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LORD & TAYLOR'S FLAGSHIP STORE
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BOLD FEATURES

- 6,000-SQUARE-FOOT INVERTED POINT-SUPPORTED FIN WALL
- GLASS LITES WEIGHING OVER 1,300 POUNDS
- GLAZED WALL CAPABLE OF WITHSTANDING HURRICANE-FORCE WINDS

Lord & Taylor's flagship store in Manhasset, New York, the first built in the United States, celebrated its 75th anniversary with a dramatic renovation. Completed in November 2016, and managed by Bellwether Design Technologies, bellwetherdesigntech.com, the redesign features a new 6,000-square-foot inverted, point-supported fin wall that redefines the entrance to the store.

Bellwether designed the components of the structural wall system to reflect the aesthetic of the architect, Highland Associates, highlandassociates.com. Bellwether's focus was to simplify structural components to meet structural requirements of the wall as transparently as possible. This focus on design extends to elements that are nearly out of view, says Brian Harrington, principal, director of business development, Bellwether Design Technologies. For instance, head anchors that connect the glass fins to the roof framing were transformed from rigid, plate-style connections to pin connections that allow the wall to transfer simple wind loads without rotational movement. "The design and engineering of this connection is especially important in absorbing high wind loads without transferring the movements to the building itself, which would have had costly impacts on the schedule and materials of the building structure," says Mike Maguire, director of design and engineering, Bellwether Design Technologies.

Laminated, low-iron glass, engineered and fabricated by Saint-Gobain in Austria, saint-gobain.de, was used in order to achieve a high level of transparency. The wall glass lites are $1\frac{1}{16}$-inches thick, and up to 10 feet 4 inches tall and 11 feet wide. Each weighs over 1,300 pounds. The structural glass fins were engineered as triple laminated, with two Trosifol SentryGlas Plus interlayers from Kuraray, trosifol.com. The fins feature an overall thickness of $2\frac{3}{8}$ inches, and a depth of 2 feet at the base and over 5 feet at the head. H-shaped fin splice plates are constructed of $\frac{1}{2}$-inch polished stainless plate, with overall dimensions of up to 3 feet tall and 3 feet wide. Standard hook style fittings were customized to suit the application.

Bellwether managed the project as a design-build, using a two-stage design process to refine aesthetic and structural elements. One of the main challenges of the project was to prevent the glass fins from buckling in hurricane-force wind speeds, according to Harrington.

"The combination of a 41-foot clear span height, double wide bays, and 111-miles-per-hour wind speeds required very thick laminated fins, and large custom designed stainless steel splice plates to resist the potential for twisting or buckling of the fins," says Harrington. "At the same time, these elements had to be designed to retain the highly transparent and uncomplicated nature of the entrance. Low-iron glass with SGP interlayers provided clarity and stiffness, while the mirror-polished stainless splice plates give the structure a true jewel box aesthetic."

Craftsman Storefronts & Glass, craftsmanstorefronts.com, served as the contract glazier. E.W. Howell, ewhowell.com, was the general contractor. Sadev, sadev.com, provided stainless-steel fittings, splice plates and other metal fabrication services.