

# 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		Other Structures Over \$1M	
Buildings \$40M - \$100M	X	Single Family Home	

Approximate construction cost of facility submitted:	Approximately \$80 million
Name of Project:	Pfizer's Project Lightspeed (COVID-19 Vaccine Facility)
Location of Project:	Kalamazoo County - Portage, MI
Date construction was completed (M/Y):	Ongoing (anticipated May 2021)
Structural Design Firm:	Mainstay Engineering Group, Inc.
Affiliation:	All entries must be submitted by DVASE member firms or members.
Architect:	IPS-Integrated Project Services, LLC
General Contractor:	The Austin Company   G-CON Manufacturing

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 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.

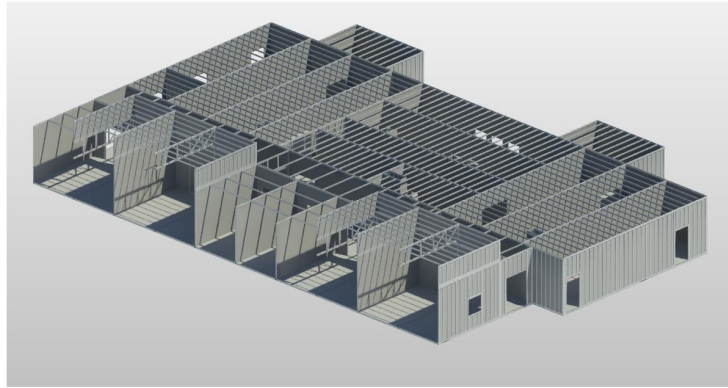
- Provide a concise project description in the following box (one page maximum). Include the significant aspects of the project and their relationship to the judging criteria.

Mainstay partnered with two different prime consultants, Integrated Project Services, LLC (IPS) and G-CON Manufacturing, on Pfizer US' Project Lightspeed. The project entailed modifying an existing warehouse area in order to accommodate production, storage and packaging of the COVID-19 vaccine. The project was on an extremely tight time schedule to keep up with the overall delivery schedule for the vaccine.

The project included the following pieces:

1. The project involves over 300 freezers and 5 blast freezers to keep the product cold prior to shipping. Structural scope for the installation of the freezers included:
  - a) Structural analysis of the existing building for new utilities being hung from the underside of the structure.
  - b) Structural design and documentation for framing to support the pipe, ductwork and electrical distribution above the proposed freezers.
  - c) Structural design and documentation for an access platform above the blast freezers.
  - d) Civil and structural design and documentation for a new nitrogen tank support pad outside the building.
  - e) Structural design and documentation for the support of vents through the roof above the blast freezers.
2. The project involved a new Dry Ice Packing line to keep the product cold during shipping. The following structural scope was required to support this new packaging line:
  - a) Civil and structural design and documentation for a new concrete equipment pad that will accommodate a new chiller and five new CO2 tanks outside the building in the loading dock area. Storm and sanitary utilities will need to be relocated out of the footprint of the pad.
  - b) Structural design and documentation for pipe supports on the pad outside and throughout the existing building.
3. The manufacturing portion of the project was comprised of 27 individual aluminum transportable POD structures which were constructed off-site with equipment and clean room components installed. Each POD is transported on flat bed trailer and craned into the existing warehouse where they were then floated into place with air-bearings into their final locations and bolted into a matrix that comprised the clean room space for vaccine manufacturing. Each of individual POD structures was designed to withstand loading from trucking and rigging operations as well as the long-term loading once in place. Six of the POD structures include a "high hat", or stacked POD scenario to allow for taller equipment, with the top POD lifted in the air and the lower PODs slid under them. The majority of the PODs are open on one side with shallow Vierendeel trusses spanning the length allowing for passage of utilities between PODs.
4. In preparation for plugging the pods into the existing warehouse facility, the following structural scope was required to prepare for the new PODs:
  - a) Structural design and documentation for a new rooftop platform (approximately 50-feet by 90-feet) for the support of mechanical equipment. The new platform was supported by new posts down through the building to new foundations.
  - b) Structural design and documentation for new access platforms and pipe supports around the perimeter of the PODs and above the PODs.
  - c) Evaluation of the existing slab on grade for loads imposed by the proposed PODs.

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



Revit Image Rendering of Grouped Aluminum Transportable Pods in an Array to make up the Vaccine Suite. This image is cut to show the internal structural elements of the Grouped Aluminum Transportable Pods.

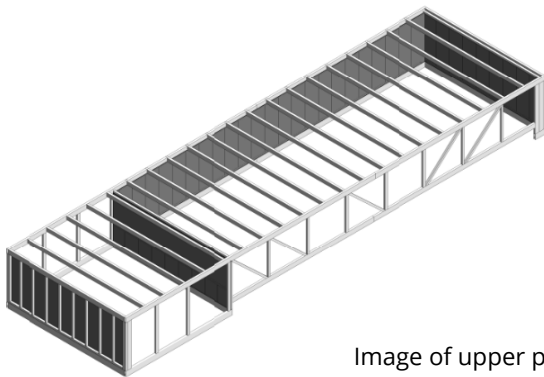


Image of upper pod (Showing Truss)

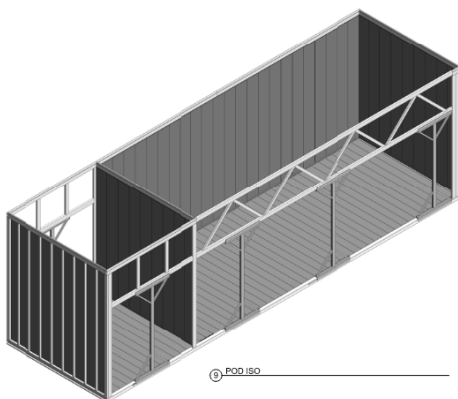
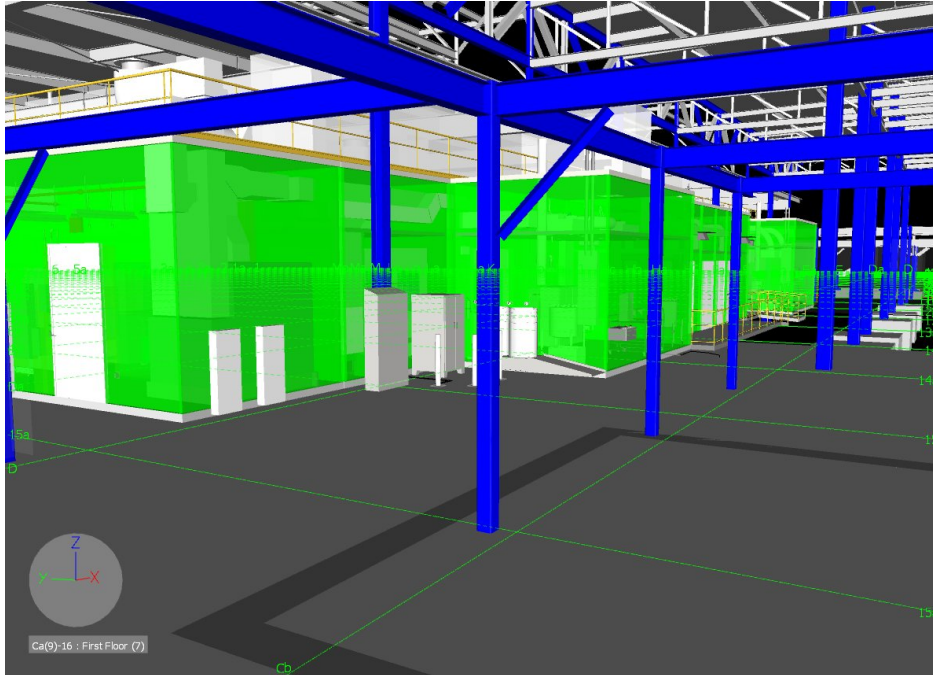
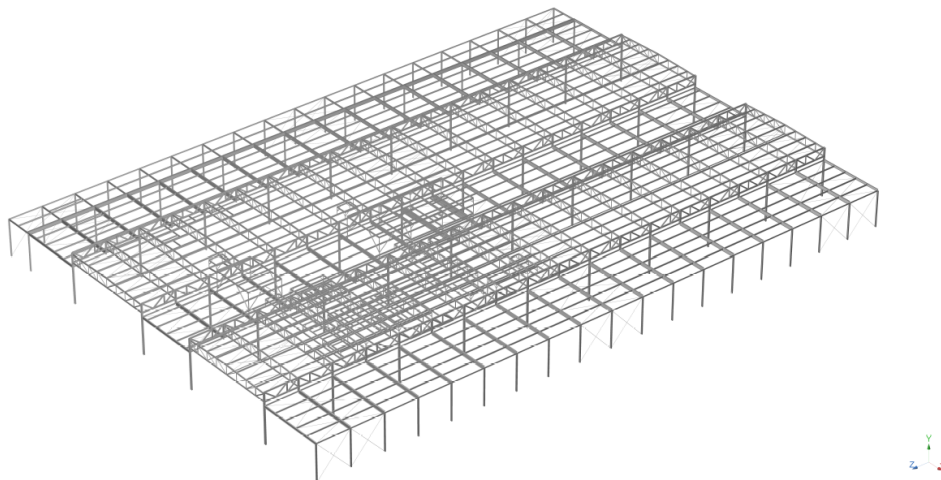


Image of single lower level pod (Showing Truss)



Navisworks image showing Steel retrofit of existing parent building for support of utilities, and new clean room facility pods.



Analytical Model of Existing Building

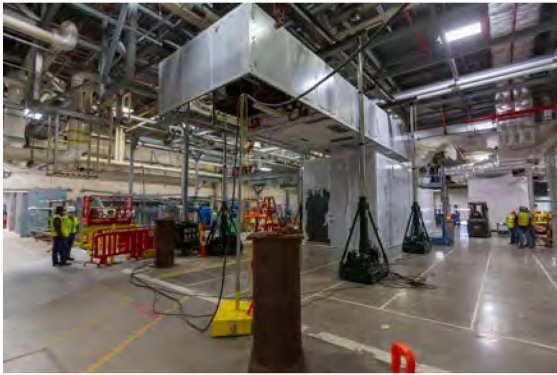




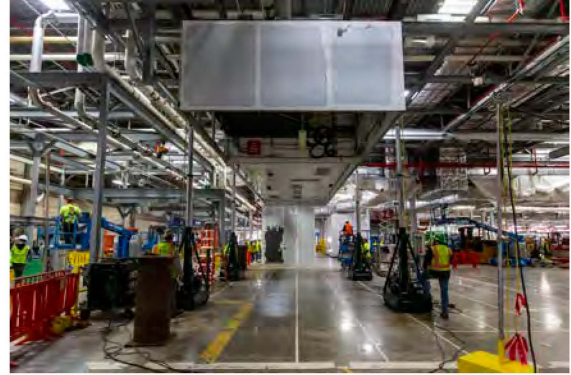
Pod delivery day when President Biden was on site.



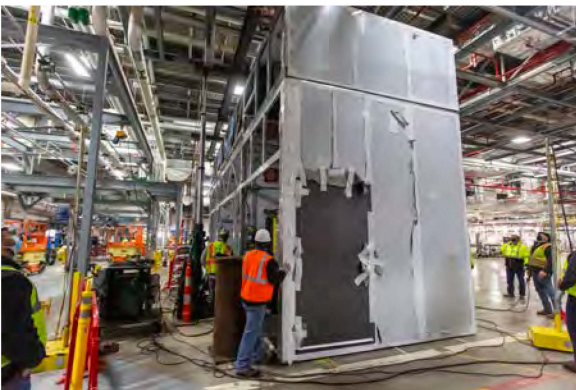
Crane lifting pods into the existing warehouse dock door.



Upper level pod (Hi-Hat) lifted into place with lower level pod being floated in underneath.



Upper level pod (Hi-Hat) lifted into place with lower level pod being floated in underneath. (alternate view)



Upper and lower level pods being married into place.




Image showing aluminum trusses of single section pod allowing for open clean room span.

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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