

# ILLUME

## Mayfield Senior School Strub Hall Renovation

*"Illig Construction is a trusted partner and exceeded all my expectations. They accomplished a most challenging and complicated project on time and on budget, always keeping Mayfield's best interest at heart."*

*Kate Morin, Head of School*

**ILLiG**   
CONSTRUCTION COMPANY Since 1919

# Partnering with Mayfield Senior School

A grand lady gets a lot more than a face lift! The heart of Mayfield Senior School's eight-acre campus in Pasadena is 103-year-old Strub Hall. Originally built in 1919 as the home for an oil magnate, Dr. Charles and Vera Strub purchased the home for the Society of the Holy Child Jesus in 1950 to serve as Mayfield Senior School's campus. This iconic Italianate Beaux Arts building is home to Mayfield's administration offices, student support center, campus gathering and meeting space, chapel, visual arts studio, digital media lab, humanities classrooms, and library. Since 1931, Mayfield Senior School has been educating young women grades 9-12 in a Catholic college preparatory tradition, providing "an intellectually empowering learning community of joy and belonging, where students enact their faith and love by transforming the world with their God-given gifts."

## Mayfield Senior School Strub Hall Quick Facts

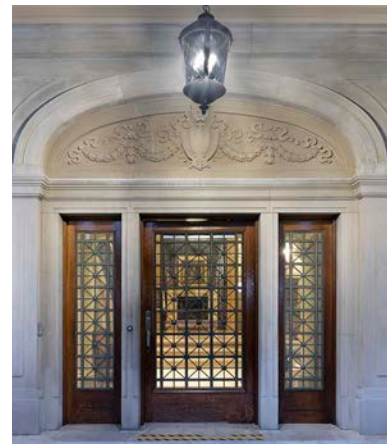
**Architect:** KFA Architecture

**Delivery:** Negotiated GC

**Size:** 40,000 sf

**Completion:** June 2022

**Scope:** Seismic upgrade, renovation, and historic restoration of the 103 year old Strub Hall



# Building Information Modeling

Mayfield Senior added Illig Construction Company to the project team early in the design process to provide preconstruction services including BIM laser scanning and investigative demo. It was imperative to arrive at a successful structural design of the new shear walls that fit within the intricate layout of this historic building. Finding appropriate locations to construct multiple 4-story shear walls meant the team would need highly accurate as-built plans and a 3d model. Illig's BIM team performed laser scans allowing the team to study the vertical alignment of the structural components and to produce sections through the building to determine the best fit locations. Next, the proposed locations would require exploratory demolition, survey and additional scans to confirm existing structural components hidden within the walls. The team was then able to determine, with high confidence, the alignment of structural elements relative to the vertical plane of the new shear walls and understand the impact on the historic millwork throughout the building.



## Strub Hall Renovation

Another key objective during preconstruction was to develop a phasing and logistics plan that allowed Mayfield to continue operations in the building throughout construction. Illig coordinated occupancy and the preservation of historic finishes, while at the same time replacing all building systems and seismically reinforcing the four-story, 40,000-sf-structure--no small task!

In three distinct phases, while Mayfield staff and students continued to occupy key areas of the building, the Illig team installed:

- 11 shotcrete shear walls; continuous reinforced structures through all four floors to anchor the building to the ground with 30 tons of reinforced concrete for seismic strengthening
- Two floors of steel structural floor straps and anchor bolts
- All new mechanical, electrical, plumbing (MEP) and fire sprinkler/ alarm systems throughout
- New/refurbished windows
- ADA upgraded and refinished restrooms
- A new three-story interior stair tower
- Interior remodel of all offices, classrooms, visual arts studio, media lab, dark room, senior lounge, kitchen and faculty break room
- New terrace tile flooring
- New site storm drain

***"We knew even before the project started that the Strub Hall Renovation would be challenging. However, the surprises we encountered during the course of construction made it even more challenging than we expected. Nevertheless, the Illig team took them in stride without missing a beat and still finished the project on schedule and under the Guaranteed Maximum Price. We have a fantastic, finished project."***

***Jim Muenzer, Trustee***

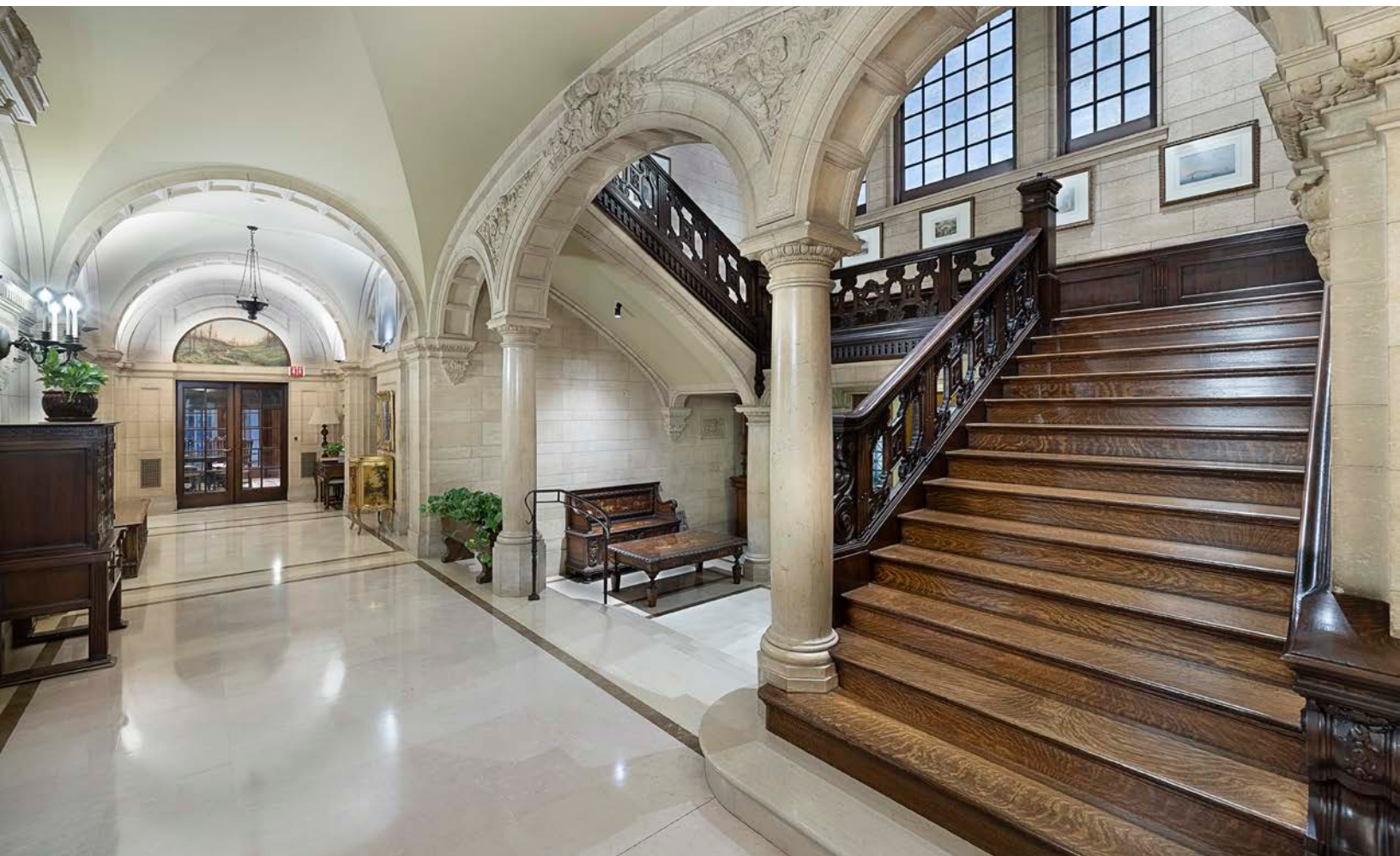




Throughout construction, the historic finishes were meticulously removed, cataloged, protected, and mapped for reinstallation once the shear walls and MEP systems within the walls were complete. The construction approach for Strub Hall was far from “textbook.” Trades were required to work out of sequence to accommodate and maintain utilities in occupied areas. Significant scope was strategically identified and added into the first phase of the project, occurring over the summer months, to avoid disturbing students and staff in completed occupied areas during future phases.

The team identified key existing structural conditions in preconstruction to efficiently advance the work. However, it’s impossible to determine all conditions prior to opening walls during construction, and a 103-year-old mansion is bound to have surprises! One such surprise occurred with the new interconnecting stair. Once the finishes were peeled down to the building shell, the team found the load bearing wall layout did not work with the existing joist configuration. The team was tasked with modifying the structural design--taking significant time in an already tight schedule. Illig re-sequenced the work to maintain momentum in all other areas--working double shifts and weekends to complete phase one on time for students to begin the new academic year.

Before completion of the third and final phase, the Illig team rallied to complete the terrace, living room and library spaces early. Mayfield was thrilled to welcome Senior students for their Senior Tea on campus—continuing a valued Mayfield tradition in the newly refurbished spaces.



Successful city inspections are key to on-time project completions. Illig earned the trust and confidence of the inspection team by sharing the game plans early for their input and completing the work in meticulous alignment with city approvals. The inspection process was a true partnership! With students and staff in close proximity to construction operations, safe paths of travel were routed, maintained and adjusted for Mayfield's ongoing operations. Worker access and codes of conduct were strictly enforced. Activities were coordinated and planned with minimal disruption to surrounding residential neighbors. All these efforts yielded zero safety incidents and positive neighbor relations!

The Illig team worked hand-in-hand with the architect, KFA LLP, and the consultants to quickly bring solutions in a design assist approach as the finishes were removed to reveal existing structural conditions. A driving focus was to ensure preservation of historic elements while realizing the vision for Mayfield Strub Hall for the next 100 years. The spirit of teamwork, flexibility and laser focus on timely completion was shared by the design build consultants, Brandow & Johnson, Wittler Young and Muir-Chase Plumbing, as well as the key subcontractor trade partners. This dedication to meet Mayfield's objectives resulted in, what some may say, a miraculous completion!

Illig Construction Company and Mayfield Senior School have forged a lasting, trusted partnership. Strub Hall will long continue to serve students, faculty and staff as the campus heart. With stunning historic beauty and newly enhanced structure, systems, finishes and learning spaces, the grand lady continues to serve Mayfield in grace and purpose for generations to come.



## Partners

Great accomplishments require great partnerships! Illig Construction recognizes those exceptional subcontractors who played a major role in completing this project:

- Advanced Framing Structures
- All Pro Building Maintenance Service, Inc.
- Apex Fire Protection
- Barden Electric, Inc.
- Brandsafway Services, LLC
- Complete Door Systems
- Davison & Moore Commercial Flooring
- Diamond Environmental Services, LLC.
- Diversified Window Coverings, Inc.
- Division 7 Services, Inc.
- F3 & Associates, Inc.
- Floored Tile & Stone
- Harris & Ruth Painting Contracting
- Janus Corp
- John R. Byerly, Inc.
- L2 Specialties, Inc.
- Muir-Chase Plumbing Co., Inc.
- Preferred Landscape, Inc.
- S & H Cabinets
- Southcoast Acoustical Interiors, Inc.
- Spec Construction Co., Inc.
- Spectra Historic Construction
- Stumbaugh & Associates, Inc.
- Superior Wall Systems, Inc.
- Wittler Young, Inc.

*The Illig team knew the design intent inside and out and were extremely proactive in this collaborative process. I always felt like the school had an advocate in Illig, a partner that went above and beyond to meet the needs of the school community. Their care and commitment to Mayfield and the success of this project was remarkable. What we did together was magical.*

***Tarrah Beebe, KFA LLP***

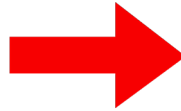


## Comparison Pictures

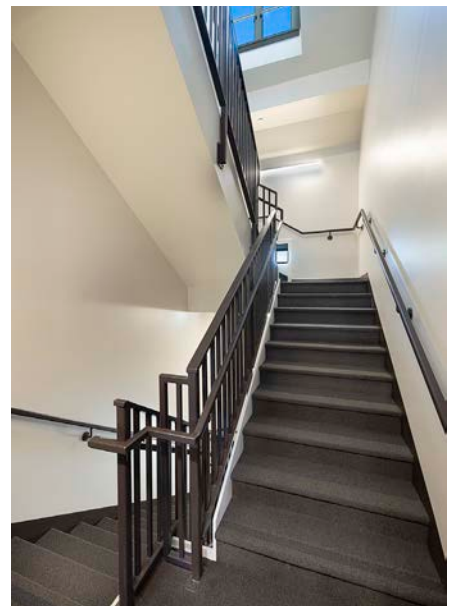
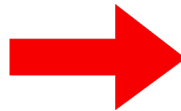
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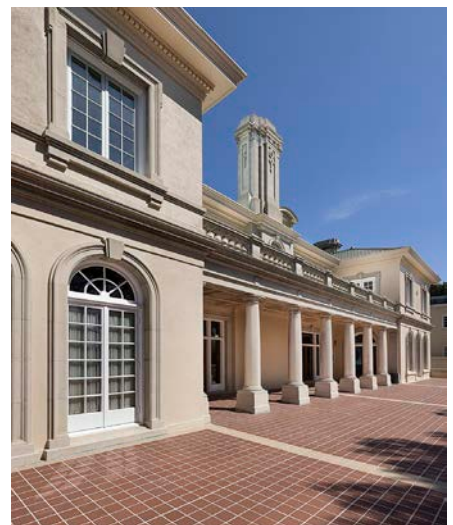
Remove, preserve  
and reinstall historic  
finishes to construct  
new shear wall in  
library



Existing 2-level stairwell  
closed and re-framed. New  
3-level interconnecting stair  
constructed.



New exterior shear wall  
constructed and refinished  
along with new terrace.





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