APA CASE STUDY

Robust Glulam Frame Supports Historic Building Renovation in Newport, RI

The façade of the Audrain building on Newport's famed Bellevue Avenue at dusk invites passerby to gaze within. Photo courtesy of Ben Jacobsen.

The Audrain Building on Newport's celebrated Bellevue Avenue was designed by New York architect Bruce Price in the early 1900s with intricate exterior detailing that exudes an enduring sense of luxury and tradition. Its recent renovation from a worn-around-the-edges modified office building into a car museum and upscale work space affirms its role as gilded historian, with an authentic blend of vintage charm and high-end appeal that has anchored this block of the Newport's National Historic Landmark District for over a century.

On the high-ceilinged first floor, golden-era automobiles and muscle cars glisten through full-height windows. Above, new offices make better use of the space while maintaining the particular air of Gilded Age elegance that's expected within the Newport Historic District.

But getting to that point required some heavy lifting from a new, more robust building frame.

Project Summary

PROJECT NAME:
Audrain Building

LOCATION:
Newport, Rhode Island

PROJECTED COMPLETION:
Fall 2014

CONTRACTOR:
Parker Construction

ENGINEER:
Camera/O'Neill Consulting

Strong Support

Upon completion, the car museum will house a range of vintage autos, including a 1930 Lincoln V-12 limousine weighing in at three tons. Engineer Mike Camera of Camera/O'Neill Consulting Engineers knew that the original 2x12 flooring system would need to be removed and replaced to accommodate the additional weight.

The team at Parker Construction kept the outer shell and the original brick bearing walls, which divide the basement into six sections. On the ground floor, the structure was framed with steel columns and then 20-foot, 3-1/2-inch-by-9-1/2-inch glulam beams from Anthony Forest Products, spaced 12 inches on center, spanning

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each bay. The glulam not only accomplished the span requirements for the frame, but also was more readily available than other framing alternatives the design team considered.

Though the beams will be largely unseen in the low basement storage area and were coated with fire retardant, "The glulam was milled so well, we could have left them exposed," says David Louttit, project manager at Parker Construction.

Douglas-fir 2x6 timbers run perpendicular to the glulam beams, with ¾-inch tongue-and-groove CDX plywood in between. For the second-floor frame, exposed steel trusses provide an industrial look.

The glulam members specificed for the new framing were readily available from local suppliers.

Vintage Feel

While the project sports a new frame, the team took great care to preserve as many of the original decorative elements as possible, including ornamental metal and millwork. The front façade features the original brick, intricate terracotta around the windows, and similarly ornate roof cornices. The arch-top windows reach from the first floor through to the office space upstairs. A new set of bi-fold doors, fabricated to reflect the original windows, provide access for the display vehicles.

Along with the challenges of preserving the look and beefing up the frame, the construction team faced severe time constraints: a schedule with less than half the normal turnaround time. To accommodate, Louttit had crews on site 16 hours a day, seven days a week; they also shrink-wrapped the structure to eliminate the weather variable.

"Our company specializes in investing in employees willing to give 110 percent," says Louttit. "So we can get it done faster while working closely with the architect to ensure each element, from the structure to the decorative work, is exact and precise."

This level of care befits the Audrain Building, whose architectural details will continue to grace its corner of Newport's famed historic district for many years to come.

The floor is framed with 20-foot, 3-1/2-inch-by-9-1/2-inch glulam beams spaced 12 inches on center.

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