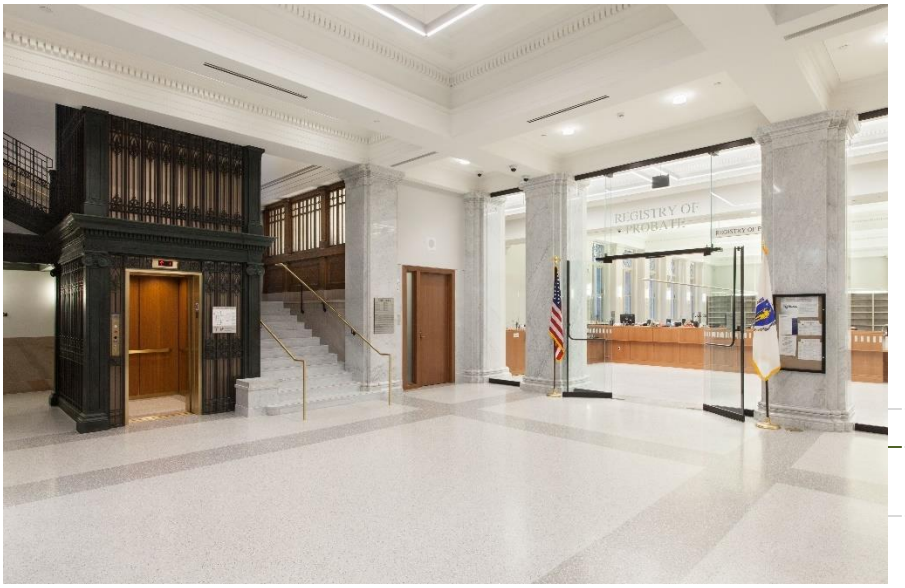
Salem Probate and Family Court Building

Historic Renovation And Addition

AGC 2017 Build New England Award Submission



Submitted by:

Construction Manager:

W.T. Rich Company, Inc.

Newton, MA

Architect:

Perry Dean Rogers | Partners Architects

Boston, MA

Awarding Authority:

Division of Capital Asset management and maintenance

Boston, MA

AGC 2017 Build New England Award Submission

Contents

AGC MA
Building Excellence

AGC Build New England Awards 2017

Entry I.D. Number (internal use only)

Project Name

Salem Probate and Family Court Building - Historic Restoration and Addition

Project Facility Type

Court House

Project Address

Street Address

36 Federal Street

Line 2

City

Salem

Country

United States

State / Province

Select Massachusetts

Zip / Postal Code

01970

Category

- ( ) New Construction
- (X) Renovation/Restoration

Firm Size (annual volume)

- ( ) Under $10 Million
- ( ) $10-$30 Million
- (X) Over $30 Million

Project Delivery Method

Construction Manager at Risk M.G.L. Chapter 149A

Project Constructor Firm

W.T. Rich Company, Inc.

Project Architect Firm

Perry Dean Rogers | Partners Architects

Project Architect Address

Street Address

177 Milk Street

Line 2

Suite # 700

City

Boston

Country

United States

State / Province

Select Massachusetts

Zip / Postal Code

02109

Primary Architect Contacts Name

Thomas McCarty, Associate Principal, Sr. Technical Advisor

Primary Architect Contacts Email Address

tomm@perrydean.com

Project Owner

Commonwealth of Massachusetts, Division of Capital Asset Management and Maintenance (DCAMM)

Project Owner's Address

Street Address

1 Ashburton Place, 1

Line 2

5th Floor,

City

Boston, MA 02108

Country

United States

State / Province

Select Massachusetts

Zip / Postal Code

02108

Project Owner's Email

Jeff Novak, Construction Project Manager DCAMM | jeffrey.novak@state.ma.us

Photo 2 Hi-Res Jpeg

SALEM PROBATE AND FAMILY COURT BUILDING HISTORIC RENOVATION AND ADDITION

Project Facts

Location	Salem, MA
Owner	Commonwealth of Massachusetts, Division of Capital Asset Management and Maintenance (DCAMM)
Construction Type	Historic Renovation and Addition
Contract Amount	Initial: $39.6 Million | Final: $42.3 Million
Building Size	77,000 GSF – (Renovation: 50,000 sf; Addition: 27,000 sf)
Contract Duration	Preconstruction/Design: December 2013 to July 2014 | Construction: June 2014 to February 2017
Start and End Dates	November 2012 to December 2015
Contract Method	CM at Risk (M.G.L. Chapter 149A)
M/WBE Goals	Combined Goal: 10.4% | Combined Achieved: 16.5%

Key Project Team Members

User	DCAMM
Architect	Perry Dean Rogers | Partners Architects, Boston, MA
User Agency	Office of Court Management (OCM)
Construction Manager	W.T. Rich Company, Inc., Newton, MA
Structural Engineer	LIM Consultants, Malden, MA
MEP/FP Engineer	BVH Integrated Services, Newton, MA
Civil Engineer	Nitsch Engineering, Inc., Boston, MA
Historic Consultant	Building Conservation Associates, Dedham, MA
Landscape Architect	Carol R. Johnson Associates, Inc., Boston, MA

1909 Main Entrance - Federal Street

Project Overview

Located at 36 Federal Street in the heart of downtown Salem, the Salem Probate & Family Court (Salem PFC) building is an essential element of the City's residential and civic historic district known as the Federal Street District. Historically known as the Registry of Deeds Courthouse, the original Court building was constructed in 1909. The primary goal of the Salem PFC renovation and addition project was to efficiently house the current and future needs of the Probate Court. The project approach comprised two key strategies: comprehensive historic renovation and improvement of the 1909 building; and, construction of a new "right-sized" addition, replacing the existing, ill-suited one built in 1979.

The Division of Capital Asset Management and Maintenance (DCAMM) was the awarding authority on the project. DCAMM partnered with the end-user, the Office of Court Management (OCM), to lead the client requirements and mandates for this ambitious project. DCAMM retained Perry Dean Rogers as the project architect and W.T. Rich as its Construction Manager for this challenging project. The project was delivered under the M.G.L. Chapter 149A, Public, CM-at-Risk delivery method. Major scope aspects included the complete "gut" demolition and rehabilitation of the 1909 Federal Street building while salvaging and restoring its historic elements, the demolition of the 1979 addition on Bridge Street, and the construction of a smaller addition that was more proportionate to the scale of the original building. The building's interior was completely reprogrammed to meet current courthouse circulation standards.

The project involved a highly collaborative effort between W.T. Rich, the design team and the owner throughout preconstruction and construction. The project was faced with an array of unique and, in some cases, fairly daunting, challenges. The project team worked in partnership to identify, explore, understand and ultimately resolve these challenges in an efficient and cost-effective manner. As a result, the project was completed on time and to the very high accolades of all project stakeholders. The project was recently awarded a 2017 Preservation Award from Historic Salem, one of America's oldest civic historic preservation groups.

Excellence in Project Management

The Salem PFC project represented a highly challenging and sophisticated undertaking. Working within the confines of a building constructed in 1909 to create a modern, elegant facility while preserving critical elements of the building's historic nature presented a wide range of technical and architectural challenges. In addition, the project was conducted amidst a highly confined work site bordered by two congested streets, and in very close proximity to the fully operational J. Michael Ruane Judicial Center. Further, not surprisingly, the existing record plans were found to be severely inaccurate and missing most details.

The context of this project required the project team to perform at a very high level from project start through completion. The key elements of the team's approach were open communication, thoughtful research and analysis, and timely and effective decision making. The project team worked closely with key stakeholders to understand fully their programmatic needs as well as their concerns with regard to safety, security, site access, noise, and construction impact. Throughout the process we committed ourselves to a proactive, collaborative, open and transparent style for dealing with project issues – both within the project team and with key project stakeholders.

Preconstruction and Early Construction

During the preconstruction process, W.T. Rich Company played a significant role in the planning and design process. Upon notice of award, the team mobilized immediately to initiate a focused design review from which a comprehensive cost estimate was established. The project team developed a highly detailed schedule of preconstruction activities, and conducted an extensive investigation of existing building and site conditions in order to develop a detailed site logistics plan. We also used this time to familiarize our team with the historic elements of the existing building and the preservation approach we would take. The project team worked together to define all permitting and approval requirements and responsibilities, document all applicable local ordinances (work hours, noise, light, etc.) and agree on the timing for early construction work.

W.T. Rich provided DCAMM, the OCM and Perry Dean Rogers with timely, accurate and detailed cost estimates that enabled them to validate the estimated cost of construction against the available budget. In cases where alternatives or value engineering were required to keep the project within the preset budget, W.T. Rich provided accurate estimates for various design options, soliciting detailed cost data from subcontractors for the largest or most critical scopes of work. This approach allowed DCAMM and the OCM to analyze the alternatives and make the most informed trade-off decisions that best maintained the goals of the project.

The project utilized two early release packages. The first consisted of the abatement of the entire facility, demolition of the 1979 addition and selective demolition of the 1909 building. The second consisted of the concrete foundations, structural steel and the complete site work and utility scope of work. These early packages not only accelerated the overall project schedule, but also allowed us to reveal the underlying conditions and structure of the building. This information was incorporated into the ongoing design progress, helping to reduce the number of change orders that might otherwise have been encountered.

Project Management Communication and Practices

The nature of communication amongst project team members distinguished itself not only by its frequency, but also by the quality and cohesiveness of the relationships that existed. As outlined below, there were ample formal structures for project updates, information sharing and team-based issue resolution. These included:

- Weekly OAC (Owner/Architect/Contractor) meetings that were consistently attended by representatives from all stakeholders, including weekly involvement from the Office of Court Management.
- Weekly review at the OAC meetings of job-specific issues, submittal and RFI status, outstanding or potential change orders, budget status and the look ahead schedule.
- Regular building walkthroughs by engineers and design consultants – with relevant subcontractors present – to identify, review, investigate and resolve field issues, challenges and questions.
- "Special meetings" were scheduled as needed to discuss and address specific challenges and pressing issues.
- The Construction Manager held weekly subcontractor meetings in which look ahead schedules, open issues and project challenges were discussed and resolved.
- MEP Coordination with the associated subcontractors/engineers prior to rough-in starting, and MEP commissioning meetings with subcontractors, engineers, and the commissioning agent as well as DCAMM and end user representation as systems were brought online and tested.

- Detailed minutes for all meetings were maintained by Perry Dean Rogers, and distributed weekly without fail.
- The following reports and logs were kept up-to-date by the Construction Manager and distributed at the OAC meetings and/or on a weekly basis: Submittal Log; RFI Log; Procurement Status Report; MBE/WBE Status Reports; Change Order Logs; Allowance Usage Log; Contingency Usage Logs.
- The Project Superintendent completed and distributed daily reports.

Perhaps even more important than these formal communication structures, the informal lines of communication were open and frequent, and in many ways served as the backbone of the team's effectiveness. There was a deep sense of alignment in which all team members worked together towards a common goal – never against one another or from hidden agendas. The foundations of the team were grounded in trust, respectful communication, professionalism and accountability. This collaboration and teamwork were the number one reason for the project's success. Given the project challenges described above and the technical requirements that follow, project goals would have been difficult to attain in the absence of such effective teamwork and cooperation.

Scheduling and Budget

Each week, W.T. Rich's lead superintendent developed a three-week look ahead schedule in Gantt chart format, which was presented, reviewed, discussed and distributed at both the OAC meeting and weekly subcontractor meeting. In addition, W.T. Rich maintained and kept up-to-date a master critical path method schedule using Primavera Project P6. This master schedule was reviewed monthly during the OAC meetings to confirm progress, identify potential schedule challenges and, when necessary, agree on required action steps to preserve, maintain, recover or advance the schedule.

Once the GMP was established on the project, the biggest threat to the budget was potential change orders. The Salem PFC project encountered its fair share of potential changes – both discretionary, user-requested changes and non-discretionary ones encountered due to latent conditions. The project team consistently worked together in a collaborative manner to find and implement the most cost-effective and project-appropriate solution to these types of issues, while at the same time seeking to avoid adverse schedule impacts.

Measures Taken to Provide a Strong Culture of Safety

W.T. Rich is extremely proud that the project had an outstanding safety record with zero lost time accidents over the nearly three-year duration. W.T. Rich accomplished this by having a dedicated Safety Director assigned to the project who was responsible for development and implementation of the project's site specific safety plan. The Safety Director conducted site visits and inspections a minimum of twice per week. This included a comprehensive "mock-OSHA Inspection" every seven to ten business days. If the Safety Director noticed any potential safety issues or non-compliant work practices, he notified the subcontractor's Foreman and the W.T. Rich Superintendent to rectify the matter immediately thereafter. Any repeat issues or offenders would be dealt with sternly. Verbal and written notices would be issued (with fines, if applicable) and proactive oversight would continue until the issue was eliminated.

W.T. Rich utilized a new safety inspection tool on the Salem PFC project. Safety-Reports® is a web-based software tool that contains a comprehensive library of OSHA standards, organized as an inspection checklist. W.T. Rich customized these inspections to include additional criteria. The tool allows inspections via a smart phone or tablet, and easily integrates real-time photographs. Inspections were conducted by both the Safety Director and the on-site representative. Safety-Reports® maintains a log of all flagged safety items and violations; the on-site safety representative was responsible for closing out all open safety items logged to Safety-Reports®.

Best Use of Technology/Techniques/Tools

The Salem PFC project included a wide range of new, advanced or sophisticated technologies and tools. The project team consistently demonstrated its competence in understanding and managing these technologies, many of which were complex and challenging aspects of the project. There was always a great environment of support and collaboration in dealing with some of these complexities.

Building Support Systems for Unsuitable Soil Conditions

The geotechnical investigation of the site quickly revealed challenging sub-surface conditions on the site. The existing sub-surface contained high-levels of clay, which would not be suitable for bearing the new addition foundations. The existing soils contained a high content of urban contaminants, and would be expensive to remove and replace. The project team agreed to utilize two hundred rammed aggregate piers to support the new 27,000 SF, five-story addition. The soil issues were not limited to the new addition: a new foundation system was required within the basement level of the 1909 building to support new structural columns. This consisted of over 88 drilled mini-piles, which were installed using a drilling rig that had less than a 6" clearance from the overhead structure above. These were topped with pile caps and grade beams that effectively raised the entire basement level up 5' to better accommodate the new programing layout of the design.

BIM and 3D MEP Coordination in an Existing Building

W.T. Rich utilized a BIM-based 3D approach for MEP coordination for the project. MEP trades created coordination models for their work using AutoCAD 3D; W.T. Rich assembled and coordinated the models, and resolved conflicts using NavisWorks. While the use of BIM for 3D MEP coordination is commonplace today on new construction, its effective use on complex renovation projects is more limited. Given the intricate detailing of ceilings and the constraints imposed by other historical features, effective and accurate coordination of MEP systems was essential. Although plenty of coordination issues and challenges were encountered, these were identified and addressed in advance of installation. The outcome of the efforts is elegant and historically-true finishes with MEP systems and infrastructure cleverly incorporated into and hidden by the architectural features.

Glass Reinforced Gypsum

GFRG Plaster Profile Replication

Glass Fiber Reinforced Gypsum (GFRG) is a molded product with a high strength to weight ratio that is used in construction to replace the disappearing art of plaster. Although GFRG itself is not a new technology, the use of the technology to this level of detail is not common practice and is considered a unique and custom application. The process required extensive detailing and coordination – especially given the historical restoration requirements of the Salem PFC project – to ensure that custom models replicated exactly the specified profiles of the historic plaster profiles removed. This is a specialty trade with limited capacity in the industry. The work was a sub-tier trade to the drywall contractor. When the Pennsylvania-based GFRG supplier ran into production issues and delays, the full team worked together to source a supplemental supplier, and to modify work sequences to accommodate later than expected material delivery.

State-of-the-Art, Integrated Security and Life Safety Systems

The Salem PFC building has very high security requirements. There are substantial restricted areas throughout the building, to which access must be controlled. A new, two-cell detention area was created as well as a secure, underground tunnel between the PFC building and the adjacent Ruane Center. To meet these requirements, a sophisticated key-card access control system was installed throughout the building. The system was required to connect to the Trial Court's centralized security system in Boston. In addition, there were a large number of cross-system integration requirements between various systems. For example, the fire alarm and access control system operate together to allow for proper egress out of secure spaces in the building. The fire alarm system could not be NFPA tested until all hardware was installed, programmed and commissioned first. The courtroom AV systems are also tied into the FA system such that in the event of an emergency, all audio visual systems are shut down and overridden by the FA or Mass Notification System. The building also has three separate fire suppression systems: Wet, Dry and Pre-action.

Leading Edge Project Management Platform

W.T. Rich was proud to introduce use of the Procore Project Management tool to the Salem PFC project for the coordination, tracking, and administration of all project management functions and tasks. This web-based tool included a cloud-based, user

friendly platform for creation, review, management, and tracking of submittals, RFI's, ASI's, proposal requests, daily reports, potential change orders, field reports, meeting minutes, photographs, the project directory and all sub-contract commitments. Procore's email integration allows for ease of communication and response. The project team made full use of all of the functions described above. In addition, we used the tool to maintain an on-line library of all project documents, which included a feature in which the tool automatically builds hyperlinks from all detail references to the details themselves, enabling one click navigation to access detail callouts.

Meeting the Challenges of the Project

Constrained Construction Lay Down

The Salem PFC project is widely regarded by the project team and the end users as an overwhelming success. Notwithstanding this superb outcome, there were certainly numerous challenges along the way. The project team faced these challenges head on, maintaining a positive, proactive and resourceful approach to resolving the issues encountered.

Constrained Work Site within an Urban/Residential/Historic Environment

Logistically, the Salem Probate & Family Court site provided many challenges. The site is bordered by Bridge Street to the north, Federal Street to the south and the newly constructed and fully-operational Ruane Judicial Center on its west side, as well as the currently vacant Superior Court immediately to the east. Within such a tight construction site and historic environment, a strategic construction management and risk mitigation plan was an essential element to ensuring the project minimized adverse impact and inconvenience to the surrounding community. These factors required W.T. Rich Company and all of its subcontractors to operate with the highest standard of care and sensitivity to the needs of the local environment.

By working in partnership with DCAMM, the OCM, City of Salem officials and the design team, W.T. Rich implemented a detailed and project-specific construction mitigation plan for the project. The plan centered on open and clear communication among the construction team and all parties affected by the construction. Key items relating to the community included a traffic management plan that clearly identified all diverted vehicle and pedestrian pathways, designated "off-limits" construction areas and defined temporary utility shut-down requirements.

Examples of Unforeseen Condition Challenges

Delamination – The concrete topping slab, which was designated to remain on all floors, was determined to be delaminating from the floor slab below. At a time when wall framing and MEP rough-in were ready to proceed in earnest, the decision was made that all topping slabs were to be removed and replaced. W.T. Rich led the effort to manage the sequence of work to mitigate the adverse impact of this last minute change order.

Structural Deviation – The structural slabs were thought to be supported by steel beams encased in concrete, and structural calculations and details were designed around this premise. Once the building was vacated and destructive investigation performed, it was determined that slabs did not have steel support beams. Significant modifications to the structural design were required and implemented via addenda.

Unforeseen Conditions Encountered During Construction

During the preconstruction phase, the project team invested significant time and effort into revealing, understanding and documenting latent conditions. While these efforts were largely successful, they were not absolute in preventing surprises and challenges from unforeseen conditions. The project team encountered a number of such challenges during construction, requiring quick and decisive responses from the design team, so as to minimize the impact on critical path work items. Two specific, more significant examples are provided in the inset box. For the project as a whole, there were dozens of such issues. Many were minor in terms of scope, cost and schedule impact, but several were more significant. Regardless, all needed to be addressed proactively, collaboratively and quickly by the project team to keep the project on track.

Structural Retrofit within 1909 Building

The new programming of the existing 1909 courthouse called for Records Storage to be moved up from the basement level to the first floor. To accomplish this, the design added structural steel reinforcement to the entire basement, which transferred load down onto new pile caps over eighty eight drilled mini piles to support the floor above. These mini piles were drilled down to an average depth of 75 to 100 feet, with all equipment needing to fit and operate within the confinements of the existing building interior

structure. The lower level basement was also raised five feet for ADA accessibility. Pumped specialty "Light Weight Fill" was used to raise the basement grades prior to pouring the new slabs. These systems required precise coordination in terms of layout within the basement subsurface area to avoid existing to remain items while supporting the new structural design.

Restoration of ornate period details and Associated Lead Time Challenges

The aesthetic of the revised court house provides an elegant, stately building that remained congruous with the overall architectural flow of Salem's Historical Federal Street District. The design called for the use of extensive new and restored marble as well as limestone quarried in Portugal for the new addition building façade.

Artisan plaster replication

These elements needed to match existing to remain items along with the requirements of the Historic Commission. The entire 1909 building exterior façade underwent a historic restoration with new historically-replicated, specialty aluminum windows and all stone joints re-pointed. Skilled artisans were required to re-create historic features and details within the courthouse interior. While the design intent met all of these visual requirements, these items presented many scheduling challenges and timing issues. The interior of the 1909 historic building consists of extremely high-end millwork and marble finishes throughout, while blending in the requirements for the historic replication of ceilings, courtroom paneling, marble accents, light fixtures, and other historic architectural details. The marble was quarried in Italy, where artisans had to hand carve intricate details to match the existing marble remaining on site. Seventy-five tons of new marble materials were installed on the project. The 1909 building was outfitted with three new courtrooms. Courtroom #1 millwork was selectively removed and perfectly replicated with new wooden materials, piece for piece. All plaster profiles at coffered ceilings had to be historically replicated, which required custom wooden molds built by hand to receive glass fiber reinforced gypsum pours. Each piece had to be poured and cured; and this equated to an extremely lengthy process. A large portion of the floors are a beautiful poured terrazzo. The resulting grandeur of this building is truly astonishing.

Partnering Excellence/Collaboration

Project Team Collaboration. The planning, programming and design phases involved multiple meetings with key stakeholders - the Massachusetts Trial Court's Office of Court Management (OCM), DCAMM, the Probate & Family Court staff and judges, along with input from the Massachusetts Historical Commission, Salem Historical Commission, Salem Fire Department, City Engineering and State building and specialty inspectors. The W.T. Rich construction team played an integral part within the preconstruction phase. Through early involvement, the project managers worked with the design and engineering teams to get a comprehensive construction plan developed; therefore, we were in a position to begin construction while certain phases of the preconstruction effort were still underway. This collaborative approach continued through to the completion of the project, proactively addressing unforeseen conditions, design modifications, detailed trade coordination and final inspection of the site through to punch-list and close-out.

Coordination with Facilities Management. The Salem Probate & Family Court is considered part of a 'judicial campus' complex with the adjacent Ruane Judicial Center. During design, W.T. Rich and Perry Dean worked closely with the Trial Court's Facilities Management Department and specific personnel from the Ruane Center, so that the completed building's maintenance operations could be seamlessly integrated and managed by a designated team who had a full understanding of the building systems in place.

Interdependent Schedule Aspects Required Detailed Trade Coordination. This project required a complex schedule due to several overlapping tasks. A key example of this included the need to sift through hazardous waste materials in order to salvage and preserve as many historic interior elements (such as marblework and millwork) as possible. This necessitated extensive coordination between the historic preservation consultant, the project team and sub-trades performing the work. Some components were identified to be salvaged for restoration and reinstallation, some were to be protected in-place, while others (such as ornate plaster ceiling coffers and column capitals) needed to be replicated due to the presence of hazardous materials.

Distinction in Client Service

It is fair to state that client satisfaction was at the forefront of all decisions and actions made by the project team. From the outset of the project, it was evident that not only was the project facing many challenges, but also that the user agency had very high expectations for the project team that had been assembled. A culture of client satisfaction and excellence runs deep for both W.T. Rich and Perry Dean Rogers. It was our joint mission to ensure that key stakeholders on the project were not just satisfied with the project outcomes, but rather were ecstatic about them. Our team collaborated with the OCM on a regular basis. Once the project advanced past the rough-in stage, weekly walk-throughs with the OCM were conducted.

Additional, as-needed walkthroughs were conducted with City officials and the Salem Fire Department, including arranging for the SFD teams to run training drills throughout the building during off hours. Also, frequent walk-throughs with the State building inspector were conducted to make sure all compliance requirements were met for each aspect of the project, as well as frequent communication with the City of Salem Engineering Department to make sure the City and all key players knew exactly what was happening on the project. The positive results of these efforts are demonstrated through the testimonials received from various stakeholders, which are presented in the supplemental information to this submission.

Community Relations / Environmental Sensitivity

The project was executed with great sensitivity to the environment and the surrounding community. Complaints from neighbors and abutters were non-existent throughout the project. The City raised a concern regarding the quality and durability of an asphalt patch on Bridge Street that had been installed under our contract. The project team decided to replace the full width of pavement for a 100' length of Bridge Street.

The project was constructed with a LEED Silver goal, yet is on track to achieve LEED Gold certification. Dozens of provisions and methods were employed, which demonstrate sensitivity to the environment and a commitment to sustainable design and construction. Details of specific sustainability measures are presented in the supplemental information section.

Why This Project is Worthy of a Build New England Award

The Salem Probate and Family Court renovation and addition project is an outstanding example of the great results that are possible when committed and passionate team members unite together in a collaborative effort to create a state-of-the-art facility. The project demonstrates the possibilities available for preserving the integrity and context of an historic building while simultaneously implementing leading edge technology for the building's systems and infrastructure. The project was distinguished by the range and complexity of challenges it faced. These challenges included, but were certainly not limited to, the highly confined urban work site; the proximity of the active Ruane Center and abutting residences; the rigorous requirements associated with the historic restoration and/or replacement of the granite and installation of the limestone, windows and roofing; the handling of unforeseen/latent conditions; structural retrofit within the 1909 building; creative foundation bearing systems structure; and the simultaneous demolition to the 1979 addition while abatement and selective renovation were underway in the 1909 building. In the face of these complications and hurdles, the project team needed to perform at a very high level to accomplish the project's goal of constructing a state-of-the-art building on schedule and within budget.

The project performed exceptionally well against all of the criteria that form the basis for award selection. Not only were significant challenges managed successfully, but the project also included a number of cutting-edge technical elements and requirements such as a comprehensive 3D MEP coordination process within an existing structure; innovative, environmentally-friendly materials; leading-edge, state-of-the-art mechanical and electrical systems; an aggressive sustainability agenda; and, use of a leading edge project management platform. The above challenges and technical elements in and of themselves are impressive; however, it is the collaboration and performance of the project team that ultimately distinguishes this project and makes it deserving of an AGC Build New England Award. No complex project of this nature proceeds without a hitch. The true measure of a collaborative, high performing team is how it responds in the face of challenges, issues and difficulties that arise during the course of the project. It is in this realm that the Salem Probate and Family Court project team distinguished itself. Whenever faced with such difficulties, the team always came together to brainstorm and problem solve with a spirit of alignment and cooperation. The project team, end users and the City of Salem are all thrilled with the results of their renovated courthouse and the new addition. All parties stand proud of their accomplishments and eager to share the credit with their project team partners.

KEY SUBCONTRACTORS

In many ways it seems misleading to list only two subcontractors, as so many subcontractors played such important roles in contributing to the success of the project. Nonetheless, as indicated in the award guidelines, we have limited our comments to the two subcontractors described below.

Beaubois Architectural Woodwork

Beaubois' entire team dedicated heart and soul to provide a gorgeous custom millwork package for the Salem Probate & Family court building. Their management and field staff on the project was second to none, along with their overall quality control program. From the clean and concise shop drawings, to the weekly field visits and corresponding field reports by the general superintendent months before actual mobilization, Beaubois always harvested a proactive and collaborative approach on the Salem project. The attention to detail was phenomenal; often bringing forward small intricacies to the architect in order to provide a higher quality product, as well as flagging conflicts with other trades that may have gone unnoticed until installation in the field.

It was extremely impressive to see the commitment and innovation of Beaubois when faced with the challenge of honoring the historical character of this magnificent building. We cannot forget that all of the millwork was custom made by the talented carpenters found in Beaubois plant. Some challenges faced were removal of existing delicate millwork pieces both for restoration and re-use, as well as replication; some of which were over 100 years old. The plant millworkers were stunned to see 14-foot-long pieces of white and red oak with no joints, knowing they had to reproduce them with 21st century equipment!

Today, their exceptional talent can be witnessed on every piece that looks as if it were signed by the original craftsmen. Among them, we notice reveals made of bronze and tropical wood, wooden lattice ceilings, window and door frames, paneling and moldings, some of which are two feet wide and have more than 10 profiles. Beaubois' masterpiece however is agreed to be the magnificent main entrance, demanding respect and dignity from all that enter into the building. Such delicate work required special skills, talent, experience, flexibility, dedication and, most of all, a team spirit shared with all partners of the project. That is what the project team believes to be at the core of Beaubois' business philosophy and culture: a firm that is to be considered true partner for success.

Wayne J. Griffin Electrical | Electrical Contractor

It was good news to the project team when Wayne J. Griffin Electric, Inc. (Griffin) won the trade bid electrical package for the Salem Probate and Family Courthouse Project. Griffin has worked on myriad projects together with WTR, DCAMM and PDRP, and seemed like they would be a strong fit on a complicated project of this nature. As most know – electricians are one of the first contractors on site, one of the last to leave and are mission critical to many other trades involved in the construction process. Griffin projected a sense of confidence from day one on the project and backed up that confidence with a proactive approach, deep expertise in their trade and a thorough understanding of the specific requirements and challenges of the PFC project.

As cited above in the submission, the work site was extremely condensed and faced many challenges impacting the project schedule. Work and logistics had to be carefully managed across the site and inside the building to accommodate these challenges and get over the hurdles. Fortunately, Griffin Electric demonstrated strong experience navigating all levels of logistical challenges and was able to meet the challenging circumstances of this project while mitigating delays to their work. Griffin was always there to help solve problems, never hindering forward progress.

Using BIM (Building Information Modeling) for the electrical coordination of the updated facility, the Griffin team was responsible for the installation of 1200 AMP service with a 500kw emergency generator. The team also outfitted the building interior with new power wiring and lighting systems with state of the art lighting controls that included the restoration of historical light fixtures both inside and outside the building. Griffin also installed a brand new fire alarm system and radio master box, telecom systems, access control, CCTV security systems and lightning protection.

Griffin Electric is an exemplary example of a collaborative mindset, demonstrating that while skill is critical, teamwork is the key to a successful project.

Supplemental Information

Contents:

Sustainability / Environmental Sensitivity

Testimonials

Recognition:
Historic Salem, Inc.
Historic Preservation Award Nomination Form and Submission

SUSTAINABILITY / ENVIRONMENTAL SENSITIVITY

The project was constructed with a LEED Silver goal, yet through the best efforts of the entire project team, it is on track to achieve LEED Gold certification. The provisions and methods that were employed, which demonstrate sensitivity to the environment and a commitment to sustainable design and construction are listed below:

- Development and community Connectivity
  - ✓ The project is within ½ mile of a residential zone or neighborhood with an average density of 10 units per acre net; is within ½ mile of at least 10 basic services; and has pedestrian access between the building and the service
- Alternative transportation
  - ✓ Both public transportation access (MBTA less than a tenth mile away) as well as bicycle storage, changing rooms and showers
- Low emitting and fuel efficient vehicles & parking capacity
  - ✓ Preferred parking provided for low emitting vehicles – 11% of total onsite parking
- Storm Water design
  - ✓ The Project includes a storm water management system to mitigate for the increase in impervious area. The storm water management system has been designed to capture and treat storm water runoff from 90% of the average annual rainfall to 80% total suspended solids (TSS) removal. The storm water management system includes the use of proprietary treatment structures and a new subsurface infiltration system comprised of perforated pipe and stone, and an existing infiltration system comprised of pipe and stone.

Water Efficiency:

- Water efficient landscaping
  - ✓ All landscape areas will be planted with native, salt- and drought-tolerant species. No irrigation or even temporary irrigation is proposed throughout the site.
  - ✓ The planting palette will be simple, yet effective thorough the selection of hardy material that require little to no water maintenance outside of normal precipitation.
  - ✓ The elm trees planted along the street are salt-, drought- and pollution-tolerant. They also replicate the elm trees that were planted in front of the building in the early 1900's.
  - ✓ Water use reduction
  - ✓ Flush fixtures water reduction of 32.5%, Flow fixture reduction of 61%; combined all fixture reduction of 40.5%

Energy and Atmosphere:

- Optimize Energy Performance
  - ✓ Improved by 30% (operating cost i.e. energy use reduction by 30%)
- Enhanced commissioning
- Enhanced refrigerant management
  - ✓ HVAC System Equipment (Screw Chiller and split AC/Heat Pumps both comply with minimization of emission of compounds which contribute to ozone depletion and global climate change

Materials and Resources:

- Building re-use – maintain existing walls, floors and roof – 56% of total project square footage was reused
- Construction Waste Management – targeted exemplary - 98% of roughly 8,800 tons of construction waste was diverted from landfills
- Recycled content – targeting 15% of total material costs for the project
- Regional Materials – targeting 20% of all procured materials to have been extracted, harvested or recovered, as well as manufactured within a 500 Mile Radius of the project.
- Certified Wood – targeting exemplary - 95% certified wood value as percentage of all new wood material costs on the project.

Indoor Environmental Quality

- IAQ Plan generation and implementation on site
- Mechanical ventilation
  - ✓ All of the project's mechanical ventilation AHUs are at least 30% above the minimum required by ASHRAE Standards
- Low-Emitting Materials procured for the project in accordance with LEED requirements
  - ✓ Adhesives and Sealants
  - ✓ Paints and Coatings
  - ✓ Flooring Systems
- Controllability of Systems:
  - ✓ Lighting – 100% of both individual and shared occupant spaces have user adjustable lighting controls
  - ✓ Thermal Comfort
    - 62% of individual occupant spaces have adjustable controls
    - 100% of shared occupant spaces have controls
- Thermal Comfort design and verification - HVAC system was designed such that all design conditions of all occupied spaces fall within acceptable ranges required per ASHRAE Standards.

Innovation and Design Process

- Green Cleaning Program implemented by end user:
  - ✓ Objectives:
    - To minimize the effect of cleaning the facility on occupants, workers and the environment.
    - To reduce the exposure of building occupants and maintenance personnel to potentially hazardous chemical, biological and particulate contaminants, which adversely affect air quality, human health, building finishes, building systems and the environment.
    - To implement a green cleaning policy for the building.
  - ✓ Green Cleaning Policy, the attached Green Cleaning Plan of the Facilities Management Department (FMD) of the Office of Court Management outlines the following:
    - Purchase of sustainable cleaning and hard floor and carpet care products meeting the sustainability criteria requirements.
    - Purchase of cleaning equipment meeting the sustainability criteria.
    - Development of strategies for promoting and improving hand hygiene
    - Development of guidelines addressing the safe handling and storage of cleaning chemicals used in the building, including a plan for managing hazardous spills or mishandling incidents.
    - Development of requirements for staffing and training of maintenance personnel appropriate to the needs of the building. Training of maintenance personnel in the hazards of use, disposal and recycling of cleaning chemicals, dispensing equipment and packaging.
    - Provision for collecting occupant feedback and continuous improvement to evaluate new technologies, procedures and processes.
  - ✓ The Trial Court FMD's Green Cleaning Policy is supported by an appropriate Staffing Plan.

testimonials

"The renovation and restoration of the Essex County Probate and Family Court in Salem has been an exemplary project for the Trial Court's ongoing mission to bring its portfolio of facilities up to the highest standards of accessibility, dignity and efficiency. The contribution of the staff of W.T. Rich Company to this tremendous success cannot be overstated. The efforts and effectiveness of field staff, supervision and management were fundamental to the extraordinary results achieved by the entire project team. In my professional experience, I have rarely had the pleasure of working on a project with such strong players at every position – the design team, construction manager, funding agency and user group all came together and delivered exceptional efforts to fulfill their responsibilities and commitments. The team was able to foster a genuine collegial relationship that enabled all parties to put forth the extra effort needed to complete this exceptional building for the delivery of justice in the Commonwealth. I extend my personal thanks to the professionals at W.T. Rich Company, Perry Dean Rogers Partners, DCAMM and the Essex County Probate and Family Court for their dedication and hard work on this wonderful project."

Louise Outler
Project Administrator
Court Capital Projects
Salem Probate and Family Court Project

"I am sincere in calling the hard working team at W.T. Rich, my friends, because that is what they have become over the course of this project. We've overcome numerous obstacles along the way, and W.T. Rich has all produced an amazing facility. Their attention to detail and the response to any issues that arose was first class. I was always treated with the utmost respect and my opinions as the end user were always heard and addressed. To this day, the warranty issues and punch list items are still top priority for the W.T. Rich team and it s greatly appreciated. Now, as the torch so to say has been passed on to us at Facilities Management, we will proudly up keep and maintain our new facility, our new home."

Norman J. Eldredge
Facilities Supervisor I
Facilities Management & Capital Planning
Essex County [Salem] Family and Probate Court

"Just wanted to send a note of thanks to W.T. Rich on your recent renovation of the Probate Court Complex here in Salem, MA. During your time in our city, our office appreciated your quick response to any issues that we came across, spending time with updates and keeping our office informed of any changes or just information of work being performed. We also appreciate your attention to safety for the workers on the job site. The final product is a direct reflection to the time and care taken by you, John and the rest of the workers that were on that project."

Lt. Peter Schaeublin
Fire Marshal
Salem Fire Department
Salem Probate and Family Court Project

"The work performed by W.T. Rich Company as the Construction Manager deserves special recognition due to their "can do" attitude, unflagging professionalism and team mindset in their approach to construction. A lot is asked of the CMs that DCAMM hires – including (but not limited to) managing and sequencing numerous trades and sub-trades (many of which the CM has little or no say in the selection of due to the nature of the public procurement laws and MBE / WBE compliance considerations). WTR has steadfastly approached these things with a positive attitude, focusing on how to meet the requirements in the way yielding the highest net project benefit, rather than looking at them as burdensome constraints to be "worked around" as some others might. The efforts of the entire project team, have made this project immeasurably better than most of the ones our agency executes in terms of design quality and simplicity / smoothness of execution."

Jeffrey A. Novak, R.A., NCARB, LEED Green Associate
Construction Project Manager
Division of Capital Asset Management & Maintenance
Salem Probate and Family Court Project

"The Salem Probate and Family Court was a project five years in the making for Perry Dean Rogers Partners Architects (PDR). This complicated, historic renovation & addition project had its share of challenges, which were successfully overcome in each instance thanks to the expertise and collaboration of all parties involved. As the project's Construction Manager, WT Rich brought their professionalism, enthusiasm and team-approach to the project from Day One. It became apparent that this positive attitude is deeply embedded in the WT Rich Company's culture, from project management staff to field personnel. No matter what an encountered issue may have been, WTR led open and respectful communication between DCAMM, the building User Group (Office of Court Management and Court Facilities), and the Design Team in order to identify and incorporate the best solutions.

The building is on a tight urban site, and WTR sensitively managed construction activities in close coordination with the City of Salem, and institutional as well as residential neighbors. Building tie-in to the adjacent judicial center involved careful coordination with the building's secure areas and consideration of court security staff operations and concerns. Existing historic architectural elements had to be protected, restored, replicated and/or matched – a process that required multiple mockups and feedback, which was very well-managed. With their experience and deep understanding, the WTR team professionally navigated state agency protocols and regulations, from hazmat abatement activities to the attention to detail needed for accessibility compliance. Throughout three years of construction, PDR experienced a genuine, respectful and very enjoyable working relationship with each member of WTR's Project Team."

Tom McCarty, Associate Principal
Anne Brockelman AIA, Senior Associate
Perry Dean Rogers Partners Architects
Salem Probate & Family Court Project

HISTORIC
SALEM INC

Preservation at work

Historic Salem, Inc. Preservation Award
Nomination Form

Please complete as much as possible.

Name of Nominee: PERRY DEAN ROGERS PARTNERS ARCHITECTS

Address & Phone of Nominee: 177 MILK STREET, BOSTON, MA 02109

617-423-0100

Nominee is:

- ☐ Property Owner
- ☐ Non-Profit Organization
- ☐ Public Agency
- ☐ Contractor
- ☐ Citizen Activist
- ☐ Historian
- ☑ Architectural Firm
- ☐ Other _____

Name of Project: SALEM PROBATE & FAMILY COURT

Address of Project, if different from above: 36 FEDERAL STREET, SALEM, MA 01970

Award Category: (Pick Category or Categories from list)

Project Type (select all that apply):

- ☐ Adaptive Reuse
- ☑ Preservation
- ☐ Residential
- ☐ Commercial
- ☐ Historic Landscape
- ☑ Public Building
- ☑ Institutional

Or

Preservation Initiative:

- ☐ Community Involvement
- ☐ Communications/Publications
- ☐ Education
- ☐ Urban Planning
- ☐ Neighborhood Revitalization
- ☐ Government Policy
- ☐ Stewardship
- ☐ Other _____

9 North Street | P.O. Box 865 | Salem, MA 01970
V 978.745.0799 | F 978.744.4536
info@historicsalem.org | www.historicsalem.org

Historic Salem, Inc.
Preservation Award Nomination Form
continued…

Include a brief narrative description of the Preservation Project, the Preservation Initiative or the Individual being nominated. (Additional pages may be attached.) Please include photographs or other visual information if available.

The modernization of the Salem Probate & Family Court was built around two strategies: sustainable reuse and improvement of the historically-significant 1909 building on Federal Street, and a new, right-sized addition to more efficiently house the current and future needs of the courthouse. See attached pages for complete description and details.

Please list major contributors to the achievement of the project, program or effort (e.g. architect, landscape architect, contractor, lender, consultant, historian, group, organization, or individual citizen). Please include contact information (address and phone number) if known.

Architect: Perry Dean Rogers Partners Architects
Construction Manager: WT Rich Company
Owner: DCAMM
User: Office of Court Management
Historic Preservation: Building Conservation Associates

Please see attached pages.

Date Submitted: March 15, 2017

Name of
Nominator: Perry Dean Rogers Partners Architects

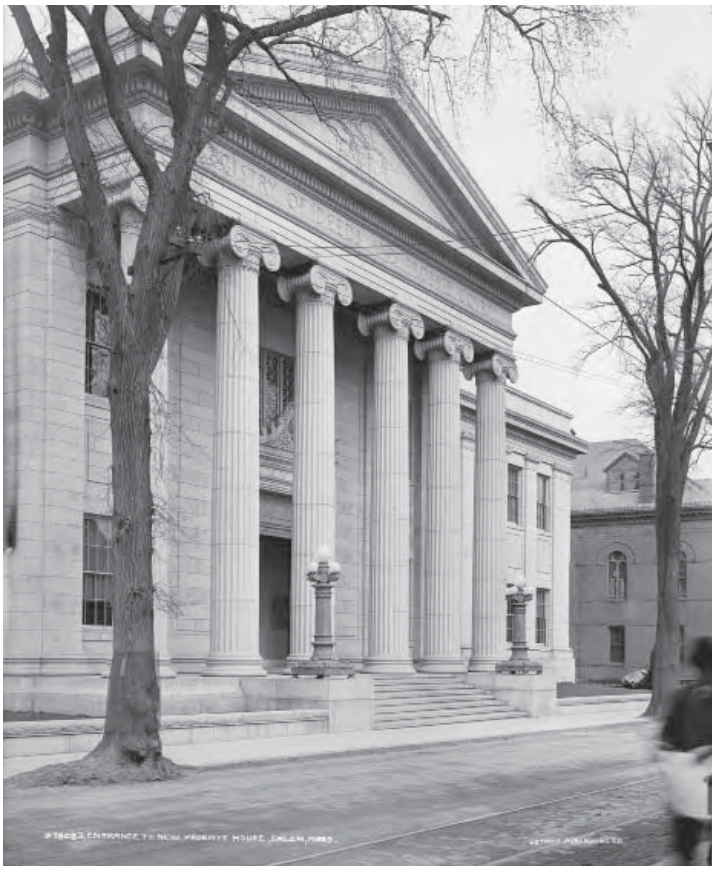
Nominator
Email: anneb@perrydean.com

Address & Phone number of
Nominator: 177 Milk Street, Boston, MA 02109. Tel 617-423-0100 x234

Relationship to Individual or
project: Architect

Please mail or email to Historic Salem, Inc. by March 15.

Historic Salem, Inc.,
The Nathaniel Bowditch House - 9 North Street,
P.O. Box 865
Salem, MA 01970
Phone: 978-745-0799
anya@historicsalem.org



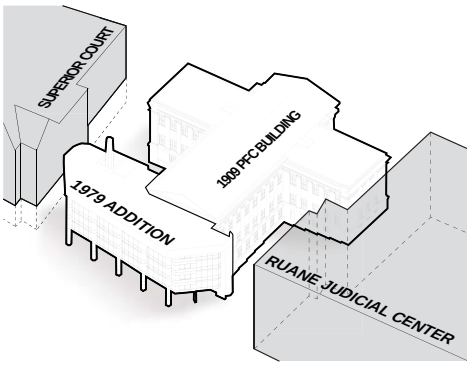
SALEM PROBATE AND FAMILY COURT

PROJECT OVERVIEW

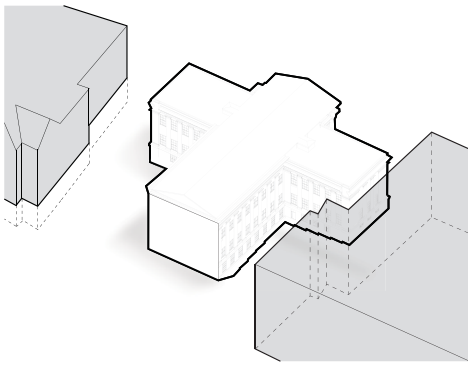
The modernization of the Salem Probate and Family Court is built around two strategies: sustainable reuse and improvement of the historically-significant, 1909 building, and a new, right-sized addition to more efficiently house the current and future needs of the courthouse.

The project involved the renovation of the existing historic structure on Federal Street, demolition of the 1979 addition on Bridge Street, and replacing it with a new addition to house a new high-tech courtroom and programs. Principal spaces include four courtrooms (one of which is based on the existing historic courtroom) and accompanying judicial offices; the Register of Probate; the Probation Department; Building Facilities headquarters for Essex County courthouses; and detention and security spaces. The design preserved the historic character of the 1909 building while improving the quality and organization of the interior spaces, along with replacing building systems and improving the building envelope. The project is tracking LEED Gold certification.

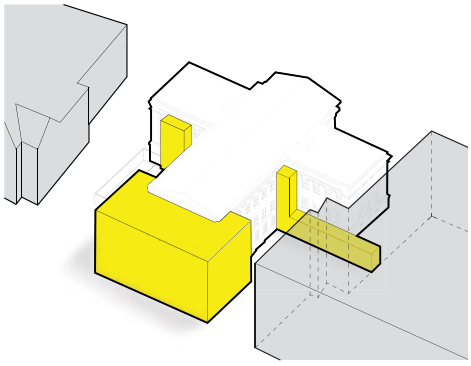
RIGHT-SIZED ADDITION



Existing



Demolition of 1979 Addition



Renovation and New Addition

The new north addition is clad in limestone, a warm-colored masonry material sympathetic to the beige color of the existing brick. The vertical 'fins' on the north side relate to the existing brick pilasters between the windows in scale and proportion. Similarly, the vertical openings at the stairs pick up on the combined effect of the stacked windows of the existing building. Individual punched openings of the addition, although smaller, also derive their proportions from the existing windows.

In this way, although the new addition seeks to differentiate itself (instead of replicating or mimicking) from the existing historic building with contemporary, precise and pared-down details, its massing, scale and proportion of openings and masonry units help create a sensitive, contextual addition to the 1909 building.

South view of north addition - Before

South view of north addition - After

Rendering of east elevation

New north addition: vertical 'fins' reference the rhythm of brick pilasters of the 1909 building

EXTERIOR PRESERVATION

Federal Street, main facade

Main entry approach - Before

Main entry approach - After

The Salem Probate and Family Court (1909) is a contributing structure in two historic districts: the Essex County Court Buildings and Federal Street historic district. The placement of this courthouse between the 1841 Essex County Courthouse and the 1861-91 Superior Courthouse to the east and the 2011 Ruane Judicial Center to the west makes this street a unique and important collection of judicial buildings spanning many architectural styles. The Salem Probate and Family Court is a three-story, granite and brick Classical Revival building. The granite facade facing Federal Street is defined by a monumental, pedimented portico with Ionic columns. The portico is flanked by two wings.

The design of the courthouse exhibits the typical symmetry of a Classical Revival building. It has a clear, regular rhythm of windows and pilasters, a prominent cornice and water table, and a hierarchy of materials and detailing. The ornamentation is otherwise appropriately restrained, creating a stately presence fitting to the significance of the building.

The front entry, which is sheltered by the portico, is reached by monumental granite steps. Two sloped walks replace the non-original and non-complying ramp to allow for universal access up to the front entry.

EXTERIOR REPAIR & RESTORATION

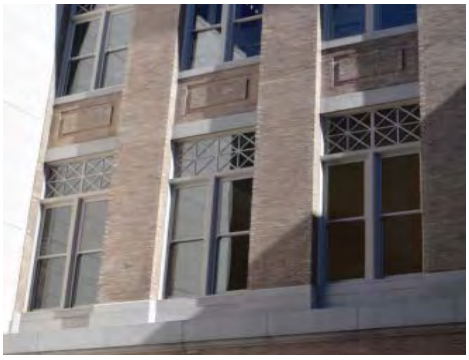
Existing condition - non-original top step

Existing condition - efflorescence

Existing condition - biological growth

New top step scribed around the column

Granite cleaning tests

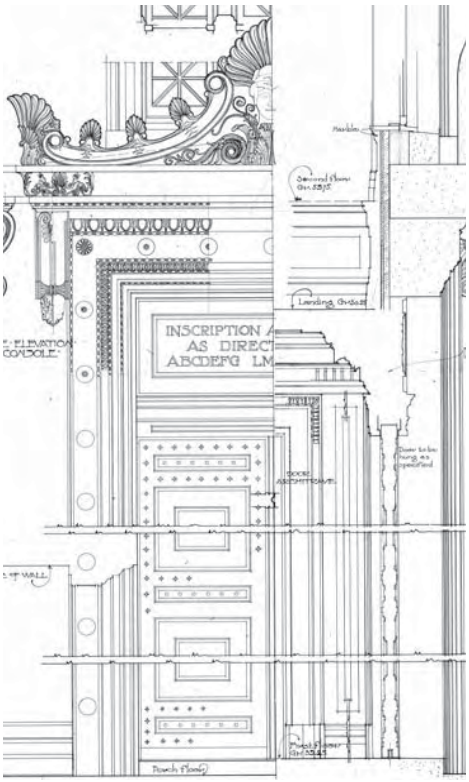


New windows

The Design Team felt that any significant alteration to the monumental granite stairs would adversely affect the building's iconic front elevation. Therefore, the project proposed only cleaning the granite, replacement of a non-original concrete step with granite, and replacement of handrails. The project received a MAAB variance to be able to pursue this strategy, due to the original stairs being non-ADA-compliant.

Restoration of the exterior included general facade washing/cleaning, comprehensive masonry (granite and brick) repair and re-pointing, and applying joint covers on all sky-facing joints to protect from future water damage.

Original, double-hung wood windows were replaced by more energy-efficient aluminum double-pane windows, with details carefully replicated on both the exterior and interior.

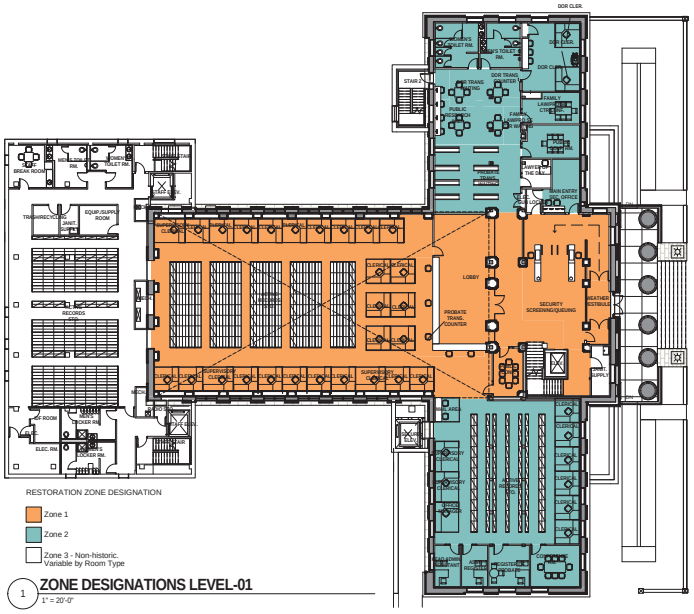


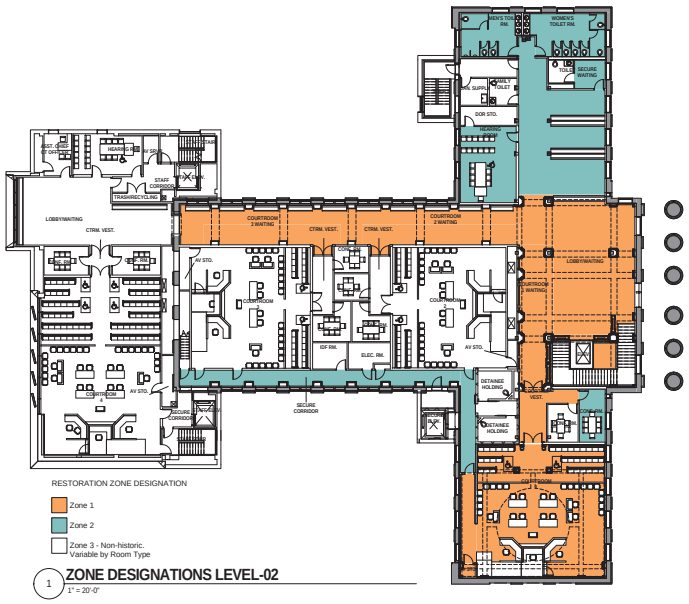
Original 1907 drawing

Existing, non-original entrance

The main Federal Street entryway was rebuilt to its original integrity. As the monumental wood doors no longer existed, the design team had to work with the building's original hand-drafted drawings and interpret the details as best we could. Necessary contemporary requirements, such as the incorporation of door panic hardware and vision panels, had to be carefully incorporated while retaining the original design intention.

INTERIOR RESTORATION





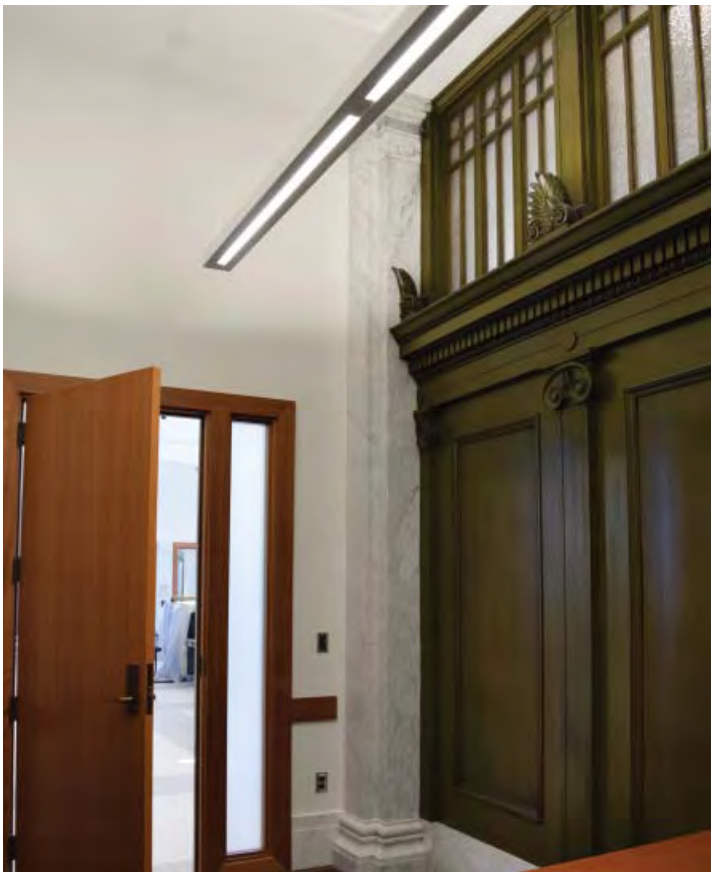
To establish preservation priorities for the courthouse, individual spaces were assessed and assigned to 'zones,' which correspond to specific treatments. The three zones per the GSA guidelines were as follows:

- Zone 1 - RESTORATION: These are areas of high architectural or historical significance and typically are used/viewed by building occupants and visitors. Repairs and alterations did not visually impact the existing fabric of the space. These included the public lobbies, including the monumental stair and elevator with its decorative grillework, as well as the historic Courtroom and the double-height Register of Probate space. These were treated with a high level of attention to their historic nature.

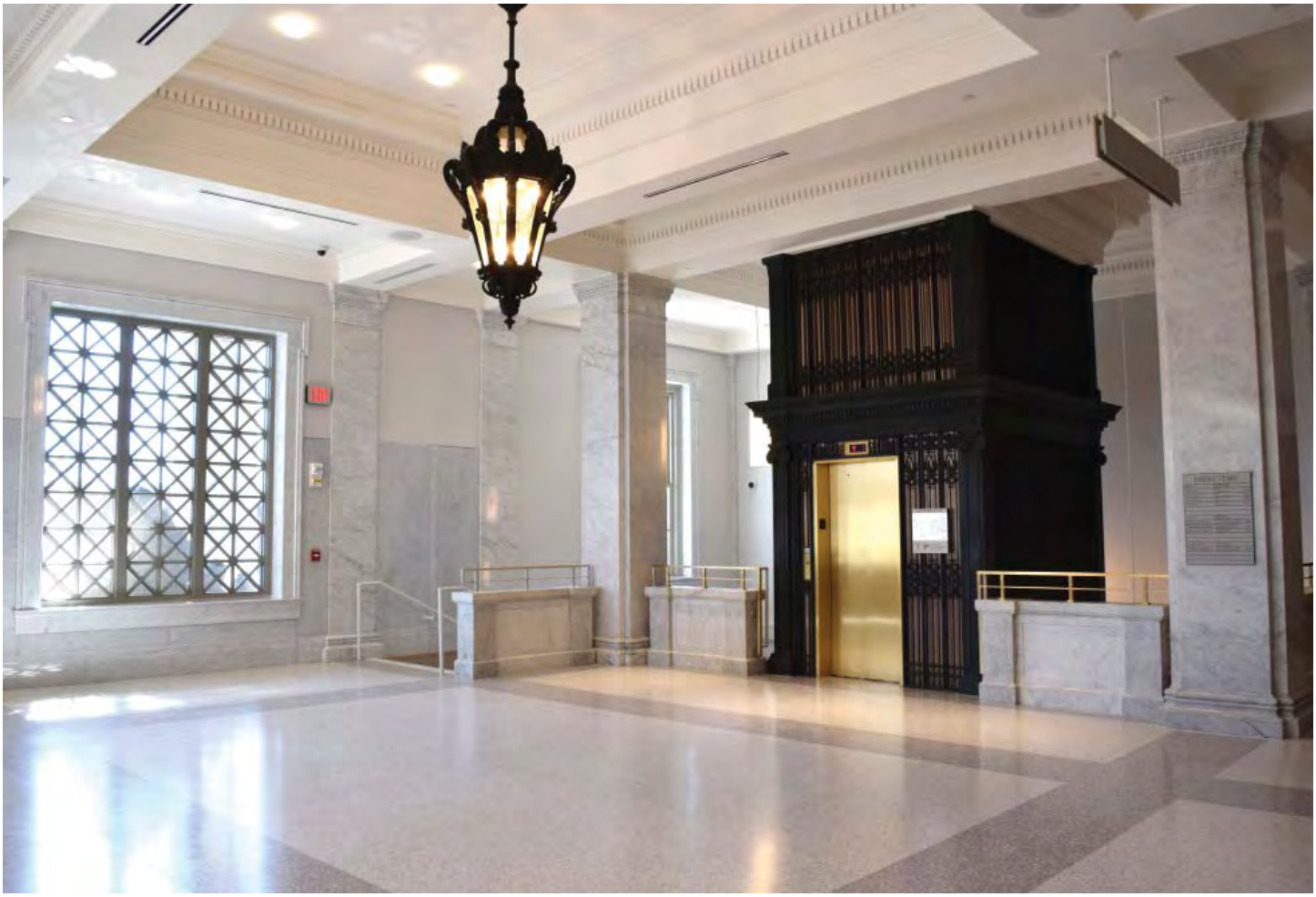
- Zone 2 - REHABILITATION: These spaces do not contain much ornamentation, but contain exterior windows, which maintain the continuity of the overall character of the building.

- Zone 3 - RENOVATION: These are non-historically significant spaces, as well as new construction.

This analysis informed the design and helped prioritize the project's decision-making process.

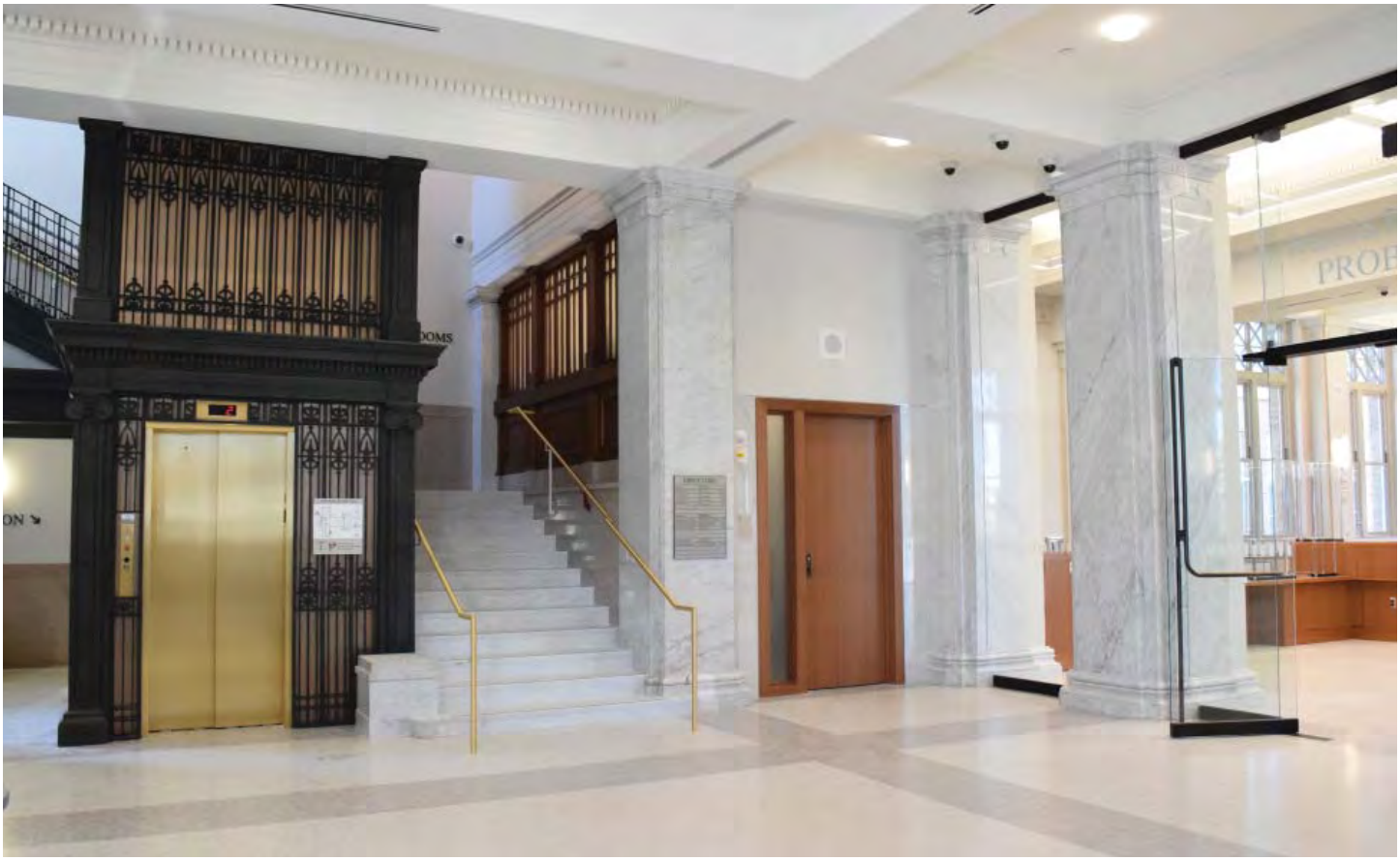


An original restored wood screen reveals itself inside a conference room



Second Floor Lobby - the large, teardrop pendant was restored and relocated from the first floor. In all lobbies, new terrazzo flooring was introduced, with the pattern reflecting the ceiling coffers above.

INTERIOR LOBBIES



Main lobby on first floor: glass partitions and an all-glass entrance was introduced on the right, which allow the historic marble columns to remain a prominent feature. The patina finish of original elevator grillework was meticulously restored.

View from main stair down into the entry lobby. The wall was opened up in order to expand the lobby/security screening area.

The original laylight was restored and relocated to the east wing waiting area.

Replicated historic windows, pilaster and ornate ceiling coffers offer rich details to the courtroom waiting areas.

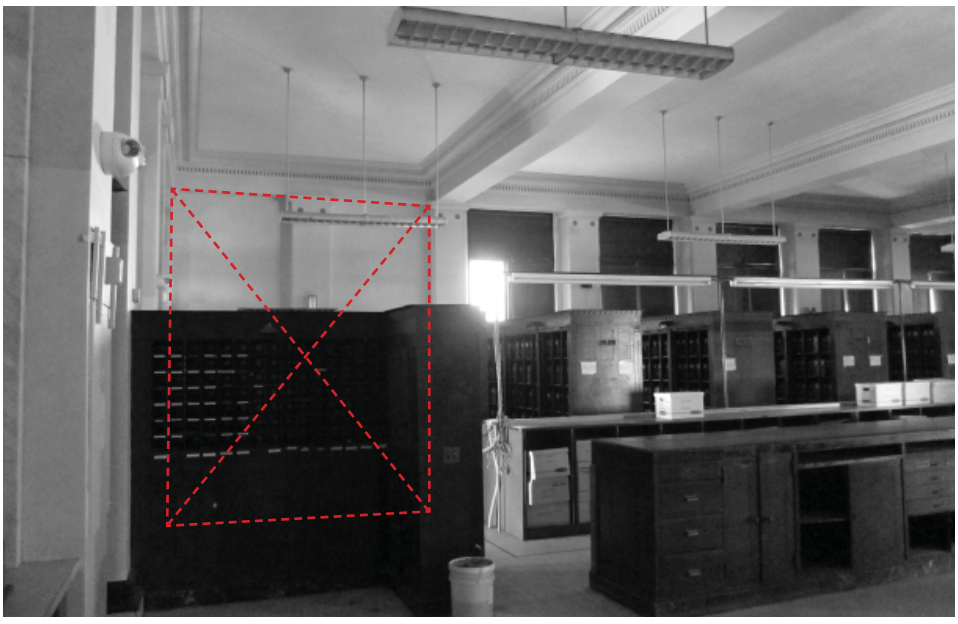
The first and second floor lobbies are connected with a grand marble staircase wrapped around an ornate, metal elevator grillework. From these central entry points, one is directed along each of the three wings to the east, north, and west. The two lobbies, along with the highly-significant spaces of the west courtroom (Courtroom 1), and the Probate and Registry of Deeds to the north, exhibit the most detailed ornamentation. These spaces are characterized by large-scale plaster cornices, finely-crafted wood screen walls, and marble pilasters, wainscot, and floors.

With regard to new interior finishes, the palette was kept restrained and neutral, in deference to the existing materials of white carrara marble and warm gray-toned windows. The intent was to allow these existing historic finishes to feature prominently. New terrazzo floors joined the palette of the warm gray tones, while most of the new wood (Makore, or African Cherry) was selected to complement them as well.

HISTORIC COURTROOM

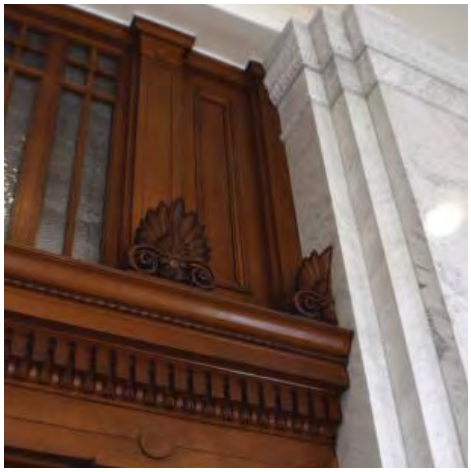
The historic Courtroom features tall, stained wood paneling and furnishings and a large, central circular ceiling coffer. Red oak was selected for woodwork replication, to closely match the wood finish of the existing decorative screenwork in the lobbies. The original light fixtures were refurbished and reinstalled with energy efficient light bulbs.

REGISTRY OF PROBATE



On the first floor, the west wing was opened up in order for the Register of Probate department to have spatial continuity. On the right is the main double-height space of the north wing, which features many decorative details, lit by natural light.

MAJOR CONTRIBUTORS



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Construction Manager:
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User:
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