

ENTRY FORM



DVASE 2019 Excellence in Structural Engineering Awards Program

PROJECT CATEGORY (check one):

Buildings under \$5M		Buildings Over \$100M	✓
Buildings \$5M - \$15M		Other Structures Under \$1M	
Buildings \$15M - \$40M		Other Structures Over \$1M	
Buildings \$40M - \$100M		Single Family Home	

Approximate construction cost of facility submitted:	\$1.1 Billion
Name of Project:	Penn Medicine Patient Pavilion
Location of Project:	1 Convention Avenue, Philadelphia, PA 19104
Date construction was completed (M/Y):	Anticipated substantial completion Feb. 2021
Structural Design Firm:	Henningson, Durham & Richardson of Penn., Archs. and Engrs., P.C. (HDR)
Affiliation:	All entries must be submitted by DVASE member firms or members.
Architect:	HDR Inc. & Foster + Partners
General Contractor:	LF Driscoll & Balfour Beatty

Company Logo (insert .jpg in box below)



Important Notes:

- Please .pdf your completed entry form and email to bsagusti@barrhorstman.com.
- Please also email separately 2-3 of the best .jpg images of your project, for the slide presentation at the May dinner and for the DVASE website. Include a brief (approx. 4 sentences) summary of the project for the DVASE Awards Presentation with this separate email.

**Provide a concise project description in the following box (one page maximum).
Include the significant aspects of the project and their relationship to the judging criteria.**

The new Penn Medicine Pavilion at the Hospital of the University of Pennsylvania Health System is a 16-story structural steel high-rise building designed to be a highly flexible, high-performing facility that accommodates evolving patient care practices. In total, over 16,800 tons of steel will be used in the tower's construction.

Occupying a highly visible spot on campus, the Pavilion links Hospital of University of Pennsylvania (HUP) and the Perelman Center for Advanced Medicine (PCAM) with three elevated pedestrian bridges and one below-grade tunnel. Additionally, continuing Philadelphia's civic tradition, the design weaves together existing separate public spaces by providing a new promenade, plaza, and garden spaces which connect with the adjacent University of Pennsylvania's Museum of Archaeology and Anthropology and SEPTA, Philadelphia's regional light rail.

Many site constraints and building program requirements led to a truly innovative structure:

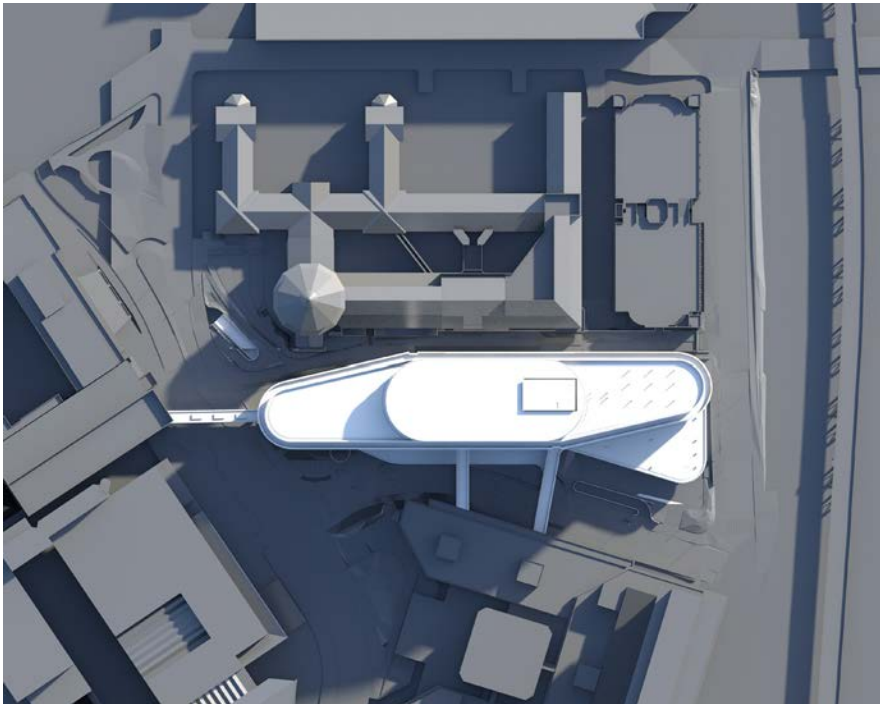
- Different column grids (parking garage, public space, patient floors, emergency department and loading dock) stacked in a high-rise
- Only 44 of 76 columns from the tower are continuous to the foundation
- The shape and narrow site needed to accommodate 1.5 million-square-feet of built space
- The program is complex, requiring 500 patient beds; parking for 690 cars; an interventional platform with 47 operating rooms; on-site radiology; and an emergency department with 60 treatment rooms

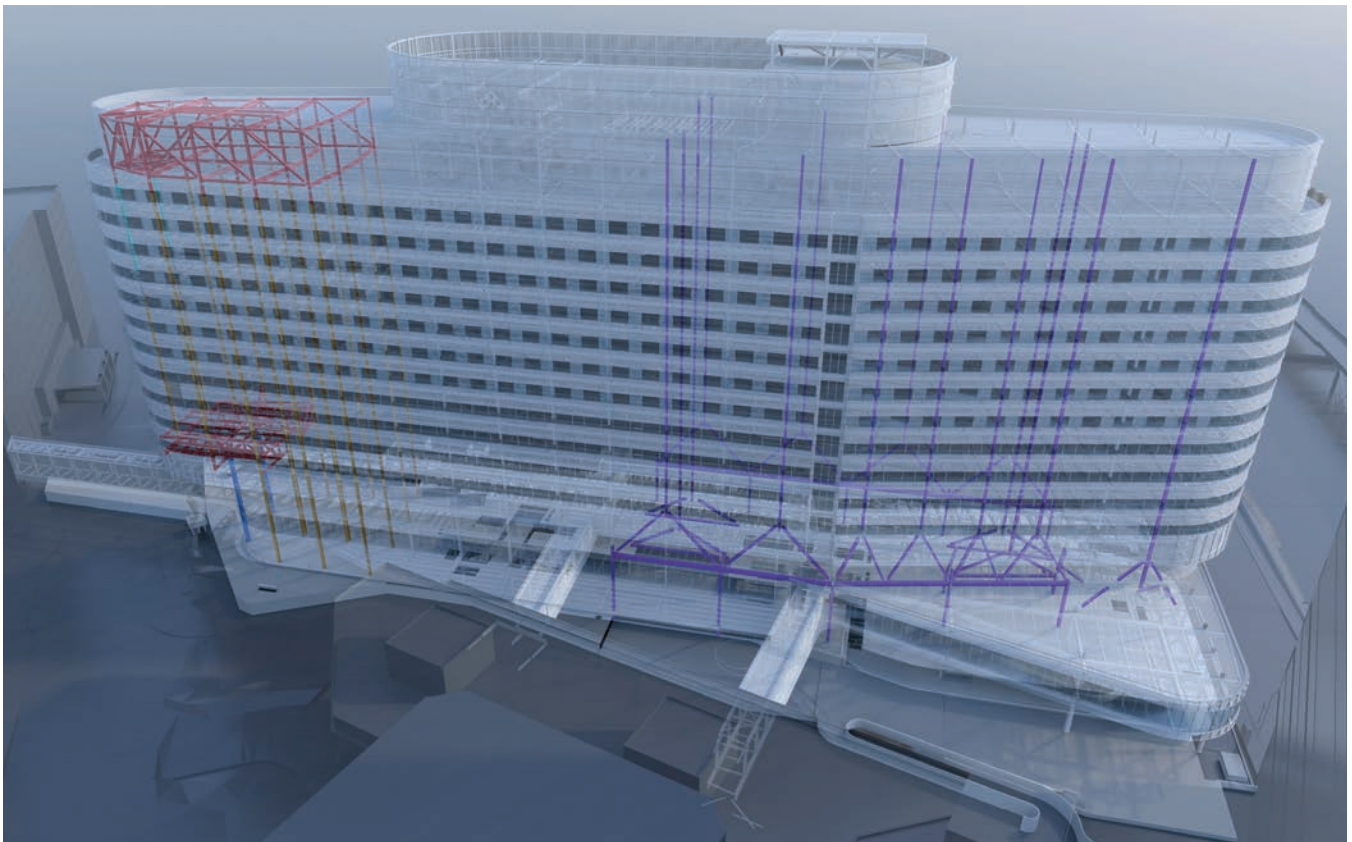
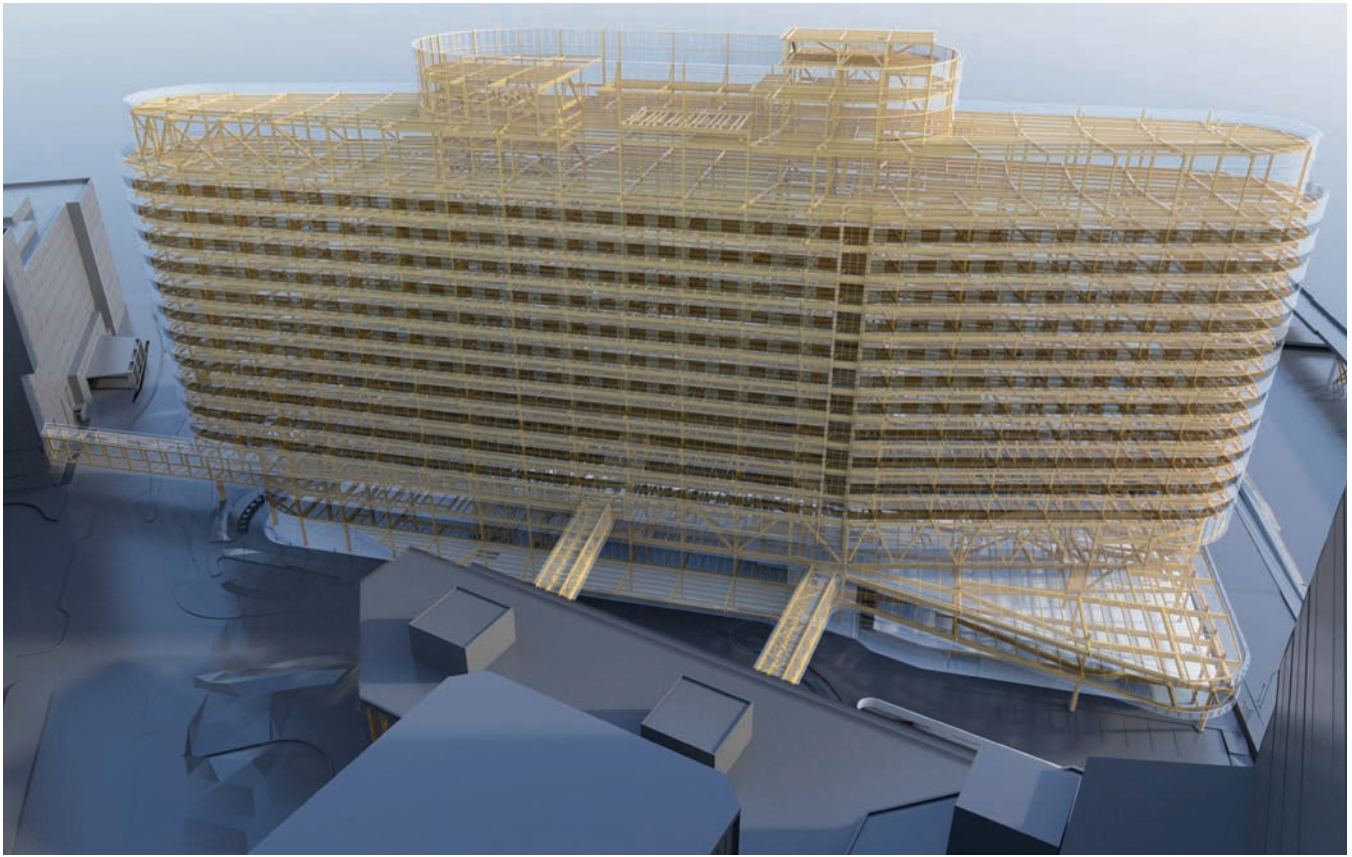
Floors 3 through 16 are cantilevered 50 feet from the last support, 70 feet above the ground, opening views to the iconic dome of the adjacent museum while offering a new safe and pedestrian-friendly route from the local Septa train station. Two "super-columns" support a W-shaped transfer truss upon which the lower floors of the cantilever sit; upper cantilevered floors hang from a 27-foot-deep truss above. A loading dock sits below the plaza and is accessible from the south. The open loading dock and service space below the plaza, which is shared with the museum, is created by transferring the building columns onto massive (up to 10'-8" deep) long-span plate girders that transfer the column loads from the tower above to the mat foundation below.

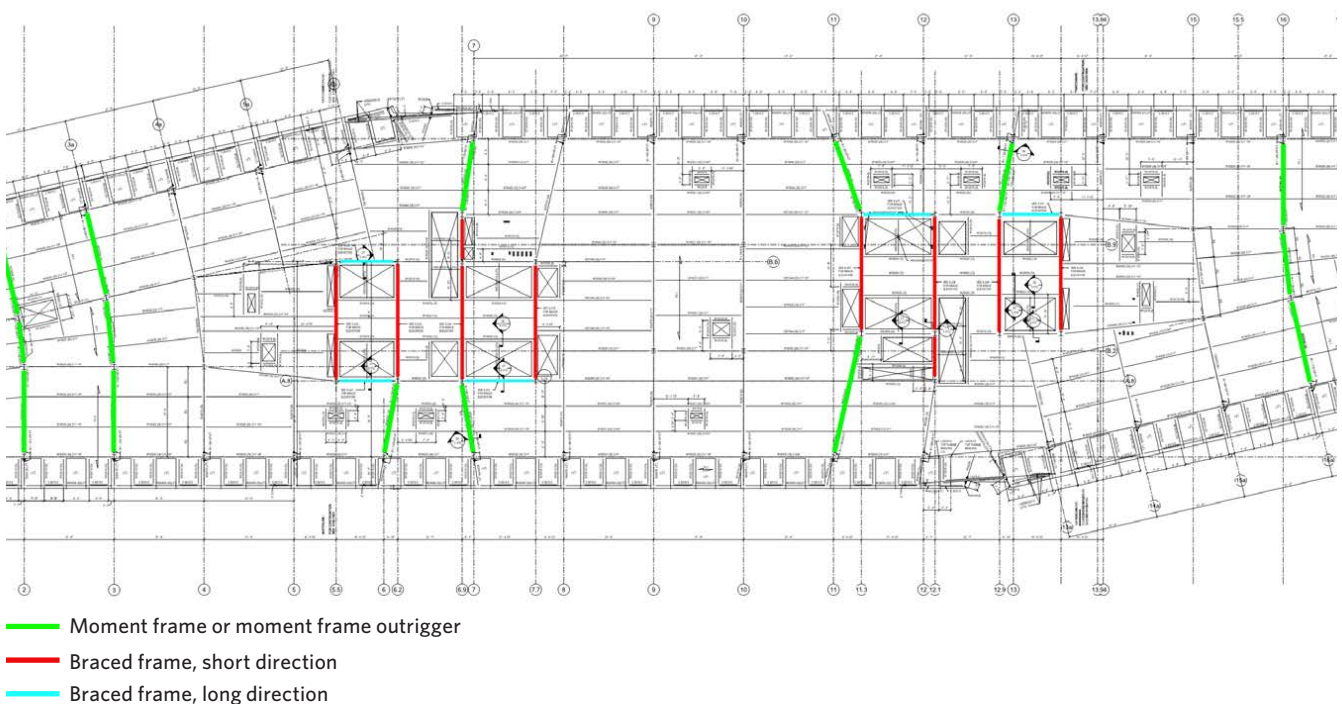
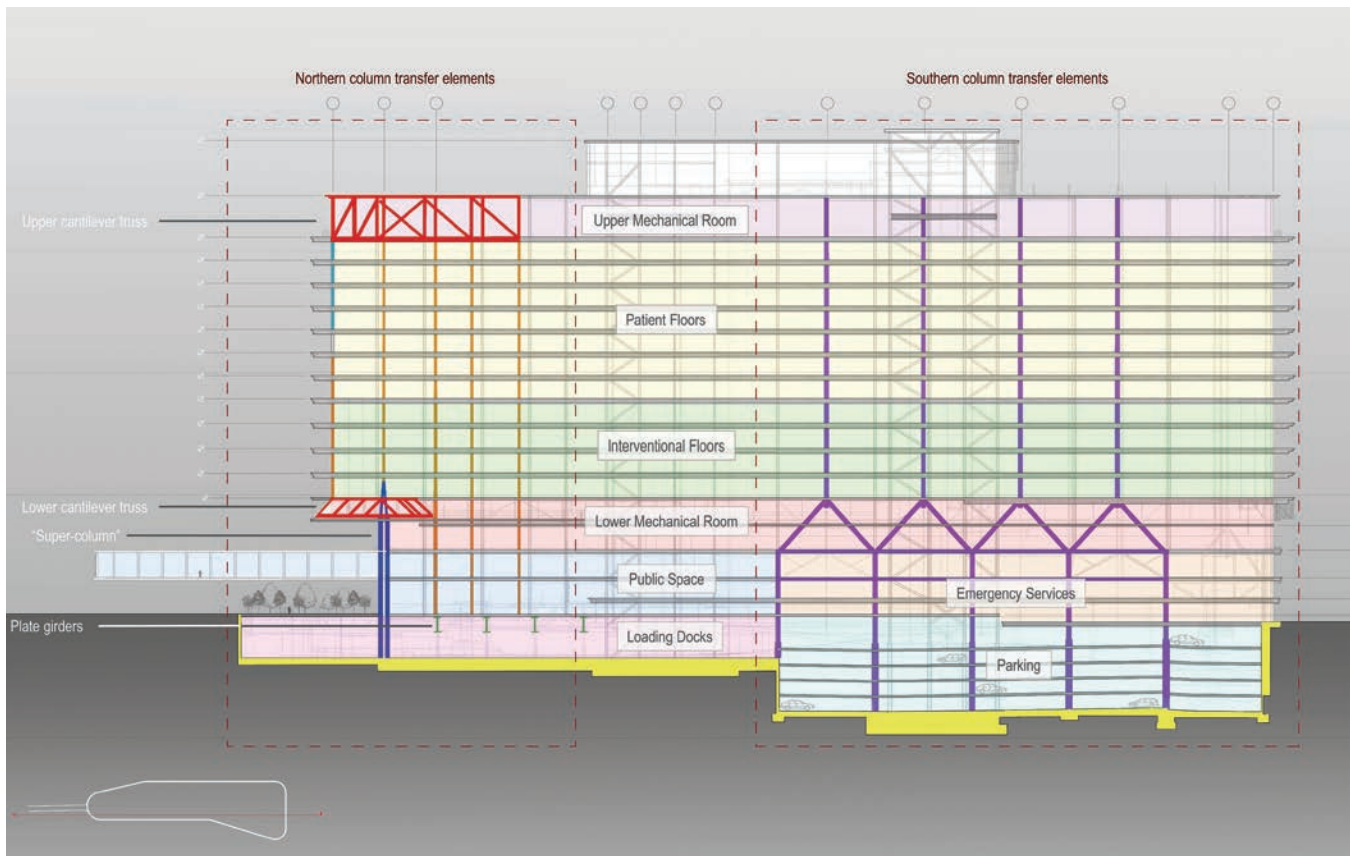
The site slopes to the southeast and creates an entrance to the new two-story Emergency Department at the opposite end. Additionally, parking for 690 cars is accommodated in a six-level below-grade precast parking structure also accessed from the west. The precast double-T parking structure, with 63-foot spans, supports the weight of the steel tower above. Double-height trusses in the two-story mechanical space transfer the load and column grid from the tower above to the grid of the precast parking garage below.

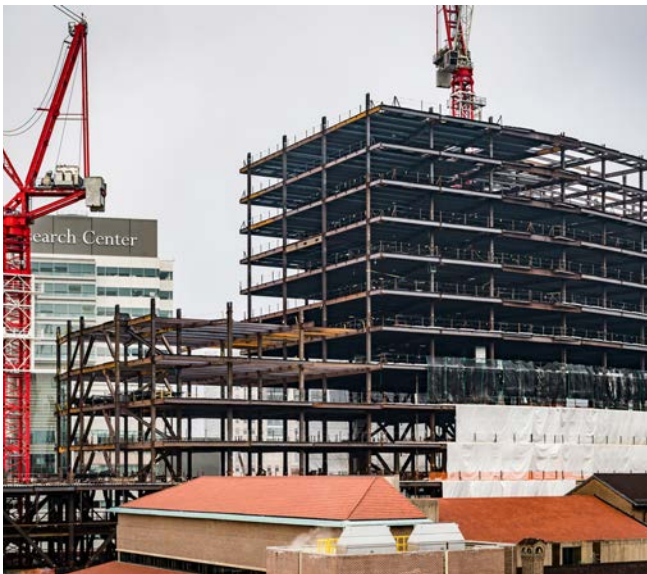
A mat foundation covers the north half of the site which ranges in thickness from 4'-4" to 8'-6". A majority of the mat foundation was completed in a single-pour in order to meet schedule demands. The pour lasted 14 hours, included over 6,500 cubic yards of concrete, and was the largest single pour in the history of the city of Philadelphia.

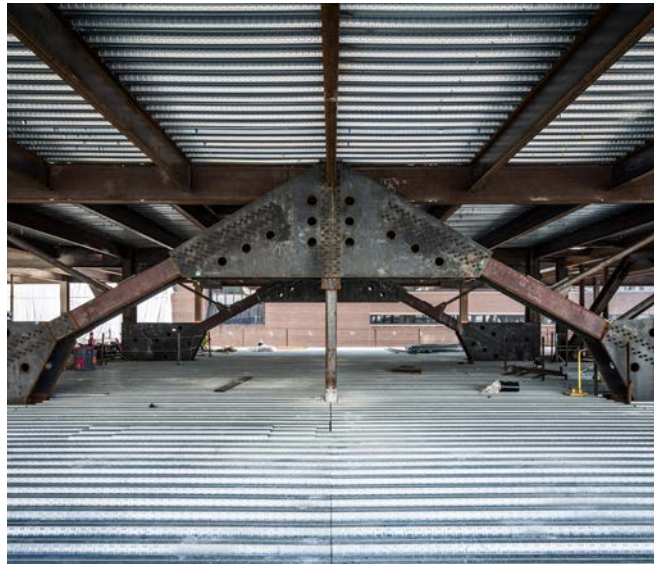
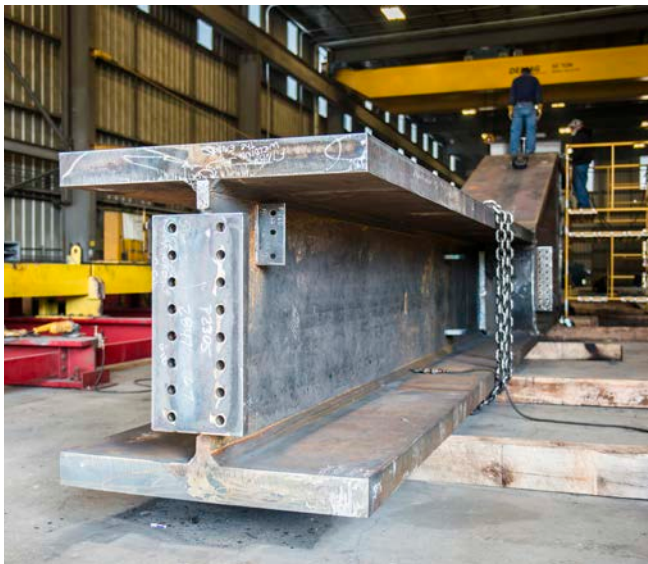
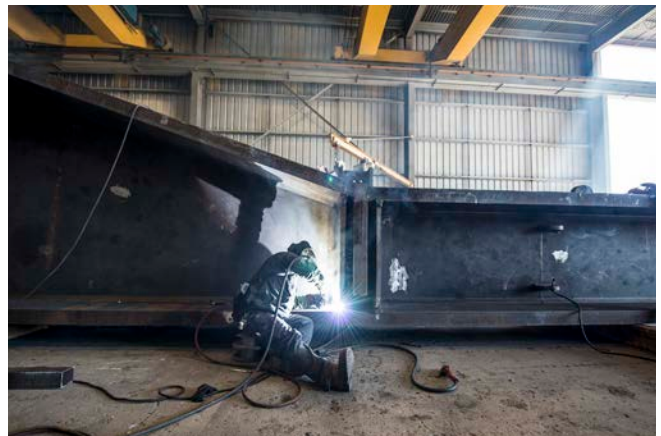
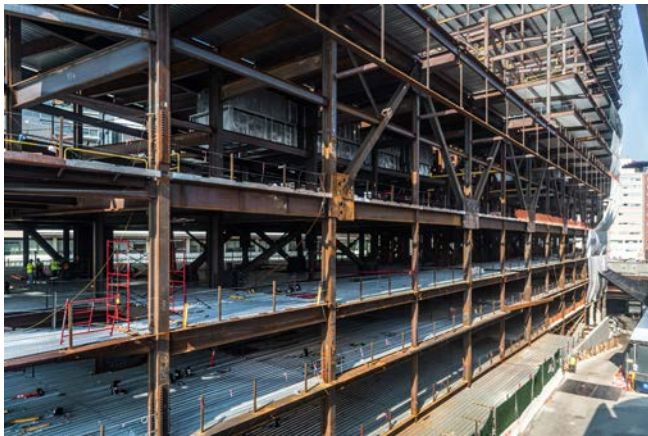
The following 5 pages (maximum) can be used to portray your project to the awards committee through photos, renderings, sketches, plans, etc...











By signing, signatory agrees to the following and represents that he or she is authorized to sign for the structural design firm of record.

All entries become the property of DVASE and will not be returned. By entering, the entrant grants a royalty-free license to DVASE to use any copyrighted material submitted.

If selected as an award winner, you may be offered the opportunity to present your project at a DVASE breakfast seminar. Would you be willing to present to your colleagues? ☒ **YES** ☐ **NO**

Submitted by:

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