continuous, fine. | 2. Glaze |
| 5 | Orange-White | Opaque, continuous, thick; particles dispersed within layer. | 3. Primer |
| 6 | Brown | Translucent, continuous, thin. | 3. Glaze |
| 7 | White | Opaque, continuous, thick. | Overpaint |

**Notes:** Substrate is missing due to the deteriorated condition of plaster in this area.

| **Sample:** | NYSS.066 | **Magnification:** | 5x and 20x | **Date Sampled:** | 3-20-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-25-13 |
| **Description:** Flame under Seahorse: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |



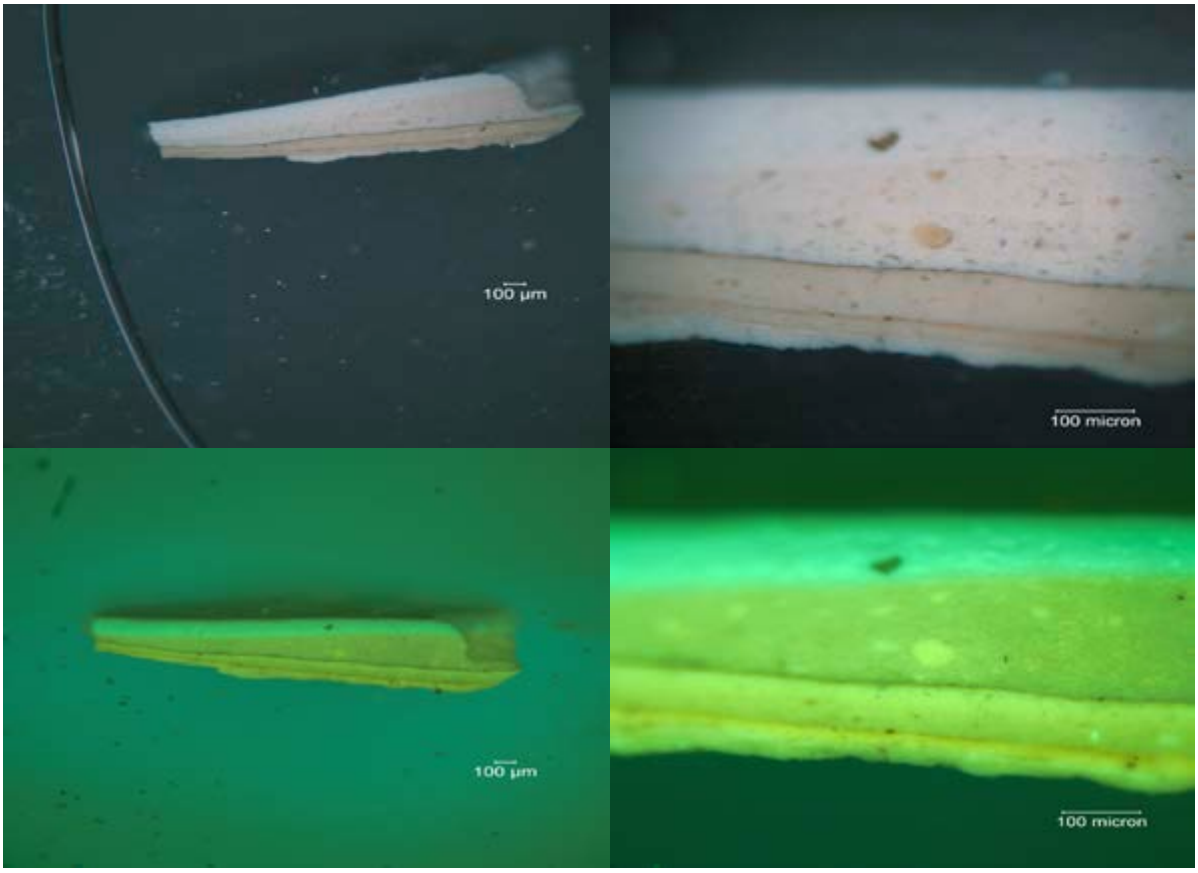



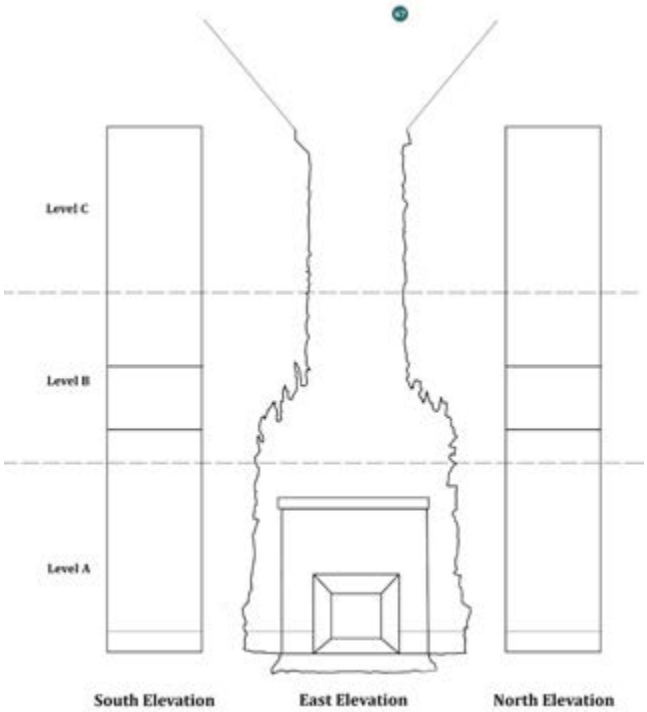
| **Sample:** | NYSS.066 | **Magnification:** | 5x and 20x | **Date Sampled:** | 3-20-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-25-13 |
| **Description:** Flame under Seahorse: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, discontinuous, fine; only a small amount of layer visible. | 1. Primer/size? |
| 2 | Copper-colored | Opaque, continuous, thin. | 1. Metallic leaf |
| 3 | White | Opaque, continuous, medium-thick. | 2. Primer |
| 4 | Brown | Transparent, semi-continuous, thin-to-fine. | 2. Size |
| 5 | Silver-colored | Silver-colored foil, continuous, thin. | 2. Metallic leaf |
| 6 | White | Opaque, continuous, medium-thick; particles dispersed within layer. | 3. Primer |
| 7 | Brown | Transparent, semi-continuous, fine. | 3. Glaze |
| 8 | White | Opaque, continuous, medium-thick; particles dispersed within layer. | 4. Primer |
| 9 | Brown | Opaque, continuous, fine. | 4. Glaze |
| 10 | Light Yellow-White | Opaque, continuous, thick; large particles dispersed within layer. | Overpaint |
| 11 | White | Opaque, continuous, thick. | Overpaint |
| 12 | White | Opaque, continuous, medium-thick; distinct from layer 11 under UV. | Overpaint |

**Notes:** Substrate is missing due to the deteriorated condition of plaster in this area.

| **Sample:** | NYSS.067 | **Magnification:** | 5x and 20x | **Date Sampled:** | 3-20-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-25-13 |
| **Description:** Seahorse Chest: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |



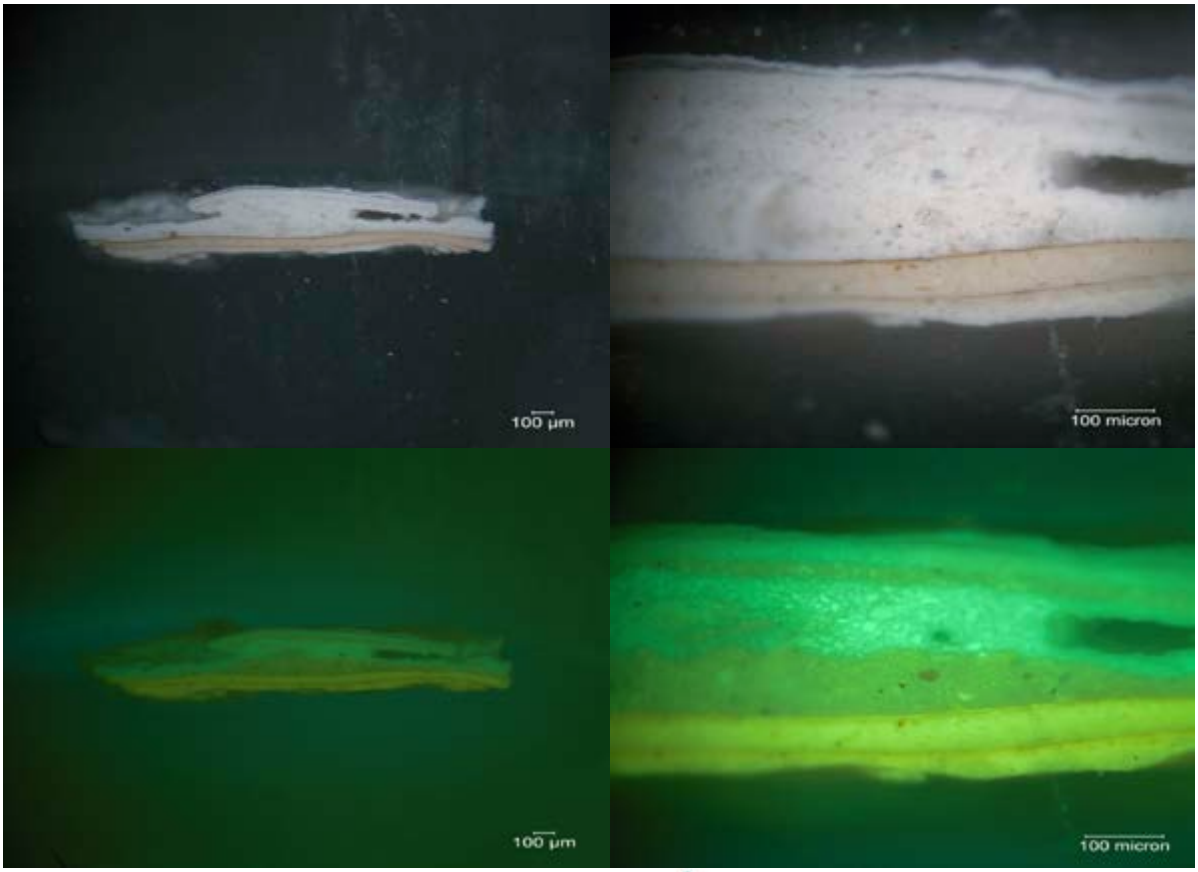



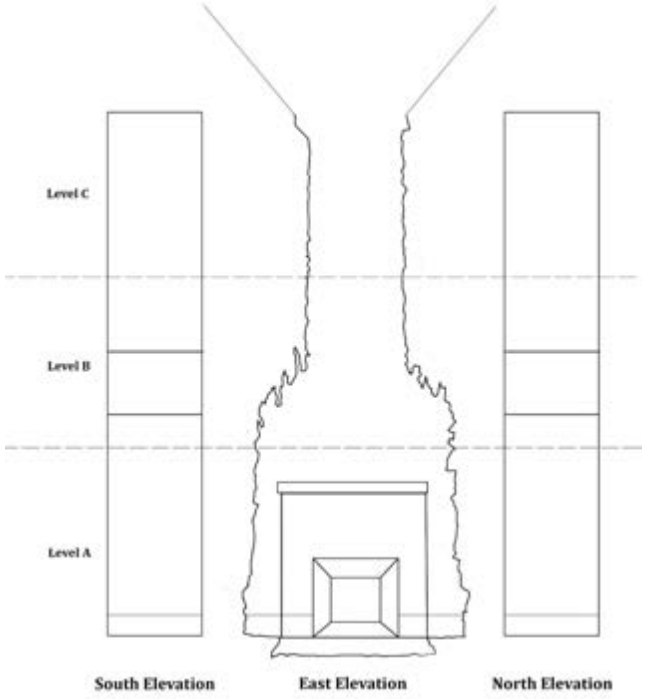
| **Sample:** | NYSS.067 | **Magnification:** | 5x and 20x | **Date Sampled:** | 3-20-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-25-13 |
| **Description:** Seahorse Chest: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, discontinuous, medium-thick. | 1. Primer |
| 2 | White | Opaque, continuous, thin; distinct from layer 1 in uniformity and under UV. | 1. Primer/paint |
| 3 | Brown | Translucent, continuous, fine. | 1. Glaze |
| 4 | Brown-White | Opaque, continuous, medium-thick; particles dispersed within layer. | 2. Primer |
| 5 | Brown | Translucent, continuous, fine. | 2. Glaze |
| 6 | Brown-White | Opaque, continuous, thick; particles dispersed within layer. | 3. Primer |
| 7 | Brown | Translucent, continuous, thin. | 3. Glaze |
| 8 | Light Pink-White | Opaque, continuous, thick; large particles dispersed within layer. | Overpaint |
| 9 | White | Opaque, continuous, thick; particles dispersed within layer. | Overpaint |
| 10 | White | Opaque, continuous, medium-thick; distinct from layer 9 under UV. | Overpaint |

**Notes:** Substrate is missing due to the deteriorated condition of plaster in this area.

| **Sample:** | NYSS.068 | **Magnification:** | 5x and 20x | **Date Sampled:** | 3-20-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster (deteriorated) | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-25-13 |
| **Description:** Background: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |



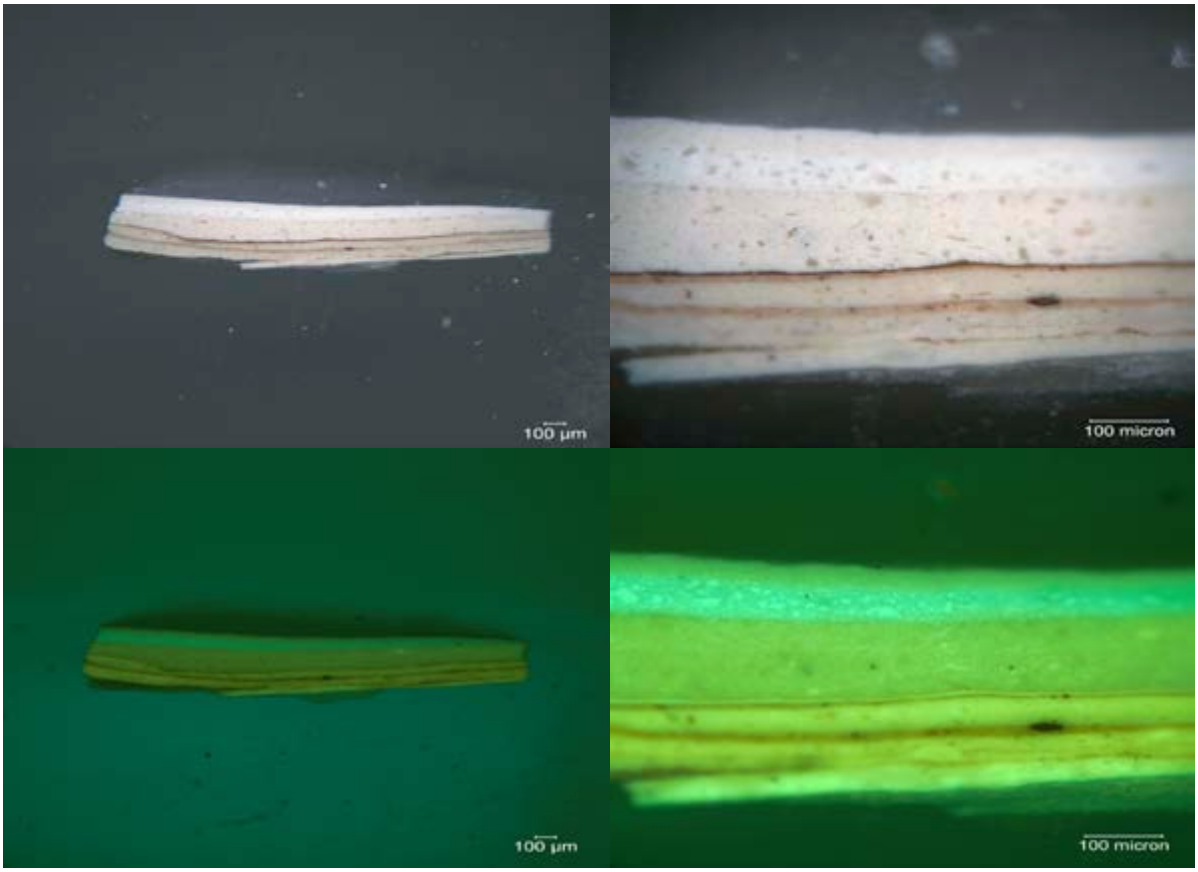



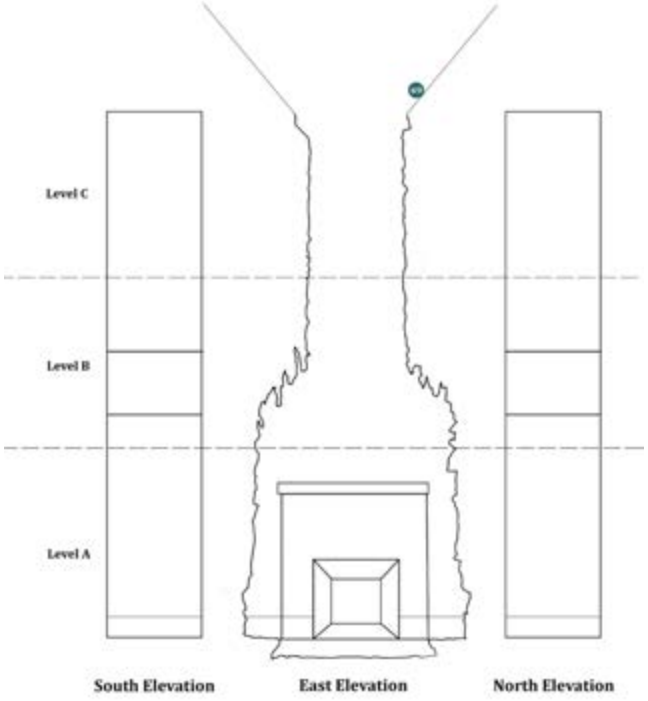
| **Sample:** | NYSS.068 | **Magnification:** | 5x and 20x | **Date Sampled:** | 3-20-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster (deteriorated) | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-25-13 |
| **Description:** Background: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, continuous, medium-thick. | 1. Primer |
| 2 | Brown-White [**Munsell: 2.5 Y 9/2**] | Opaque, continuous, thin. | 1. Paint |
| 3 | Brown | Translucent, continuous, fine. | 1. Glaze |
| 4 | Brown-White | Opaque, continuous, medium-thick; particles dispersed within layer. | 2. Primer |
| 5 | Brown | Opaque, continuous, thin-to-fine. | 3. Paint |
| 6 | White | Opaque, continuous, thick; particles dispersed within layer. | Overpaint |
| 7 | White | Opaque, discontinuous, medium-thick. | Overpaint |
| 8 | White | Opaque, discontinuous, medium-thick, uniform. | Overpaint |

**Notes:** Substrate is missing due to the deteriorated condition of plaster in this area.

| **Sample:** | NYSS.069 | **Magnification:** | 5x and 20x | **Date Sampled:** | 3-20-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-25-13 |
| **Description:** Above Man's Hand: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |



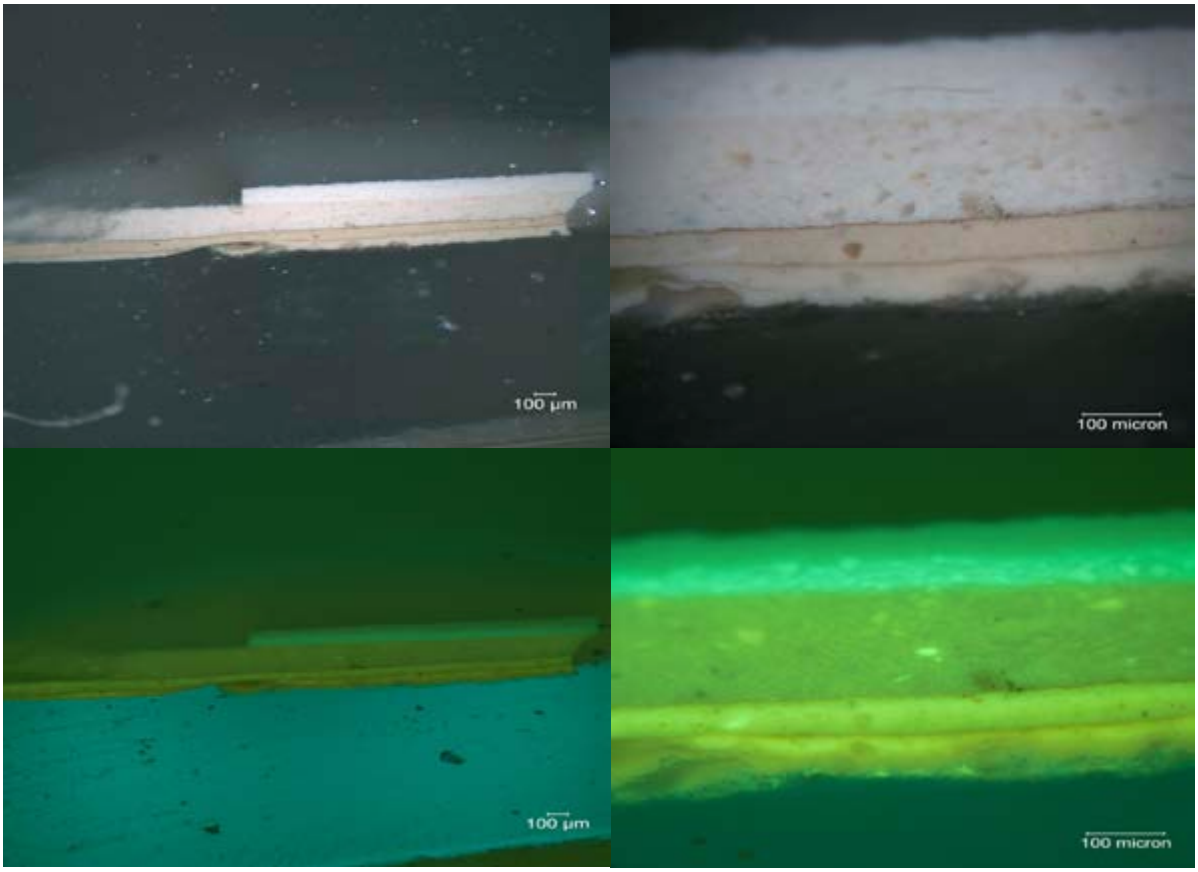



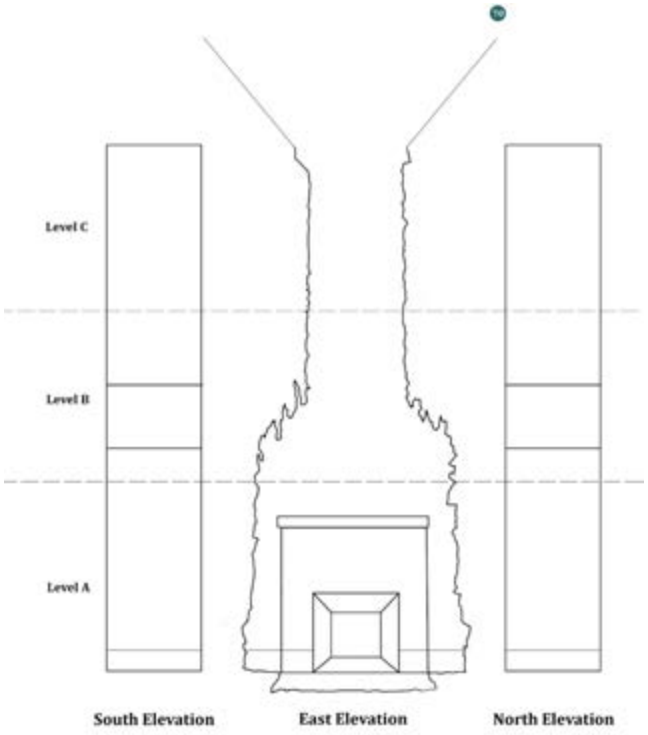
| **Sample:** | NYSS.069 | **Magnification:** | 5x and 20x | **Date Sampled:** | 3-20-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-25-13 |
| **Description:** Above Man's Hand: East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 1 | White | Opaque, discontinuous, medium-thick. | 1. Primer |
| 2 | Light Brown | Translucent, continuous, thin. | 1. Glaze |
| 3 | White | Opaque, discontinuous, medium-thick. | 2. Primer |
| 4 | Light Brown | Translucent, continuous, thin. | 2. Glaze |
| 5 | White | Opaque, continuous, thin. | 3. Primer |
| 6 | Orange-White | Opaque, continuous, thin; particles dispersed within layer. | 3. Paint |
| 7 | Light Yellow-White | Opaque, continuous, medium-thick. | 4. Primer |
| 8 | Orange-White | Opaque, continuous, thin-to-fine. | 4. Paint |
| 9 | Brown | Opaque, continuous, thin-to-fine. | 4. Glaze |
| 10 | Light Pink-White | Opaque, continuous, thick; particles dispersed within layer. | Overpaint |
| 11 | White | Opaque, continuous, thick; particles dispersed within layer. | Overpaint |
| 12 | White | Opaque, continuous, medium-thick; distinct from layer 11 under UV. | Overpaint |

**Notes:** Substrate is missing due to the deteriorated condition of plaster in this area.

| **Sample:** | NYSS.070 | **Magnification:** | 5x and 20x | **Date Sampled:** | 3-20-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-25-13 |
| **Description:** Ceiling between Flames, East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |



| **Sample:** | NYSS.070 | **Magnification:** | 5x and 20x | **Date Sampled:** | 3-20-13 |
|---|---|---|---|---|---|
| **Substrate:** | Plaster | **Microscope:** | DM 4000 M | **Date Analyzed:** | 3-25-13 |
| **Description:** Ceiling between Flames, East Elevation, Level C | | | | **Analyzed by:** Megan Randall | |

| **Layer Number** | **Color** | **Description** | **Finish Type** |
|---|---|---|---|
| 2 | White | Opaque, discontinuous, medium-thick. | 1. Primer |
| 3 | Light Yellow-White | Opaque, discontinuous,medium-thick. | 1. Paint |
| 4 | Brown | Transparent, discontinuous, thin-to-fine. | 1. Glaze |
| 5 | White | Opaque, continuous, medium-thick; particles dispersed within layer. | 2. Paint/Primer |
| 6 | Brown | Transparent, discontinuous, thin. | 2. Glaze |
| 7 | Light Yellowish-White | Opaque, discontinuous, thick; particles dispersed within layer. | Overpaint |
| 8 | White | Opaque, continuous, thick; particles dispersed within layer. | Overpaint |
| 9 | White | Opaque, continuous, medium-thick; distinct from layer 8 under UV. | Overpaint |

**Notes:** Substrate is missing due to the deteriorated condition of plaster in this area.

Appendix C.

# Munsell Color Index

| Sample | Description | Location | Category | Layer | Color | Munsell Value |
|---|---|---|---|---|---|---|
| 4 | Snake head | North elevation, A | Animal | 1 | Blue-Green | 7.5G 2/6 |
| | | | | 8 | Dark Red | 10R 2/4 |
| 5 | Beak | North elevation, A | Animal | 7 | Red | 10R 5/14 |
| 9 | Dog | North elevation, A | Animal | 7 | Green-Black | 5Y 2/2 |
| | | | | 8 | Gray-White | 5GY 5/1 |
| 10 | Metal flame | North elevation, A | Flame | 1 | Blue-Green | 7.5G 2/6 |
| | | | | 2 | Bright Yellow | 7.5Y 8/12 |
| | | | | 5 | Dark Red-Brown | 7.5R 2/4 |
| 12 | Lion face | North elevation, A | Animal | 2 | Gray-Brown | 5Y 5/1 |
| 15 | Brick behind metal | East elevation, A | Background | 2 | Gray-Brown | 2.5Y 2/2 |
| | | | | 3 | Light Brown | Between 10YR 4/2 and 10YR 5/2 |
| | | | | 4 | Dark Brown | 10YR 7/4 |
| 26 | Flame tip | East elevation, A | Flame | 12 | Orange-White | 5Y 9/4 |
| 37 | Flame center | East elevation, B | Flame | 4 | Light Yellow-Brown | 7.5Y 3/2 |
| 39 | Flame tip | East elevation, B | Flame | 2 | Pink-Red | 5R 8/4 |
| 55 | Flame | East elevation, C | Flame | 2 | Orange-Red | 10R 5/12 |
| 56 | Flame transition | East elevation, C | Flame | 9 | Medium Yellow-Brown | 2.5Y 7/6 |
| 68 | Background on deteriorated plaster, above seahorse | East elevation, C | Background | 2 | Brown-White | 2.5 Y 9/2 |

Appendix D.

# Instrumental Analysis

| Percentages of Sample Characteristics | | | | |
|---|---|---|---|---|
| | Blue and red particles (possibly pastel) | Bright Color | Aluminum Leaf | Copper Lead |
| Number of Samples | 26 | 9 | 35 | 14 |
| Percentage of Valid Sample | 45% | 15% | 60% | 24% |
| Percentage of Total Number | 37% | 13% | 50% | 20% |

**Figure 1.** Table of Percentages of Sample Characteristics.

| Elements in Samples Tested | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Number | Lead (Pb) | Calcium (Ca) | Silicon (Si) | Titanium (Ti) | Sulfur (S) | Aluminum (Al) | Copper (Cu) | Iron (Fe) | Bismuth (Bi) | Magnesium (Mg) |
| NYSS005 | x | x | x | x | x | x | | x | x | |
| NYSS011 | x | x | x | x | x | x | x | | | x |
| NYSS024 | x | x | x | x | x | x | | | | x |
| NYSS026 | x | x | x | x | x | x | | | | |
| NYSS029 | | x | x | | x | x | x | | | |
| NYSS032 | x | | | | x | x | x | | | |
| NYSS035 | x | x | x | x | x | | x | | | |
| NYSS037 | x | x | | x | x | x | | | | |
| NYSS038 | x | x | x | | | x | x | | | |
| NYSS053 | x | x | x | x | x | x | x | | | |

**Figure 2.** Table of Elements in Samples Tested.

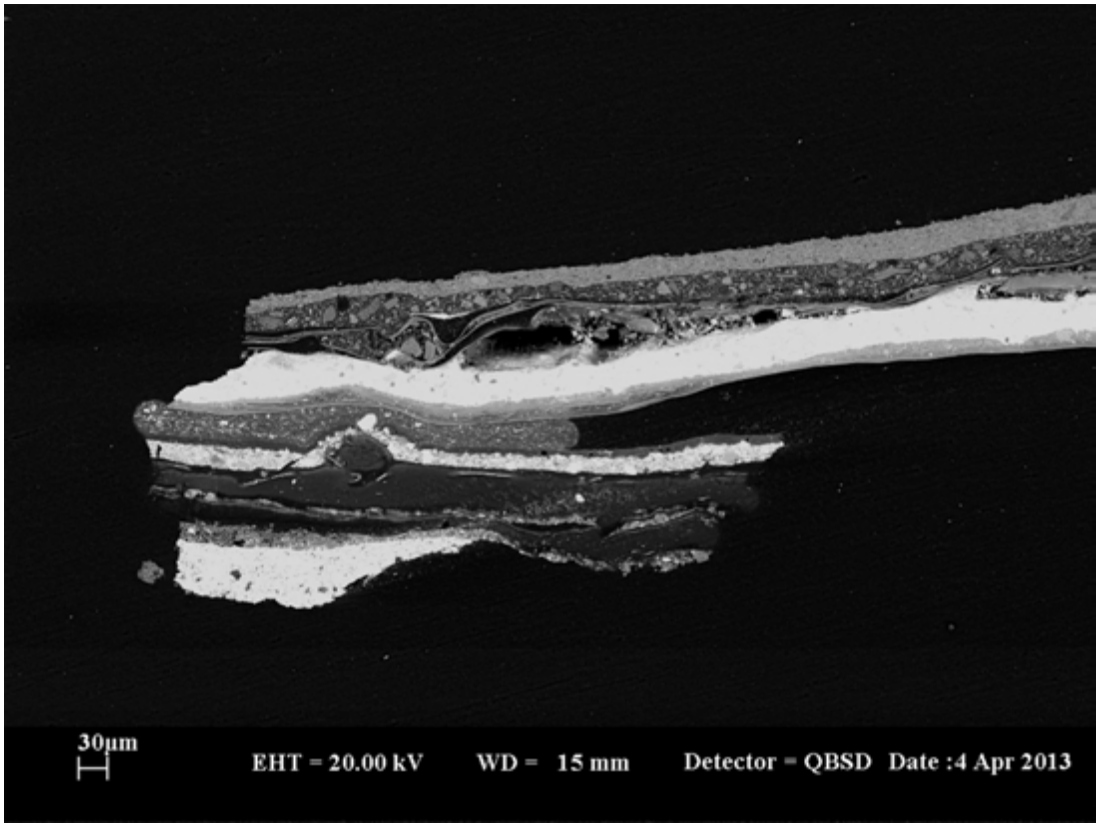



**Figure 3.** Scanning Electron Microscopy image of NYSS011 taken at the Metropolitan Museum of Art under 430x magnification. Photograph taken by Federico Caro.

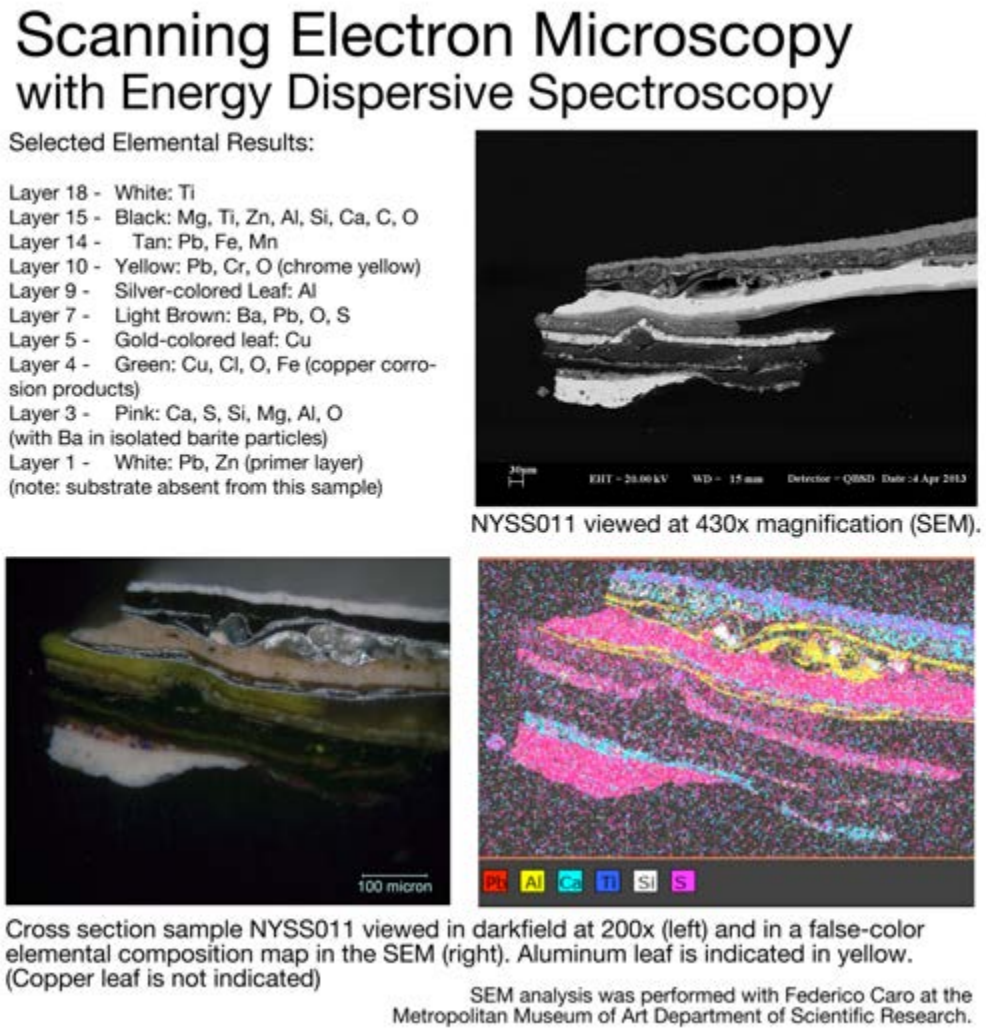



**Figure 4.** Scanning Electron Microscopy NYSS011.

NOTE: Sample NYSS011 was repolished and carbon-coated at the Metropolitan Museum of Art prior to SEM analysis. As a result the stratigraphy of the cross-section was altered somewhat from the photomicrograph used for the sample sheet in Appendix C. The layer numbers used in this image are the best approximation to the layers noted in the sample sheet for NYSS011.

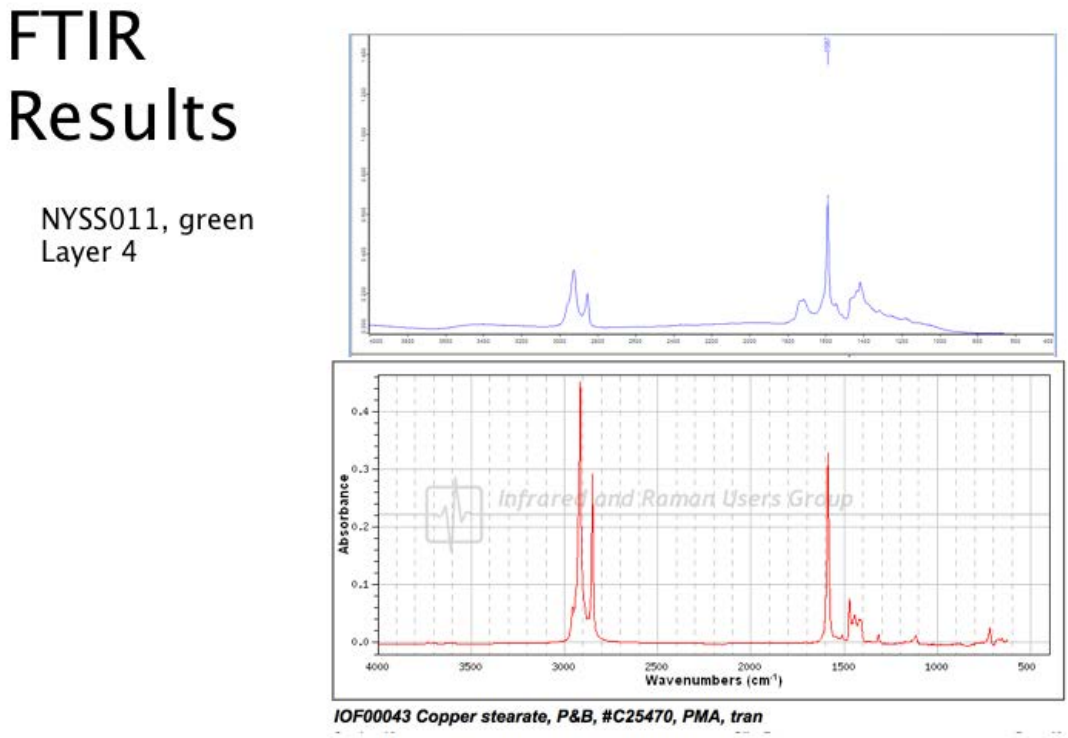



**Figure 5.** FTIR Results for NYSS011, layer 4. This image compares the signal from the sample to that of copper stearate, a copper corrosion product.

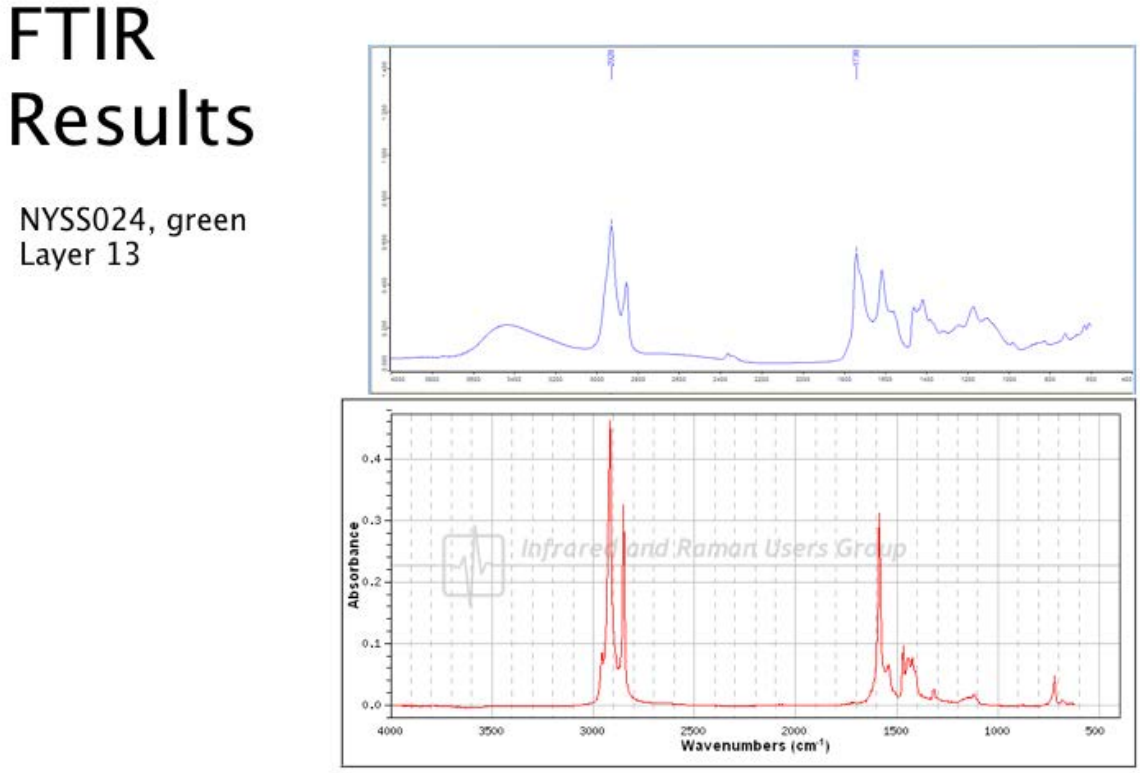
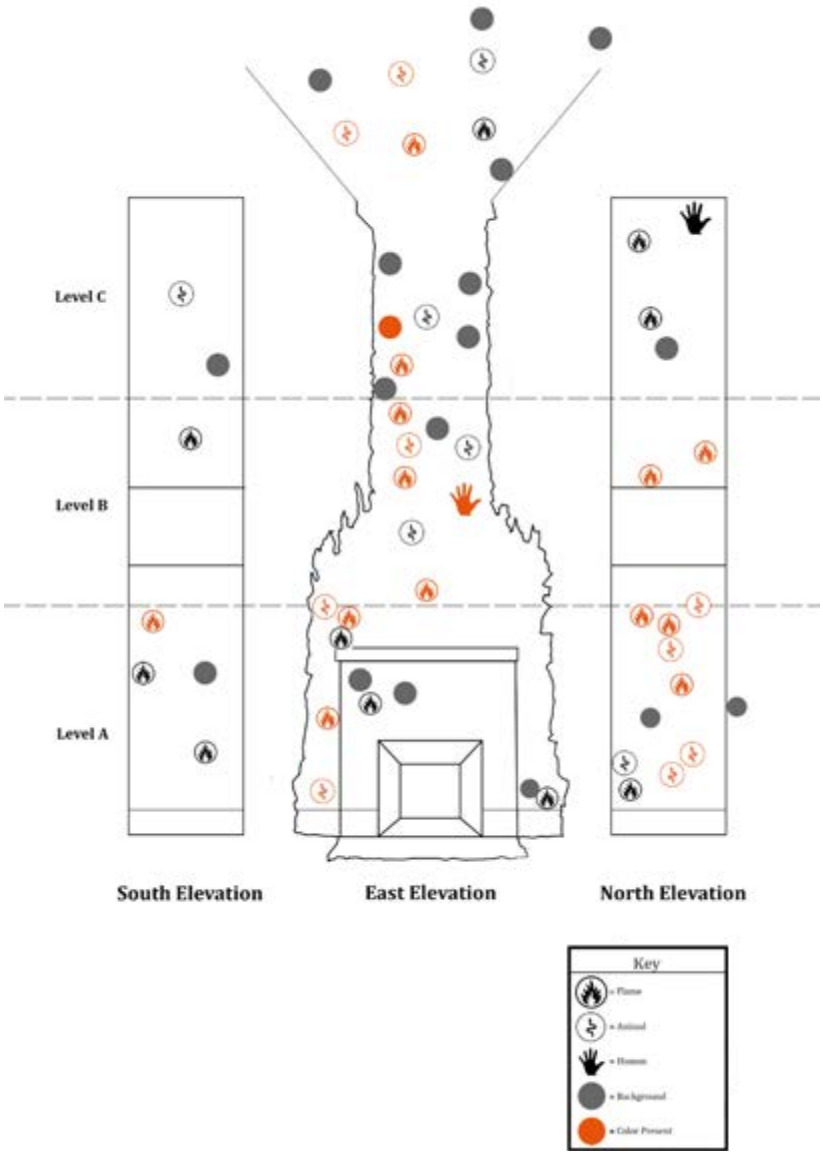


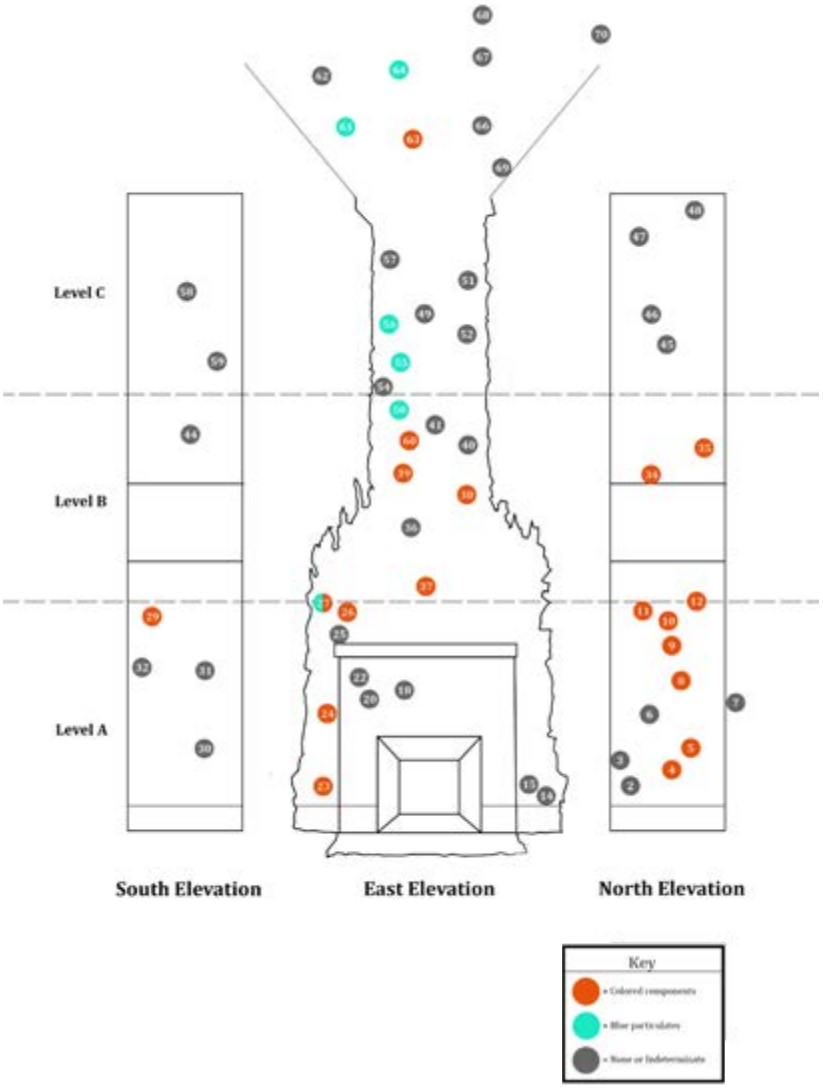

**Figure 6.** FTIR Results for NYSS024, layer 13. This image compares the signal from the sample to that of cupric palmitate, a copper corrosion product.

Appendix E.

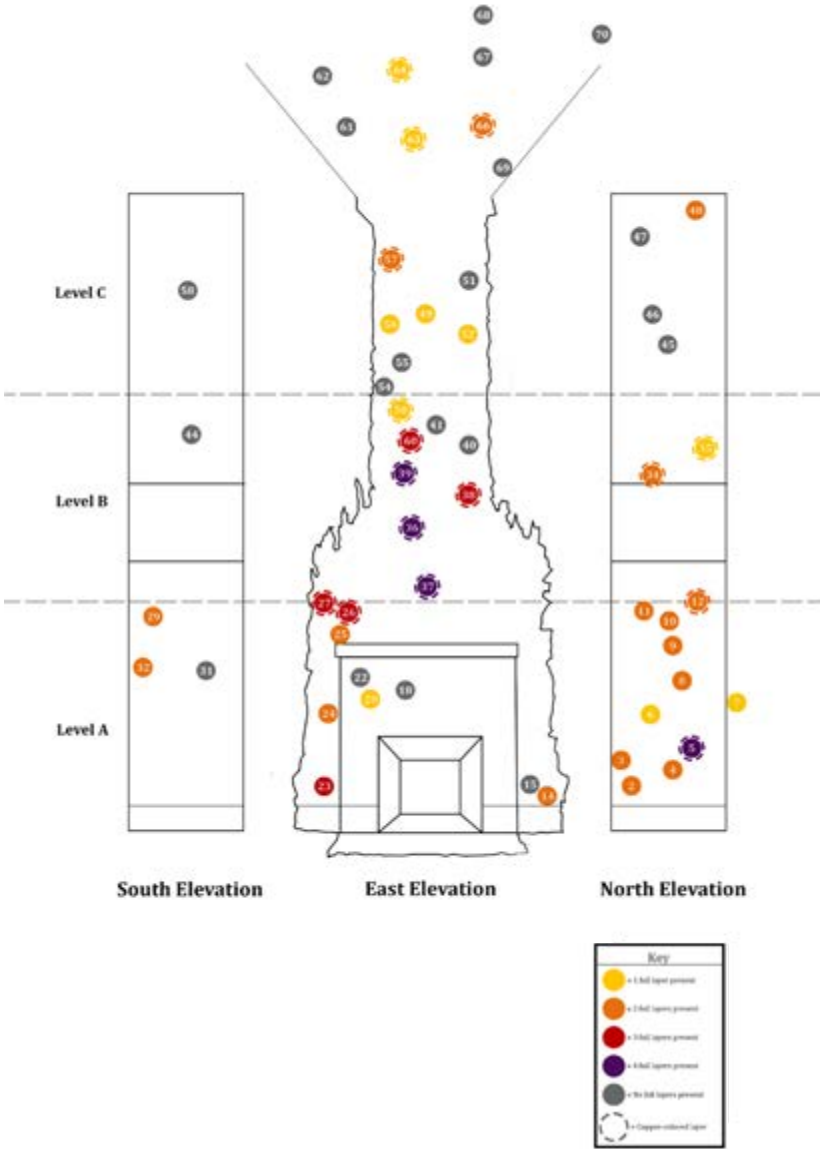
# Sample Data Maps



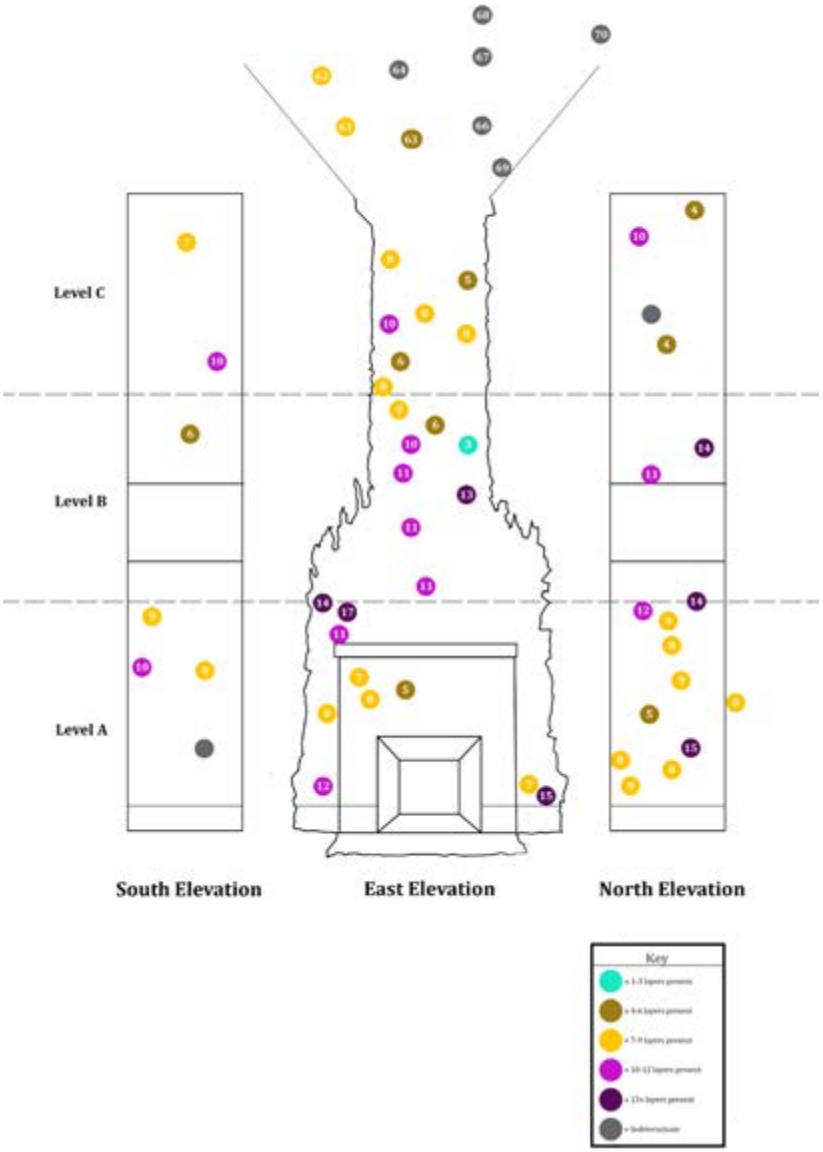

**Map 1.** This map indicates the categories of samples—whether they are from Flames, Animals, or Human figures. The gray color indicates a background sample, or one without color, while the orange indicates the presence of a color finish within the sample. Incomplete samples 1, 13, 16, 17, 19, 21, 28, 33, 42, 43, 53, 65 are not represented.



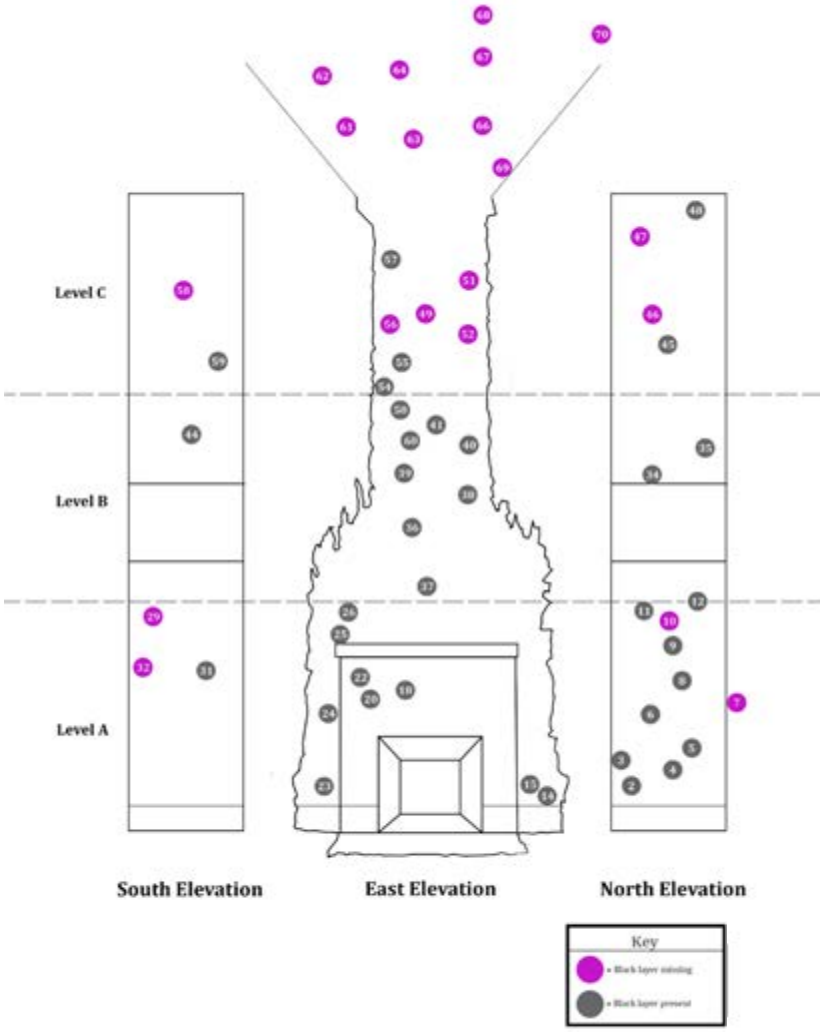

**Map 2.** This map indicates the presence—or absence of color—within the layers of a sample. Incomplete samples 1, 13, 16, 17, 19, 21, 28, 33, 42, 43, 53, 65 are not represented.




**Map 3.** This map indicates the presence of foil layers, their number, and type. Incomplete samples 1, 13, 16, 17, 19, 21, 28, 33, 42, 43, 53, 65 are not represented.




**Map 4.** This map indicates the number of layers present in each sample. Those samples which were possibly incomplete, or otherwise irregular, were marked "indeterminate." Incomplete samples 1, 13, 16, 17, 19, 21, 28, 33, 42, 43, 53, 65 are not represented.




**Map 5.** This map indicates the presence—or absence—of a black layer of overpaint in each sample. Incomplete samples 1, 13, 16, 17, 19, 21, 28, 33, 42, 43, 53, 65 are not represented.

**Metals Scheme, Finish 1.** This map shows the approximate colors of the first finish campaign in complete samples taken from metallic substrate.

**Metals Scheme, Finish 2.** This map shows the approximate colors of the second finish campaign in complete samples taken from metallic substrate.

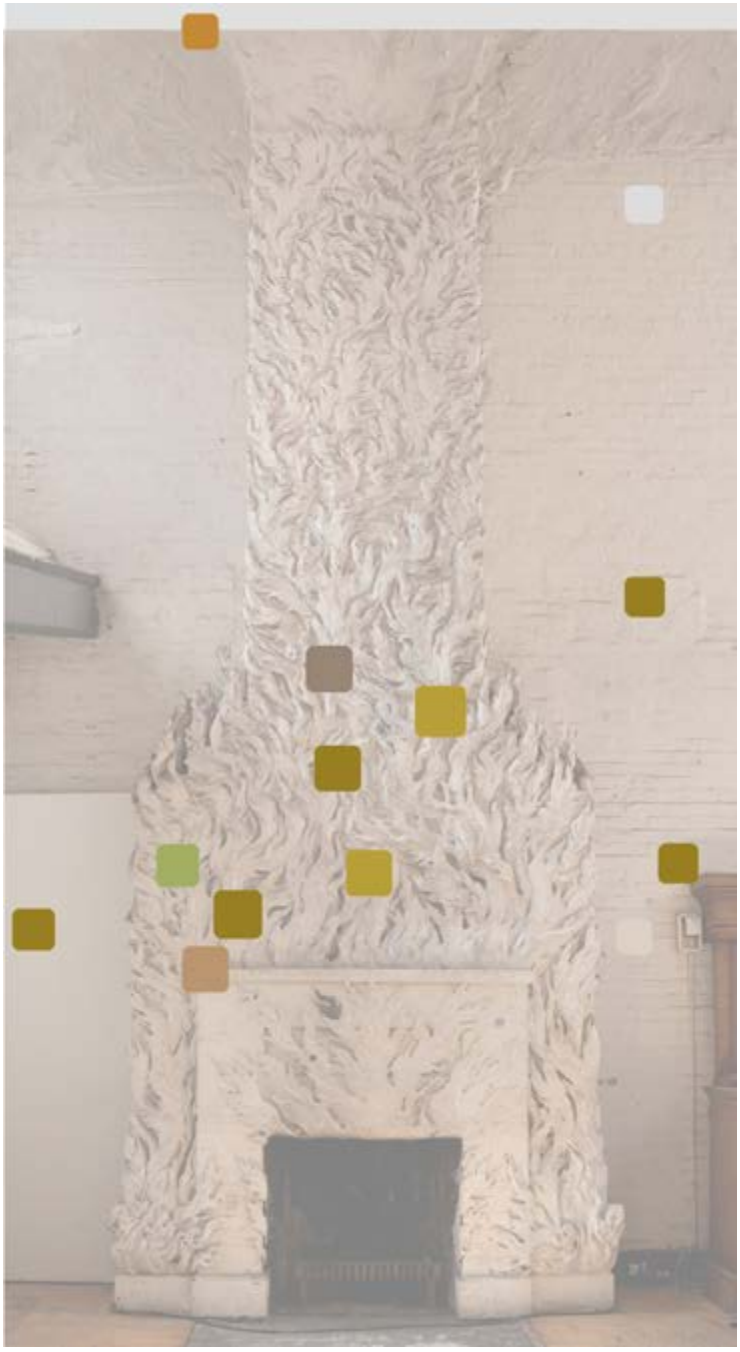
**Metals Scheme, Finish 3.** This map shows the approximate colors of the third finish campaign in complete samples taken from metallic substrate.

**Plaster Scheme, Finish 1.** This map shows the approximate colors of the first finish campaign in complete samples taken from plaster substrate.

**Plaster Scheme, Finish 2.** This map shows the approximate colors of the second finish campaign in complete samples taken from plaster substrate.

**Plaster Scheme, Finish 3.** This map shows the approximate colors of the third finish campaign in complete samples taken from plaster substrate.

**Plaster Scheme, Finish 4.** This map shows the approximate colors of the fourth finish campaign in complete samples taken from plaster substrate.



**Plaster Scheme, Finish 5.** This map shows the approximate colors of the fifth finish campaign in complete samples taken from plaster substrate.

**Plaster Scheme, Finish 6.** This map shows the approximate colors of the sixth finish campaign in complete samples taken from plaster substrate.

Appendix E.

# Hypothetical Polychromy Reconstruction

## HYPOTHETICAL POLYCHROMY RECONSTRUCTION

The present study was undertaken with the goal that the "original" Chanler polychromy should be recovered—by overpaint removal—or reconstructed. With the use of cross section sampling, chemical and mechanical reveals, and archival and art-historical research, it became clear that there was no singular "original" finish to the fireplace. Rather the fireplace likely evolved over the course of five years. The cross sections presented layers of multiple campaigns, aluminum leaf over bright reds over deep greens, all covered by opaque layers.

To begin the reconstruction, it was determined that the three white paint layers, which are very consistently preceded by another black and white coat at the surface of the sample, represented the most frequently recurring pattern. If these are indeed the overpaint layers applied over a Chanler scheme, the colors beneath them in the cross sections and the colors just under the last trace of black or white paint in the reveals are of interest. As mentioned above, it is unclear from the cross sections alone what the final appearance of these superimposed layers would have been in the most recent Chanler composition. Although a complimentary technique, mechanical and chemical reveals were rather indelicate when applied to the Chanler fireplace. General color families were discernible in the test areas in the lab and on site, but the techniques used invariably destroyed the subtlety of Chanler's finishes, namely his leafing and glazing techniques.

What is represented in the following reconstruction is the gold-toned finish that was consistently found under the overpaint layers in both cross section (presenting as a thin-to-fine brown or orange-brown glaze over aluminum leaf) and in reveals (presenting as an over all gold-toned finish). To achieve this effect, Chanler may have used subtle variations of browns (ranging from light-orange-brown to dark green-brown) over scattered leafed areas, defining alternately the swaths of flames, the brick background, and animals and human figures. The graphic reflects these apparent variations in color, as visible in the cross sections, as these were not as visible in the mechanical reveals.

The whole of this reconstruction was made by extrapolation. For example, a sample taken from a flame on the fireplace frontal, NYSS024, shows aluminum leaf over a light-brown substrate and a light yellow-brown glaze layer. An approximation of the effect of a yellow-brown metallic finish was applied to all flames on the fireplace frontal. Similarly, there were many animal and human figures which were presented with an aluminum layer in-between dark greenish-brown layers, and so many of the animals and humans were reconstructed in that fashion.

In our reveals near the upper-middle and the upper fireplace, a delicate pink-purple became visible. This effect was likely achieved by the mixture of red and blue pigment in a medium, as visible in samples NYSS040, NYSS043, NYSS044, NYSS050, and many others, under the overpaint. In other cases (such as with NYSS051) a more striking pink layer seems to have been superimposed by the aforementioned gold tones. Where this effect was likely last visible, it has been applied to the upper regions of the fireplace reconstruction.

It must be stressed, of course, that the colored sketches and graphic reconstructions here presented do not pretend to do justice to the original work, nor do they pretend to be more than mere extrapolation.

**Figure 1.** The reference photograph of the Chanler fireplace in its current state, taken on January 9th, 2013.

**Figure 2.** A possible reconstruction of the Chanler fireplace before it was overpainted, generated using the aforementioned procedure.

**Figure 2.** A side-by-side comparison of the current state of the fireplace with its color reconstruction.

Appendix G.

# Glossary of Terms

Term:

*Alligatoring*

Definition:

A network of cracks formed as a result of lack of elasticity within a paint layer. It can occur when incompatible forms of products are used. For example, glossy paints or enamels do not work well when applied to a latex paint. Paint alligatoring can also happen when oil-based paints are exposed to fluctuating temperatures.

Degrees:

Moderate – Severe – Delaminating – Severe Delamination

Alligatoring: Moderate

Alligatoring: Severe

Alligatoring: Delaminating

Alligatoring: Severe Delamination

Term:

*Cracking*

Definition:

Breakage without complete separation of parts.

Cracking visible in standing flame, North elevation.

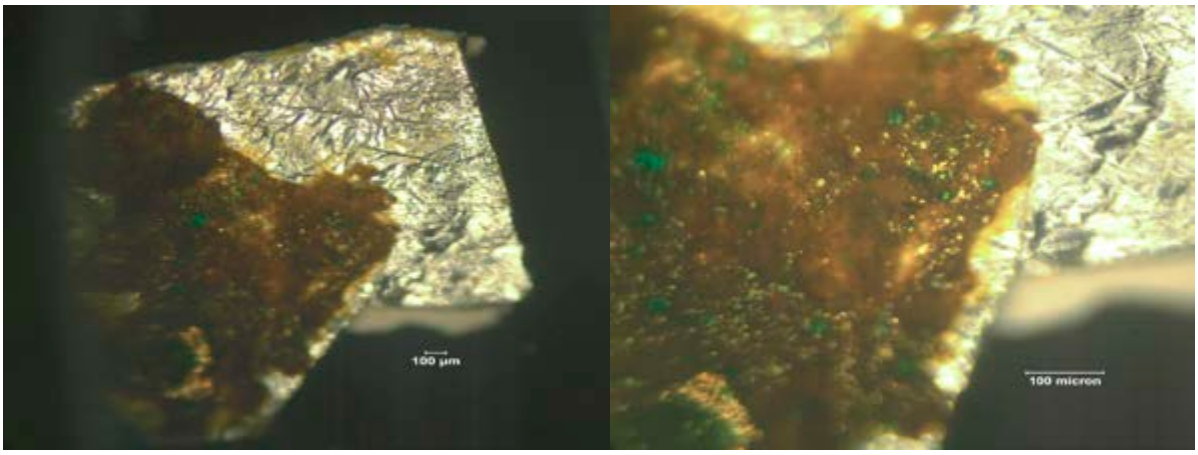
Term:

*Bronzing Powder*

Definition:

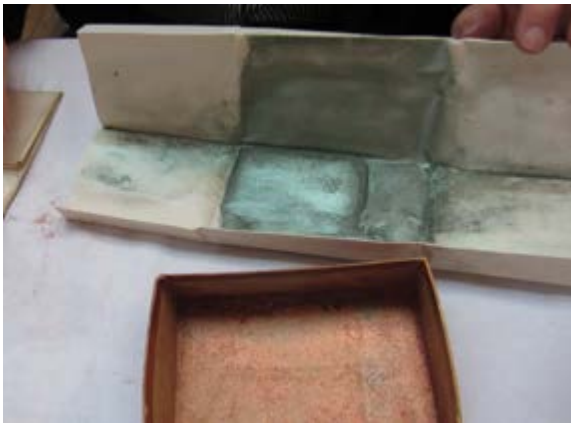
Bronzing powder is a fine metallic powder, used in a decorative-painting technique popular during Chanler's time. The powder could be sold in or mixed into a medium for application or can be sprinkled on a wet paint layer to provide a metallic dimension. Bronzing powder was manufactured in a broad palette of colors, including the more traditional metallic tones, as well as green, orange, blue, and purple in various shades.

Bronzing powders are visible in the photomicroscopy of various finish samples taken from the Chanler Fireplace.




Flame near Hearth: East Elevation, Level A. Flecks of green (and possibly gold) bronzing powders are visible in this photomicrograph of sample NYSS.025, substrate-side up.

A historic bronzing powder sample, provided by Mary Jablonski, in its envelope.



Green- and Bronze-colored historic bronzing powder samples, provided by Mary Jablonski.

Term:

*Flaking*

Definition:

Falling away of thin pieces or layers.

In the materials of the Chanler Fireplace, flaking is most often due to poor adherence between paint layers or between finish layers and the substrate. In the plaster, flaking is also caused by water infiltration through the roof and along the wall behind the water-sensitive fireplace substrate.

Serious flaking conditions are observed in the plaster where the fireplace transitions in to the coved ceiling area.

Flaking: Paint

Term:

*Loss*

Definition:

A piece of material that has is considered to be detached entirely from its original position.

Aside from the loss of finish layers under study, the Chanler Fireplace exhibited considerable losses of the free-standing sculptural flame elements. This material was collected, recorded, and stabilized.

Complete loss of free-standing plaster element exposes the ferrous wire armature.

Term:

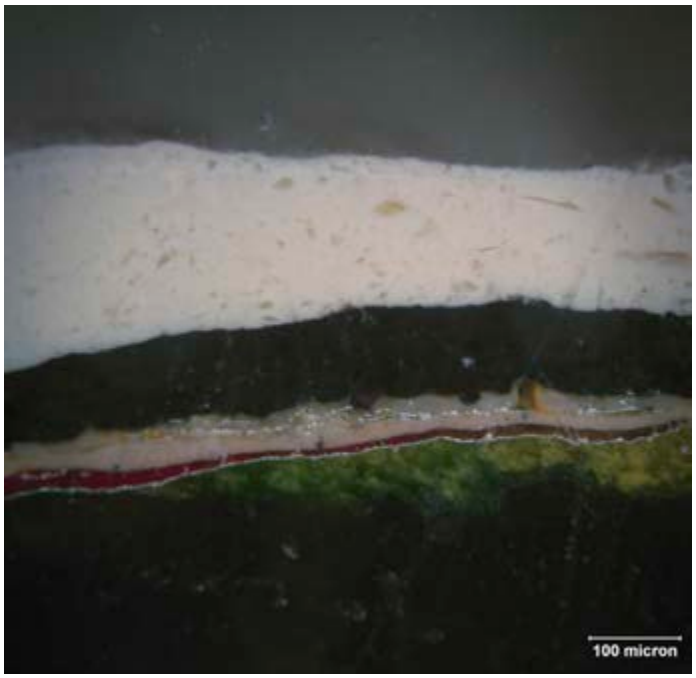
*Patina*

Definition:

A patina is a coating of various chemical compounds such as oxides, carbonates, sulfides, or sulfates formed on the surface of copper, bronze, and other similar metals. This occurs due to exposure of atmospheric elements such as oxygen, rain, acid rain, carbon dioxide, etc.

Whether the green patina present on the bronze elements of the Chanler fireplace was applied as a decorative finish or was the result of corrosion processes before the application of paint and other finishes cannot be determined.

Although the bronze patina seems to have been removed by previous reveals (above), the associated mottled-green color is visible as the bottom layer in the cross-section samples (below).



Term:

*Reveal*

Definition:

A reveal denotes a procedure undertaken to expose the under-layers of finishes either by chemical or mechanical means.

Both chemical and mechanical revealing techniques were practiced on the Chanler Fireplace.

Chemical Reveal:

Exposure of the under-layers of finishes by the application of chemical solvents which preferentially disrupt or dissolve each overlying layer.

Mechanical Reveal:

Exposure of the under-layers of finishes by incrementally scraping off each overlying layer.

Mary Jablonski performs a mechanical reveal on a detached plaster flame.

Previous reveal on a plaster snake element, likely performed by Alan Farancz.

A chemical reveal on the lower area of bronze-work is demarcated with tape.