

Wilshire Grand Center

Lindapter Hollo-Bolts provided a solution for securing a huge architectural curved skylight atrium.

Project Background

Location: Los Angeles, California, USA
Market: Steel Building Construction
Product: Hollo-Bolt® by Lindapter®
Architect: AC Martin Partners
Engineer: Catena Consulting

The original Wilshire Grand Hotel opened in 1952 and quickly became a landmark of downtown Los Angeles.

After 59 successful years the building's owners decided it was time to revive the Wilshire Grand as a landmark and conceived the idea of developing a new complex which would include the tallest building in Los Angeles, at 335m.

Client Requirement

As part of the development an ambitious design was proposed for a huge architectural curved glass skylight atrium above the entrance which would "drape" between the new skyscraper and its seven-storey companion building known as the Podium. To bring the skylight in on budget engineers were tasked with finding solutions which would reduce costs while retaining the elegant and dramatic design. The skylight would also need to meet seismic design criteria to protect it, in the event of a major earthquake.



Hollo-Bolts used to splice together the circular STS



The 73m long skylight drapes between the two buildings

Wilshire Grand Center

Design Solution

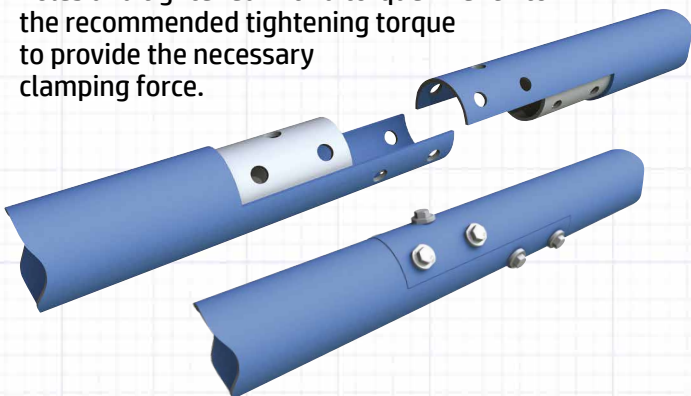
The skylight was to be supported by curved structural beams, however the cost of bespoke steelwork proved to be prohibitive. Engineers determined that the same curved effect could be achieved for less money by using straight pieces of circular hollow sections spliced together. The engineer specified Hollo-Bolt, an expansion bolt that requires access to only one side of a Structural Hollow Section (SHS), for each of the splice connections.



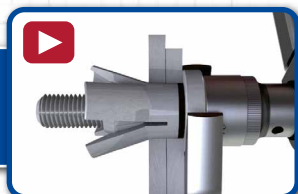
It was chosen as it offered significant benefits over traditional welding or drilling and bolting, including quicker, safer installation and high strength capacity. It also has a wide range of independent technical accreditations including full ICC-ES approval for all seismic design categories (A through F), and Los Angeles Research Report (LARR) to comply with the 2014 City of Los Angeles (COLA) Building Code.

Installation

Contractors used 3,000 size M16 hexagonal head Hollo-Bolts to splice together circular hollow sections to form the curved skylight structure. Installation was quick and easy as each bolt was simply inserted into predrilled holes and tightened with a torque wrench to the recommended tightening torque to provide the necessary clamping force.



[Click here to watch the installation video >>>](#)



Result

The skylight was completed on budget, helped by the speed of installation of the structural beams and the splice connections that were achieved without drilling or welding. Labour costs were also reduced as specialist skills or equipment were avoided, whilst ICC-ES approved products ensured the connections were compliant with the International Building Code.

After three years of construction the Wilshire Grand Center was finally completed in 2017 along with its signature element, the skylight "river of glass". This iconic addition to the Los Angeles skyline is now the tallest building in California and the tallest building west of the Mississippi River standing at 335m tall.



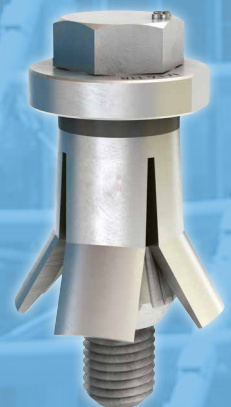
We recommend using Hollo-Bolts due to the ICC-ES approved capacities for use in all Seismic Design Categories.

John S. McDonald, Principal, Catena Consulting Engineers



Key Benefits

- ✓ Fast, cost saving installation from one side
- ✓ Suitable for square, rectangular and circular hollow sections
- ✓ No site drilling or welding
- ✓ Seismic approved for SDC A through F
- ✓ High resistance to shear and tension



[Click here for more details](#)