

ENTRY FORM



DVASE 2020 Excellence in Structural Engineering Awards Program

PROJECT CATEGORY (check one):

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

Approximate construction cost of facility submitted:	Undisclosed
Name of Project:	Nevelson and Epstein Sculpture Relocation
Location of Project:	University of Pennsylvania (Philadelphia, PA)
Date construction was completed (M/Y):	08/19
Structural Design Firm:	CVM
Affiliation:	All entries must be submitted by DVASE member firms or members.
Architect:	Ground Reconsidered (landscape architect)
General Contractor:	Massimino Building Corporation

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 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.

CVM assisted the University of Pennsylvania with the addition of two significant sculptures to their campus. As the prime consultant to Penn, CVM provided Project Management and Structural Engineering services for the deinstallation, transportation and final installation of Louise Nevelson's *Atmosphere and Environment XII* (1970) and Sir Jacob Epstein's *Social Consciousness* (1954). Both works, owned by the Association for Public Art, were sited at the Philadelphia Museum of Art and have been loaned to Penn for 99 years.

The process began with the dismantling of both multi-ton sculptures at the Art Museum. The Nevelson sculpture is composed of a series of weathering steel plates fabricated into open boxes which are stacked and bolted together. The work was disassembled box-by-box and carefully packaged for transportation, leaving the existing granite-clad concrete base at the art museum site. The Epstein sculpture consists of bronze figurines positioned on a large, engraved granite base. The figurines were individually removed from the base and packaged for transportation while the granite based was moved separately.

The first stop for the sculptural elements of both works was a warehouse where they were restored by an art conservator. While that process was underway, construction of new foundations began on two separate sites on Penn's Campus. The Nevelson sculpture was to be sited on Shoemaker Green, to the north of Franklin Field, and the Epstein sculpture in Memorial Garden, behind Van Pelt Library. Coordination and exact positioning at the sites were done in consultation with the various stakeholders, ensuring the optimal environment for each sculpture. The foundation for each sculpture consists of a 30"-deep reinforced concrete pad with integral slots to accommodate rigging needed for installation. As the Nevelson sculpture needed a new solid granite base, CVM designed the connection of the sculpture to the granite utilizing adhesive anchors with the positioning to match the holes in the existing sculpture.

A unique challenge of this project was the conveyance across campus and installation of the granite base and figurines of the Epstein sculpture. The granite base weighed 55,000 pounds and had to be moved approximately one quarter of a mile along brick walkways and up a granite staircase. Use of a crane was not possible due to the limited access created by trees and stairs into the site. George Young Mammoet, a specialty rigging contractor tasked with moving the sculpture, brought in a specialized piece of equipment, a Self-Propelled Modular Transport (SPMT), from Texas to complete the job. The base was loaded onto the SPMT, which is a large platform that contains its own power and steering system capable of turning 360 degrees. The platform is also able to rise vertically or lower to climb stairs. The SPMT navigated the brick walkways with it tight turning radius and then climbed the granite stairs while keeping the base supported through the platform's self-leveling feature. The SPMT's 24 wheels minimized surface pressure on the brick walkways, avoiding damage. Once the SPMT reached the newly constructed foundation, a custom rigging platform was created to remove the granite base from the SPMT and place it on the new foundation. The bronze figurines were installed on the original base, and the site was restored.

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



Nevelson sculpture and Nevelson base. Note the slots in the concrete foundation of the base, which were included to accommodate the rigging used to lower the base on to the new foundation.



The Epstein sculpture (above) and the removal of the base of the Epstein sculpture from its previous site at the Philadelphia Museum of Art (left).




Above, the SPMT transports the base of the Epstein sculpture through Penn's Campus. At left, rigging designed to remove the base from the SPMT.

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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