DRAFT
Scoates Hall
at Texas A&M University
Historic Interior Painted Finishes Study

QMC Project Number 2013-10
April 2014
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SCOATES HALL
AT TEXAS A&M UNIVERSITY
HISTORIC INTERIOR
PAINTED FINISHES STUDY

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Prepared for
Cynthia Woods Mitchell
Historic Interiors Fund
of the National Trust for
Historic Preservation

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Executive Summary

Scoates Hall at Texas A&M University – Historic Interior Painted Finishes Study

Introduction

Quimby McCoy Preservation Architecture is working on a Capital Renewal project at Scoates Hall. The work of that contract does not include any restoration or improvements to spaces like the Vestibule, Lobby and Lecture Room where distinctive historic materials remain intact or partially intact. These distinctive finishes and architectural treatments were designed by architect Samuel Charles Phelps Vosper under the campus architect, Frederick E. Giesecke, during the late 1920’s and early 1930’s with the building. The treatments in this building are very similar to those in the other seven academic buildings designed by the same team and are excellent examples of period decoration. The treatment is also in need of conservation and restoration work as they have been typically been left alone or painted over for the last 80 years.

The Cynthia Woods Mitchell Historic Interiors Fund has enabled this study and documentation of the finishes in Scoates Hall for the purpose of future restoration, as documentation of the treatments that can inform the restoration of the other seven buildings with similar interiors, and as a means of creating more awareness and appreciation of these important historic resources.

This study was undertaken for the Center for Heritage Conservation (CHC) of the College of Architecture, Texas A&M University by a team of specialists led by Quimby McCoy Preservation.
Architecture. The CHC hosted and Quimby McCoy presented a public lecture on this topic at the Preston Geren Auditorium on April 30, 2014.

Quimby McCoy of Dallas, TX conducted the historic research, coordinated the team of specialists involved in the study of the finishes, and prepared a conceptual scope of work and cost estimate for a comprehensive restoration of the Vestibule, Lobby and Lecture Room. The conservation and restoration of painted finishes is a significant component of the comprehensive restoration and a team of specialists were utilized to study this aspect. Matthew Mosca/Artifex, Ltd. of Baltimore, MD prepared the Historic Paint Finishes Report for the building, which provided information and documentation of the painted finishes through on-site investigation, laboratory analysis and an understanding of the building’s history in January – March of 2014. Stashka Starr/Stashka Art Conservation of Dallas, TX prepared on site exposures of the original finishes where they were painted over and defined a methodology for removal of the overpaint and the potential for conservation. Stashka also conducted a visual inspection of the murals in the Lecture Room.

The following is a summary of the work of this study including a physical description of the study area, a history of the building, and historic finishes investigation, findings and recommendations. The appendix includes the full reports from Artifex and Stashka Art Conservation and the conceptual cost estimate.

A word on the definition of terms as they are used in this report: Conserve or conservation treatment refers to the retention of original finishes exposed to view. In order to achieve this treatment, it may be necessary to remove overpaint or to clean the surface, to infill paint, and to repair damaged areas by various means. This work would be undertaken by a trained conservator. Restore or restoration treatment refers to the need to re-create or replicate an original finish because the original finish either does not exist or cannot be re-exposed to view. In order to achieve this treatment, it may be necessary to prepare the substrate for repainting, and to repaint using materials and techniques that enable replication of the original finish. Typically, this treatment is provided on top of the original and later finishes in order to retain the original finish beneath.

**Physical Description**

The building is a three-story, non-symmetrical H-shaped plan, with three distinct parts: the south wing, central Lecture Room, and north wing. The south wing faces the campus’ East Quad, with stairs leading to the building’s elevated main entry on the south facade; with classrooms on the first and third floors and administration and faculty offices on the second floor. The hyphen (center) of the building contains a two-story, stepped lecture room and office spaces on the third floor. The north wing is the largest component, and originally housed large industrial spaces designed for working on agricultural equipment such as tractors, harvesters and other farming machinery. The building is of brick and cast stone, with ceramic tile and cast stone ornamentation and iconography representing Agricultural Engineering.

The building’s primary south wing elevation faces the East Quad and has a centered two-story main entrance. The entrance is heavily sculpted with a cast stone surround and cartouche representing the academic discipline studied in the building. The entrance itself consists of ornamental wrought iron and glass with a lit monogram element over the centered entry doors. The ornamental grille was crafted by Voss Metal Works in San Antonio Texas. Less than a half flight of exterior stone steps leads to the entry doors.

Once inside, the visitor is in the Vestibule where another half flight of monumental stairs leads to the second floor Lobby. The Vestibule features a Spanish tile floor of bold and pale greens and Greek Tinos
and Belgium Black polished marble wainscoting, decorative pilasters in gold, and a decorative cast plaster cornice. The ceiling is plaster with similar cast plaster ornament as the walls and features a cast plaster medallion in the center with a wrought iron and colored glass light fixture. The steps are made of terrazzo. Decorative metal grilles conceal the original heating system.

On the second floor, the Lobby occupies most of the south wing and is surrounded by administrative office space, including the department head's office that is also highly decorated but not a part of this study. The Lobby connects to the upper level of the two-story Lecture Room. The decorative finishes of the Lobby match those in the Vestibule and are similar to those in the Lecture Room. The floor consists of a black marble border and green terrazzo. The walls have polished black marble wainscoting with plaster panels above. The ceiling is the most elaborate feature in the room with highly sculptural forms of cast plaster beams, moldings and ornament and perforated aluminum light troughs with up-lighting. Some of the plaster wall and ceiling surfaces have been painted over with white paint, concealing decorative painting. The original finishes are exposed on approximately half of the surfaces and include an aluminum flake paint base with areas of glazing and areas of highlighting using a bronze powder paint that has discolored (oxidized) from a bright gold to a dull brownish-green. Just off of the Lobby are ante-rooms which provide access to offices and to the stairs that serve all three floors of the building. An elaborate surround with built-in niches for the placement of busts on each side leads to the ante-rooms; this element has been painted over in black. The ante-chambers themselves has been painted over in white. The doors and frames of the Lobby have also been painted black, but were originally a rich dark brown, but they retain their original stained glass lights and bronze hardware.

The Lecture Room features concrete floors that are now carpeted, decorative painted plaster walls and a stenciled acoustic ceiling tile. An original light tough runs on the east and west walls of the Lecture Room near the ceiling. This Lecture Room was originally painted with a similar decorative painting technique as in the Lobby, which and can be seen in the background of early historic photographs. Instead of using an aluminum flake paint as the base coat as in the lobby, a tan color was used with glazing over it. An original mural painted by Gerturde Babcock can still be seen on a beam element in front of the room. In the late 1930's an additional brightly colored mural by Gertrude Babcock was painted on top of some of the original decorative painting at the front of the Lecture Room. The ceiling includes a center medallion identical to the one in the Vestibule and three additional medallions near the entrance to the room. The original metal chandelier, featuring farm implements, remains but the three smaller fixtures near the entrance have been replaced. The historic wood doors with russialoid covering and wood door frames, and the blackboards, decorative metal grilles and step lighting remain in place.

Beginning in the 1950’s to present, several modification to the space have occurred including the overpainting of the walls, overpainting of the stenciled ceiling tile, a dropped acoustical ceiling with recessed lighting and a furred out projection screen. One modification in 1952 involved overpainting almost every public space of the building in a green color. This color remains today, sometimes beneath later paint coats. Unfortunately, some, but not all, of the decorative painting treatments were covered with this green alkyd paint which has proven to be very difficult and impractical to remove.
First Floor Plan. Courtesy The Texas A&M University System drawing archive.

Detail from original drawings for ceiling treatment in Lobby and Vestibule. Courtesy The Texas A&M University System drawing archive.

Detail from original drawings for ceiling treatment in the Lecture Room. Courtesy The Texas A&M University System drawing archive.
c1950’s photograph of the stage area of the Lecture Room. Note that the wall finishes on the side walls have been painted over in two tones while the back wall appears to retain the original finish. The mural painted on the beam element can be seen at the top of the photograph. The ceiling tiles have already been painted over in white, suggesting a date for this photograph after 1952. Photograph from collection of the Department of Agricultural Biological Engineering, Department Head Office and provided by Dr. Steven Searcy.
History

By the late 1920’s the Agricultural and Mechanical College of Texas was in the early of stages of a building program that would dramatically change the face of campus with a new master plan and campus architectural style. This building boom that would last from 1928 to 1934 was funded largely by the Permanent University Fund divided between Texas A&M University and The University of Texas. The Permanent University Fund is the State’s higher education endowment funded through revenue generated by State land that was made rich with the discovery of oil in 1923.

The building program included both residence halls and educational buildings; the campus was reoriented from east to west with a new impressive main entrance flanked by Live Oak trees leading to the new Administration Building. The highly decorative buildings of this period incorporated finely detailed cast stone reliefs, colorful tile, finely crafted ironwork, beautify sculpted decorative plaster work and richly painted spaces. Built in 1932, Scoates Hall was designed by Samuel Charles Phelps Vosper the chief designer in the College Architect’s office. The College Architect was Frederick E. Giesecke and his name appears on the cornerstone as the architect of the building. The building was designed for the Agricultural Engineering department and later named in honor of Daniel Scoates who was the department head for the program from 1909 to 1939.
### Building Chronology

**Jan. 16, 1932**  
College Architect F. E. Giesecke issued plans, sections, interior and exterior elevations, details, structural, mechanical, electrical, and plumbing drawings for the construction of the Agricultural Engineering Building.

**April - 1932**  
College Architect F.E. Giesecke revised drawings to shorten the north wing of the building.

**1933**  
Construction was completed during the spring of 1933. The gold monochrome mural in the Lecture Room by Gertrude Babcock is original to the building.

**ca 1939**  
Gertrude Babcock was commissioned to paint scenes depicting stages of agricultural development. Mural was painted over part of the original decorative painting in Lecture Room.

**1952**  
The interior of the building was repainted covering much of the original decorative finishes.

**July 1, 1959**  
System Architect Henry D. Mayfield, Jr. issued plans, sections, details, elevations, plumbing, heating, electrical and telephone plans for the remodeling of the Agricultural Engineering Building. The changes included minor modifications to some spaces on each floor to add offices, women’s restrooms, research space and classrooms. The large elevator located centrally in the south wing of the building, serving the first and second floors, was removed and the space used for offices, darkroom and mimeograph space. Some spaces had shelves and cabinets added to spaces.

**April 10, 1968**  
Harper & Kemp Architects issued plans, sections, details, elevations, mechanical, electrical and plumbing drawings for renovations and installation of air conditioning. Plans note the removal of window air conditioning units throughout the building. Drop ceilings were added in the building. The mechanical room was added below the main Lecture Room. Major reconfigurations were made throughout the building including the addition of an exterior stair on the northeast corner. A second floor was added to the two story space at the north end of the building. Laboratories had new cabinets and work spaces added. Finishes were changed including new flooring and doors. The covered sidewalk was added on the east side of the building.

**April 10, 1972**  
Architect Marion C Lawrence, Jr. issued drawings for renovations to the Architecture and Agricultural Engineering Buildings. Modifications in the Agricultural Engineering building to the finishes on the first floor northeast corner space.

**1972-1978**  
The building name changed from Agricultural Engineering Building to Scoates Hall.

**1978**  
Dedicated by the American Society of Agricultural Engineers as a landmark building.

**1972 - 2012**  
Various undocumented and miscellaneous changes were made throughout the building and the exterior at varying degrees of significance. One of the more significant changes to the building occurred during this time period was the
March 13, 2012  VWR, Laboratory Furniture Group issued plans, elevations, sections and details for work to some laboratories.

July 17, 2013  Quimby McCoy Preservation Architecture issued plans, sections and elevations as part of the university’s capitol renewal program. The changes included the replacement of the original plumbing and electrical systems, upgrades to the data system and replacement of the heating and ventilation system. Significant reconfigurations and alterations on each floor were made to accommodate new classrooms, laboratories, and offices.

Investigation – Painted Finishes

During the week of January 6-10, Matthew Mosca, historic paint finishes specialist, made a site visit to examine the finishes in the Vestibule, Lobby, Antechambers and Lecture Room of Scoates Hall. Mosca prepared small exposure areas using solvents to remove the overpaint. However, some parts of the study area, including the ceiling of the Vestibule, were not accessible because they require scaffolding; additional exposures will be required once access is possible.

Matthew Mosca also collected samples of finishes for further analysis in the laboratory. The laboratory examinations included stereomicroscopy, polarized-light microscopy and microchemistry. The samples were examined obliquely and in cross section for stereomicroscopy and accomplished using an Olympus SZ-1145. Polarized-light microscopy was done through the use of Olympus BMAX-50 microscope. The samples were then photographed to record the data through photomicrography, digital photographs taken through the microscope.

The collected data and analysis was compiled into a report by Matthew Mosca. His report is included in this document that contains data from his site visit, laboratory analysis, photographs and color standards.

Stashka Star, a conservator, was on site January 6-10, during the same visit by Matthew Moscia, to assess the viability of conservation as a treatment for the historic finishes. She prepared tests to determine if the overpaint could be removed without damaging the historic finishes below. She also removed overpaint from one of the ceiling tiles of the Lecture Room. Based upon the methods used to remove the overpaint, Star provided cost estimates for the areas that could be conserved. Star also visually inspected the murals of the Lecture Room and provided costs for conserving them.
Findings – Painted Finishes

In the Vestibule, most of the original finishes remain intact. These finishes exhibit the rich but controlled palate used in the building and should be used as the example and sample for matching in areas that have been overpainted. These finishes should therefore be conserved so that they can remain exposed to view. With a base of aluminum flake paint over which is a brown glaze applied with a ragged (stippled) technique, with touches of green and red, the decorative painting is both earthy in color and aged in appearance. The wrought ironwork has similar painted finishes, as does the light fixture.

In the Lobby, the areas that have been overpainted in white (with a green paint beneath) cannot practically be exposed to view because the alkyd green paint has cross-linked with the glaze and base coat making its removal impossible without extensive damage to the original finishes. Therefore, these areas should be repainted (preserving the original paint beneath) as part of a restoration effort. The exception to this includes three elements: a green cyma recta molding that runs against the wall, the black niches at the entrance to the ante-chambers and the areas that are still visible as aluminum paint (not overpainted). The green cyma recta molding has not been overpainted with the alkyd green paint, but with later latex paints that are relatively easy to remove; therefore, the original green painted finish can be conserved and exposed to view. The black niches overpaint can also be removed to conserve and expose to view the original painted finishes there, although because this area was silver and may include some gold highlights and glazing, there is some restoration work to do there also. The areas of the ceiling and walls that retain their aluminum paint, glaze and gold highlighting, are in good condition and can remain exposed. The gold highlighting utilized a bronze powder paint that has discolored (oxidized) to a dull, brownish green color that wholly changes the effect intended by the architect and craftspeople who created the ceiling’s design.

In the Lecture Room, the walls have been entirely overpainted many times, including with the alkyd green paint from the 1952 painting campaign. Since this alkyd paint is very difficult to remove without damage to the original finishes, it should be left in place and the areas repainted as part of a restoration effort. The original ceiling tiles have been overpainted but remain above the later suspended ceiling. However, these tiles contain asbestos, which makes their conservation impractical. As a record and sample for restoring the stencil pattern and color, several of these tiles should be removed, the asbestos abated and then the conservation of the finishes completed. Like the walls, the flat plaster ceilings have been overpainted many times and their conservation is impractical. However, there are places such as the upper level wall where the main entrance doors are, where the original finish can easily be exposed for use in matching.

Recommendation – Painted Finishes

Vestibule: conserve all of the original finishes still exposed to view by lightly cleaning the surface and with infill painting at losses and by applying new gold paint directly over the original bronze powder paint highlights.

Lobby: conserve the original exposed aluminum painted elements by lightly cleaning the surface, infill painting at losses and by applying a new gold paint (using actual gold powder that will not oxidize) directly over the original bronze powder paint highlights. Conserve the green cyma recta molding. Restore the remainder of surfaces by painting on top of the original paint, after application of a separation layer, with paints that replicate the original finish.

Lecture room: remove the overpaint, expose to view and conserve an area of the original paint treatment on the upper level wall of the room for use in replicating the wall treatment - as much area
should be exposed to view as practical, which may include the entire wall. The remaining walls can be repainted on top of the existing sound paint, to match the upper level wall. Conserve the murals. Abate, remove and remove overpaint to expose the original finishes and stencil patterns on several original tiles for use in replicating the ceiling treatment. On new tiles to match the original as closely as possible, replicate the original design. Replicate the original flat plaster ceiling painted treatment on top of the existing sound paint. Conduct further testing of the ceiling medallions to determine if removal of the overpaint is possible here and if so, conserve the original finishes of the medallions, light fixture and light cove. If conservation is not practical, restore the appearance of these elements by replicating the finish on top of the existing.

**Comprehensive Restoration Plan and Conceptual Cost Estimate**

In addition to the restoration of finishes, the Vestibule, Lobby and Lecture Room require architectural work in order to restore their appearance. Although the condition of the finishes differs, architecturally the Vestibule and Lobby are similar, hence these spaces are combined for this summary of work. The conceptual cost estimates are likewise organized this way and may be referred to for additional detail on the scope of work and costs.

**Vestibule and Lobby: approximate cost: $500,000**

Scope of work includes:
- Restore flooring. Remove and replace handrail at stair.
- Repair damage on plaster walls and conserve wall finishes where possible, restore where not.
- Restore niches with artwork and ante-chamber beyond.
- Restore marble wainscot.
- Conserve ceiling finishes where possible and restore where not.
- Add LED lighting to the light trough to compensate for the darker original finishes.
- Conserve finishes on metalwork at entrance.
- Conserve finishes and glass at Vestibule light fixture.
- Replace handrail at stair.
- Restore finish and hardware on doors and replicate stained glass where missing.

For additional work, refer to conceptual cost estimate.

Conceptual sketch of Lobby in restored state.
Lecture Room: approximate cost: $1,000,000

Scope of work includes:
Restore flooring at stage and interpret the original turntable feature. Remove carpet and expose portions of floor with the original concrete but add carpet for sound absorption/acoustical reasons. Repair damaged plaster walls and restore finishes. Conserve finishes if possible at upper level wall.
Remove partial height partition added for screen and audio-visual reasons and restore small blackboards, doors and grills that remain. Add a screen mounted on ceiling or portable type.
Make HVAC, sprinkler system and lighting adjustments to create new layout as a result of partition removal.
Remove suspended ceiling tile system and associated lighting.
Remove asbestos containing original ceilings tile and abate at least 6 tiles to be retained for record purposes.
Conserve 6 tiles and use as exampled for replication of the original treatment.
Replace original tiles with new tiles and replication finish and stencil pattern.
Restore remaining flat plaster ceilings.
Restore ceiling medallions.
Conserve murals.
Replace window treatment
Replace handrail on walls.
Restore wall step lights and architectural grills
Restore doors and door hardware.
Add recessed lighting to new ceiling to provide higher light levels expected in classroom space today.
Conserve original light fixture. Replace non-historic light fixtures with more compatible alternatives.
Replace lamping in cove light with LED fixture.
Make adjustments to HVAC, lighting, sprinkler system (exposed) as required.
For additional work, refer to conceptual cost estimate.
Scope does not include the replacement of seating or other furniture such as a podium.
Scope does not include audi-visual equipment.

Conceptual sketch of Lecture Room after restoration
Appendix

Historic Paint Finishes Study – Matthew Mosca

Reference attached study.
Historic Paint Finishes Study

Scoates Hall
Texas A&M University

The Vestibule, Lobby and the Lecture Room

Conducted at the request of:

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Historic Paint Finishes of The Vestibule, Lobby and the Lecture Room
Scoates Hall, Texas A&M University

Introduction:

During the period 6-10 January, a site visit was made to the subject site for the purpose of examining the historic paint finishes and to collect samples for additional examination and analysis. At the same time, Conservators Stashka and Richard Star conducted assessment of the mural and the historic finishes, opening numerous exposure windows of the original finishes where these finishes had been over-painted, with the hope that the original finishes could be exposed again by the removal of over-paint.

Because Scoates Hall is a building in active use, the time frame and access had to be limited. Some additional examination will be required at a later date and may be done at the same time as the actual restoration since many surfaces survive and this study provides additional information.

As part of the second phase, in-situ color matching may be done by the restoration team (i.e. decorative painting firm). It is anticipated that draw-downs of the final colors will be provided to the writer for CIE Lab spectrophotometric readings, which then will be added to this report.

Fortunately, the highly articulated Vestibule and Lobby retain a considerable percentage of original decoration from ca. 1932. The interior design was provided by the Chief Designer, Samuel C.P. Vosper in the office of F. E. Giesecke, College Architect, and the original drawings show many details that were executed. Some changes were made from the original concept of the decoration, however, it is clear that the **system of the painting** that was implemented in 1932 worked to complement the original designs. It is likely that Samuel Vosper devised the interior forms with the types of finishes originally executed in mind.

The original finishes appear to have been retained until August 1952, at which time Welch and Company was contracted for “Repainting of the interior of the South (Front) Wing and Lecture Room Section of the Agricultural Engineering (Building)…”\(^1\). The actual repainting was clearly strictly controlled by the Architect, as many of the original finishes were retained. This precedent was continued, resulting in the survival of many original finishes and details.

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\(^1\) Contract of Welch and Company for Repainting of the Agricultural Engineering Building, Petroleum Engineering and Cottonseed Laboratory Building at The A&M College of Texas, College Station, Texas Arch C. Baker, College Architect 331 Administration Building A&M. College of Texas, College Station, Texas  Contract Number 1156
Provided by Quimby McCoy Architects.
An example of the original glazed and “Rag-Rolled” Finish:

The panels and the underside of the beam at the opening of the Vestibule into the Lobby show the original system of painting: the surfaces were first painted with aluminum flake paint that was then painted over with a brown glaze. The glaze is a translucent layer with a high drying oil content. Once applied to the aluminum flake paint, the glaze was adjusted by rag-rolling. Rag-rolling involved using a bunched up rag (of a lint free material) and rolling it over the wet glaze. By doing so, the craftsmen created the pattern in the glaze seen in the illustration: the rag-rolling removed much of the glaze and created this decorative textured finish. Glazes treated in this manner are called broken finishes. It is possible that specially cut rollers might have also been
used. Before the glaze fully dried, the half-round molding was *high-lighted*, that is all glaze was removed by wiping, exposing the aluminum flake paint.

**Retention and Re-execution**

The fortunate condition that some of the original ca. 1932 decoration survives creates a special condition, since large areas of the Vestibule and Lobby have been overpainted. These surfaces include the flat ceiling of the Vestibule and the upper walls and half of the ceiling in the Lobby.

In nearly every case, the surfaces were overpainted with an alkyd-oil medium paint. This type of paint is very strongly adhesive, and attempts to remove the alkyd-oil paint also severely damage the original brown glaze that was applied to the surfaces. Exposure on a large scale of the original surface does not appear to be feasible.

The original finishes have changed somewhat as well: the aluminum flake paint has lost some of its metallic gleam. As a result the newly executed surfaces will vary to some degree from the original. Despite this, it is the writer’s position that the original finishes should be retained. It appears that there are very few locations where the original finishes need to be repaired. The advanced tarnishing of the bronze powder paint, however, is an exception: these highlights may be directly overpainted with a new metallic or mica-powder coating, based on the results of tests.

**In-situ Color Matching**

Because of the survival of much of the original finishes, the option of in-situ color matching is important. Many of the surfaces, such as the acoustical tile ceiling of the Lecture Room may be matched at the time of the restoration. This will result in a harmonious palette for the entire project because some of the finishes will be the surviving original finishes, the in-situ color matching will make it possible to adjust any restoration colors to the correct value and chroma based on the surviving exposures. Illuminant metameric failure is another factor that may prove important in this restoration. Illuminant metameric failure is the condition where colors match under one lighting condition but not under another lighting condition. The red and blue detailing of the Lobby Ceiling may be instances where these types of changes may happen: thus it may be decided to implement in-situ color matching.

In-situ color matching requires that color standards are made and sent to this office at the time of the restoration. A completion report is anticipated, and the in-situ color matches would be read by the spectrophotometer and registered in CIE Lab coordinates and provided with Munsell Conversion Numbers. All in-situ color matches would thus be included in the Completion report.

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2 The manipulation of the original glaze in the Vestibule, Lobby and Lecture room is referred to as “rag-rolled” to be consistent. It is certain that the craftsmen who did the work also used other actions such as dabbing or striking the wet surface with a wad of rag, or sponges, or stipple brushes.
Technical Program

1. Collection of Materials

Samples of the characteristic surfaces were collected for laboratory examination. Examples were compared on site so that the best examples were obtained. For the Scoates Hall project many small exposure areas were made. In addition, exposures were made by Ms. Stashka Star, Conservator.

2. Exposure of Finishes:

Small exposure areas were made using the cratering technique and using solvents (ethyl alcohol and benzyl alcohol) to remove the overpaint. Unfortunately the initial overpaint of the original glazed finish is an alkyd oil finish, which was applied over the glaze which was penetrated by the alkyd binder and it is nearly impossible to remove the overpaint without dislodging the glaze. Some additional exposures are called for, and a sufficient area of exposures will be possible to assess the original glaze for comparison with the existing original glazed surfaces.

Laboratory examination:

3. Stereoscopic and Polarized-light Microscopy, and Microchemistry

All samples were examined in cross section and obliquely. Several sample were mounted for thin cutting and polishing. These samples are mounted in Bio-plastic polymer resin. The samples are ground and polished for examination using top lighting and ultraviolet illumination. Mounted samples will be photomicrographed, which forms the basis of the report, illustrating the findings.

Exposure to full-spectrum or part-spectrum light is used to help reduce the yellowing of oil media. Initial stereomicroscopy is accomplished using an Olympus SZ-1145 microscope. Polarized-light microscopy, when necessary, is also undertaken, using the Olympus BMAX-50 microscope. Polarized-light microscopy identifies pigments and media according to the McCrone Research Institute system of particle identification. Short wave UV was employed for bleaching of oil media, and oil penetrations for color clarity. For the Scoates Hall project, color standards were from the Benjamin Moore and Company Paint finish lines. All color standards other than the Munsell Color standards, were read by the X-Rite SP62 Sphere spectrophotometer to provide CIE Lab coordinates, the universal means of expressing color in a three-dimensional color space, expressed numerically.

4. Photomicrographs:

A very important means of recording paint finish data is photomicrography: digital photographs taken through the microscope of particularly informative samples. This allows for clear indications of the conditions seen under the microscope, and how the recommendations were achieved. The report includes photomicrographs that are annotated with information in the report. Many of the paint samples will be mounted in polymer resin for cross sectioning. In addition, some photomicrographs of unmounted samples may be included since this type of examination is also very informative.
5. Report: Deliverables

The report brings together all the aforementioned material in a comprehensible manner and includes color samples, photomicrographs, reconstructed finishes and any additional pertinent information, such as that from known documents. Spectrophotometric readings of color standards are also executed to provide all standards with CIE Lab and included in the report as indicated above. The report is delivered electronically and one hard copy.

Color Standards:

The color standards that were used for this study are from the Benjamin Moore and Company color lines. Since this is a proprietary paint line and not a recognized system of color notation, each color standard for the report has been read by the X-rite Sphere Spectrophotometer SP-62 to provide CIE Lab coordinates, Hunter Lab coordinates. These numbers express the color and make it possible to reconstitute the color without the color standard.

Note Regarding the color accuracy of the photomicrographs

Despite great strides in the field of color control in digital photography, the variations in the various computers and printers makes it impossible at this time to insure that all colors will be registered with complete accuracy in all cases. The color standards represent the historic colors that are the guide for the restoration. The photomicrographs illustrate the paint seriations and the condition of each sample.

Respectfully submitted this date, 15 March 2014

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The Vestibule:

The painted surfaces of the vestibule are primarily the entablature, the ceiling and the center medallion. These surfaces were not accessible for examination during the site work. Nevertheless, the following procedures may be recommended.

Center medallion and Ceiling

Notes:
1. The ceiling has been over-painted, however, with the examination of the ceiling of the Lobby, it is probable that the ceiling of the Vestibule will prove to have the aluminum flake paint with a rag-rolled-stippled glaze. This will require additional examination. An exposure window must be opened to examine the original ceiling finish, which may then be assessed and replicated.

2. The outer ring of the rosette retains the original finish: aluminum flake paint was first applied, and then the blue background was painted in (note that the opacity of the blue is deliberately not even, making it a more dynamic surface).

3. The stylized plant forms retained the aluminum flake finish, with the gold toned bronze powder paint highlighting. The bronze powder paint may be renewed with new bronze powder paint or a mica-powder acrylic paint. This will be determined by additional testing.

4. This ring retains the aluminum flake paint finish.
5. This ring *may have been over-painted.* Additional examination will be required. Also note that locations 5a and 5b may show the same light green over-paint and will be subject to additional examination.

6. The beads between the teeth of the dental molding ring (which retains the aluminum flake paint finish) appear to be a red paint, which is used sparingly on the ceiling of the Lobby as well.

7. The radially articulated ring retains the original aluminum flake paint finish, with the same blue paint that was used on the outer ring (2) used to tone the edges of this ring.

8. This ring, formed of acanthus leaves and floral forms was first painted light green, with (below, 9)

9. Gold toned bronze powder paint, seen on the edges of the acanthus leaves and the flowers. The inner ring also has gold toned bronze powder paint. The deteriorated bronze powder paint should be renewed with additional bronze powder paint or mica-powder acrylic finish.

Vestibule Entablature:

1. The ceiling has been over-painted and will require exposure, assessment and replication. It is anticipated the original finish was similar to that of the Lobby: a rag-rolled brown glazed finish over aluminum flake paint.
Entablature 1a: All of the surface of the entablature are original finishes. Note the alternation created by the fields of the curved frieze: blue and light green. The decoration is executed in the aluminum flake paint, with the gold bronze powder paint highlights. The gold bronze powder paint finish had tarnished and is now brown. Note that there appear to be two tones of the gold highlights (a, b) however, this may have been achieved by varying the thickness of the gold bronze power paint: the paler example (b) may have been produced a thinner application of the gold bronze powder paint.

2. This frieze may have been recently overpainted with a light green that is very similar to the original. The original green may have had the rag-rolled brown finish that is seen on the bead molding directly below and is part of the lower frieze (3).

3. All of the surfaces within the lower frieze (3) show the original finishes. These will require additional examination, but may be retained (except for the tarnished gold toned bronze powder highlights)

Vestibule: Lower frieze, Pilaster

Note: The frieze surfaces are indicated as original finishes. The surfaces were not accessible for close examination, however, it appears that molding (a) may be an original surface and may indicate the original finish of the pilaster (b). An exposure was executed on the shaft of the pilaster, as per below.
Vestibule: Pilasters at the Corners

Note: The original grayish brown glaze that appears to have been stippled and struck with a flogging brush may be seen in the small exposure on the surface of the reeded shaft of the pilaster. The brown semi-opaque glaze (which was not well applied and overlaps onto the adjacent marble wall surface) was removed using ethyl alcohol and scalpels.

The upper surfaces, particularly the capital should be carefully examined and may provide additional information on the original finish. A larger exposure area may be opened in order to guide any restoration painting.

Pilaster, Capital:  Ground Coat: Light grayish tan: **Benjamin Moore 1004**
Glaze layer to be matched to on site exposure.
Vestibule:

Photomicrograph: Sample from the Pilaster

Photomicrograph: Unmounted sample, Olympus SZ-1145 microscope, with Nikon D7100 digital camera body Lexar Media 1GB flash card Dolan Jenner Fiber optics illuminator, daylight filtering

Note: The view of the sample is looking down onto the finish surface of the sample. The sample was extracted from the return of the pilaster. Note the plaster substrate, which supports the paint finish. The yellowish-white base coat is clearly seen and noted. The brownish-gray marbling is also noted (not easily perceived). The later dark varnish is also clearly seen. Note the cracks that opened in the basecoat and marbling that is indicated as A: these cracks opened as the original marbling and base coat aged. The later dark varnish flowed into the cracks when it was applied. The presence of these cracks, filled with the later dark varnish is a clear indication that the dark varnish was added later.
Note: The original black enamel finish is still visible on the heat register grilles. The paint is worn from most of the protruding surfaces. Some of the original black finish may be seen on the surface (A). The grille has some rust on the surface. The original black has lost most of the gloss level due to decline of the gloss as the paint has aged; this has altered its appearance.

Finish: Black: **Benjamin Moore 2131-20** ("Midnight") Gloss level: Modern semi-gloss
The Vestibule: Phase 2 Examination and Restoration

The Vestibule will require additional examination of some surfaces as well as conservation of the original surviving surfaces.

1. Ceiling: the flat ceiling, now overpainted white, must be examined with additional exposures of the surface. The known finish of the Lobby Ceiling suggest that the Vestibule ceiling will be similar: an aluminum flake paint ground with some type of brown glaze.

2. Center medallion: most of the surfaces appear to be original, as noted.
   a. Determination if light green surfaces (5, 5a, 5b) are overpainted and the original condition if this is the case. In-situ finish matching and restoration thereof.
   b. The original surfaces may require modest cleaning.
   c. Re-execution of the bronze powder highlighting, using a non-tarnishing gold metallic finish to be determined.

3. Entablature: most of the surfaces appear to be original, as noted.
   a. Determination if light green surface (2) is overpainted and the original condition if this surface if this is the case. In-situ finish matching and restoration thereof.
   b. The original surfaces may require modest cleaning.
   c. Re-execution of the bronze powder highlighting, using a non-tarnishing gold metallic finish to be determined.
   d. Stabilization and In-painting of areas of loss of the original finish.

4. Pilasters and Capitals
   a. Additional exposure of the original surface by the removal of the dark brown glaze.
   b. In situ color matching and replication of the original finish. Ground Color: Light grayish tan: Benjamin Moore 1004

   (“Midnight”) Gloss level: Modern semi-gloss
The Lobby:

The Vestibule opens directly into the Lobby and the Lobby walls continue the system of glazing on aluminum flake paint that is seen in the Vestibule. These spaces were finished in a manner that emphasizes the connection of the two spaces.

The Ceiling; Center: Sample locations (photograph provided by Richard Star)

Note: The on site exposures by Ms. Stashka Star. The exposures showed very light application of the brown glaze, rag-rolled. The Locations 1 and 3 would have had a light application of the brown glaze, rag-rolled similar to the lighter areas of the light track, as noted below.

Location 4 shows the original blue detail on this molding. The red detail, Location 2 would have provided a similar trim effect.
Lobby Ceiling: Center moldings:  
Location 1, Location 3:  
Photomicrograph: Mounted sample, Olympus BMAX-50 polarized light microscope/ 10x 
objective, (100x microscopic magnification) with Nikon D7100 digital camera body Lexar Media 
1GB flash card Dolan Jenner Fiber optics illuminator, daylight filtering.

Note: The sample has been mounted in polymer resin, cut and polished for additional 
examination. The plaster substrate is clearly seen and noted which supports the yellowish white 
primer/undercoat, which supports the aluminum flake paint (2). The very thin application of the 
brown glaze follows (3), which would have been rag-rolled to create the textured finish. This is 
the last of the original finishes.

The teal-green layer (4) is much later in date (1952 overpainting) and is not part of the original 
decoration. A larger exposure should be executed to view the glazed surface and note the weight 
of the glaze application and the pattern of the rag-rolling.
Lobby Ceiling: Center moldings:
Location 2: Red detailing
Photomicrograph: Mounted sample, Olympus BM-50 polarized light microscope/10x objective, (100x microscopic magnification) with Nikon D7100 digital camera body Lexar Media 1GB flash card Dolan Jenner Fiber optics illuminator, daylight filtering

Note: The sample has been mounted in polymer resin cut and polished for additional examination. The plaster substrate is seen at the base of the sample. This supports the yellowish white undercoat (1), followed by the aluminum flake paint (2). The red detail paint (3) is very clearly seen, and this completed the original finish for this location.

The later 1952 teal-green finish may be seen (4).
Lobby Ceiling: Decorated Panels

Note: The decorated panels show the original finish still extant: these finishes should be retained. The bronze powder detailing (Rings of Saturn, in this panel) should be re-executed to restore the original gold metallic finish, with a non-tarnishing bronze powder or a latex metallic (mica) paint.
Lobby Ceiling: Decorated Panels

Note: These panels, with the “cloud decoration” and the adjacent moldings also show the original finish. The relief of the cloud forms have been “refreshed” with additional aluminum flake paint at some point. Immediately to the right (outside) are the flat panels of the ceiling with ribs, surfaces that have been over painted.
Lobby Ceiling: Flat ceiling with ribs

Schematic section drawing

Note: The flat surfaces of the ceiling, which are between the Cloud panels and the Phoenix bird panels of the ceiling. The suspended indirect lighting tracks are under this part of the ceiling.

The flat surfaces appear to have been lightly glazed with the brown glaze and rag-rolled; the brown glaze was applied over the aluminum flake paint. The ribs were highlighted: all of the brown glaze was wiped off while the glaze was still wet.
**Lobby Ceiling: Flat Surface:**

Photomicrograph: Mounted sample, Olympus BMAX-50 polarized light microscope/10x objective, (100x microscopic magnification) with Nikon D7100 digital camera body Lexar Media 1GB flash card Dolan Jenner Fiber optics illuminator, daylight filtering

Note: The sample has been mounted in polymer resin cut and polished to 8000 micron grit polishing cloth for additional examination. The plaster substrate is seen at the base of the sample. This supports the yellowish white undercoat (1) and the aluminum flake paint (2). The thin brown glaze (3) is seen in a dark variable line, indicating the rag-rolling of the glaze. This is the last application of the first finish. The later 1952 teal-green finish (4) is clearly seen obscuring the original finish.
Lobby Ceiling: Phoenix Bird Panels

Note: The Phoenix bird panels and associated moldings retain the original decorative finish: aluminum flake paint with the rag-rolled brown glaze. Note the extensive use of the gold metallic bronze powder highlighting that is extensively used: the bronze powder finish has tarnished and should be re-executed using a non-tarnishing metallic finish.
Lobby Ceiling Panels: Phoenix bird panels (at walls)

Use of Bronze powder highlighting: Ceiling of the Lobby

Note: This part of the Ceiling of the Lobby retains the original finish: this is a detail of the panel with the Phoenix bird. The background (1) shows the aluminum flake paint with a thin brown glaze manipulated with stipple brush and wiping. The figures (bird, wing, leaves, etc.) are all highlighted showing the basic aluminum flake paint without any glaze (2): any brown glaze that might have been applied to the relief forms was removed while the glaze was wet. The bronze powder (3) shows clearly as a brownish-yellow dull metallic: it is different than the pigmented brown glaze used to articulate the background. This would have been a bright gold metallic when new.
Photomicrograph: Lobby Ceiling, Tail of Phoenix Bird relief, with Bronze powder paint
Unmounted sample, Olympus SZ-1145 microscope, (20x total microscopic magnification) with
Nikon D70 digital camera body Lexar Media 1GB flash card Dolan Jenner Fiber optics
illuminator, daylight filtering

Note: The sample was extracted from the tail of the phoenix bird, showing the bronze powder
paint on the surface. The plaster substrate is clearly visible and noted. The aluminum flake paint
was fist applied and can be seen at the edge of the paint accumulation and is identified. The
bronze powder paint is clearly dulled by exposure and in essence, tarnishing, since it is a copper
alloy with zinc and other metals and looses its gleam over time. Note the dark particles (A) that
reduce the brightness of the metal flake paint.
Glazing on opaque Paint: Lobby Ceiling, Cyma molding

Glazing was also used to tone opaque paint and to provide additional and subtle texture. The cyma molding at the edge of ceiling

Note: The cyma molding that serves as the crown molding between wall and ceiling, is perhaps the only element where removal of the over-paint is an option. The over-paint layers here are the later latex-acrylic paint. The earlier alkyd-oil green finish was not applied to this cyma molding. The cyma molding is a green paint, with a thin layer of the brown glaze. Note that the rag-stippling is subtle, but under microscopy is clearly seen (refer to the unmounted sample below).
Photomicrograph: Cyma molding, sample from exposed original location (raw)
Unmounted sample, Olympus SZ-1145 microscope, (11x total microscopic magnification) with
Nikon D70 digital camera body Lexar Media 1GB flash card Dolan Jenner Fiber optics
illuminator, daylight filtering

Note: The view of the sample is looking down onto the finish surface. The sample was not treated
in any manner in the lab. The white finish plaster is seen at the right end of the sample. The
yellowish tan primer/undercoat (1) is clearly seen; this color was never visible in the finished
Lobby. The aluminum flake paint (2) is the next layer. As part of the system of painting, at one
point nearly all plaster in the Lobby and the Vestibule would be painted with aluminum flake
paint. The next layer is the light green oil based paint (3) that is the ground coat for the brown
glaze (4). Note that the evidence of “texture” of the manipulated glaze is clearly seen under
microscopy.
Lobby: Ceiling Beam

The paneled walls of the Lobby that are now over-painted were originally finished in the same manner as that in the Vestibule. The cross section below indicates how the original finish was achieved in layers. The sample is from the Beam that crosses the ceiling. Test exposure by Ms. Stashka Star, Conservator.
Photomicrograph: Scoates Hall, Lobby: Side of Beam across ceiling
Photomicrograph: Mounted sample, Olympus BMAX-50 polarized light microscope/10x objective, (100x microscopic magnification) with Nikon D7100 digital camera body Lexar Media 1GB flash card Dolan Jenner Fiber optics illuminator, daylight filtering

Note: This sample has been mounted in polymer resin, cut and polished to 8000 micron polishing cloth for additional examination. The plaster substrate is seen at the base of the sample. The first layer (1) is a yellowish white primer/undercoat that was applied to nearly all of the plaster surfaces within this study. The second layer is the aluminum flake paint (2). The aluminum flake paint is also found on nearly all of the plaster surfaces of the Vestibule and Lobby. Once the aluminum flake paint was fully dry, the brown glaze (3) was applied and rag-rolled. The translucency of the glaze is clearly notable, and shows the morphology consistent with oil glazes: a uniform solid coating. This was the completion of the original finish,

The side of the beam would have been the same type of rag-rolled finish as seen on the surviving wall panels.
Layer 4, the teal-green paint, is the first over-painting and appears to be an alkyd-oil paint, possibly dating to 1952. The alkyd paint is very well adhered to the glaze layer and cannot be removed without disruption to the glaze layer.

Other paint layers (which were more recent latex finishes) were removed prior to the mounting process.
Note: This on site photograph shows the underside of the ceiling beams. The cross sections showed that the flat surfaces were finished with the same type of brown glaze, rag-rolled as seen on the walls and the side of the beams. The half-round molding was high-lighted, removing any of the brown glaze while it was still wet, exposing the gleaming aluminum flake paint.
The Walls

The panels of the walls, both the large and the smaller panels were finished with the rag-rolled glaze over the aluminum flake paint ground, as is retained at the Vestibule.

The upper wall panels (plaster) were finished with the brown glaze, rag-rolled over the aluminum flake paint finish. This is still exposed on the panels and lintel at the entrance to the Vestibule.
Lobby Walls: Original finishes
Small Panels, type 1

Note: The panel seen at the left retains the original glazed and rag-rolled surface.

Samples were extracted from the various locations.

The glaze was applied over aluminum flake paint.

This is the finish that was used on all of the panels of the upper walls in the Lobby.
Sample: Scoates Hall, Lobby Small panel: 1. Panel
Photomicrograph: Mounted sample, Olympus BMAX-50 polarized light microscope/10x objective, (100x microscopic magnification) with Nikon D7100 digital camera body Lexar Media 1GB flash card Dolan Jenner Fiber optics illuminator, daylight filtering

Note: The sample is mounted in polymer resin, cut and polished to 8000 micron grit polishing cloth for additional examination. The plaster substrate is seen at the base of the sample. The first paint is an oil based yellowish white that is the base coat (1). There is a clear coating (2) that is followed by the aluminum flake paint (3) and the brown glaze (4). The later 1952 teal-green finish is also clearly seen (5).

Note: The same paint layering is seen on samples from:

2. Small Panel, Panel reveal
4. Wall surface
5. Beam
Note: All of the samples from these locations show the aluminum leaf with the brown rag-rolled glaze, with the exception of Sample 7. Inner molding and 9. Outer Molding both of which appear to have been highlighted by the wiping off of the glaze. Note the band of the original brown glaze adjacent to the outer molding.
Scoates Lobby Walls, Large panels Sample: 6. Panel
Photomicrograph: Mounted sample, Olympus BMAX-50 polarized light microscope/ 10x objective, (100x microscopic magnification) with Nikon D7100 digital camera body Lexar Media 1GB flash card Dolan Jenner Fiber optics illuminator, daylight filtering

Note: The sample is mounted in polymer resin, cut and polished to 8000 micron grit polishing cloth for additional examination. The plaster substrate is seen at the base of the sample. The first paint is an oil based yellowish white that is the base coat (1). There is a clear coating (2) that is followed by the aluminum flake paint (3) and the brown glaze (4). The later green finish is also clearly seen (5). The most recent white paint had been removed on site.
Scoates Lobby Walls, Large panels Sample: 8: Recessed molding
Photomicrograph: Mounted sample, Olympus BMAX-50 polarized light microscope/ 10x objective, (100x microscopic magnification) with Nikon D7100 digital camera body Lexar Media 1GB flash card Dolan Jenner Fiber optics illuminator, daylight filtering

Note: The sample is mounted in polymer resin, cut and polished to 8000 micron grit polishing cloth for additional examination. The plaster substrate is seen at the base of the sample. The first paint is an oil based yellowish white that is the base coat (1). This supports the aluminum flake paint (2). The aluminum flake finish is glazed with the brown rag-rolled glaze (3): it appears to be a light application. The later 1952 teal-green finish is also visible (4).
Note: The remains of some of the edges of the original glazed aluminum flake paint indicate the original finishes of the panel moldings, as indicated.
The End Walls (East, West):
These walls are complicated and were elaborately finished. The niches and lintel were finished with the aluminum flake paint without glaze.
The End Walls, Details:

Note: The green finished fascias have been over-painted repeatedly (1); the original finish is aluminum flake paint with a thin brown glaze, rag-rolled-stippled, to match the finish noted “A”. The raised fillets (2) show the aluminum flake paint finish.

The floral band (3) retains the original finishes: the small areas of the background show the brown glaze. All of the relief decoration is aluminum flake paint highlighted with gold toned bronze powder paint.

The cresting detail (4) also retains the original decoration. The entire element was painted with aluminum flake paint, with the use of the brown glaze in recesses and highlighted with the gold toned bronze powder paint. As in the other locations the gold toned bronze powder paint has oxidized and darkened.
The Lobby: All Doors including the Doors to the Lecture Room

Note: The original finish of the doors to the Lecture Room is wood faced on the Lobby side of the doors. At present the doors and door frames have been painted black. The original finish is found under the large escutcheon plate of the door handles, as indicated by the blue arrow in the photograph to the left. The finish is a dark “black walnut” brown staining and a thin coating. The door frames were finished in the same manner: thus the doors were distinct from the black marble lined walls. The surviving examples of the original finish may serve as a model for the restoration of this finish on all doors and door frames in the Lobby.
The Lobby: Phase 2 Examination and Restoration

The Lobby will require additional examination of some surfaces as well as conservation of the original surviving surfaces.

1. Ceiling
   a. Center section, Location 1 should be subject to additional exposure to determine the degree of the glaze (density of pigmentation) and adjustment (rag-rolling, stippling etc.) in comparison with original surfaces that remain.
   b. Re-execution based on the in-situ matching of the original using aluminum flake paint as a ground surface.
   c. Re-execution of the original red detailing (Location 2): Color standard Benjamin Moore 1295 (“Apache Red”) Gloss level: Eggshell gloss
   d. Flat ceiling sections between ribs should be subject to additional exposure to determine the degree of the glaze (density of pigmentation) and adjustment (rag-rolling, stippling etc.) in comparison with original surfaces that remain. Re-execution based on the in-situ matching of the original using aluminum flake paint as a ground surface.

2. Original panels
   a. Original surfaces may require modest cleaning.
   b. Re-execution of the bronze powder highlighting, using a non-tarnishing gold metallic finish to be determined.

3. Crown molding, (cyma molding): this surface may be fully exposed by removal of the later overpaint (that appears to be latex based), or may be re-executed based on the large exposure that was produced by Stashka Art Conservation, Inc.
   Ground Color: Benjamin Moore 634 (“Forest Valley Green”) Suggested gloss level: Eggshell gloss

4. Ceiling Beams: to be re-executed using aluminum flake paint ground and brown glaze, replicating original finish exposed on the underside of the beam at the Vestibule. Panels of the Beams to receive Re-execution of the bronze powder highlighting, using a non-tarnishing gold metallic finish to be determined.

5. Walls: All of the upper walls (plaster) to be re-executed in the brown glaze rag-rolled, with highlighting of the moldings as indicated. Ground color: aluminum flake paint.

6. Doors and Door Frames: these surfaces were originally stained and finished in a warm ebony finish that survives under the large escutcheon plates. One door to the Lecture Room will be retained and all other doors and door frames will be stripped of the black overpaint and refinished to match the original finish under the retained door escutcheon plate. Once this has been successfully completed, the retained door will also be stripped of the black overpaint and refinished, so that all surfaces will have the original ebony finish restored.
7. End Walls: Niches and Lintels: These surfaces were originally the aluminum flake paint finish without any glaze. This surface may be re-executed using the same type of aluminum flake paint.

8. End Walls: details
   a. Floral bands: This retains the original aluminum flake paint finish. Original surfaces may require modest cleaning. Re-execution of the bronze powder highlighting, using a non-tarnishing gold metallic finish to be determined.
   b. The flat surfaces (1) are to be re-executed using the aluminum flake paint finish and the brown glaze, rag rolled to match cresting detail “A”.
   c. Cresting: Original surfaces may require modest cleaning. Re-execution of the bronze powder highlighting, using a non-tarnishing gold metallic finish to be determined.
The Antechambers beyond the Lobby: These spaces were not part of the original scope, however, since the Lobby opens into these spaces at each end, it is important to include them, in order to complete the effect of the Lobby. Samples were taken from both the woodwork and the plaster walls. It was very easy to remove the overpaint down to a deep blue-green finish that was prepared with prussian blue and a composite white base. The pigments are characteristic of paints in the Lobby as well, particularly the very similar deep blue-green finish on the underside of the track lighting (see below).

Removing this blue-green finish was not possible certainly in part due to the use of an alkyd medium. The strong adhesion may also indicate that the deep blue-green was applied not too long after the initial decoration since there is little surface particulate on the surface. It is impossible to estimate the time between the first finish as the application of the deep blue-green finish.

The first finish appears to be a glazed finish on a light ground. The glaze was probably rag-rolled in the same manner as the walls of the Lobby and the Lecture Hall. Additional exposure of the rag-rolled finish will be necessary to assess the first finish.
Antechamber: Woodwork: Doors and Door Frames
Photomicrograph: Mounted sample, Olympus BMAX-50 polarized light microscope/ 20x objective, (200x microscopic magnification) with Nikon D7100 digital camera body Lexar Media 1GB flash card Dolan Jenner Fiber optics illuminator, daylight filtering

Note: The sample has been mounted in polymer resin cut and polished to 8000 micron grit polishing cloth for additional examination. The first two layers (1a, 1b) create the yellowish white ground for the brown glaze (1c). The next layer (2) is the deep blue-green and prepared with a prussian blue pigment (A) mixed in the composite white base. The same type of prussian blue pigment is used in other blue detailing in the Lobby such as the very similar deep blue-green bands seen on the underside of the light track.
**Comparison with Antechamber:**
Light track of Lobby, underside: note the deep blue-green bands labeled A: this paint appears to be nearly the same as the second finish (layer 2 in the cross section above). Since it has been exposed since ca. 1932, it has aged to a greater degree. These bands are not glazed.

On-site photograph, Lobby Light track showing blue-green painted bands.

Note: the similarity of the deep blue green in the Antechamber and the detailing of the light track in the Lobby does not automatically indicate that these two finishes are exactly contemporaneous: additional exposure of the initial glazed finish in the Antechamber will be necessary before a final decision can be made.
Antechamber: All surfaces
Phase 2 Examination and Restoration

All of the surfaces, both plaster and woodwork appear to be the same. The surface is to be subject to additional exposure to examine the glazed finish. The original finish appears to be similar to the finish for the Lecture Room:

Ground Color: Yellowish white: **Benjamin Moore 981** (“Winds Breath”)  
Glazing: additional exposures to be opened and glaze color and manipulation to guide restoration

Second Finish: Deep Blue-green enamel finish:  
**Benjamin Moore 720** (“Bella Blue”) Gloss level: Semi-gloss
The Lecture Room

The Lecture Room was originally finished in the same glazed and rag-rolled technique as the Lobby, but without the use of the aluminum flake paint and a different brown glaze. Instead, the ground for the glazing was a light grayish tan color, creating an entirely different effect.

Historic view of the Lecture Room post 1952. By this time, the ca. 1932 decorative paint and glazed finishes had been over-painted. In addition, the highly decorated original acoustical tiles have also been over-painted. Note the cornice/light wells on the side walls: these elements have also been over-painted. It is known that the Lecture Room was included in the repainting campaign executed in 1952.
The Original finishes

The original glazed finish of the walls and the plaster parts of the ceiling has survived in satisfactory condition on the paneled jamb of the lintel between the ca. 1942 murals.

Note that the original small mural (1) is painted in a palette of colors similar to the tan- brown colors of the rag-rolled glazing of the walls.

Radiator Grille:

The radiator grille, seen above was not accessible for examination, however, it appears that it may retain the original finish: this finish appears to be a gold bronze powder finish that has discolored by oxidation, however, in view of the use of the brown rag-rolled glaze on all of the plaster surfaces, and even the step lighting units, it may well be that the radiator grille may have been finished in the same manner. Additional examination will be required to determine the finish.
The Original Wall finish: Surviving Examples:
Rag-rolled, stippled brown glaze on a yellowish white ground

Note: The original wall finish is seen behind the cove lighting, above the dropped ceiling. This finish is consistent on the upper wall, but also was found on the lower wall. The step path lights that line the side walls also show the same brown glaze with the rag-rolled/stippled finish.
Lower wall: Step path lights
Exposed original rag-rolled brown glaze

Note the exposed original glazed and rag-rolled finish. The later green finish may be the finish applied in the 1952 repainting campaign.
**Original Ceiling: above the dropped ceiling**

Above the dropped ceiling, the plaster surface of the ceiling near the wall was also decorated with the rag-rolled glazed surface. The same finish is also seen on the wood molding that borders the original acoustical tile, which was elaborately decorated. The background of the acoustical tile was the aluminum flake paint finish. The tiles were stenciled with blue and green. The acoustical tile was relieved of the over-paint, and the stencil decoration was partly exposed by Conservator, Ms. Stashka Star on a tile that was removed from the ceiling.

Location A is a small exposure/cratering that disclosed that the ground for the acoustical tile was the aluminum flake paint, and that there was a light used in the decoration.
Lecture Room: Historic Photograph: ca. 1932 showing the original decorated acoustical tile and the center medallion. The medallion is clearly painted with the aluminum flake paint with glaze and other colors. The design of the medallion appears to be the same as that seen in the Vestibule and it may have been painted in similar colors, since the acoustical tiles were stencilled with blue and light green finish paints against the aluminum flake paint ground. The stencil decoration is fascinating using blue (darker tone) and light green (paler tone) on the aluminum flake paint ground. Some of the tiles are entirely coated with the aluminum flake paint finish. The border has a second tile stencil decoration.

At the lower corners of the photograph the darker rag-rolled glaze finish is visible. The chandelier may also have been finished in different glazed and painted surfaces.

All of these surfaces have been over-painted by the time of this study.

It is likely that the colors of the ceiling acoustical tile may be repeated in the center medallion.
Note: The ground is the aluminum flake paint on which the light green and blue stencil decoration has been applied. (Photograph provided by Richard and Stashka Star, Conservators)

The gleaming decorated tile, with the background of aluminum flake paint would have been surrounded by the rich texture of the brown rag-rolled glazed finish.
Lecture Room: Doors to the Lobby

On site exposure:

Note: The original rag-rolled glazed finish was exposed on the door between the Lobby and the Lecture Room. The later paint layers were not well adhered, and it may be possible to expose the entire surface of one of the doors that could be retained for the future. Note that this finish is the same finish as is seen on the walls.
The Cornice/ Light cove:

The light cove is a feature that is from the architect’s drawings. As executed, there was a change in that the decoration on the large frieze was inverted. There was a question as to the original finish of the ground for the decorated frieze, which is shown on the next page. The incandescent light bulbs created excessive heat and the paint, which included drying oil in the medium cracked and deteriorated at an accelerated pace. As a result there are large areas of loss of the earlier paint.

Indeed all of the initial examination proved to have been incorrect due to the damage to the original finishes of the cornice/light cove caused by the excessive heat. It is only with extensive microscopy including cross sections of the accumulated paint layers has it been possible to determine beyond doubt that the original finish was the same rag-rolled glazed finish seen on the other surfaces of the walls and border of the ceiling.

Because of this, a large number of samples were taken from the Cornice/Light cove that are included in the report, substantiating the original rag-rolled glazed finish. The cross sections illustrate the phenomenon of under-flow: early paints that are cracked are invaded by new fluid paint that flows into the cracks and under the earlier paint, thus, later paints can appear to be earlier that the first finish!

Cornice/Light cove:
Location of Paint Samples
Cornice/Light Cove: Molding, Location 9
Unmounted sample, Olympus SZ-1145 microscope, (20x total microscopic magnification) with
Nikon D70 digital camera body Lexar Media 1GB flash card Dolan Jenner Fiber optics
illuminator, daylight filtering

Note: This is probably the most informative of all of the samples from the Cornice/Light cove.
The plaster substrate is clearly seen and noted. The first finish was made with a light grayish tan
ground coat (1a) and the brown rag-rolled glaze (1b). The second finish,(2) on this sample, is the
pink-red finish that is actually the fourth finish, but there are intermediary layers that are missing.
The later bronze paint (3) has flowed through cracks so that it is seen under the pink-red layer.
This is typical of the problems that beset the paint samples from the cornice/light cove.
**Cornice/Light Cove: Molding, Location 1**

Photomicrograph: Mounted sample, Olympus BMAX-50 polarized light microscope/ 10x objective, (100x microscopic magnification) with Nikon D7100 digital camera body Lexar Media 1GB flash card Dolan Jenner Fiber optics illuminator, daylight filtering

Note: This sample has been mounted in polymer resin, cut and polished to 8000 micron grit polishing cloth for additional examination. The plaster substrate is seen at the base of the sample. Note the crack in the paint sequence that has permitted the pink-red paint (4) to flow down under the earlier paint finishes which had lifted off of the plaster; the pink-red is thus seen directly on the plaster, even though it is much later. The first finish is the brown rag-rolled glaze finish (1a: the light grayish tan ground coat and the brown glaze 1b, which in this location is only thinly seen). The greenish blue finishes (2 and 3) follow. The pink-red finish (4) follows the greenish blue layers. A later red finish is also visible (5). The last finish, the modern bronze powder paint is not present on this sample.
Cornice/Light Cove: Molding, Location 2
Photomicrograph: Mounted sample, Olympus BMAX-50 polarized light microscope/20x objective, (200x microscopic magnification) with Nikon D7100 digital camera body Lexar Media 1GB flash card Dolan Jenner Fiber optics illuminator, daylight filtering

Note: This sample has been mounted in polymer resin, cut and polished to 8000 micron grit polishing cloth for additional examination. The plaster substrate is seen at the base of the sample. The magnification is higher power (200x). The first finish is the brown rag-rolled glaze on the light grayish tan ground coat (1a, 1b). Note that the glaze layer is heavier in this location (1b). The greenish blue layer is missing, but the pink-red layer (2) is present. The later red finish (3) follows and the bronze powder enamel finish is also visible (4).
Cornice/Light Cove: Location 3, Ground of the decorated frieze
Photomicrograph: Mounted sample, Olympus BMAX-50 polarized light microscope/10x objective, (100x microscopic magnification) with Nikon D7100 digital camera body Lexar Media 1GB flash card Dolan Jenner Fiber optics illuminator, daylight filtering

Note: This sample has been mounted in polymer resin, cut and polished to 8000 micron grit polishing cloth for additional examination. The plaster substrate is seen at the base of the sample. The first finish is the light grayish tan undercoat (1a) with the brown rag-rolled glaze finish (1b) that shows to be quite opaque and thick on this sample. The greenish blue finishes are missing, however, the pink-red finish is clearly noted (2). The red (3) is also seen.
Cornice/Light Cove: Location 4, Trefoil decoration of the frieze
Photomicrograph: Mounted sample, Olympus BMAX-50 polarized light microscope/10x objective, (100x microscopic magnification) with Nikon D7100 digital camera body Lexar Media 1GB flash card Dolan Jenner Fiber optics illuminator, daylight filtering

Note: This sample has been mounted in polymer resin, cut and polished to 8000 micron grit polishing cloth for additional examination. The plaster substrate is seen at the base of the sample. The first finish is the brown rag-rolled glaze (1b) finish on the light grayish tan ground coat (1a). The greenish blue layers may not have been present in this location. The pink-red finish (2) is present and is clearly considerably later in date, since it has flowed into cracks that have opened in the first finish and has penetrated below the first finish.
Cornice/Light Cove: Location 6, Molding
Photomicrograph: Mounted sample, Olympus BMAX-50 polarized light microscope/ 10x objective, (100x microscopic magnification) with Nikon D7100 digital camera body Lexar Media 1GB flash card Dolan Jenner Fiber optics illuminator, daylight filtering

Note: Note: This sample has been mounted in polymer resin, cut and polished to 8000 micron grit polishing cloth for additional examination. The plaster substrate is seen at the base of the sample. The first finish is the brown rag-rolled glaze (1b) finish on the light grayish tan ground coat (1a). The pink-red finish (2) is present and is clearly seen, followed by the second red (3). The last paint finish is the recent bronze powder paint finish (4).
Cornice/Light Cove: Location 7, Molding

Photomicrograph: Mounted sample, Olympus BMAX-50 polarized light microscope/ 10x objective, (100x microscopic magnification) with Nikon D7100 digital camera body Lexar Media 1GB flash card Dolan Jenner Fiber optics illuminator, daylight filtering

Note: This sample has been mounted in polymer resin, cut and polished to 8000 micron grit polishing cloth for additional examination. This sample illustrates the damaged condition of the finishes caused by the delaminating of the early paint layers. The plaster substrate is seen at the base of the sample. The first finish is the brown rag-rolled glaze (1b) finish on the light grayish tan ground coat (1a). Note that this is seen only on the left portion of the sample. From location A and to the right, the early paint has cracked and delaminated. The pink-red finish (2) is present and is clearly seen, and it is applied on top of the original rag-rolled brown glaze on the left but directly on the plaster to the right. The second (less chromatic red, 3) follows and nearly obscures the change in the paint level caused by the loss of the earliest paint finish. The last paint finish is the recent bronze powder paint finish (4).
Cornice/Light Cove: Location 9, Molding
Photomicrograph: Mounted sample, Olympus BMAX-50 polarized light microscope/ 10x objective, (100x microscopic magnification) with Nikon D7100 digital camera body Lexar Media 1GB flash card Dolan Jenner Fiber optics illuminator, daylight filtering

Note: This sample has been mounted in polymer resin, cut and polished to 8000 micron grit polishing cloth for additional examination. The plaster substrate is seen at the base of the sample. The first finish is the brown rag-rolled glaze (1b) finish on the light grayish tan ground coat (1a). Note that the variation in the rag-rolled brown glaze is clearly indicated by the variation in the thickness of the brown glaze layer across the span of this sample. The pink-red finish (2) is present and is clearly seen; the second (less chromatic red, 3). The last paint finish is the recent bronze powder paint finish (4).
Cornice/Light Cove: Location 10, Molding proximate to the wall
Photomicrograph: Mounted sample, Olympus BMAX-50 polarized light microscope/ 10x objective, (100x microscopic magnification) with Nikon D7100 digital camera body Lexar Media 1GB flash card Dolan Jenner Fiber optics illuminator, daylight filtering

Note: This sample has been mounted in polymer resin, cut and polished to 8000 micron grit polishing cloth for additional examination. The plaster substrate is seen at the base of the sample. The first finish is the brown rag-rolled glaze (1b) finish on the light grayish tan ground coat (1a). Note that there is a crack in the initial finish (A) through which the second finish has invaded. The pink-red finish (2) is present and is clearly seen; note the change of levels due to the crack at location A. The second less chromatic red (3) is also seen. The later bronze powder paint is not seen on this sample (removed in the laboratory).
Lecture Room: Reflected ceiling plan from original drawings:

Note: This reflected ceiling plan shows the detail that the chief designer, Samuel Vosper provided for the decoration, including the stencil patterning of the painted acoustical tile. The plaster surfaces of the rear part of the Lecture Room show the same rag-rolled brown glazing finish seen on the walls and the lintel at the front (north elevation) of the Lecture Room. The Medallion was executed largely as drawn by Vosper.
Lecture Room: Rear ceiling, Medallion for chandeliers

Note: The medallion appears to follow the design of the Architect. Access to the medallions was problematic since the lecture chairs were in place scaffolding could not be set up. The colors used for the finishes of the medallion create a muted palette: a brown finish for the background and the figures in a cream color.

The chandelier is of recent date.
Lecture Room: Medallions
Sample Locations

Note: Sample extraction was difficult because of the limited access due to the chairs and the placement of a ladder. The eight samples noted above indicated that the ground (Sample 1) was a dark brown finish, and all of the bas-relief was a grayish white.
Lecture Room: Rear Ceiling Medallion: Sample 1: Ground

Photomicrograph: Mounted sample, Olympus BMAX-50 polarized light microscope/ 10x objective, (100x microscopic magnification) with Nikon D7100 digital camera body Lexar Media 1GB flash card Dolan Jenner Fiber optics illuminator, daylight filtering

Note: The sample has been mounted in polymer resin, cut and polished to 8000 micron grit polishing cloth. The plaster substrate is seen at the base of the sample. There is a void that has opened in the sequence, however, the first finish is clearly seen: prepared with a light tan ground coat (1a) and a dark brown finish (1b). The second finish (2) appears to be a light yellow latex finish; a white finish (3) and the most recent bronze flake paint (4) complete the sequence.
Lecture Room: Rear Ceiling Medallion: Sample 2 (fan forms)
Photomicrograph: Mounted sample, Olympus BMAX-50 polarized light microscope/ 10x objective, (100x microscopic magnification) with Nikon D7100 digital camera body Lexar Media 1GB flash card Dolan Jenner Fiber optics illuminator, daylight filtering

Note: The sample has been mounted in polymer resin, cut and polished to 8000 micron grit polishing cloth. The plaster substrate is seen at the base of the sample. The first finish (1) shows the light tan original finish. The second finish (2) appears to be a light yellow latex finish; a white finish (3) and the most recent bronze flake paint (4) complete the sequence.

Note: The same sequence was observed on
Rear Ceiling Medallion: Sample 3, relief
Rear Ceiling Medallion: Sample 4, relief
Rear Ceiling Medallion: Sample 5, relief
Lecture Room: Rear Ceiling Medallion: Sample 6 (star form)
Photomicrograph: Mounted sample, Olympus BMAX-50 polarized light microscope/10x objective, (100x microscopic magnification) with Nikon D7100 digital camera body Lexar Media 1GB flash card Dolan Jenner Fiber optics illuminator, daylight filtering

Note: The sample has been mounted in polymer resin, cut and polished to 8000 micron grit polishing cloth. The plaster substrate is seen at the base of the sample. The first finish (1) shows the light tan original finish. The second finish (2) appears to be a light yellow latex finish; a white finish (3) and the most recent bronze flake paint (4) complete the sequence.

Note: The same sequence was observed on:

Rear Ceiling Medallion: Sample 7
Rear Ceiling Medallion: Sample 8
**The Lecture Room: Phase 2 Examination and Restoration**

The second phase of the Examination and Restoration will be more complicated in that it will require the removal of the present dropped ceiling and the lighting. A new lighting scheme that permits the exposure of the original acoustical tile is anticipated to be part of the next phase. Other later changes (north wall) may also be removed.

1. **Ceiling, Center:** Additional exposure of the acoustical tiles based on the historic photograph and the reflected ceiling plan. The overpaint is relatively recent and appears to be latex finishes, thus is relatively easily removed. In situ color matching of the stencil decoration.

2. **Center Ceiling Medallion and Chandelier:** Exposure of surfaces and in situ color matching. These surfaces were not accessible. The overpaint may be recent latex finishes. It is anticipated that the Central Ceiling Medallion will be finished in a manner similar to the Vestibule ceiling medallion that is the same form.

3. **Ceiling Border and Plaster coved surface:** Enlarge exposure areas and view the original surviving rag-rolled brown glaze.
   a. **Ground Color for the Plaster surfaces:**
      Light grayish tan: Benjamin Moore 1004 (“Desert Light”) Suggested gloss level: Eggshell
   b. Glaze layer to be prepared with true pigments in oil; to match examples on site.

4. **Cornice/Light Cove:** Brown glaze on light grayish tan ground, all surfaces:
   a. **Ground Color for the Plaster surfaces:**
      Light grayish tan: Benjamin Moore 1004 (“Desert Light”) Suggested gloss level: Eggshell
   b. Glaze layer to be prepared with true pigments in oil; to match examples on site.

5. **All plaster wall and ceiling surfaces:** Brown glaze on light grayish tan ground, all surfaces:
   a. **Ground Color for the Plaster surfaces:**
      Light grayish tan: Benjamin Moore 1004 (“Desert Light”) Suggested gloss level: Eggshell
   b. Glaze layer to be prepared with true pigments in oil; to match examples on site.

6. **Rear Ceiling Medallions:**
   a. **Ground surface:** Dark Brown Benjamin Moore 2131-30 (“Stone Brown”)
      Suggested gloss level: Eggshell
      All relief decoration: Light grayish tan: Benjamin Moore 1004 (“Desert Light”)
      Suggested gloss level: Eggshell
The Wrought Iron Entrance Grille (Aedicule): Interior and Exterior surfaces

Note: The magnificent iron front entrance grille was executed by Voss Metal Works in San Antonio, Texas. The firm was evidently responsible for the original decorative ironwork for the interior as well, such as the Lecture Room main chandelier. It is probable that they also did the chandelier in the Vestibule, which is also original to the building. The Front Entrance grille is an exceptional piece of period ironwork.

The actual doors have been replaced. Unfortunately the entire grille was subject to total paint removal (possibly sandblasting) and only the most minute fragments of early finish survive on either the interior or the exterior surfaces of this major element. The interior surfaces retained even less original paint: thus most of the examination was conducted on exterior samples. Hours were spent on site in an attempt to find good surviving samples.

The lower part of the grille has been more recently painted. At the time of the major paint removal, all of the ironwork (including the decorative lamp posts) was painted with a modern rust inhibitive coating.
Historic Photograph: The Wrought Iron Grille at the Voss Iron Works

Note: the wrought iron grille is seen at the Voss Iron Works nearing the completion of production of the exterior face at the time of the construction of Scoates Hall.
Note: Because of the completeness of the paint removal, the locations noted on the photograph to the right were collected. All of these were recesses that might have escaped the paint removal.

1. Screw and interior of flower form
2. Behind rope twist form
3. At edge of iron work, below caulking
4. Underside of leaves
5. Interstices of wheat sheaves
6. Recesses of thistle flower

The best sample was collected from
1. Screw and interior of rose form
Entrance Wrought Iron Grille

1. Location of Screw and interior of flower form

Note: the best surviving sample was extracted from the slot of the screw that holds the flower form in place; additional samples were taken from the inside of the flower form.
Sample: Photomicrograph Entrance Wrought Iron Door, Flower form, from the slot of the screw and inside the flower form
Unmounted sample, Olympus SZ-1145 microscope, (11x total microscopic magnification) with Nikon D7100 digital camera body Lexar Media 1GB flash card Dolan Jenner Fiber optics illuminator, daylight filtering (raw)

Note: This minute fragment was the best indicator of the original finishes of the wrought iron gate that has been found to date. The sample is seen turned over, so that the earliest paint layers are seen closest. The dark gray coating (A) may be the coating applied at the foundry. The first paint finish is the moderate bluish gray (1): this may be the overall finish for the entire wrought iron grille. The next layer, a brownish red, may be the finish added to the flowers only. The green may be a later painting campaign, though a nearly exact green is used on the original wrought iron chandelier of the Vestibule (see below). The light beige color (4) is modern. Note that it has flowed under the remnants of the earlier paint, as indicated, making the reading of the sample even more complicated.
Sample: Photomicrograph Entrance Wrought Iron Door, Flower form, from the slot of the screw and inside the flower form

Photomicrograph: Mounted sample, Olympus BMAX-50 polarized light microscope/ 10x objective, (100x microscopic magnification) with Nikon D7100 digital camera body Lexar Media 1GB flash card Dolan Jenner Fiber optics illuminator, daylight filtering

Note: The sample has been mounted in polymer resin, cut and polished to 8000 micron grit polishing cloth for additional examination. The wrought iron substrate is not present. The initial gray layer (A) is probably the gray primer/rust inhibitor coating applied at the Voss Iron Works. The bluish-gray finish (1) appears to be the principal paint finish that would have been applied to the entire surface of the grille when installation was completed. In this location (the flower form) may have been painted red for the projecting petals and the interior. This is probably the last paint layer applied as part of the first painting campaign. Layer 3, the light green, may be part of a second painting campaign (refer to comparison with Vestibule chandelier). Layer 4 is certainly from a later re-painting and is the first surviving use of a yellowish tan for the finish. Layer 5, a second light green is more recent, and may be the last finish prior to the sand-blasting that appears to have been used to remove the paint finishes.
Historic View: The installed Wrought Iron Grille ca. 1933

Note: While this is a black and white photograph, it clearly shows that some details of the finished Wrought iron grille were painted different colors. Reds tend to register as dark and greens tend to register as light in ca. 1930 black and white photography. An example of this type of color use on wrought iron is seen on the Vestibule Chandelier within.
Note: This detail view of the original chandelier in the Vestibule may be a very good indication of how the Wrought Iron Grille was originally finished on both the interior and the exterior. Because the Wrought Iron Grille was finished in a manner that had to be weather-proof, there would have been some variations. Nonetheless, the basic ironwork (painted moderate gray on the grille) might have been detailed with the “copper green” and highlighted. The brownish red may have been used for the flower forms, and there may have been gold toned details, which would have been executed in gold leaf because of the exterior location.

An historic photograph showing the original Wrought Iron Grille in ca. 1932 supports polychromy on the exterior and no doubt the interior. Using the finishes seen in the paint sample and the Chandelier, above, it is possible to extrapolate the data as indicated in the ca. 1933 historic photograph. Refer to the details below.
The Wrought Iron Grille: polychromy based on the ca. 1933 photograph.
Upper section

Note:
1: Principal bluish gray color
2: Light copper green color, from chandelier
3: Moderate red color (from paint sample) – thistle flower nearly disappears against dark window.
The Wrought Iron Grille: polychromy based on the ca. 1933 photograph. Note that the doors as they exist today are not replicas of the original design, seen below.

Note:
1: Principal bluish gray color
2: Light copper green color, from chandelier
3: Moderate red color (from paint sample of flower form)
4: Gold leaf (birds, wheat sheaf disk, small flower)
**Restoration of the Wrought Iron Grille:**

Based on the evidence to date, all of the surfaces of the grille should be painted a moderate gray:

**Historic finish:**

Moderate gray: **Benjamin Moore 2128-40**: Gloss level: Semi-gloss  
Note: this color match was made to a very small sample of the original finish. If additional samples are found (during the restoration), it will be essential to review any new samples.

Detail colors: Location of the colors would be based on the historic photograph of 1933 and the use of the colors and finishes as seen on the original chandelier in the Vestibule.

Moderate red: **Benjamin Moore 1295 “Apache Red”**

Copper green: to be matched to green of the Vestibule Chandelier

Gold leaf: Exterior weight and grade to be applied to an exterior grade oil size following best practice.
**General Conclusions:**

Scoates Hall is one a group of remarkable buildings at Texas A&M that illustrates the importance of iconography that was characteristic of the Inter-war period. The use of sculptural form and attention to finishes was viewed as a means of inspiration to the student body and their professors. These were recognized aspects of architecture: that form and the crafts necessary to create a building would be used for an overall iconographic harmony. Unfortunately, this approach to architecture was eliminated with the rise of International Modernism, particularly after World War II. The concepts and values that created Scoates Hall were seen as quaint, at best. Fortunately, a major reassessment of American Architecture of this era is well underway and the superb craftsmanship and attention to detail so evident in Scoates Hall is once again valued.

Scoates Hall very happily retains much of the original finishes that articulate the forms. The restoration, repair and conservation of the surfaces is clearly achievable.
Color standards: CIE Lab coordinates, Hunter Lab

CIE is the abbreviation for the Commission Internationale de l’Eclairage the French title for the International Commission on Illumination, which devised the CIE Lab system in 1931. It is devoted to standardization in illumination and related areas that include color.

The spectrophotometer registers color standards into a system of measuring color devised in 1931 known as CIE Lab (pronounced See-lab). CIE Lab is a uniform (opponent color scale) color space in which colors are located within a three dimensional rectangular coordinate system. The three dimensions are Lightness (L*), redness/greenness (a*) and yellowness/blueness (b*). CIE Lab is part of current CIE recommendations.

In addition to the CIE Lab coordinates, the Hunter Lab numbers are also provided. These are based on developments undertaken by Richard Sewall Hunter (1909-1991) who developed a different means of identifying color. The Hunter color space was an effort to regularize the color space: the L axis represents lightness/darkness, with absolute white at 100 and absolute black at 0. Note the drawing below that shows the means of locating any color within the Hunter color space.

On the L* a* b* color model, where a* and b* are zero (point where the axes cross), the color is gray. Gray is without chroma (i.e.: saturation of color) and has undefined hue. Moving out from gray in any direction, the color increases in chromatic strength. Hue becomes defined by the angle of departure, as noted below, from a+ that is set at 0 degrees. The distance moving out from the L axis is C*; the angle of departure is h degrees.
All of the Spectrophotometric readings are done with the X-Rite SP-62 Sphere Spectrophotometer. Designated observer 2 degrees, Illuminant C. Illuminant C is a mathematical representation of filtered tungsten halogen (daylight). The color temperature is 6770K, simulating CIE average daylight.
Color Standards

**Light grayish tan: Benjamin Moore 1004**

CIE Lab coordinates

Designated observer 2 degrees

Illuminant C

\[
\begin{align*}
L^* &= 81.31 \\
a^* &= 1.86 \\
b^* &= 6.89
\end{align*}
\]

Hunter Lab:

\[
\begin{align*}
L^* &= 81.31 \\
C^* &= 7.14 \\
h \text{ degrees} &= 74.87
\end{align*}
\]

Munsell Conversion Number: 7.97YR8.00/1.16
Black: Benjamin Moore 2131-20
CIE Lab coordinates
Designated observer 2 degrees
Illuminant C
L* = 30.22  a* = -1.22  b* = -2.03
Hunter Lab:
L* = 30.22  C* = 2.37  h degrees = 238.91
Munsell Conversion Number: 6.24B2.95/0.52
**Moderate Red: Benjamin Moore 1295**

CIE Lab coordinates
Designated observer 2 degrees
Illuminant C

\[
\begin{align*}
L^* &= 42.40 & a^* &= 21.53 & b^* &= 11.05 \\
\end{align*}
\]

Hunter Lab:

\[
\begin{align*}
L^* &= 42.40 & C^* &= 24.20 & h\ degrees &= 27.17 \\
\end{align*}
\]

Munsell Conversion Number: 5.39R4.11/4.82
Light green: Benjamin Moore 634
CIE Lab coordinates
Designated observer 2 degrees
Illuminant C
L* = 66.86   a* = -14.50   b* = 4.99
Hunter Lab:
L* = 66.86   C* = 15.33    h degrees = 161.02
Munsell Conversion Number: 5.57G6.52/2.55
Yellowish white: Benjamin Moore 981

CIE Lab coordinates
Designated observer 2 degrees
Illuminant C
L* = 86.73  a* = -0.73  b* = 6.68
Hunter Lab:
L* = 86.73  C*= 6.72  h degrees = 96.20
Munsell Conversion Number: 3.99Y8.55/0.84
Deep Blue Green: Benjamin Moore 720
CIE Lab coordinates
Designated observer 2 degrees
Illuminant C
L* = 48.27   a* = -7.50     b* = -8.15
Hunter Lab:
L* = 48.27   C* = 11.08     h degrees = 227.38
Munsell Conversion Number: 5.06B.68/2.57
Dark Brown: Benjamin Moore 2112-30
CIE Lab coordinates
Designated observer 2 degrees
Illuminant C
L* = 40.28  a* = 2.95  b* = 4.20
Hunter Lab:
L* = 40.28  C* = 5.13  h degrees = 54.94
Munsell Conversion Number: 4.84YR3.91/0.83
Moderate gray: Benjamin Moore 2128-40
CIE Lab coordinates
Designated observer 2 degrees
Illuminant C
L* = 60.12  a* = -0.41  b* = 10.02
Hunter Lab:
L* = 60.12  C* = 10.03  h degrees = 267.69
Munsell Conversion Number: 4.14PB5.84/2.76
Report from Investigative in situ Exposure of Original Interior Finishes on the Walls and Ceilings of the Vestibule, Lobby and Lecture Room of Scoates Hall at Texas A&M in College Station – Stashka Star

Reference attached study.
Report from Investigative in situ Exposure of Original Interior Finishes on the Walls and Ceilings of the Vestibule, Lobby and Lecture Room of Scoates Hall at Texas A&M in College Station.

Conducted at the request of:

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Date: February 2, 2014
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Report from Investigative in situ Exposure of Original Interior Finishes on the Walls and Ceilings of the Vestibule, Lobby and Lecture Room of Scoates Hall at Texas A&M in College Station.

Exploratory samples “exposures” were made on the walls and ceilings of the Lobby, Vestibule and Lecture Room in order to establish the possibility of uncovering the original decorative finishes and their colors in the following locations:

**Lobby:**

1. The wall adjacent to the vestibule on the flat areas, inside and outside of the squares defined by a half round molding
2. Beams with silver relief areas on their underside and sides
3. Flat areas on the ceiling between the fields with silver reliefs
4. Plaster molds, reliefs and decorations above the openings on the end walls
5. Niches for sculptures in all corners of the lobby
6. Light fixtures
7. Cyma recta (curved mold) between the wall and ceiling

**Vestibule**

1. Brown pilasters
2. Radiator grill

**Lecture Room:**

1. Walls at different heights
2. Decorative molds on sidewalls above the windows.
3. Doors and door casing molds
4. Ceiling tiles

The samples of over paint removal were performed with different kinds of solvents and stripping pastes and produced the following results:
Testing results:

Lobby:

The white latex interior paint, which is the most recent over paint, covers most areas in the Lobby except for the silver half-round mold, which divides the wall into square fields and the silver reliefs. The white paint is easily removable with aromatic solvents. Cyma recta (curved mold) were left in the first green over paint as well as the fields over the entrances on both end walls. The second over paint layer under the white coat, which is a teal green oil based paint, is hard to remove, and is strongly adhered to the original brown glaze on the silver paint. This teal green paint can only be removed with the prolonged action of stripping pastes, which would damage the original brown rag-roll glaze and the silver paint, which is very sensitive to the same solvents. This teal green over paint can only be safely removed from the cyma recta (curved molding) because its surface has a sleek, light brown transparent oil glaze with a sleek surface, which is resistant to the solvents used for removing the green over paint. Removal of the stripe of teal green over paint from the edge of the mold surrounding the reliefs on the underside of the beams is also very time consuming and cannot be done without significant damage to the original aluminum flake paint.

Black over paint was found in the niches with the sculptures in all corners of the lobby, which were originally painted with aluminum flake paint. The black over paint can be removed with slight abrasions to the original finish. The brown “highlights” on the silver reliefs were originally gold toned bronze paint, which oxidized into a brown color. This changed paint cannot be removed from the silver paint layer without damage to the aluminum flake paint.

Conclusions:

The ceiling and walls of the lobby were painted with aluminum flake paint using a brown marbling, rag-roll technique.
Aluminum flake paint with brown marbling

Aluminum flake paint with brown marbling on flat areas aluminum flake paint on half round mold
Aluminum flake paint with brown marbling

The reliefs and thin half round molds painted with aluminum flake paint on brown background
The cyma recta molding between the ceiling and the walls was originally green with a light brown glaze. The ceiling was painted with aluminum flake paint with brown glaze. Round molding and a flat stripe in the middle were painted with aluminum flake paint. Narrow flat mould 1/4 " wide on both sides of the flat stripe were painted with red paint.
The unprimed aluminum light fixtures had a brown rag rolled design as on the walls except for the middle bar, which was left unpainted.

The reliefs above the entrances on the end walls were painted with aluminum flake paint with brown glaze. Relief’s highlights were painted with gold tone bronze paint.
Relief above entrance to antechambers over painted with teal green paint

The niches on both sides of the antechambers entrances were painted with aluminum flake paint, over painted with black paint
Entrance to antechambers with niches for sculptures on both sides

The over paint can only be safely removed from the following areas: the cyma recta molding and the niches for the sculptures at the entrance to the antechambers.
Vestibule:

Due to inaccessibility to the vestibule finishes, the following conclusions are based on samples made in the lobby except for the radiator grille and the brown pilasters. The Vestibule has most of the original finishes left untouched, except for the ceiling around the decorative cast plaster rosette in the middle, the cyma recta mold between the wall and the ceiling, and the wide mold in the middle of the decorative plaster at the base of the chandelier and brown column.

Rosette and Ceiling
Blue and red paint on rosette and chandelier

Brown marbling on ceiling, wall and brown pilaster
Conclusions:

The teal green paint can be safely removed from these areas.
The white paint can be removed from the ceiling.
The remaining original paint can be cleaned from dirt and varnished for protection.
The detaching paint in the water-damaged areas can be reattached and sealed with conservation adhesive.
Cracks can be filled with plaster and losses of original paint can be compensated.
The brown over paint on pilasters, which had brown marbling, is partially translucent. This translucent coat can be darkened original varnish.
Lecture Room:

Testing results:

The Lecture Room has multiple layers of over paint, except for the original monochromatic mural at the top of the front wall and the paneled jamb of the lintel. Traces of original paint were also found on the walls on the right side of the small window on the left wall, by the metal light grills, and by the door and the door jams and molds. The decorative finish on the lecture hall walls was a light tan color with thin brown ragged glaze executed with a rag-roll technique.

The original paint was covered with five layers of paint, oldest to newest as follows: light green, dark green, yellowish beige, grayish beige, and a thin gypsum coat under the most recent layer of white oil paint.

The decorative cornice on both sides of the top of the walls is presently over painted with bronze metallic paint, which is found on the molding around the door, and the decorative plaster molds at the base of the chandeliers.

The gold paint cannot be removed without damaging the original paint, which was red and green on a grey background.

The heavy coat of gold paint should be stripped from the cornice and the original finish should be reconstructed in its original colors.

The original ceiling tiles, which are hidden under the current dropped ceiling, were over painted twice with beige paint and white paint consecutively. The tiles originally had a complex stenciled design consisting of squares with blue stars and light green lines on a silver background. The tiles were composed in a checkered pattern with plain silver tiles in between the stenciled tiles. The perimeter tiles had a design composed of squares with circles inside, but their colors were not identified because the tiles were not available.

Both layers of over paint can be softened with solvents and mechanically scraped from the surface of the original paint.

The round mold at the base of the chandelier was not tested due to inaccessibility.
Cornice with relief on both sides of Lecture Room

The door on inside of the Lecture Room, its jams and molds had a grey paint and a brown rag-roll design
Sample of all over paint layers removal on door jams exposing original brown marbling on grey background

Conclusions:

None of the original finishes in the Lecture Room can be exposed by removal of the over paint except for the ceiling tiles and doors. The other finishes in the Lecture Room need to be reconstructed except for the mural at the very top of the front wall and the paneled jamb of the lintel, which can be restored. An unknown painter painted the mural when the building was built. The mural is 3 feet tall and 32 feet long. Only the lower half is visible because a secondary dropped ceiling covers the upper half. It depicts a Texas landscape with cowboys herding livestock on the left side, a train in the middle and mountains, grain elevators, tractors, trucks and cotton plants on the right side. It also shows oil derricks in the background on both sides. This mural is monochromatic and executed in earth tones. It is original to the building, painted directly on plaster, and requires cleaning and a protective coat of varnish.
The original monochromatic mural covered in half by dropped ceiling

The paneled jamb of the lintel still has the original finish, which was never over painted. This area can be preserved and restored.
The dropped ceiling presently covers the original ceiling tiles. One ceiling tile, which was removed, was tested for the possibility of over paint removal. The tiles were over painted twice with white latex paint and light beige paint consecutively. The original paint on the tiles was aluminum flake paint with elaborate stencil with green stripes and blue stars. Removal of the over paint is difficult, time consuming and will cause some damage in the original paint. The presence of asbestos on the back of the tiles is an additional argument for reconstruction versus restoration of the tile.

Stashka Star, Painting Conservator
Conceptual Cost Estimate

Reference attached spreadsheets.
## Scoates Hall at Texas A&M University - Historic Interior Painted Finishes Study - Lecture Room Restoration

### Conceptual Cost Estimate - Order-of-Magnitude

<table>
<thead>
<tr>
<th>Item</th>
<th>Priority</th>
<th>Description</th>
<th>Condition</th>
<th>Quantity</th>
<th>Unit</th>
<th>Recommendation</th>
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Quimby McCoy Preservation Architecture, LLP
### Scoates Hall at Texas A&M University - Historic Interior Painted Finishes Study - Lecture Room Restoration

**Conceptual Cost Estimate - Order-of-Magnitude**

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<tr>
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## Conceptual Cost Estimate - Order-of-Magnitude

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**NOTES:**
1. Removal of hazardous materials is not included.
### Scoates Hall at Texas A&M University - Historic Interior Painted Finishes Study - Lobby/Vestibule Restorations

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<td>Existing Conditions</td>
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</tr>
<tr>
<td>1 Conserve original directory/announcement cases</td>
<td></td>
<td></td>
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<td>1</td>
<td>ls</td>
<td></td>
<td>$ 1,000.00</td>
<td>$ 1,000</td>
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<tr>
<td>1 Conserve metal radiator grills</td>
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<td>1</td>
<td>ls</td>
<td></td>
<td>$ 1,250.00</td>
<td>$ 1,250</td>
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<tr>
<td>1 Restore decorative iron entrance grill</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>ls</td>
<td></td>
<td>$ 14,400.00</td>
<td>$ 14,400</td>
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<tr>
<td>1 Restore decorative iron light standards</td>
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<td>$ 6,640.00</td>
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<tr>
<td>1 Replace handrail</td>
<td></td>
<td></td>
<td></td>
<td>26</td>
<td>lf</td>
<td>replace with historically sensitive alternative</td>
<td>$ 70.00</td>
<td>$ 1,820</td>
</tr>
<tr>
<td><strong>Openings</strong></td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>1 Conserve historic hardware, both sides</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>ea</td>
<td></td>
<td>$ 500.00</td>
<td>$ 1,000</td>
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<tr>
<td>1 Restore doors and frames - both sides</td>
<td></td>
<td>door repair - includes lobby/ante-chamber</td>
<td></td>
<td>11</td>
<td>ea</td>
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<td>$ 300.00</td>
<td>$ 3,300</td>
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<tr>
<td>1 Replicate finish on door and frames, both sides</td>
<td></td>
<td>includes lobby and ante-chamber doors</td>
<td></td>
<td>11</td>
<td>ea</td>
<td></td>
<td>$ 410.00</td>
<td>$ 4,510</td>
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<tr>
<td>1 Replicate door and hardware</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>ea</td>
<td></td>
<td>$ 4,000.00</td>
<td>$ 8,000</td>
</tr>
<tr>
<td><strong>Finishes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Conserve moldings/finishes to remain in view</td>
<td></td>
<td>excluding scaffolding</td>
<td></td>
<td>1</td>
<td>ls</td>
<td></td>
<td>$ 127,000.00</td>
<td>$ 127,000</td>
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<tr>
<td>1 Restore plaster on walls</td>
<td></td>
<td></td>
<td></td>
<td>680</td>
<td>sf</td>
<td></td>
<td>$ 150.00</td>
<td>$ 102,000</td>
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<td>1 Restore marble wainscot</td>
<td></td>
<td></td>
<td></td>
<td>650</td>
<td>sf</td>
<td></td>
<td>$ 8.00</td>
<td>$ 5,200</td>
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<tr>
<td>1 Restore terrazzo flooring and steps</td>
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<td></td>
<td></td>
<td>1,222</td>
<td>sf</td>
<td></td>
<td>$ 4.00</td>
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<tr>
<td>1 Restore Mexican cement tile</td>
<td></td>
<td></td>
<td></td>
<td>50</td>
<td>sf</td>
<td></td>
<td>$ 2.00</td>
<td>$ 100</td>
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<tr>
<td>1 Replicate any missing or damaged stained glass in doors</td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td>ea</td>
<td></td>
<td>$ 1,000.00</td>
<td>$ 4,000</td>
</tr>
<tr>
<td>1 Replicate finishes in ante-chamber</td>
<td></td>
<td></td>
<td></td>
<td>200</td>
<td>sf</td>
<td></td>
<td>$ 14.00</td>
<td>$ 2,800</td>
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<tr>
<td>1 Replicate painted finishes on plaster walls and ceilings</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>ls</td>
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<td>$ 14,750.00</td>
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<td><strong>Furnishings</strong></td>
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<tr>
<td>1 Replace 3 missing busts</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>ls</td>
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<td>$ 20,000.00</td>
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<tr>
<td>1 3 Display elements</td>
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**subtotal**: $302,983

Quimby McCoy Preservation Architecture, LLP
### Conceptual Cost Estimate - Order-of-Magnitude

<table>
<thead>
<tr>
<th>Item</th>
<th>Priority</th>
<th>Description</th>
<th>Condition</th>
<th>Quantity</th>
<th>Unit</th>
<th>Recommendation</th>
<th>Unit Cost</th>
<th>Cost</th>
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</thead>
<tbody>
<tr>
<td>Electrical</td>
<td></td>
<td>Conserve chandelier with blue glass beads</td>
<td></td>
<td>1</td>
<td>Is</td>
<td>cleaned</td>
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<tr>
<td>Electrical</td>
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<td>Replace lighting in troughs</td>
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<td>84</td>
<td>If</td>
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**Subtotal - Construction**

$370,543

**General Conditions**

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<th>Item</th>
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<th>Condition</th>
<th>Quantity</th>
<th>Unit</th>
<th>Recommendation</th>
<th>Unit Cost</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Conditions</td>
<td></td>
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<td>NA</td>
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<td>lump</td>
<td>general conditions -10%</td>
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<td>not included</td>
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</table>

**Subtotal**

$407,597

**GC Profit and Contingency**

<table>
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<th>Item</th>
<th>Priority</th>
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<th>Condition</th>
<th>Quantity</th>
<th>Unit</th>
<th>Recommendation</th>
<th>Unit Cost</th>
<th>Cost</th>
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</thead>
<tbody>
<tr>
<td>GC Profit</td>
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<td>8%</td>
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<tr>
<td>Contingency</td>
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<td>Conceptual Estimate Contingency of 15%</td>
<td>0.15</td>
<td>$61,140</td>
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**TOTAL**

$501,345

**Budget**

$0

**NOTES:**

1. Removal of hazardous materials is not included.