

# ENTRY FORM



## DVASE 2018 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:	Est. \$1 Million
Name of Project:	QuVa Pharma, Inc.   North East Compounding Facility
Location of Project:	Bloomsbury, NJ
Date construction was completed (M/Y):	10/2017
Structural Design Firm:	Mainstay Engineering Group, Inc.
Affiliation:	<b>All entries must be submitted by DVASE member firms or members.</b>
Architect:	IPS
General Contractor:	Torcon

Company Logo (insert .jpg in box below)



### Important Notes:

- Please .pdf your completed entry form and email to [bsagusti@barrhorstman.com](mailto: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.

QuVA Pharma purchased an existing 160,000 SF facility in Bloomsbury, NJ to increase their manufacturing operations to meet current and projected sales growth. The building, known as "Building #2," is an existing warehouse structure with a partial second-floor office space.

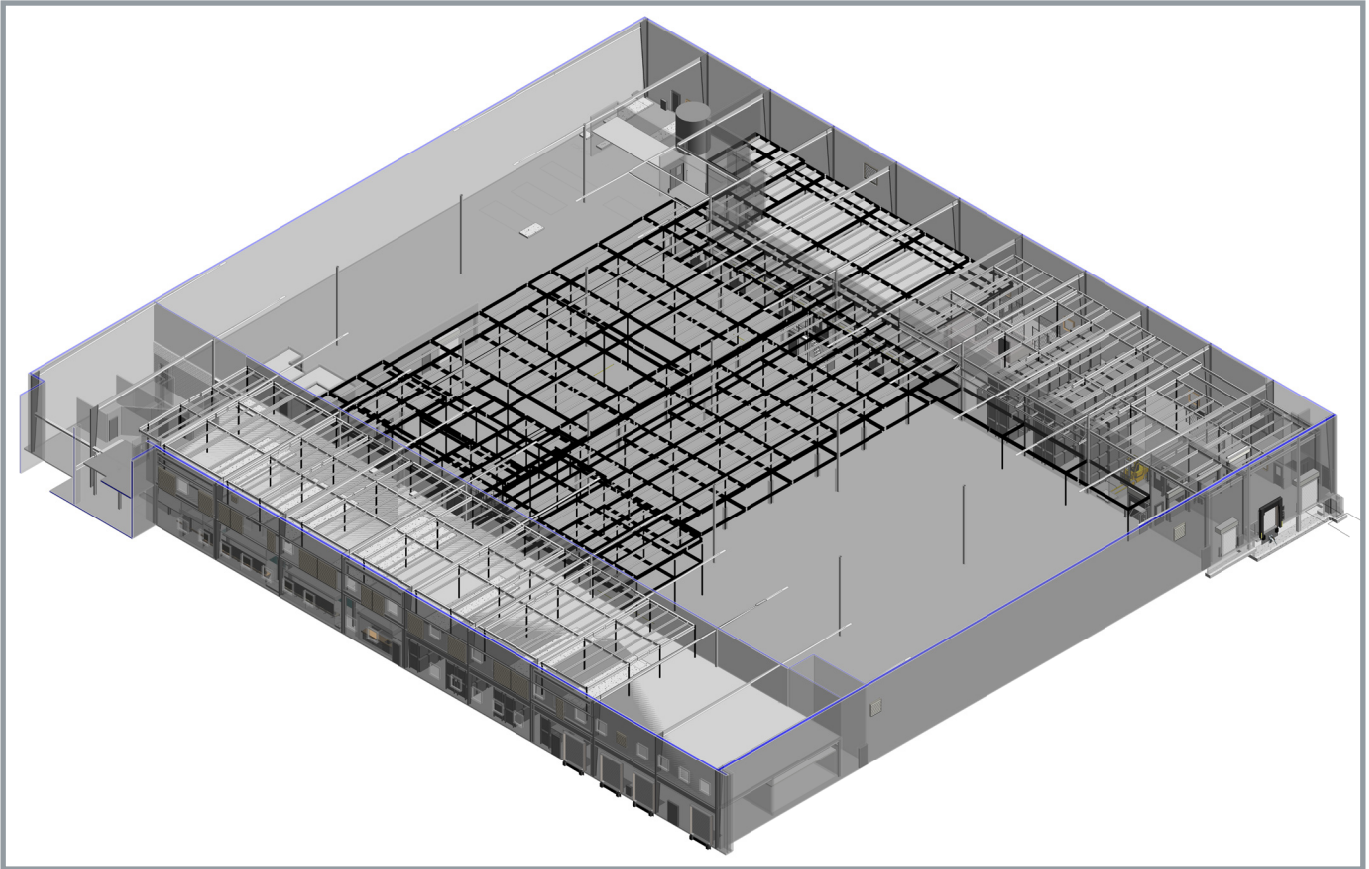
The existing warehouse structure consists of a high-bay pre-engineered steel frame building with an interior concrete and steel framed mezzanine installed following the original building construction. The existing roof structure was experiencing ponding and sagging under current load conditions which included minimal ductwork and fire sprinkler piping. The shallow foundations consisting of spread concrete footings, and floor consisting of a 6-inch thick concrete slab on the ground supports the main building structure and mezzanines.

The manufacturing area required heavy MEP loads of 30 pounds per square foot as well as hung walkable ceilings with a dead load of 10 pounds per square foot and a live load of 20 pounds per square foot. These loads could not be accommodated by the existing pre-engineered structure. The solution proposed was to construct a new steel framed structure within the existing structure. The new steel frame constructed within the existing building and completely independent of the existing building structure supports all the new ductwork, piping, and walkable ceilings.

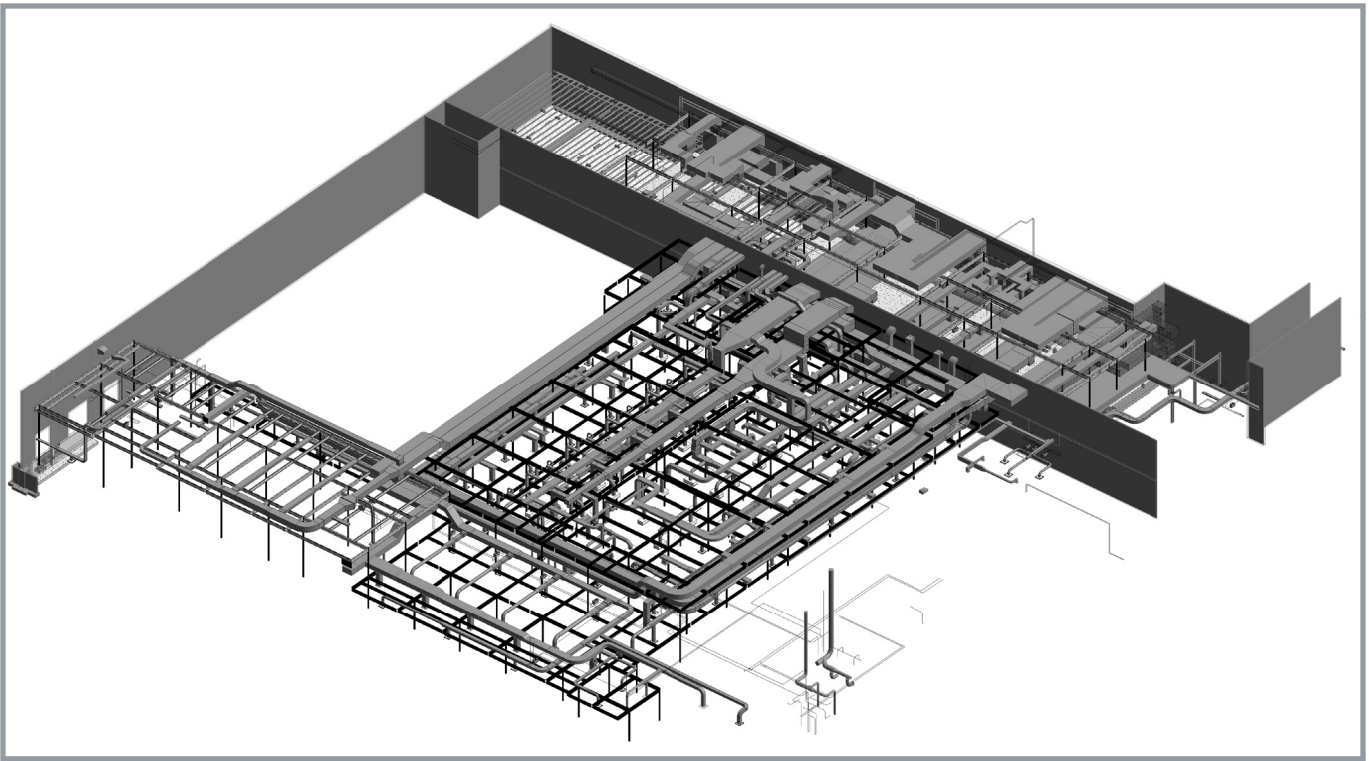
Design of this steel frame required close 3-dimensional co-ordination with all other disciplines throughout the design phase of the project. This was a challenge due to the fast pace of the project and the need for early design packages for both steel and foundations. Both structural and MEP utilized Revit modeling for the 3D analysis. Weekly clash detection meetings were held with both disciplines in order to ensure that the field clashes were minimalized. Ultimately, the two primary elevations of the ductwork required two levels of steel framing. The upper level held the ductwork mains while the lower level held the ductwork distribution to each of the manufacturing rooms. The architectural layout coordinates with the post location for the frames, in order to ensure that they are within the proposed low wall return chases adjacent to the manufacturing rooms. Beam locations were carefully selected so that they did not interfere with the air distribution through low wall returns. To keep the frame as economical as possible, the main girders were framed in rolled wide flange shapes and the infill beams were cold-formed box headers. This method also allowed maximum versatility for minor adjustments in the field.

The original mezzanine structure was designed to support the building code prescribed office floor loading conditions with a portion of the existing mezzanine designed to support a higher uniform floor live load of 130 psf. The mezzanine was converted to a mechanical space for the proposed air handling units. Existing mezzanine structure modifications were required due to the close spacing of the original mezzanine support framing and the large ductwork penetrations required out of the units. Several areas were reframed to accommodate the penetrations.

The project required two new loading docks along the south portion of the building. The construction of these loading docks required extensive underpinning and foundation modifications since the existing foundations were not deep enough to accommodate frost protection and a loading dock reveal.



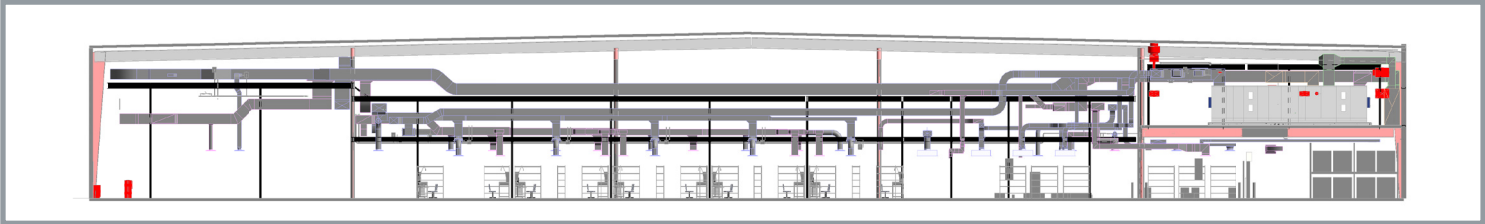
**NEW INDEPENDENT STEEL STRUCTURE WITHIN WAREHOUSE AND MEZZANINE AREAS**



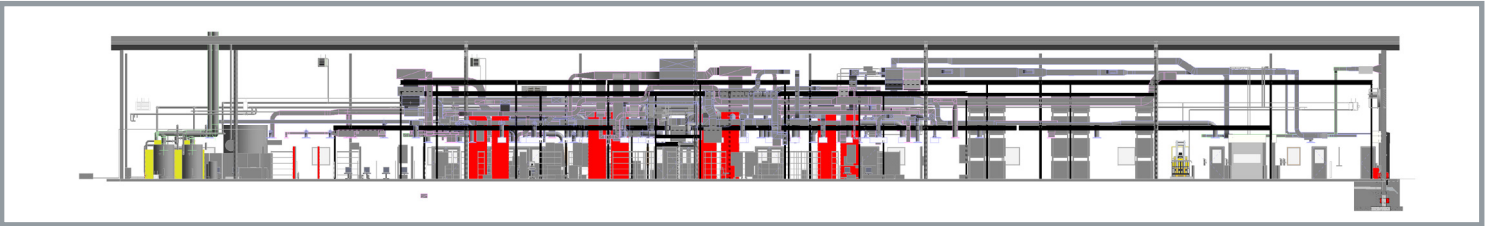
**NEW STEEL FRAMING INTERACTION WITH NEW DUCT WORK AND UTILITIES**

**QUVA PHARMA | NORTH EAST COMPOUNDING FACILITY**

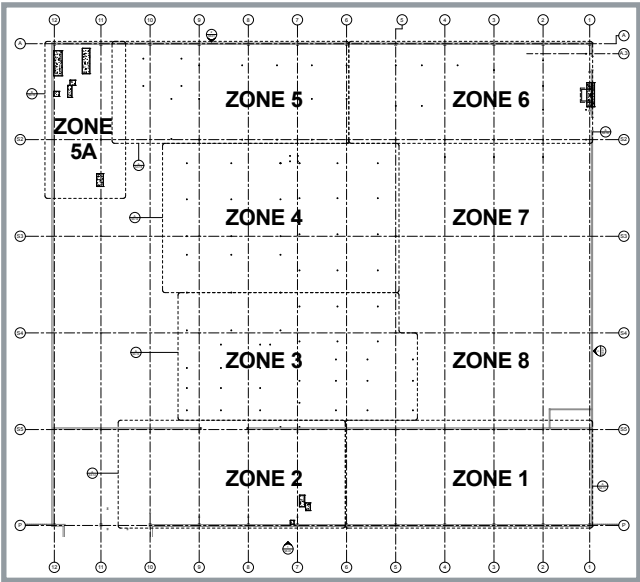
NEW STEEL STRUCTURE SUPPORTING NEW A/E/M/P SPACES AND EQUIPMENT  
CONSTRUCTED INDEPENDENTLY WITHIN AN EXISTING WAREHOUSE BUILDING SHELL



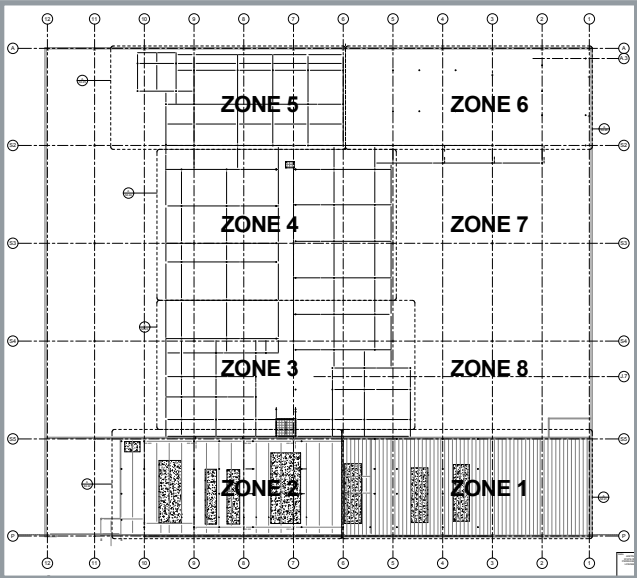
**NORTH-SOUTH BUILDING SECTION**



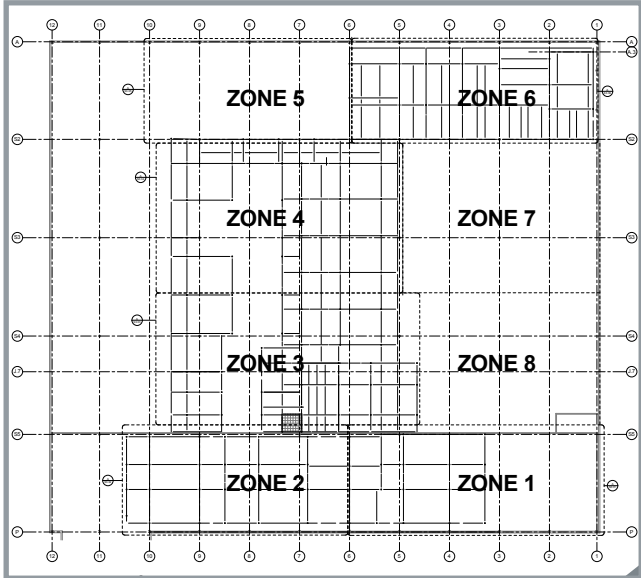
**EAST-WEST BUILDING SECTION**



**FIRST FLOOR**



**MEZZANINE / CEILING FRAMING**



**DUCT SUPPORT FRAMING**





EXISTING WAREHOUSE



EXISTING STEEL FRAME

NEW STEEL FRAME



QUVA PHARMA | NORTH EAST COMPOUNDING FACILITY



STAIR FROM  
EXISTING  
MEZZANINE TO  
ACCESS NEW  
WALKABLE  
CEILING

WALKABLE CEILING  
IN CORRIDOR

COLD FORMED INTERMEDIATE  
SUPPORTS DESIGNED TO SUPPORT  
CEILING AND MEP LOADS



NEW  
STEEL  
FRAMING

NEW  
COLUMNS

EXISTING  
COLUMNS

BASE COVING FOR NEW MODULAR WALLS  
(COORDINATED WITH NEW POST LOCATIONS)



QUVA PHARMA | NORTH EAST COMPOUNDING FACILITY



RED FRAMING  
IS EXISTING  
ROOF FRAMING

FRAMING TO  
SUPPORT NEW  
CORRIDOR  
WALKABLE CEILING



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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