ENTRY FORM

DVASE
2021 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	X	Other Structures Over $1M	
Buildings $40M - $100M		Single Family Home	

Approximate construction cost of facility submitted:	$30 million
Name of Project:	Cooper University Health - Specialty Care Center at Cherry Hill
Location of Project:	Cherry Hill, New Jersey
Date construction was completed (M/Y):	April 2020
Structural Design Firm:	Ewing Cole
Affiliation:	**All entries must be submitted by DVASE member firms or members.**
Architect:	Ewing Cole
General Contractor:	Torcon Construction

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 annual virtual presentation 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 Cooper University Medical Center for Special Care in Cherry Hill New Jersey was a major tenant renovation and building addition to the existing 88,000 SF property located at 2339 Marlton Pike, Route 70. The goal of the project was to provide an exemplary patient care experience in line with Cooper University Healthcare's standard of care by upgrading the existing facility to allow for maximum floor plan flexibility and growth between practices while maintaining a separation between patient and staff circulation.

To achieve these goals, floor areas needed to be increased on each level, the elevator layout needed to be revised, the lateral force resisting system needed to be upgraded and the patient drop-off area required a substantial addition including the introduction of an eye-catching entrance canopy that would help to further reinforce the Cooper University Healthcare visual brand.

The existing building was built in the 1980's and was a four-story brick veneer building with ribbon windows. Floor-to-floor heights were approximately 13'-0". The typical floor structure consisted of 3 7/16" concrete slabs over 9/16" deep metal form deck supported by open web steel bar joist framing bearing on wide-flange steel girders and columns. The original footprint was approximately 21,000 square-feet per floor and was in the shape of the letter 'H'. It also had a small two-story atrium located at the North entrance area. It had two small passenger elevators centrally located in the building, one in each wing. The original structural drawings for the building were not available for design so an extensive survey was conducted in conjunction with a digital scan of the existing structure after the interior was gutted to model and analyze the structure and design the required upgrades. Material testing of existing steel and concrete was also performed to confirm the steel grade and concrete compressive strength.

The existing elevators were removed and the pits and floor openings were filled in to reclaim usable floor space at all levels. A new bank of three elevators was provided that required the introduction of a new elevator pit and elevator shaft up through the existing building. Due to the proximity of an existing building column, the new elevator pit was designed to incorporate the existing column load. The existing column was shored and suspended overhead throughout the demolition, excavation and construction of the new elevator pit until it could be released to bear on the new integrated reinforced concrete pedestal. New elevator shafts were created within the floor framing by shoring existing joists and installing new wide flange members between existing joist and ultimately removing existing joists.

The square footage of each floor was also increased by between 1,600 and 2,000 square-feet to provide additional medical offices within the facility. The areas between the two existing wings on the north side were filled in with new steel framing and slabs on metal deck. The Owner did not desire to have an expansion joint within the building, therefore the added floor area and resulting increased seismic demand coupled with incomplete existing structural information necessitated an upgrade to the buildings lateral system. To provide this upgrade, locations were coordinated with the architectural floor plans to provide reinforced masonry shear walls. The coordination of the shear wall footings was carefully detailed around existing column footings and originally required underpinning of existing foundations. Due to the extensive amount of underpinning required, the contractor requested to fully remove the existing foundation, shore the columns and build new foundations. In total thirty percent of the interior columns were temporarily shored and received new foundations.

To insert the new shearwalls within the building, sections of floors were demolished at each floor level requiring phased cutting and re-supporting of the existing framing. In order to attached existing diaphragms to the new shearwalls, special attention was given to the anchorage of the existing diaphragms to the new shear walls to ensure proper transfer of the lateral forces into the new lateral system.

Lastly, the traffic flow on the site was completely reworked to improve the patient experience and a signature 4,200 square-foot entrance canopy was provided over the drive lane of the patient drop-off area. The canopy incorporated skylights to brighten things up beneath it while still providing protection from the elements allowing patients dry and covered access to the newly added facility lobby while providing the client with the desired branding opportunity and visual appeal.

In conclusion, through the upgrading of the lateral force resisting system, underpinning of existing columns and walls the design team was able to provide the client with an updated and expanded building to serve the needs of patients and staff alike.

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

VIEW OF NORTH ELEVATION

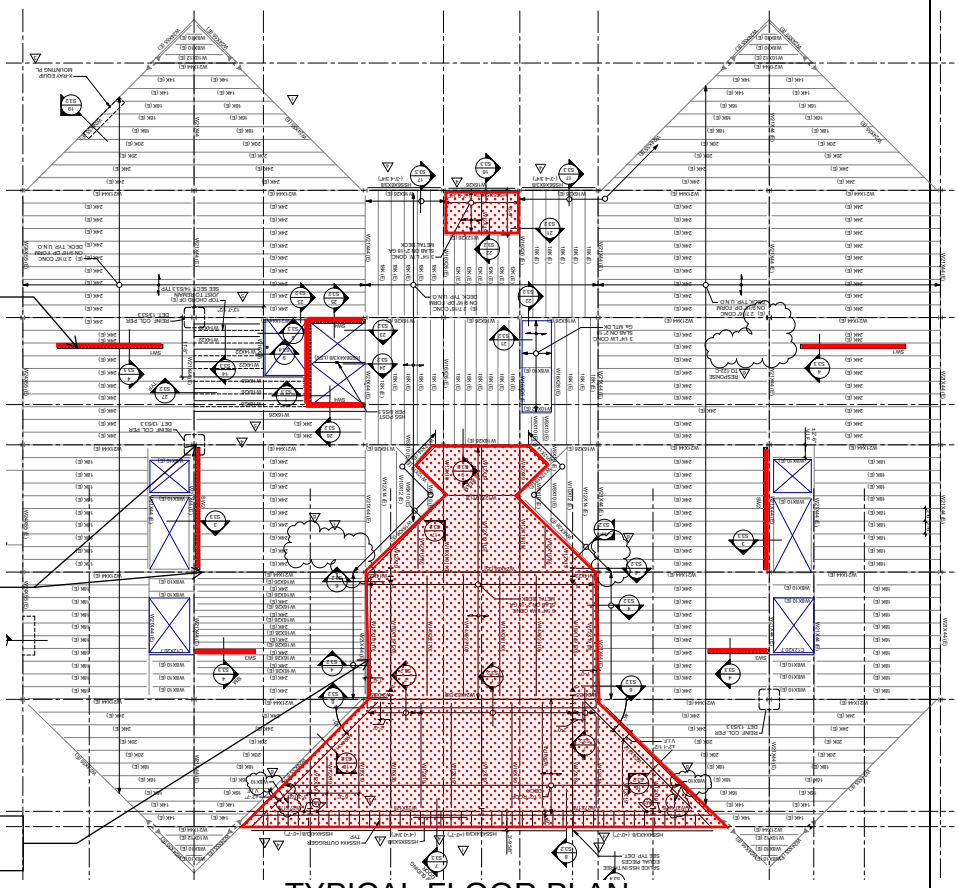
VIEW OF NORTH ELEVATION

VIEW OF FLOOR IN-FILL UNDER CONSTRUCTION

NEW SHEAR WALL LOCATIONS

EXISTING COLUMNS ADJACENT TO NEW SHEARWALL

FLOOR IN-FILL



TYPICAL FLOOR PLAN

VIEW OF UNDERPINNING
PROCESS AT INTERIOR COLUMNS

VIEW OF SHEARWALL CONNECTION TO EXISTING SLAB

VIEW OF SHEARWALL CONNECTION TO EXISTING SLAB

VIEW OF SHEARWALL CONNECTION TO EXISTING SLAB

VIEW OF NEW FRAMING BETWEEN EXISTING JOISTS

VIEW OF EXTERIOR UNDERPINNING
PROCESS AT LOADING DOCK

VIEW OF EXTERIOR UNDERPINNING
PROCESS AT LOADING DOCK

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:

Print name:	**Signature:**	**Date:**
Colleen Blackwell, P.E.		03/30/21

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