



THEODORE ROOSEVELT EXECUTIVE AND LEGISLATIVE BUILDING

A House Divided Must Span

In political terms, the Old Nassau County Courthouse at 1550 Franklin Avenue, Mineola, NY, could be considered a flip-flopper. The landmark turn-of-the-century neoclassical edifice had become a jumble of old and new, often contradictory, architectural features over years of renovations and expansion—complicating the building’s ability to exhibit a firm stylistic stand. Original interior features, such as 18-foot vaulted ceilings, were dropped and covered over, grand rooms were subdivided into small offices and cubbyholes, while remaining Ionic columns, gilded rotunda, and historical murals quietly faded into disrepair. In order to restore the historic principles of the initial design while adapting to the functional requirements of new-millennium government, the architects and designers behind the courthouse’s recently completed \$40 million renovation turned to structural steel.

The renovation of the courthouse—now known as the Theodore Roosevelt Executive and Legislative Building after the then-governor who laid the cornerstone in 1900—was a joint venture involving famed preservation architects John G. Waite Associates (JGWA), HWL International, Bovis Lend Lease, The LiRo Group, Greyhawk, and Carter Burgess. Equal parts renovation and restoration, the project involved adding a new 25,100-square-foot annex building to house the county executive and legislative chambers, while scaling the courthouse footprint back to its original 80,500 square feet, a process that called for the careful demolition of various additions and subdivisions that had accumulated over the years.

“The ultimate goal was to connect all the buildings together and create a complex that formed one campus,” says John Gering, Senior Managing Partner of HLW International, the chief architectural and structural engineering firm behind the renovation. “We were dealing with multiple types of structures here,” Gering says. “The old courthouse building was a very old reinforced concrete structure (the first public building ever to be so constructed) with different floor-to-floor heights, and the walls are literally 3 feet thick in some areas. Our challenge was to maintain the character of that building, returning it to its 1916 state, while incorporating an addition for the new Legislative Chamber.”

To preserve the past without hindering functionality, the architects designed a new glass curtain wall addition that encases the central structure of the old courthouse building, surrounding the circular press-room rotunda and creating a pair of glass corridors that link to the new annex building added at the rear of the complex. “Rather than destroying the character of the old courthouse, we wrapped the new glass structure around it, so that when people look at it from the outside they can still see the details of the original building,” says Gering. “Those glass window walls formulate a new corridor that’s internal to the space. When someone walks from the older building to the new legislative chamber they’re actually walking by the exterior wall of the old building.”

Erecting the glass link without disturbing the historic architecture required a certain structural finesse, facilitated by the properties of steel and the



Previous spread The hanging system used for new corridors clears the original structure's windows, keeping views unobstructed while allowing employees to pass to the new 25,100-square-foot annex building.

ingenuity of expert ironworkers. "On all three sides of the old courthouse we definitely wanted to keep those two very different types of structural systems separate," says Tom Gasbarro, engineer of record with HLW International. "We didn't want to tie anything into the existing building, so there's an expansion joint at each side where they interface."

The architects still had to solve structural issues involving circulation within the glass enclosure without compromising the original aesthetic. For the two-level corridors adjacent to the central wing of the old courthouse, the challenge was to keep the original facade, and its windows, as unobstructed as possible. To clear the masonry arches of the windows, the architects devised a hanging floor system that gave the corridor an ample floor-to-floor dimension of 13 feet 6 inches, with a ceiling height of 11 feet 9 inches along the external face of the wall.

"The whole second floor is suspended from the roof structure in order to keep those windows unobstructed and the architecture intact," says Gasbarro. "The 60-foot span required to bypass the wing demanded a deeper beam than we had room for. So we ran our main spanning member, a W30x108, at the roof level and used 1-inch diameter hanger rods at 10-foot intervals to pick up the second floor of the corridor."

To maintain those long spans and brace against lateral loading, the architects chose a moment frame

Above The second floor of the corridor is suspended from the roof structure by 1-inch diameter hanger rods spaced at 10-foot intervals.

system augmented with a series of braced frames for the corridors. Corridor columns were predominantly wide-flange shapes of ASTM 992 Grade 50, with the largest beam at W30x108; the largest column was W12x96. Moment connections were typically field bolted with ¾-inch A325 bolts. Plates, angles and channels throughout were A36, while the composite metal decking of both the annex and the corridor conformed to ASTM A653 with a yield stress of 33 ksi. The hanger rods, clevis connections, and gusset plates were all left exposed and deftly sculpted to blend into the architectural design. From foundation to topping out, the glass corridor and annex building took 22 months to erect.

"Going into this we looked at multiple structural options, but we found that the new building addition required the kind of spans you couldn't get out of concrete unless they were very deep members," says Gering. "We had to have long spans for the legislative chamber and steel allowed us to achieve those. It never would've been possible with concrete."

Thanks to structural steel's ability to span the aisle between classic form and modern function, the Theodore Roosevelt Executive and Legislative Building is vetted for another century of public service. "It was a very old deteriorating building and this new, updated environment of the building addition brings them up to the 21st century," says Gering. "They were really still living in the 19th century. Literally." ■



Above The annex and connective corridors were constructed while the decaying original structure was reinforced.

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Tom Gasbarro, HLW International

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Facing A glass curtain wall encloses the original courthouse's exterior wall and the passageway to the new annex.

Above To the right and left of the main building, ancillary areas were restored and returned to their original size.

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Location: 1550 Franklin Avenue, Mineola, NY
 Owner/Developer: Nassau County Department of Public Works, Westbury, NY
 Architect: HLW International, New York, NY
 Historical Architect: John G. Wait Associates, Architects, Albany, NY
 Structural Engineers: HLW International, New York, NY;
 Robert Silman Associates, New York, NY
 Mechanical Engineers: HLW International, New York, NY;
 Plus Group Consulting & Engineering, New York, NY
 Construction Managers: Bovis Lend Lease, New York, NY;
 The LiRo Group, Syosset, NY
 Curtain Wall Consultant: HLW International, New York, NY
 Structural Steel Fabricator and Erector: Mometal Structures Inc., Varennes, QC
 Miscellaneous Iron Fabricator: Mometal Structures Inc., Varennes, QC
 Ornamental Metal Fabricator and Erector: Mometal Structures Inc., Varennes, QC
 Curtain Wall Erector: Jordan Installation Services Corp., East Northport, NY