

# ENTRY FORM



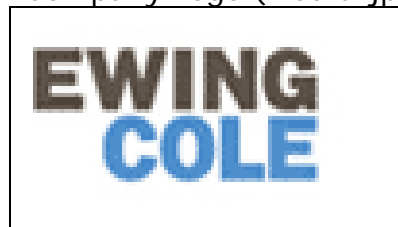
## DVASE 2010 Excellence in Structural Engineering Awards Program

### PROJECT CATEGORY (check one):

New Building under \$30M		Other Structures Under \$10M	
New Building over \$100M	<b>X</b>	Other Structures Over \$10M	
New Building \$30M - \$100M		Free Style	

Approximate construction cost of facility submitted:	\$135 million
Entry Fee:	<b>FREE</b>
Name of Project:	Bayhealth Medical Center, Kent Campus Expansion
Location of Project:	Dover, DE
Date construction was completed (M/Y):	October 2011 (projected)
Structural Design Firm:	EwingCole
Affiliation:	<b>All entries must be submitted by DVASE member firms or members.</b>
Architect:	EwingCole
General Contractor:	Whiting-Turner

Company Logo (insert .jpg in box below)



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 Bayhealth Kent Campus Expansion project is a large-scale addition to the existing hospital campus in downtown Dover, Delaware. The project consists of five new structures in all; a 5-story parking garage, a 4-story Pavilion building, a single-story emergency department building, a two-story central utilities building, and an elevated enclosed footbridge across a roadway which connects the central utilities building to the main hospital campus. The project will increase the overall total square footage of the hospital campus by approximately 400,000 sf.

The structure for the 4-story Pavilion building is designed to accommodate a future vertical expansion so that the building can grow to become a 170'-0" tall 11-story tower. The building incorporates three linear accelerator mass-concrete vaults within its footprint, where the top of the concrete vaults serve as the finished second floor slab above. The building's lateral force resisting system consists of wide-flange steel cross-bracing in both major axes. The foundation system consists of 125-ton 16-inch diameter auger-cast piles that extend approximately 50 feet into the earth below. The floor structures utilize a composite concrete slab and steel beam construction. Additionally, the floor construction at the 4<sup>th</sup> floor level was designed for the vibration criteria for sensitive equipment as per AISC to accommodate its future use as a diagnostic imaging space.

The one-story emergency department building has been designed to accept 2 future stories of vertical expansion plus an additional future 5-story link to the existing hospital tower that will project up above the current structure. The building will have a helipad structure above the current roof level that will be relocated to the upper roof during the future expansion. The 2nd floor system of this building was designed for the vibration criteria for sensitive equipment as per AISC to accommodate its future use as both neurosurgical and standard surgical operating rooms.

Large portions of the basement floors slabs in both the emergency department building and the Pavilion building, totaling approximately 18,000 sf, sit 6'-0" below the seasonal-high water table. As such these basement slabs were designed to resist the hydrostatic uplift pressure through a combination of the dead weight of the slab and by utilizing grade beams which span between the pilecaps at the building columns and additional intermediate piles.

The central utilities building will house all of the major mechanical and electrical equipment for the new buildings; including generators, cooling towers, chillers, and boilers. Several 30-inch diameter lines of piping run throughout the ceiling space of the 1<sup>st</sup> floor and are supported from the 2<sup>nd</sup> floor steel framing, each weighing in excess of 1000-lbs per foot of length. A large 30-foot tall screen wall is utilized on 3 sides of the lower roof to hide the cooling towers and dunnage platform from view from the adjacent public street. The building's lateral force resisting system consists of wide-flange steel cross-bracing in both major axes. The foundation system consists of 100-ton 16-inch diameter auger-cast piles that extend 40 feet into the earth below.

The footbridge consists of 2 major spans, one of 60 feet, and one of 80 feet. To accommodate the architectural design of the bridge, no diagonal bracing could be used, so a vierendeel truss system was implemented for the structure. The lateral system consisted of x-bracing below the elevated floor and moment frames above the floor of the bridge up to the roof level.

Please attach your photos as previously described in the call for entries document and insert captions for the photos in the following boxes.

Photo 1:



Construction of the mass concrete linear accelerator vaults

Photo 2:



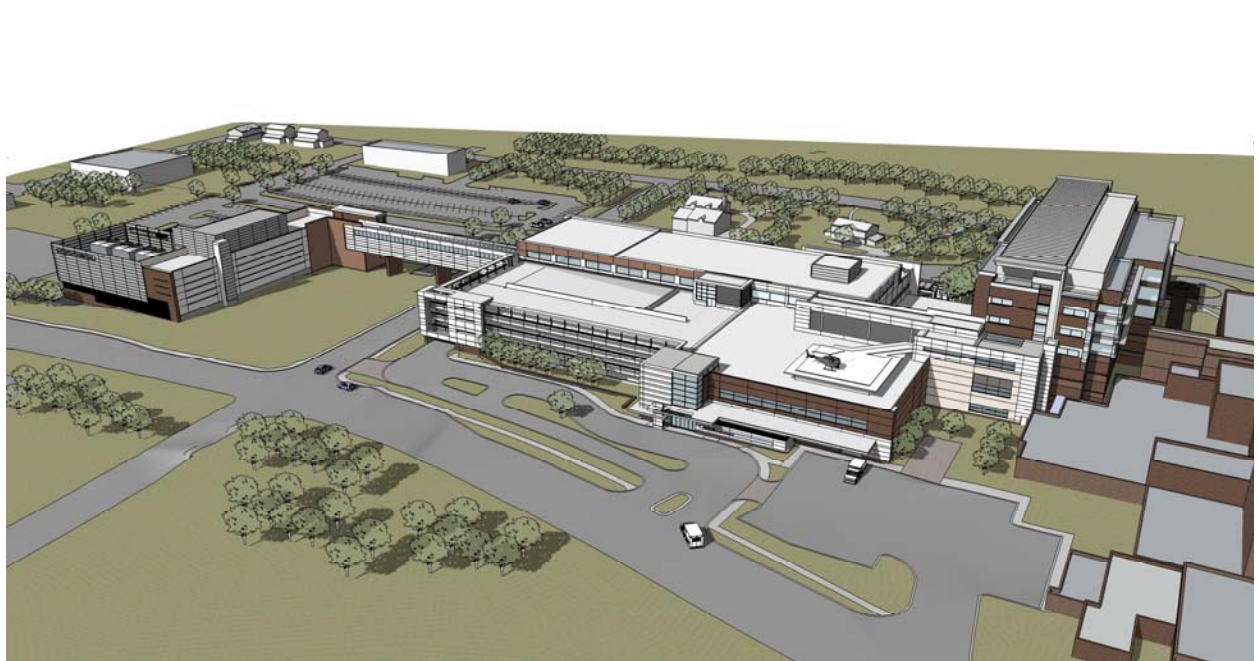
Rendering of the Pavilion building, including the addition future expansion.

Photo 3:



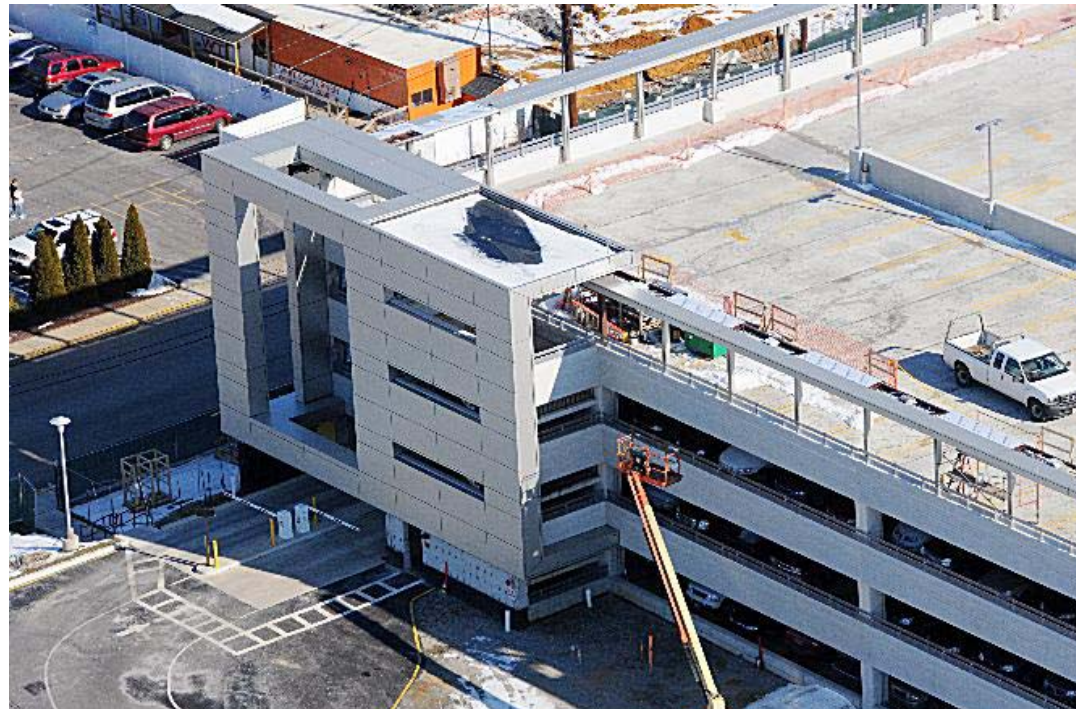
Rendering of the 2-story interior lobby at the main entrance of the Pavilion

Photo 4:



Rendering of hospital campus expansion in late 2011

Photo 5:

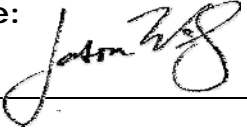


Entrance to parking garage

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

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Submitted by:

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