ENTRY FORM

DVASE
2020 Excellence in Structural Engineering Awards Program

PROJECT CATEGORY (check one):

Buildings under $5M		Buildings Over $100M	x
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:	$575 Million
Name of Project:	The Fashion District Philadelphia
Location of Project:	Philadelphia, PA
Date construction was completed (M/Y):	Grand Opening 09/2019 | AMC theater Overbuild 11/2019
Structural Design Firm:	Keast & Hood
Affiliation:	**All entries must be submitted by DVASE member firms or members.**
Architect:	JPRA Architects
General Contractor:	Main Complex: Shoemaker-Skanska Joint Venture | AMC Theater Overbuild: Shoemaker-Perryman Joint Venture

Company Logo (insert .jpg in box below)

KEAST & HOOD
STRUCTURAL ENGINEERS

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 redevelopment of Philadelphia's Gallery Mall is a massive 1.5 Million SF interior and exterior renovation that encompasses 13 different structures, spans three city blocks, and sits on top of four different mass transit train lines. The project was broken up into four different sections and carried out of the course of **seven years**. Upon completion, it is the "**largest cohesive retail project in downtown Philadelphia**."

The goal of the renovation was to **transform the space from an enclosed, subterranean shopping and transit center to a major destination** for retail and entertainment in Philadelphia. Creating new connections and a light filled space that is **more easily accessible and welcoming**. The new main entrance at 9th and Market Streets, a feature of the renovation, provides an iconic welcoming area comprised of **170 panels of structural glass**.

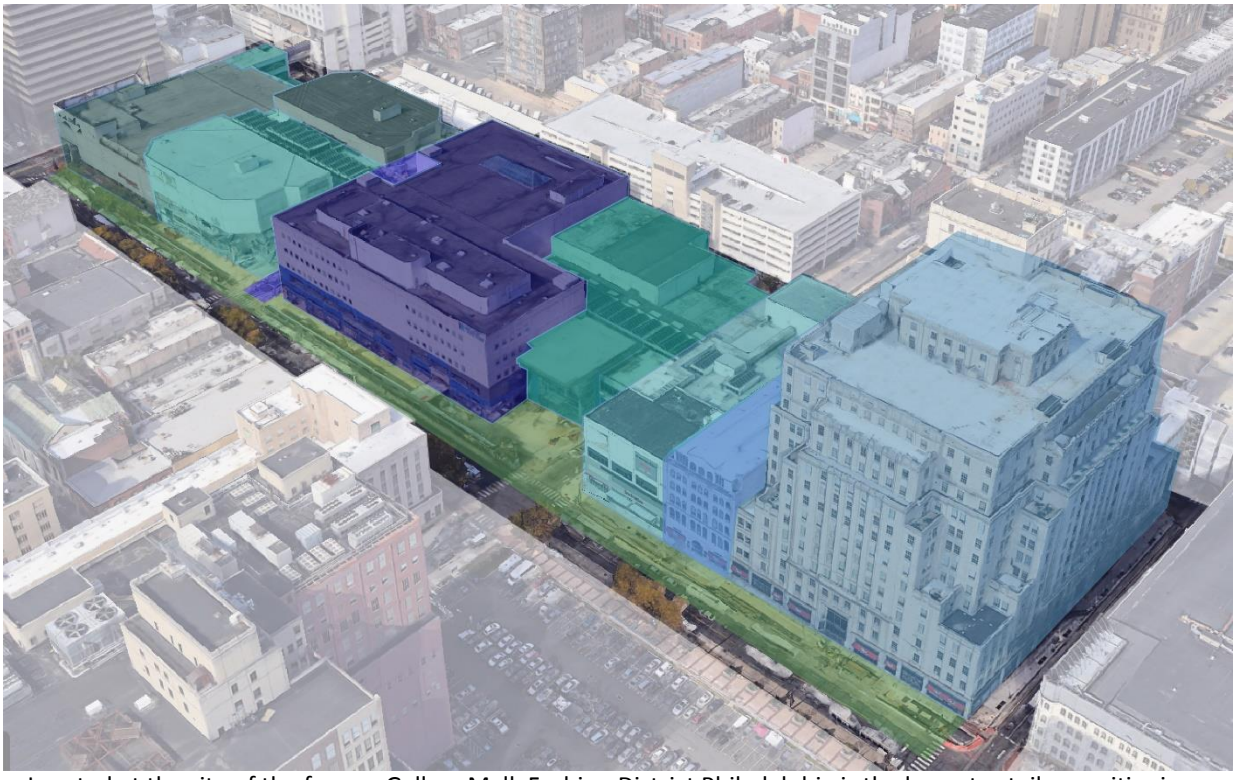
The new main entrance, **the Cube, is a freestanding structure with a clear height of 60 feet.** Comprised of steel trusses and built-up box column sections **it features architecturally exposed structural steel, while the roof cantilevers 23 feet.** The Cube is also a column-free space with a **68-foot clear span**. Site challenges for the new main entrance included extensive foundation work to infill the previously below-grade entrance including carbon fiber reinforcement of an existing reinforced concrete wall to retain soil as well as new retaining walls.

Keast & Hood provided structural design for the new feature entrance as well as modifications to the structural frame in each segment of the building complex for a **more open and easy to circulate space**. One of the main goals of the renovation was to **increase lighting levels throughout** the complex. To accommodate this, multiple large sections were cut into the Ground floor to allow for more daylighting. At one of these openings, **a 72-inch deep transfer girder existed supporting one of the building columns and thus had to be removed**. To do so, engineers re-supported the building column with a new transfer beam located one floor down. This necessitated a **complicated construction sequence** involving **temporary hydraulic jacking, done while there were six occupied stories above**, to redirect the building column loading directly down into the post-up, and onto the new transfer beam below. In another section of the complex, one of the historic structures utilized cast iron columns. The floor in this section was **lowered to increase accessibility for commuters by removing the need for stairs at that entrance.** Engineers encased the cast iron columns in concrete and the floor was lowered while the **offices above stayed occupied and the connecting mass transit rail lines of PATCO, the Market Frankford Line, SEPTA Broad Ridge Spur, and SEPTA Regional Rail all stayed in operation and undisturbed throughout the entire project.**

Structural design for the support of new exterior wall systems, canopies, and large-format signage and new interior escalators, elevators, and stairs was included as well as design for the support of primary mechanical equipment such as air handlers, boilers, chillers, and cooling towers. **Keast & Hood is also providing the structural design for many of the tenant improvements such as internal stairs, escalators and elevators**. A major tenant is the AMC Theater. **To accommodate the large space required by the theater, engineers designed a 44-foot overbuild and extensive reinforcement of both the gravity and lateral systems of the remaining structure.** Engineers also studied the potential for vertical expansion at several areas of the complex. On the complex's exterior, the existing precast concrete panels were removed and replaced with large metal panels, brick along Filbert Street, and glass entrance vestibule to allow more light into the building. Engineers added girts along the perimeter of the building to support the new glazing. For this project **engineers utilized HSS girts which spanned between the existing columns roughly 30'.**

With the top to bottom redesign of the multiple sections that make up the Fashion District, the space is now a light-filled, easy to navigate destination that exists in stark contrast to its previous iteration.

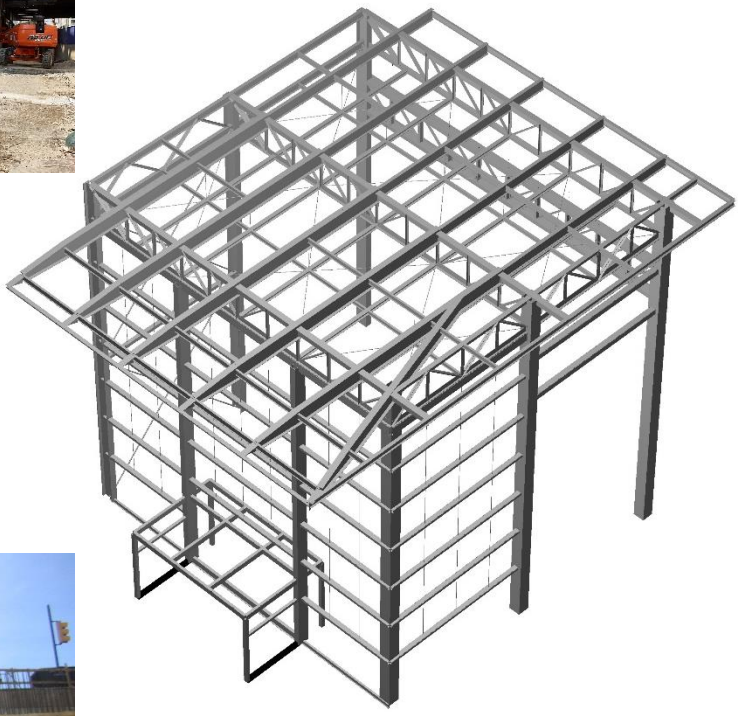
- The following 5 pages (maximum) can be used to portray your project to the awards committee through photos, renderings, sketches, plans, etc...



Located at the site of the former Gallery Mall, Fashion District Philadelphia is the largest retail-repositioning project in the Greater Philadelphia Region. It encompasses three city blocks and 1.5 Million Square Feet of space, much of which remained occupied throughout the renovation. Four major mass transit lines run under the complex and needed to remain fully operational throughout the seven-year project. All of these elements contributed to the complexity of the project.

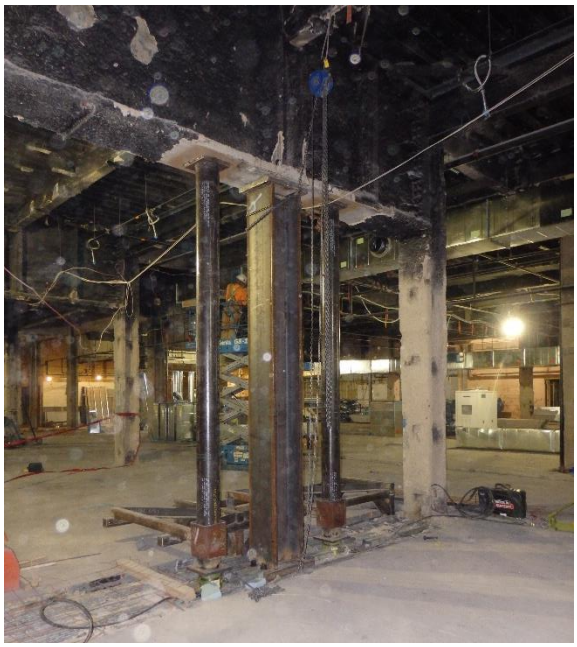
A main goal of the renovation was to create a more open and welcoming destination. The new main entrance, The Cube does so with AESS, structural glass, a column free space with a 68-foot clear span, and clear height of 60 feet.

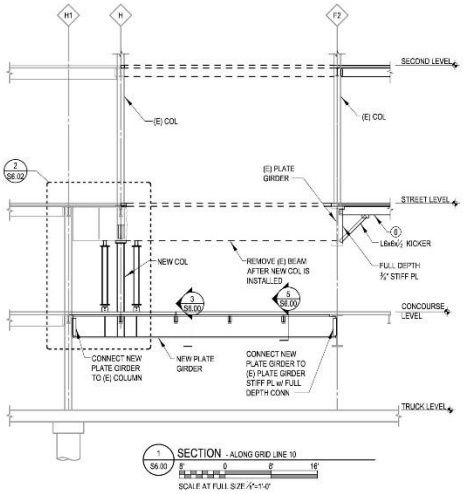
Known as The Cube, the new main entrance's roof system utilizes long-span steel trusses and custom tapered steel cantilevers.

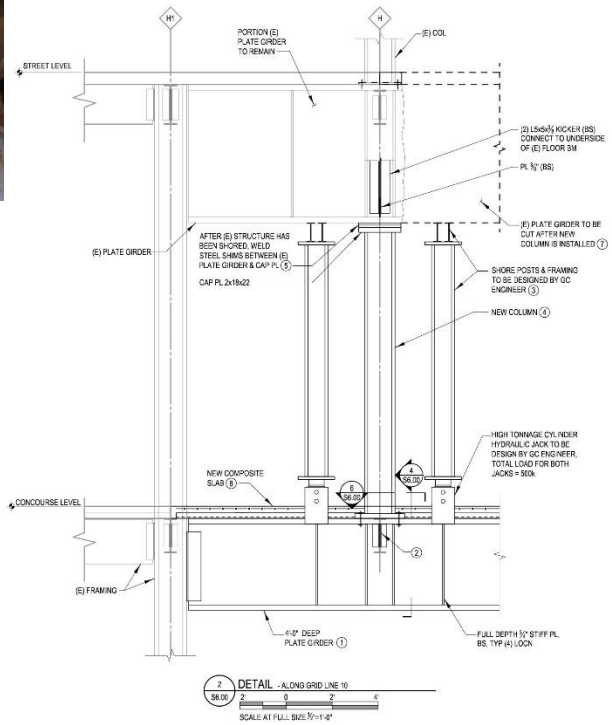


Challenges of the new entrance's standalone structure included extensive foundation work to infill the previously below-grade entrance.

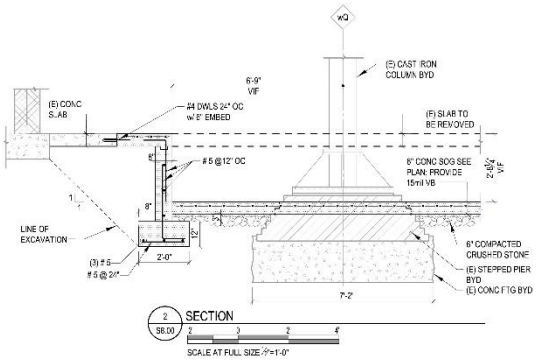
Major modifications include the removal of a larger existing transfer girder to allow for a new opening down into the concourse level. The design required jacking of the building's six floors, and removal of the existing 72" transfer girder.

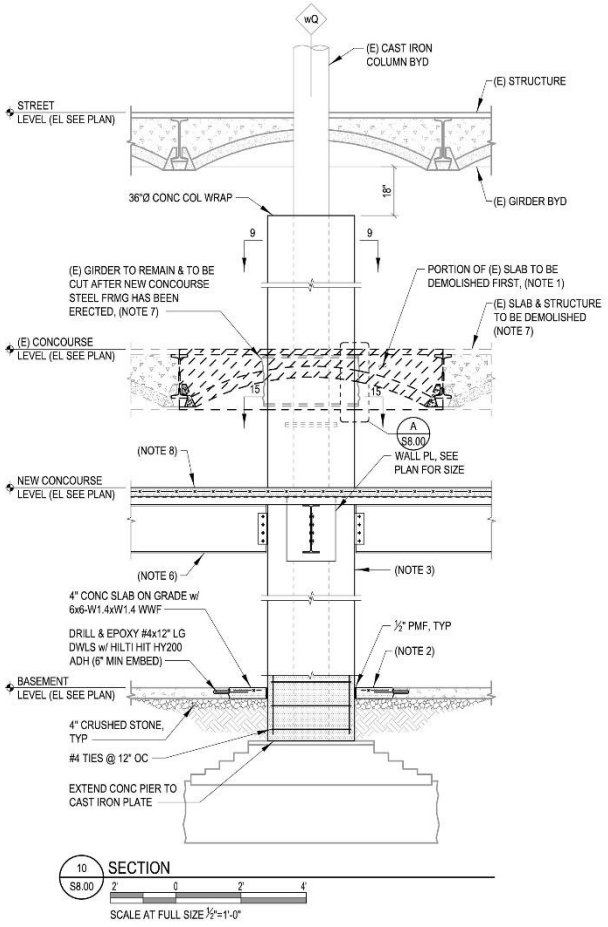


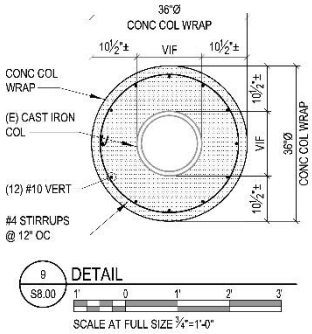




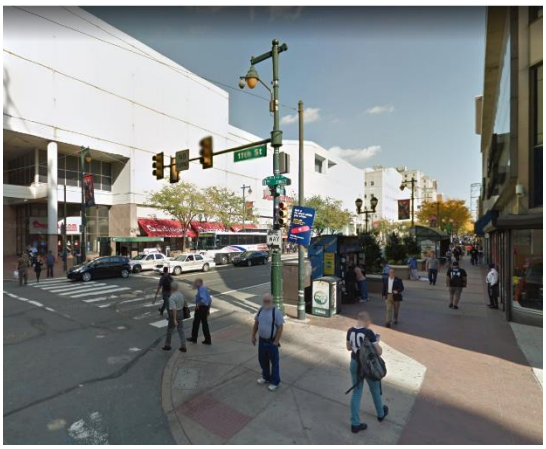
The existing cast iron columns in the historic section of the complex. The floor was lowered 8 feet to increase accessibility to the mass transit station that sits below the Fashion District Complex.

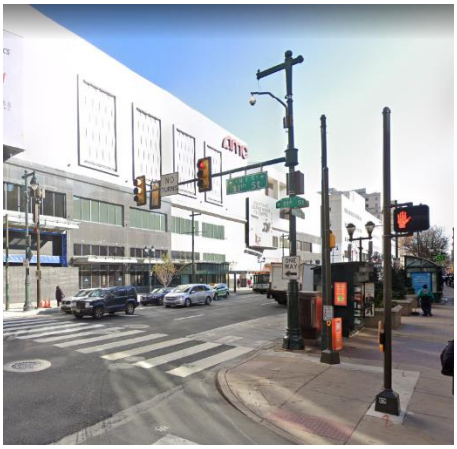






The new AMC theater overbuild at 11th and Market Streets. The new metal panel Façade is also installed along with signage.





The new openings create a bright and welcoming space that is more easily accessible and easier to circulate through.

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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