

The Coliseum Restoration

Lindapter Hollo-Bolts provided a solution for connecting new steel plates to the original defective structural columns.

Project Background

Location: Springfield, Illinois, USA

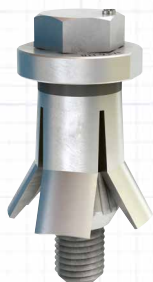
Market: Stadium / Arenas

Product: Hollo-Bolt® by Lindapter®

Contractor: Halvorson Construction

Engineer: Hanson Professional Services

Architect: Bailey Edward Design



Constructed in 1901, this 18,000 m², three-storey, enclosed amphitheatre is ideal for horse shows, motorcycle training and concerts. However the venue operator, Illinois State Fairgrounds, had to close the building in 2016 due to structural engineers safety concerns brought about by its deteriorating condition. Of particular concern was the severe corrosion found at the base of the structural steel columns which required immediate remedial works.

Client Requirement

The structural engineer proposed to install bracing brackets to the columns at and below the point where they projected through the concrete riser structure, remove the lacing and then install steel reinforcement plates before adding a plywood formwork and pouring concrete for additional reinforcement.

A solution for the connection of the steel reinforcement plates to the existing columns was therefore required.



Hollo-Bolts connected reinforcement plates to the columns

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Design Solution

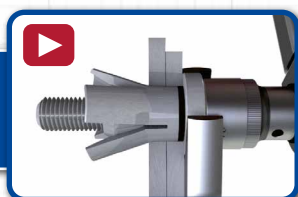
The engineer decided to specify Hollo-Bolt by Lindapter, an expansion bolt that requires access to only one side of a Structural Hollow Section (SHS). Hollo-Bolt was chosen as it offered significant benefits including, fast installation, high strength capacity, and a range of independent technical accreditations, which include the CE Mark, TÜV and ICC-ES Seismic approvals.



Installation

The contractor used size M20 hexagonal head Hollo-Bolts to connect the steel reinforcement plates to the original steel channels of the columns. Installation was carried out from the exposed sides of the columns where there was free access. Each bolt was 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 specification of Hollo-Bolts provided the necessary reinforcement to the columns. This allowed the rest of the structure to be restored and repaired with the venue officially re-opening in 2019 with a ceremonial ribbon cutting event performed by Illinois Governor J.B. Pritzker.



Hollo-Bolts provide high strength capacities

Key Benefits

- ✓ Fast, cost saving installation from one side
- ✓ Suitable for square, rectangular and circular hollow sections
- ✓ Seismic approved for SDC A through F
- ✓ High resistance to shear and tension



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details