

# ENTRY FORM



## DVASE 2013 Excellence in Structural Engineering Awards Program

### PROJECT CATEGORY (check one):

Buildings under \$2M		Buildings Over \$100M	✓
Buildings \$2M-\$10M		Other Structures Under \$5M	
Buildings \$10M - \$30M		Other Structures Over \$5M	
Buildings \$30M - \$100M		Single Family Home	

Approximate construction cost of facility submitted:	\$194,844,500
Entry Fee:	<b>FREE</b>
Name of Project:	<i>DSNY Manhattan Community Districts 1/2/5 Garage</i>
Location of Project:	<i>New York, New York</i>
Date construction was completed (M/Y):	<i>Design Completion August 2010; Construction in Progress</i>
Structural Design Firm:	<i>The Burns Group</i>
Affiliation:	<b>All entries must be submitted by DVASE member firms or members.</b>
Architect:	<i>Dattner Architects P.D.C.</i>
General Contractor:	<i>GC - DeMatteis/Darcon, Joint-Venture Steel Detailer/Erector - Owen Steel/Stonebridge Steel Erection</i>

Company Logo (insert .jpg in box below)



### Important Notes:

- Please .pdf your completed entry form and email to [bkoroncai@barrpino.com](mailto:bkoroncai@barrpino.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 York City Department of Sanitation (DSNY) has undertaken an ambitious project to construct a new vehicle maintenance and storage garage facility in lower Manhattan. The new facility will consolidate the fueling, washing, storage and maintenance operations of three distinct operating units – Manhattan Community Districts 1, 2 and 5 – when construction is completed in early 2015. The garage site formerly served as an open air trucking/trailer storage yard operated by United Parcel Service (UPS).

In conjunction with prime consultant Dattner Architects, Burns' Structures Group (formerly with Klein and Hoffman, Inc.) is responsible for structural engineering, design and construction phase services for the new multi-level, 400,000 SF facility that will consolidate these three Sanitation operating units and UPS' semi-trailer storage needs into one facility under a unique, shared-use cooperative arrangement. DSNY is the owner and designer agency for the project and New York City Department of Design and Construction is the managing construction agency.

The main operations block of the building will house a three-story vehicle garage with circulation ramps and parking for Sanitation collection vehicles and employee vehicles, a fueling station, a vehicle wash area and vehicle repair and preventative maintenance facilities to accommodate all three Sanitation districts. Most of the ground floor level will be occupied by UPS to store a variety of shipping trailers, varying in length from 28 to 53 feet. The remainder of the ground floor level will contain the main entrance to the DSNY personnel block, the DSNY fueling facility and vehicle ramps to the upper floors.

A seven-story personnel block situated along the south side of the building will provide administration offices and employee facilities for Sanitation staff separated by district and floor level. The design incorporates environmentally friendly, energy efficient building systems and materials wherever possible. The building is designed to blend aesthetically into the gentrified neighborhood and to achieve a LEED Silver certification in conformance with NYC Local Law 86.

The garage has been rigorously designed to accommodate the physical and operational challenges of a heavy industrial facility. The need for a widely spaced column grid to accommodate truck maneuvering, parking and repair of DSNY's collection vehicles and UPS' trailers presented the most significant structural design challenge. The superstructure weighs in at 11,350 tons of structural steel comprised of heavy wide flange sections, plate girders and jumbo columns to support the long-span truck floors. Due to poor soil conditions at the site and its proximity to the Holland Tunnel and the Hudson River bulkhead, the superstructure is supported on a grid of concrete-filled steel pipe piles and drilled caissons to support the heavy column loads on the underlying bedrock.

Innovative structural aspects of the facility include:

- Flood Protection: Since the ground floor elevation will be lower than the 100-year Manhattan flood datum, the perimeter walls and ground floor slab are designed to retain the height of the maximum anticipated storm surge, including a recurrence of Superstorm Sandy.
- Stringent Deflection Criteria: Floor and ramp framing is designed to accommodate fully loaded refuse collection vehicles with a maximum live load deflection criterion of  $L/800$  to limit vibrations.
- Exterior Box Trusses: Since the live load deflection of the long-span girders exceeds that of the curtainwall panels, the exterior box trusses located between the truck floors are designed to support the curtainwall dead and wind loads to satisfy the manufacturer's deflection criteria.
- Ramp Superelevation: Portions of the truck ramps are superelevated to prevent trucks from "bottoming out" around corners or snow plow blades from hitting the sloped ramps.
- Elevated Transformer Vaults: Four transformer vaults featuring blast-resistant concrete construction are situated on the third floor to satisfy Consolidated Edison's structural design and flood criteria for incoming electrical service.
- Long-span Trusses: Full floor height, long-span trusses are designed to support the interface between the multiple personnel floors and the truck floors while providing personnel access between these spaces.
- Stainless Steel Reinforcement: Stainless steel rebars are used at the truck and ramp floor slabs to resist corrosion from de-icing chemicals and extend the reliability and service life of the structure.

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



Image No. 1 - Architectural Rendering of the South and West Elevations

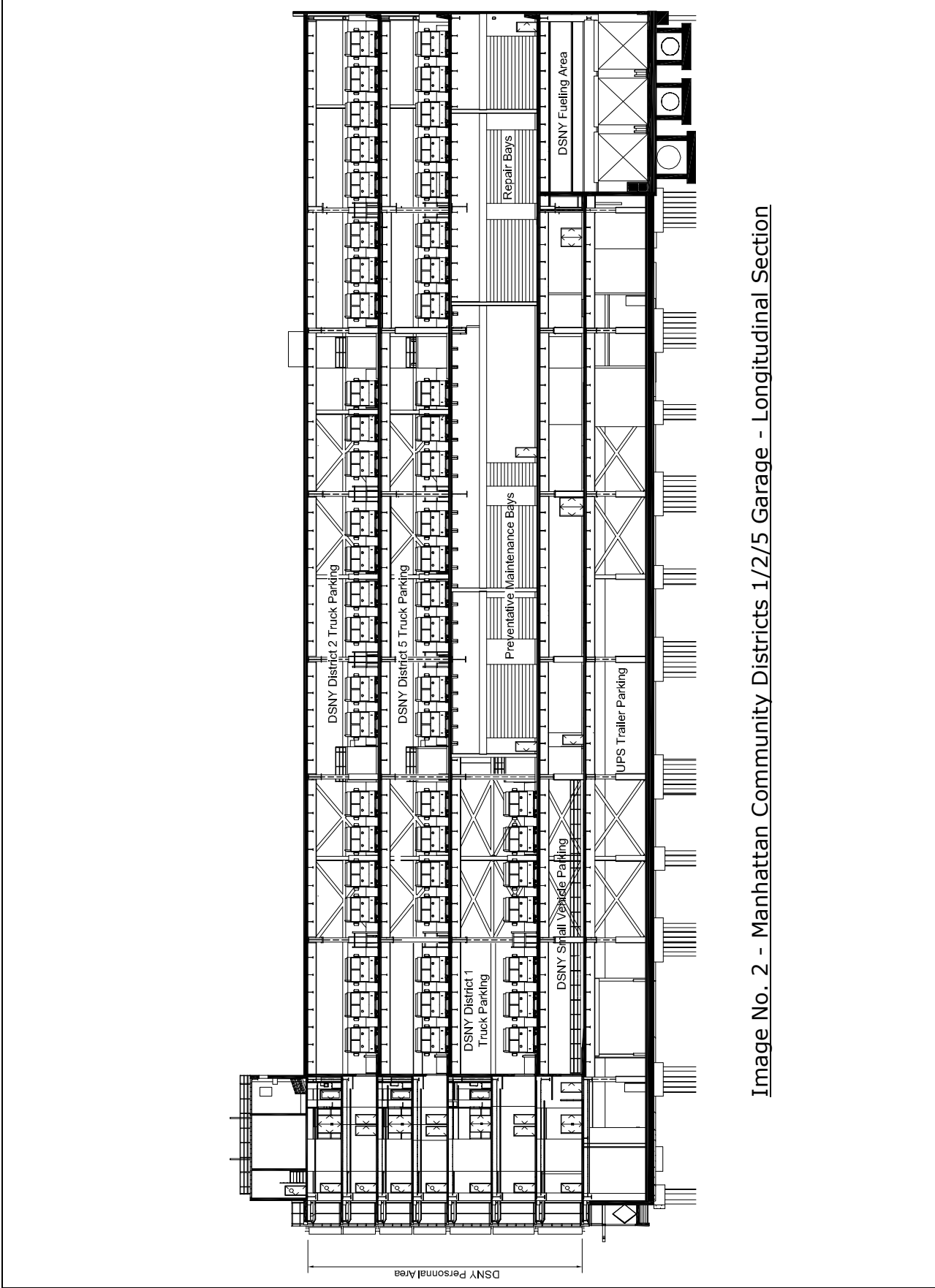


Image No. 2 - Manhattan Community Districts 1/2/5 Garage - Longitudinal Section

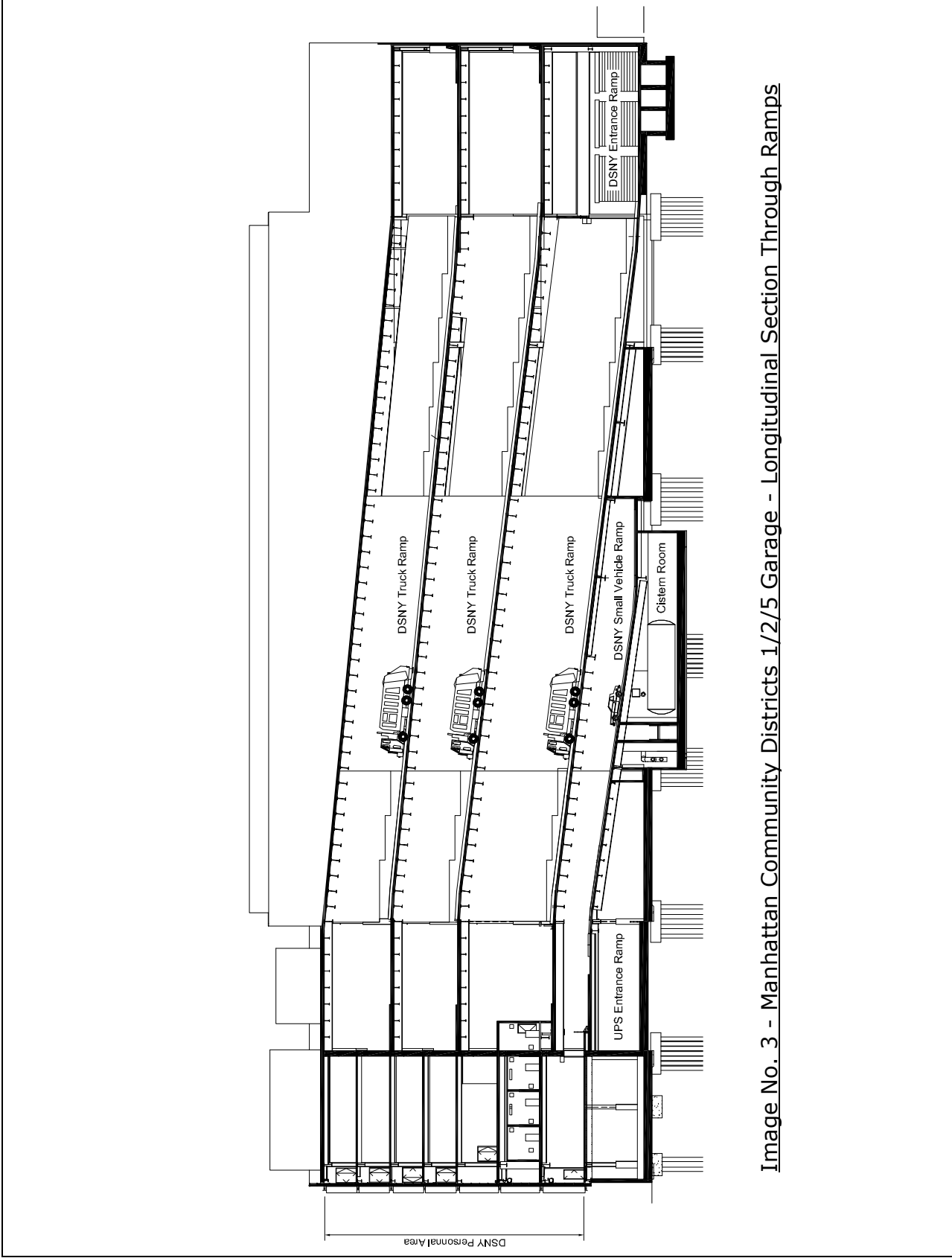


Image No. 3 - Manhattan Community Districts 1/2/5 Garage - Longitudinal Section Through Ramps

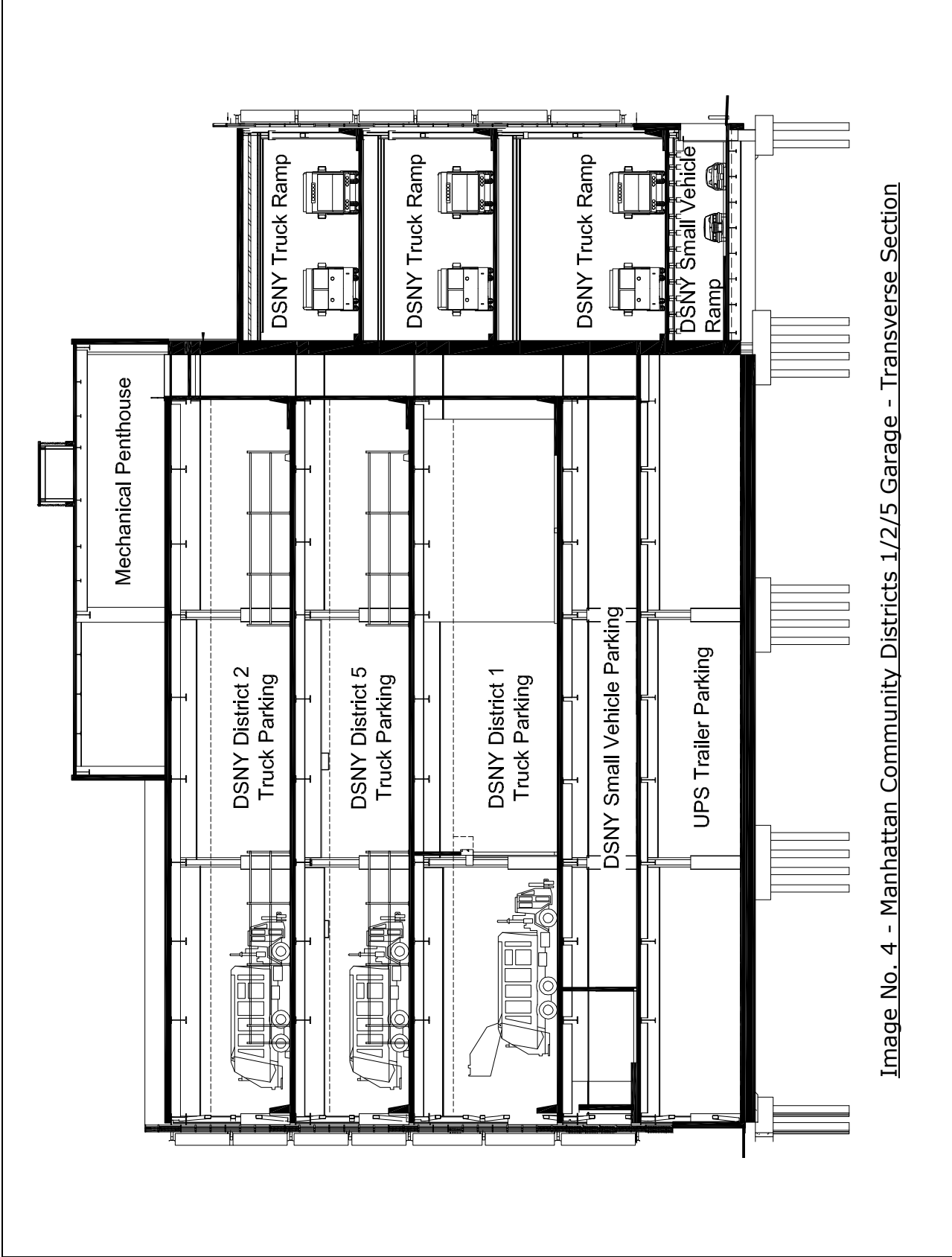


Image No. 4 - Manhattan Community Districts 1/2/5 Garage - Transverse Section

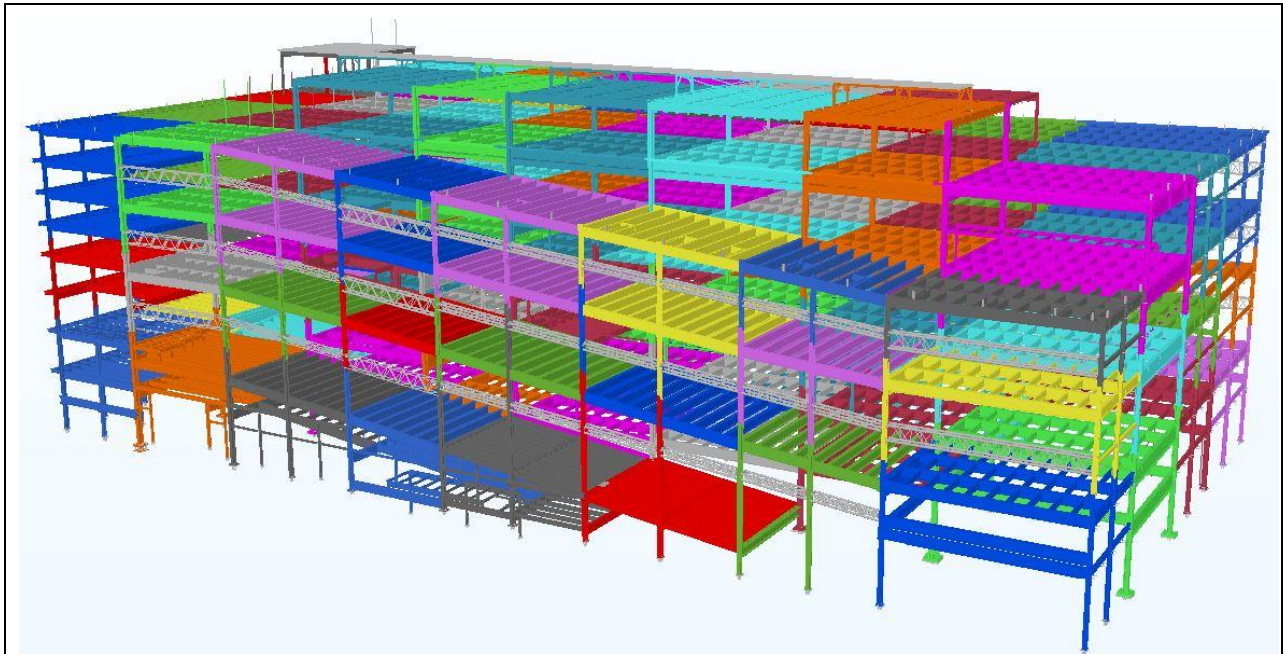


Image No. 5 - Structural steel model created by Owen Steel Company, Inc.




Image No. 6 - View of the full floor height trusses along Column Line 2 designed to support the personnel floor and the truck floor.

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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