

Massachusetts State Senate Chamber

R E N O V A T I O N

Statement of Achievement

1. Historical significance of the nominated resource

Located directly below the Gold Dome of the Massachusetts State House, the Senate Chamber has been the meeting place of the Senate since 1898, having served the House of Representatives prior to that date. Inspired by the Great Room of James Wyatt's Pantheon in London, the Senate Chamber was originally designed as "Representatives Hall" by Charles Bulfinch in 1795, as part of the new Massachusetts State House. The Senate originally occupied the room now known as the Senate Reading Room. Positioned at the east end of the original building, it is separated from the central Chamber by the Senate Reception Hall or Lobby.

Throughout its history, the Senate Chamber has undergone repeated alterations, often within the context of larger State House expansion projects. Many alterations were respectful of the original design; few attempted to enhance or completely transform the look of the room. In spite of the alterations over time, the underlying design vision of its original architect, Charles Bulfinch, still commands a noteworthy presence. The most influential detail changes to the room appearance took place in the Civil War era—1868—through renovations designed by William Washburn. The wood rustication panels that dress the lower Chamber walls are a legacy of Washburn's work; they remain today.

2. Architectural, landscape, or archaeological significance

Aside from the noted detail changes, very little has changed within the Senate Chamber since 1898, and the room has seen continuous use. Over time, wear, layers of maintenance, and outdated infrastructure took a cumulative toll on the condition of the Chamber.

The origins and changes can be partitioned into four periods, marked by their principal architects of influence, beginning in the early 1800's and concluding in the late 1800's. Around each period, numerous other small and interim changes also took place:

- i. 1795, Charles Bulfinch
- ii. Early to mid-1800's, Gridley J. F. Bryant
- iii. Civil War era, circa 1868, William Washburn
- iv. 1892 to 1898, Charles Brigham

The Chamber today does not represent any singular past era in its history as an architectural snapshot. Underlying this mix, the basic spatial character of the Chamber as designed by Charles Bulfinch, and its iconic starburst dome, remain clear and primary. However, many of the changes after are now inextricable from the surrounding building and associated spaces, due to major additions and re-configurations to the State House adjacent to the Chamber. The material and detail changes, in particular those introduced by William Washburn, have erased original Bulfinch details and finishes.

3. Elements of the preservation project and the historic preservation accomplishments that make this a deserving project

A fundamental and philosophical issue for the restoration of the Senate Chamber was the question of historical reference: *should a restoration of the Chamber today purely preserve and authentically reconstruct any past definitive architectural period or configuration?*

Following extensive historical research and design study beginning in 2010, the Senate Chamber is now newly renovated to meet 21st century needs, faithful to its architectural history and returned to its historical colors of 1898.

Preservation/Restoration Design Highlights Include:

a. Acoustics

Characterized by hard surfaces, and a dome-shaped ceiling focusing sound reflections to excess, acoustic treatment of the Chamber proved a challenge. Respecting the architectural detail of the ceiling, specialized thin acoustic sound-absorbing panels were seamlessly nested into the concave recesses between the dome ribs, following the curvature of the ceiling. The reverberation time of the Chamber has been significantly reduced, with improved speech clarity.

b. Snowflake Grilles

Circular 'snowflake' grilles that ring the base of the dome play a key role in supporting the heating/air conditioning (HVAC) system. Circular openings were first added to the Chamber ceiling in the mid-1800's to address complaints of poor air quality. The openings evolved into patterned supply air grilles connected to ductwork in the attic above. The original deteriorated wood snowflakes have been replaced with powder-coated laser-jet cut aluminum grilles of matching pattern, for longevity. To facilitate all the restoration at the dome ceiling, a work platform was erected across the entire base of the dome, supported on scaffold framework.

c. Heating, Air Conditioning and Ventilation

The current renovation includes a new HVAC system to improve air flow and climate control of the Chamber. 12 of 36 'snowflake' grilles now provide air exhaust; tempered low-velocity displacement supply air is introduced at four new grilles at the corners of the Chamber. The previous HVAC system was flawed by unfavorable flow directions and excessive temperature swings, contributing to material finish failures through excess expansion. New system controls, equipment, and duct infrastructure are designed to maintain a stable temperature range, not only for comfort, but for the preservation of wood and plaster finishes.

3. (Continued) Elements of the preservation project and the historic preservation accomplishments that make this a deserving project

d. Lighting

The chandelier and wall sconces were completely disassembled and removed from the Chamber for restoration. Lacquered brass finishes were cleaned, preserving the patina with museum waxes. New glass housings were manufactured to match the original pattern. The chandelier was re-wired with new LED lamping to reflect light off the ceiling. A new motorized cable-winch has been installed for lowering the chandelier. Lighting is enhanced by a series of new pin-lights focused through the snowflake grilles onto the Senator's benches.

The East and West Public Galleries were historically each lit naturally by a row of skylights in the ceiling. These former skylights were found covered and partially occupied by mechanical air grilles. To return the skylights to their original purpose and to simulate natural light for the Galleries, the skylights were reconstructed with diffused LED light panels. To facilitate this approach, the mechanical system was reorganized using linear air diffusers outside of the skylight panels.

e. President's Rostrum

A primary objective for the renovation and preservation of the President's Rostrum was to make it accessible. The rostrum platform was re-designed, preserving the historic front piece, to offer more room and accessible clearances. A former light-well behind the north Chamber wall was utilized to capture new space with infill floors, providing a support room connected to the Senate. Level with this workroom, the rostrum can also be reached via a discreet wheelchair lift through automatic center doors located in the zone behind the Chamber. Access to the light-well area on either side of the rostrum was achieved by re-purposing existing niches on both sides of the rostrum by converting them into passage openings symmetrical about the rostrum. The passages connect a corridor to the workroom and the wheelchair lift.

f. Rustication Panels

The rustication wall treatment of the lower Chamber is comprised of near 1500 individual wood elements. Encrusted with 20 to 25 layers of paint and fillers and beyond effective maintenance, all pieces were numbered, tagged for location, and carefully removed. Each piece was subject to a steam stripping process to least scar the wood. The steam process loosened 90% of the paint layers for easy removal. Heat guns were used to soften and gently remove the final paint remnants, followed by light sanding to remove any remaining particles. Cracks and flaws were epoxy repaired; and new wood was spliced in to replace significant wood losses, saving original panels. Each wood element was re-installed to its original location. Newly painted overall, a small group of panels was chosen to remain unstripped beneath the final finish, preserving the color history of the room.

g. Additional Improvements

- i. Public Galleries were reconfigured to improve accessibility and were fitted with new seating and bronze safety rails. Original terrace platforms were removed and restructured to evenly distribute the levels and step access and to improve the seating. New heating and ventilating infrastructure was installed in the voids under the terraces to service the galleries. The East Gallery was expanded by removing a wall to the south, opening the gallery to an accessory space and providing adjacency to an exterior window.
- ii. Plaster and woodwork materials have been restored and refinished, preserving original materials where practical. Failing plaster was explored to identify the limits of plaster to be replaced. Cracks were scored open to facilitate the adhesion of new plaster to fill the voids. The cracks were seamlessly blended to surrounding plaster. If stable, original plaster was kept. Similarly, as much existing and original Bulfinch-era wood work as possible was kept and repaired using epoxy repair materials.
- iii. A new Senate microphone system of current technology was installed, coupled with speech enhancement speakers and new assisted listening systems.
- iv. The Chamber now has a fire-protection sprinkler system integrated with the fire alarm. The sprinkler infrastructure is generally hidden from view within interstitial spaces; sprinkler heads are discreetly organized to coordinate unobtrusively with architectural elements.
- v. Stained glass windows of the former light-well – “the windows of industry” - outside the Chamber, were restored and back-lit. The glass was cleaned and preserved, and broken glass was replaced with matching new material, as needed. Sagging lead joints were reconstructed.
- vi. The stained glass lay-light of Bartlett Hall below the light-well was also restored. In addition to restoration of the glass and joint elements, a new steel reinforcing frame was installed behind the lay-light. To facilitate the fit of structural steel to support a new infill floor in the light-well above, the lay-light was lowered within the original ceiling coffer of Bartlett Hall. The egg and dart plaster detail surrounding the lay-light was preserved in the new lowered position. With a new flat panel diffused back-light system, the lay-light stained glass is now more visible.
- vii. Associated Senate toilet facilities are fully renovated to be accessible and gender neutral.
- viii. IT support infrastructure has been introduced, respecting the primary Senate Chamber tradition of legislative meeting and debate. The electrical network was upgraded, with concealed wiring infrastructure.



Commonwealth of Massachusetts
Art Commission
State House
Boston, Massachusetts 02133

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February 13, 2019

Brona Simon
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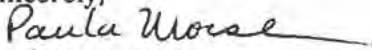
Dear Ms. Simon,

On behalf of the State House Art Commission, I write to express our unanimous approval of the renovation of the Senate Chamber, designed and overseen by CBT Architects in collaboration with the state Division of Capital Asset Management and Maintenance. Among the Art Commission's responsibilities are advising on the preservation of the historic fabric of the capitol, as well as its collections. We have long advocated for a comprehensive preservation effort for this historic chamber, located in the Bulfinch portion of the State House.

We are most pleased that resources were made available for the wide range of necessary improvements, including increased accessibility and technology upgrades in addition to a complete restoration of the envelope in accordance with strict preservation guidelines and across disciplines. CBT's professional and sympathetic approach made sure that these same ethics were also applied to the conservation of furniture, fixtures, and the restoration of the historic color scheme.

CBT's exhaustive research and planning contributed to the success of this project. The State House Curator always found their team to be responsive to her own curatorial and preservation concerns. All of the challenges and the goals were met, with the inherent elegance of the Chamber not compromised in its preparation for the next century of use.

Sincerely,


Paula Morse
Chair



February 15, 2019

Massachusetts Historical Commission
Preservation Awards
220 William T Morrissey Boulevard
Boston, MA 02125

Dear Commissioners,

I would like to take the opportunity to whole-heartedly endorse CBT Architects for the 2019 Massachusetts Historical Commission 41st Annual Preservation Awards.

The Massachusetts State House carries a significant place in the history of, not only the Commonwealth, but of our nation. Under the iconic gold dome sits one of the most significantly historic rooms in the building, the Massachusetts Senate Chamber. For over 200 years, this building, and in particular the Senate Chamber, has been the foundation for groundbreaking legislation that has shaped Massachusetts and policies of the United States.

This significance was not lost on me, when as Senate President, I sought to restore and renovate the historic chamber which had succumb to decades of band-aid like repairs leaving it in a state of disrepair. It was important to me to find a firm that understood and cared about the history of the chamber and we found that in CBT architects.

From the beginning, CBT understood that we needed to find the balance between preserving the history of the room, and creating a space that was safe and updated to allow the business of the Senate to proceed in the 21st century.

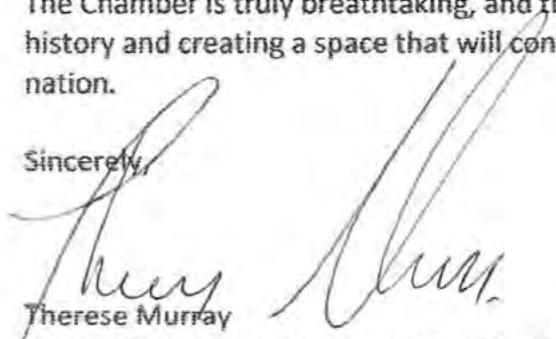
Right from the start, CBT delved into the history of the Senate Chamber. Layer by layer they researched and uncovered the various changes that the Senate Chamber had gone through over the years. Their meticulous research allowed us to take steps to preserve, and enlighten both legislators and the public to the history that was uncovered.

Simultaneously, CBT worked with my office and the Senate business office to repurpose and renovate room 428, known as the Old Document room, to a functional meeting space that provides the latest technology while keeping in line with the historic nature of the State House.

The painstaking work and leadership provided by CBT in restoring and renovating both Room 428 and the Massachusetts Senate Chamber is remarkable. When I first walked into the Chamber this January, I was taken aback by the quality of work to combine the historic research done and the technological needs of today.

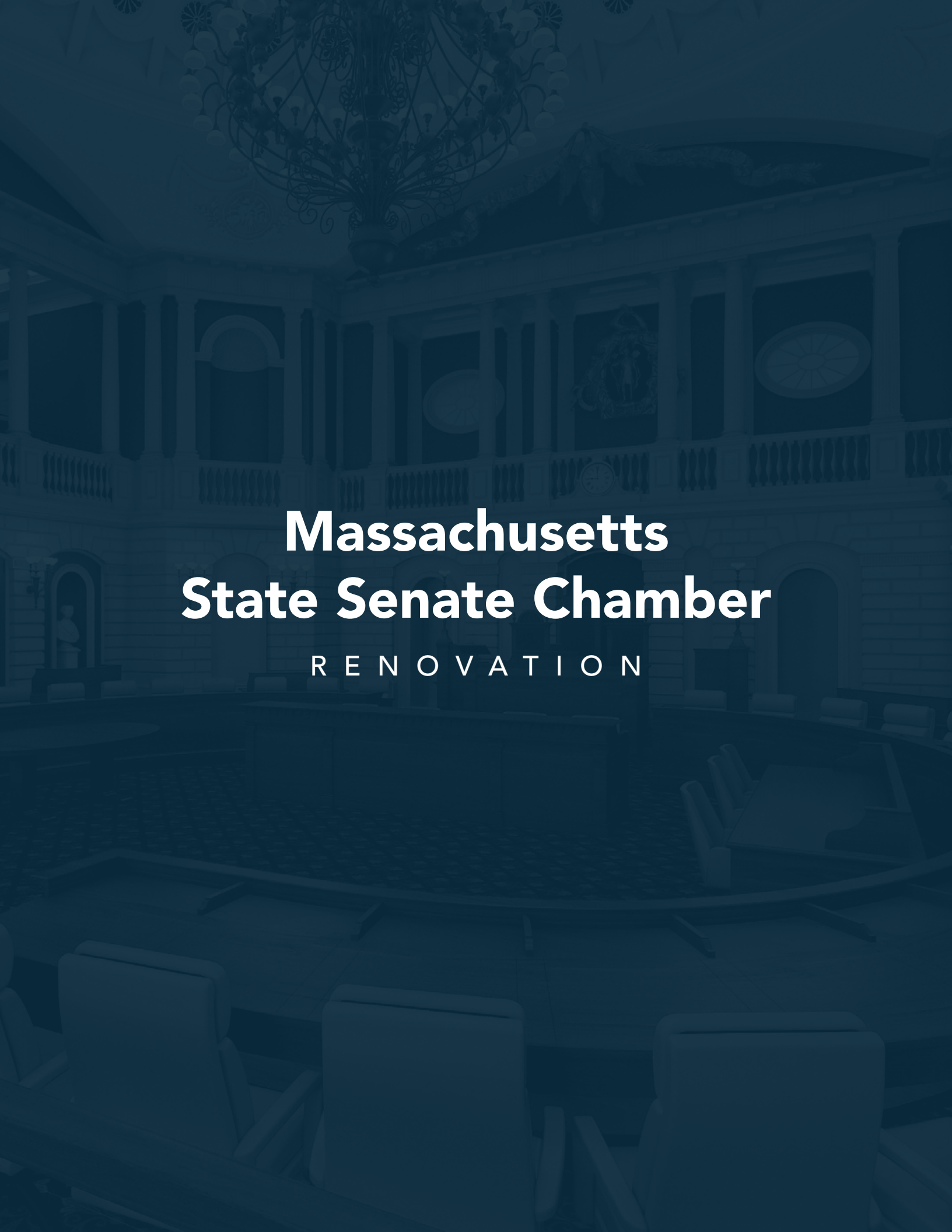
The Chamber is truly breathtaking, and that is because of the care CBT took in preserving our history and creating a space that will continue to be the foundation for our state and our nation.

Sincerely,



Therese Murray

Former Massachusetts Senate President
President & CEO, Massignite



Massachusetts State Senate Chamber

R E N O V A T I O N

Senate Lobby



General Chamber



After



Historic (circa. 1907)



Before



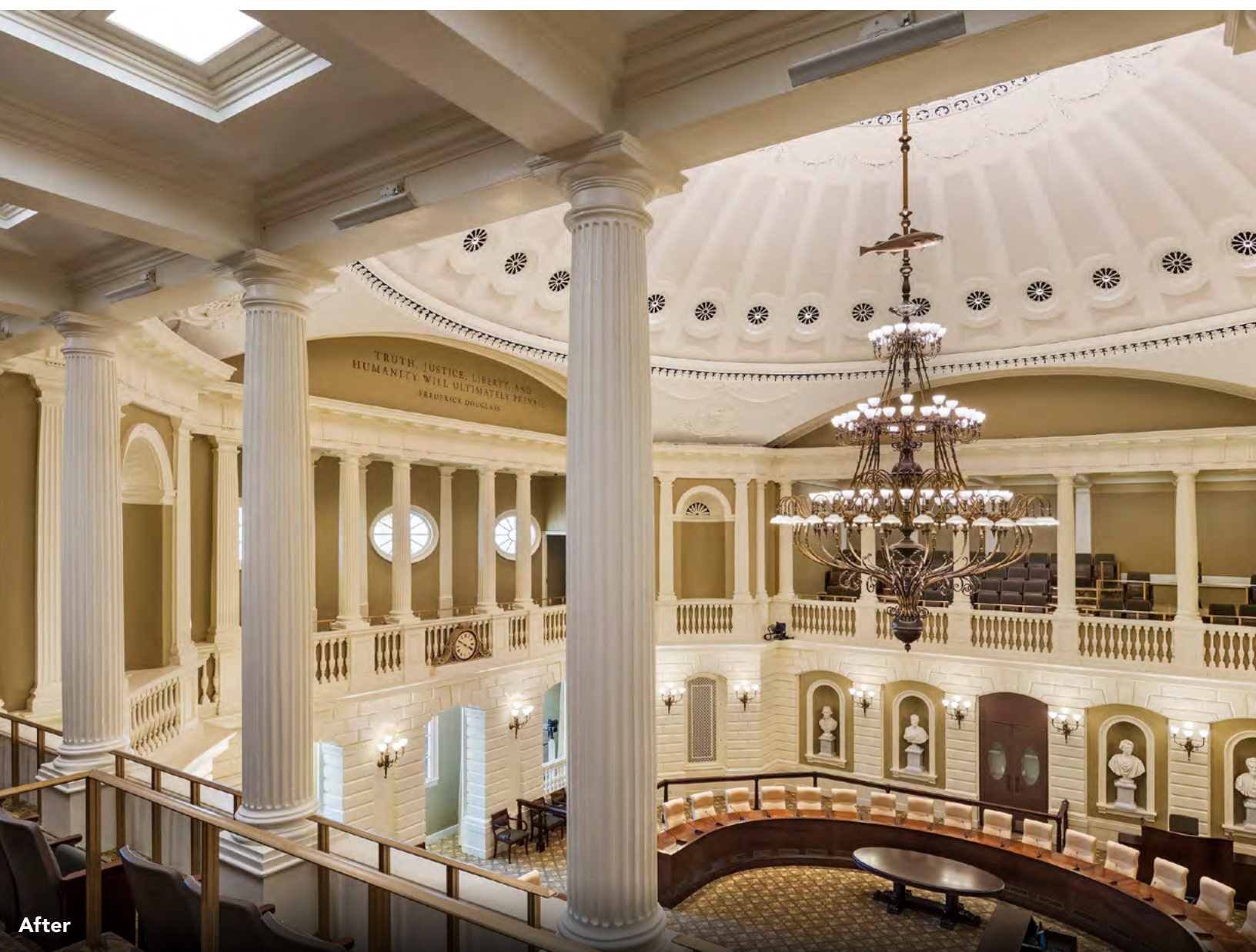
After



After



After



After

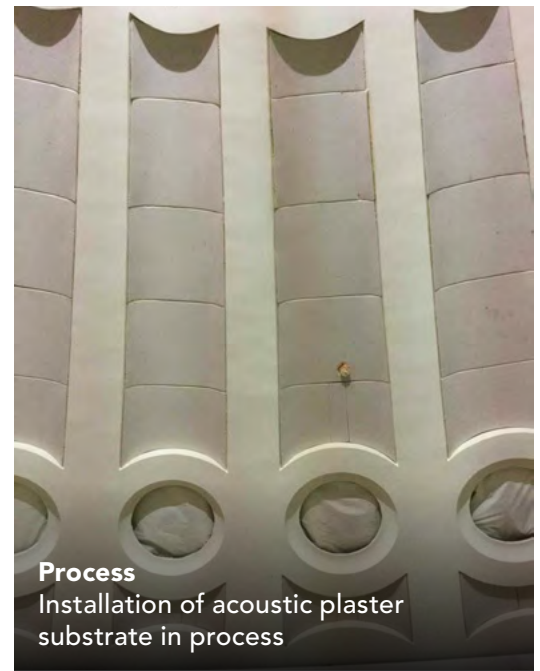
Acoustics



Process
Dome ceiling prior to application of acoustic plaster system; plaster repair at tympanum wall



Process
Acoustic plaster system mock-up



Process
Installation of acoustic plaster substrate in process

TRUTH, JUSTICE, LIBERTY, AND
HUMANITY WILL ULTIMATELY PREVAIL
FREDERICK DOUGLASS



After

Snowflake Grilles



Before
Deteriorated and missing original snowflake grilles

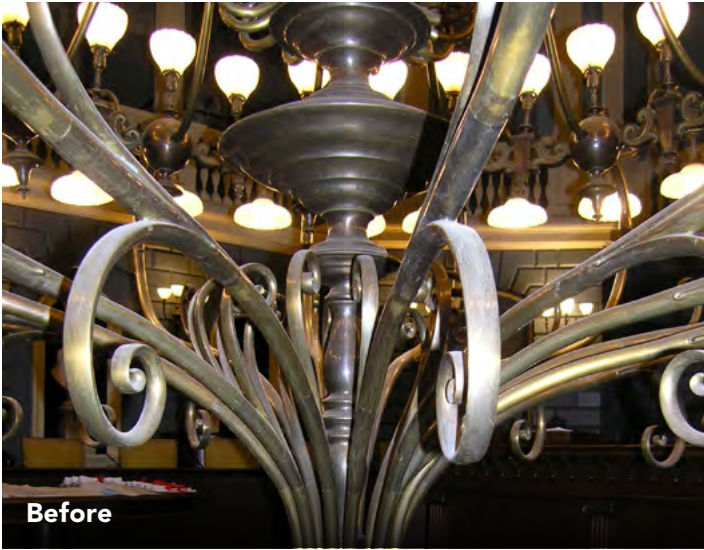


Before
Original delaminating wood snowflake grille



After

Lighting





After

President's Rostrum



Before



Process
Framing for new rostrum surround



Process
New rostrum platform construction



After

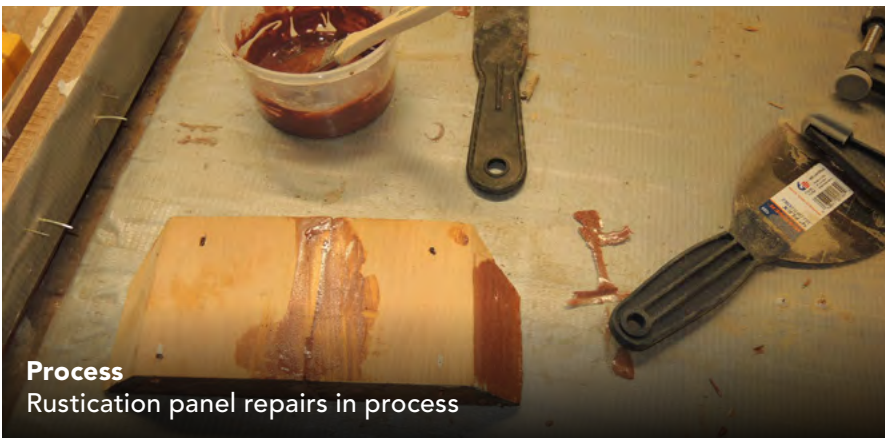
Rustication Panels



Process
Detail of substrate found behind rustication panels



Process
Initial removal and tagging of rustication panels



Process
Rustication panel repairs in process



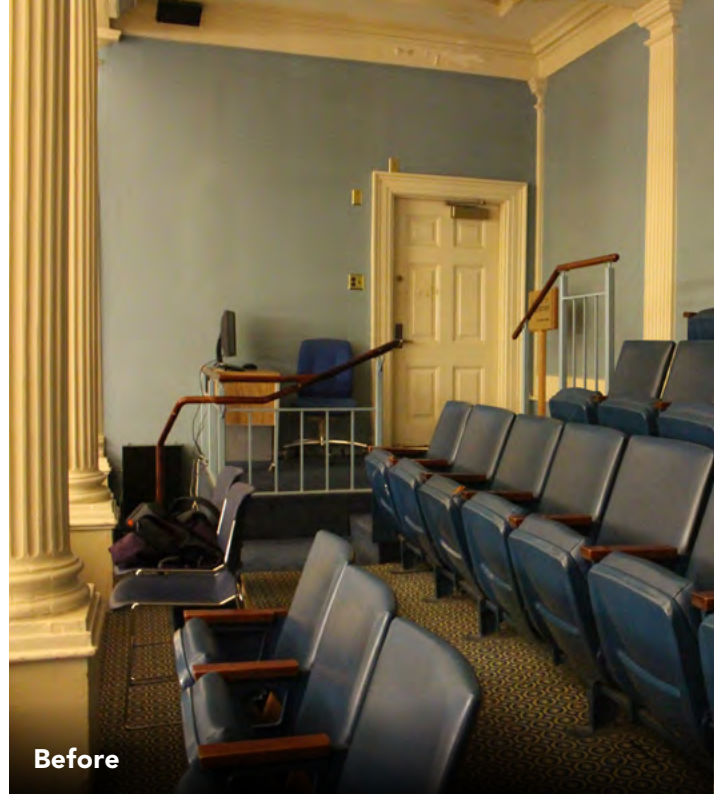
Process
Paint removal after steaming process



WASHINGTON

LAFAYETTE

Galleries

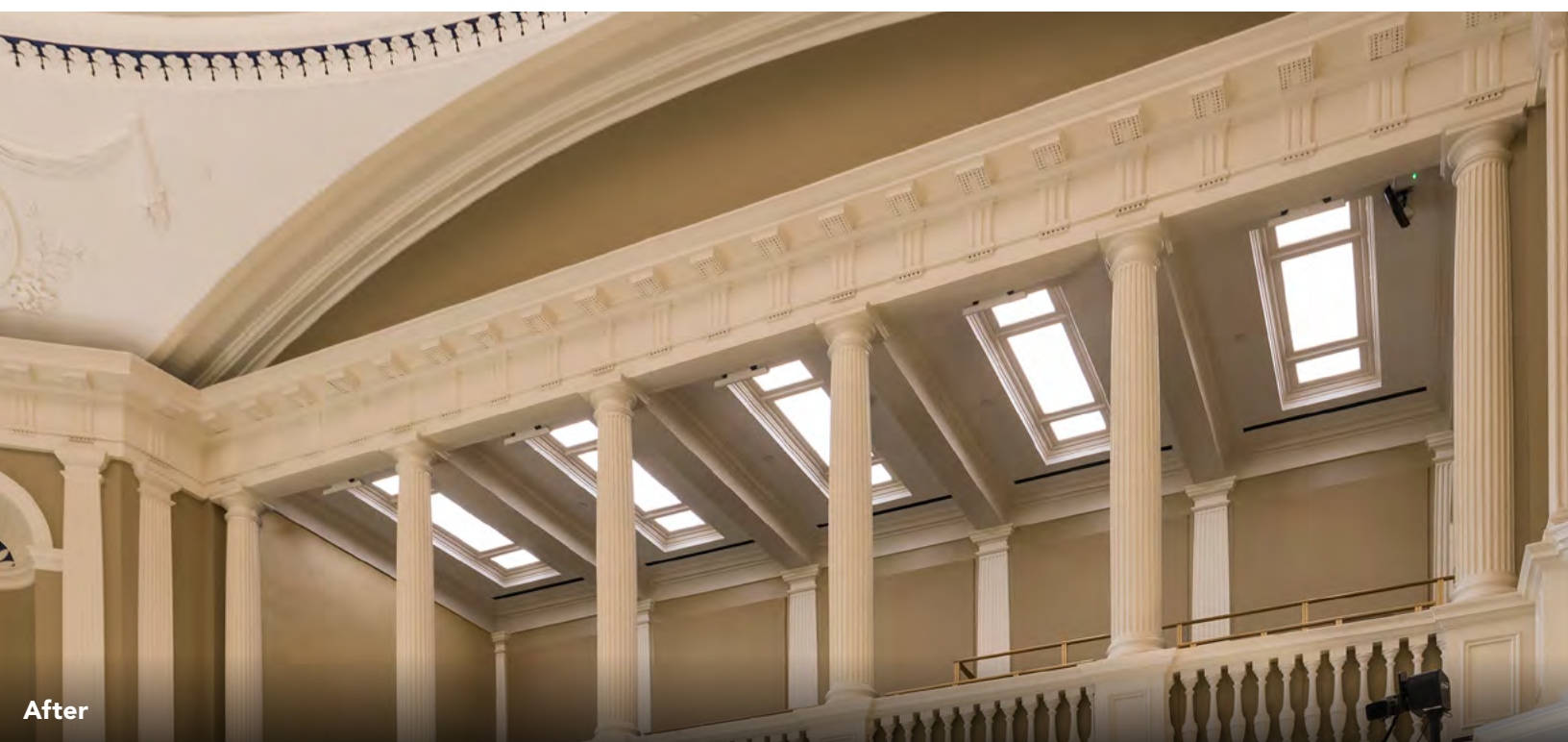


Skylights



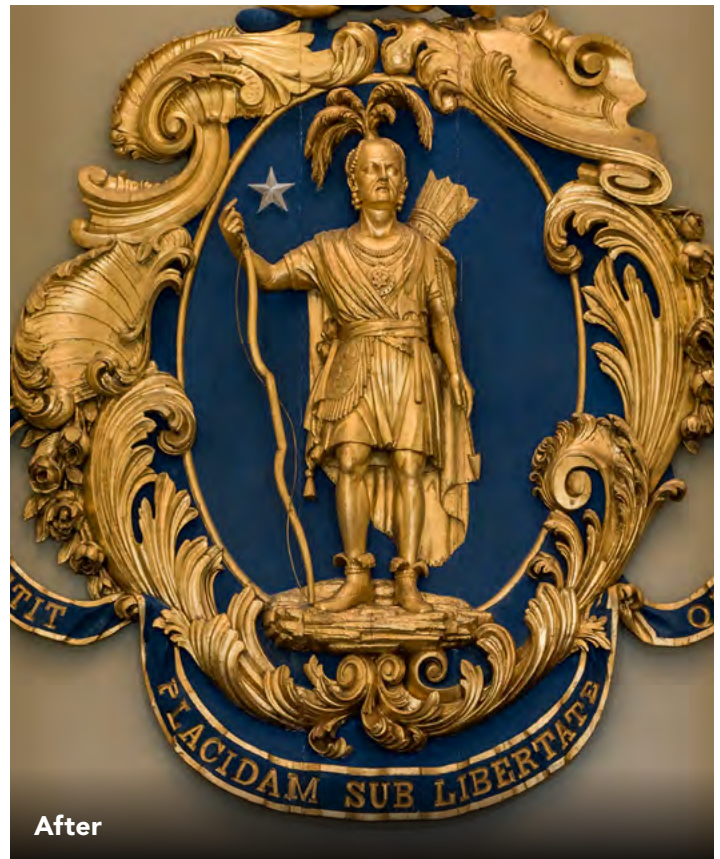


After

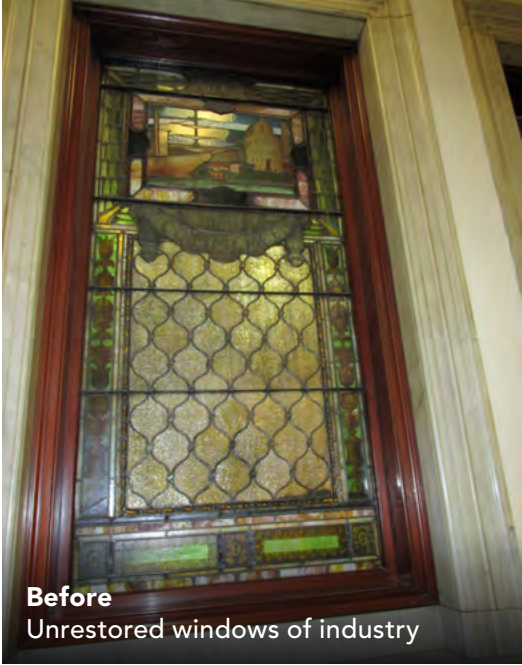


After

Eagle & State Seal



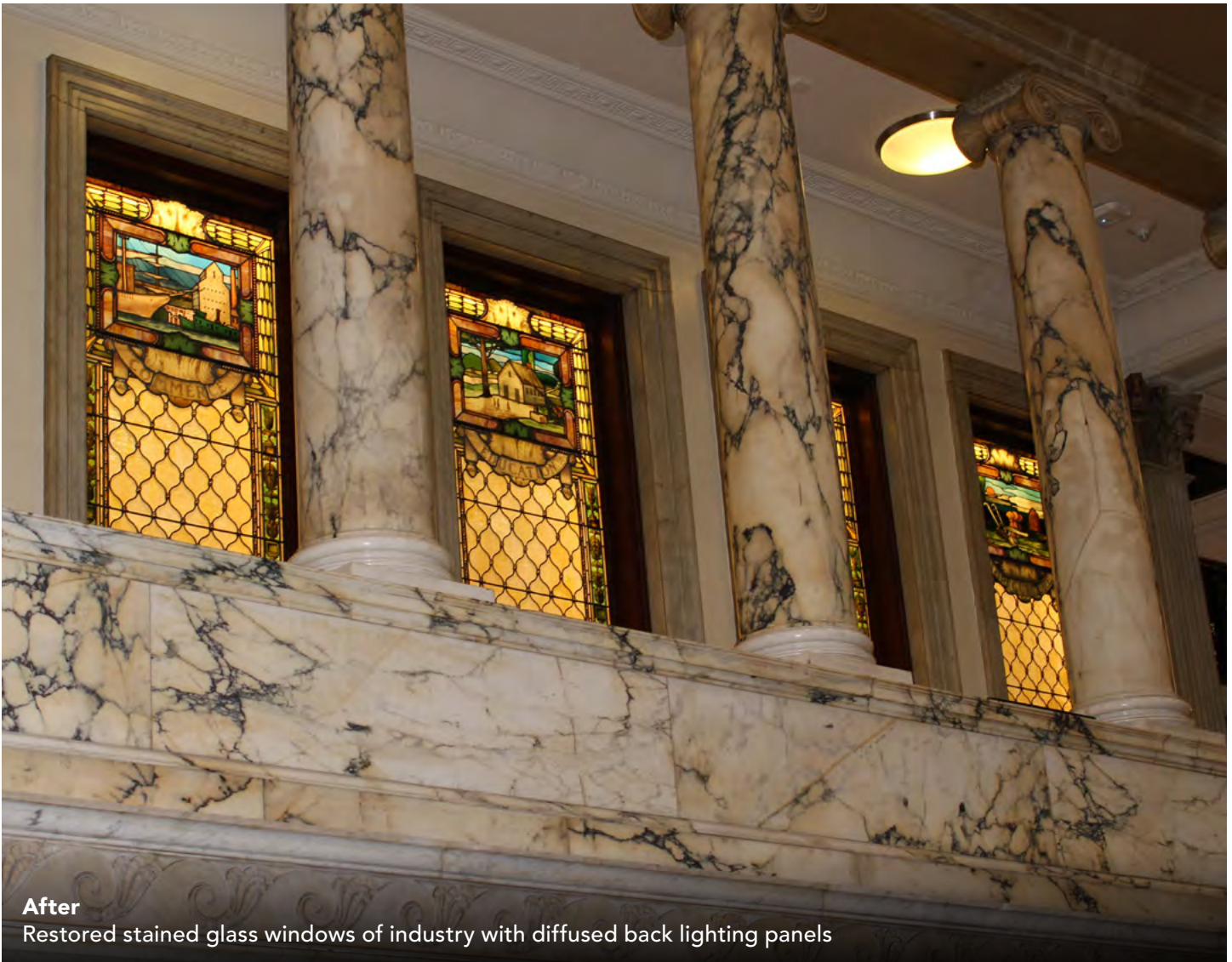
Stained Glass



Before
Unrestored windows of industry



Before
Collapsed stained glass panels and displaced leaded joints



After
Restored stained glass windows of industry with diffused back lighting panels

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