

ENTRY FORM



DVASE 2020 Excellence in Structural Engineering Awards Program

PROJECT CATEGORY (check one):

| | | | |
|--------------------------|-------------------------------------|-----------------------------|--------------------------|
| Buildings under \$5M | <input checked="" type="checkbox"/> | Buildings Over \$100M | <input type="checkbox"/> |
| Buildings \$5M - \$15M | <input type="checkbox"/> | Other Structures Under \$1M | <input type="checkbox"/> |
| Buildings \$15M - \$40M | <input type="checkbox"/> | Other Structures Over \$1M | <input type="checkbox"/> |
| Buildings \$40M - \$100M | <input type="checkbox"/> | Single Family Home | <input type="checkbox"/> |

| | |
|--|--|
| Approximate construction cost of facility submitted: | Undisclosed |
| Name of Project: | Starbucks at Dilworth Park |
| Location of Project: | Philadelphia, PA |
| Date construction was completed (M/Y): | 05/19 |
| Structural Design Firm: | CVM |
| Affiliation: | All entries must be submitted by DVASE member firms or members. |
| Architect: | DAS Architects |
| General Contractor: | Seravalli, Inc. |

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.

In 2015, Center City District of Philadelphia (CCD) transformed the neglected, below-grade Dilworth Plaza into Dilworth Park, a hardscaped, street-level public gathering space featuring a cafe, fountain, landscaping and access to transit. As structural engineer for that project, CVM reviewed historical documentation for the multiple vintages of construction that make up the area, and designed structural systems that accommodated the increased structural and planting loads while coexisting with the below-grade rail transit infrastructure. CVM made use of this experience and expertise in 2019 when CCD added a second cafe—a Starbucks branch—on the south end of the Park.

A prefabricated kiosk, the cafe arrived at Dilworth Park with all interior finishes, equipment and MEP services in place. A three-piece unit, the kiosk consists of one 12'-0" x 40'-0" section, one 8'-0" x 17'-0" section and a canopy section. The two main pieces are framed with a perimeter steel channel and dimensional wood floor framing infill, wood framed walls, and wood roof framing. Steel beams and engineered lumber were used at select locations of large openings. The canopy is a steel-framed structure that connects back to the main unit. The facade around the building, designed by DAS Architects, is composed of terracotta tile and back-painted ceramic glass panels. A greenscreen is located around the perimeter of the back elevations.

Prior to the kiosk's arrival, site preparations were underway, including the foundation, which was the focus of CVM's design effort. The foundation is made up of reinforced concrete wall footings and foundation walls with steel embed plates located at various locations on the top of the wall for attaching the kiosk to the foundation. There is a crawlspace below the kiosk's framed floor, which functions as a service access to make the necessary MEP connections.

Much like the creation of Dilworth Park, the most challenging aspect of the project was dealing with the existing structures buried below the plaza. Underground pedestrian tunnels, trolley tunnels, concrete encased duct banks and stormwater structures all flanked the cafe's new foundation. CVM's knowledge of these existing below-grade elements was essential in siting the cafe. CVM also recommended excavating down to the top of the existing tunnels and backfilling with foamed glass aggregate to reduce the load on the tunnels. A load swap was also performed with the existing backfill for the new kiosk and lightweight fill to prevent overloading the existing tunnels below.

Despite our knowledge of the site, flexibility was still required in design. Based on research performed during the project's early stages, the cafe's foundation was assumed to straddle an existing duct bank only a few feet below grade. The bank's actual existence, though, as well as its exact location were subjects of debate. The contract documents were developed to accommodate the duct bank and also contained an alternate in the event the duct bank was not present. After excavation, it was found that the bank existed, but it was slightly higher than what was first thought. This resulted in the crawl space of the kiosk being divided into two separate compartments. Reinforced concrete beams are integrated into the foundation walls to span over the duct bank supporting the kiosk.

Once the site was ready, final delivery was arranged and the installation occurred overnight. A large crane was setup next to Dilworth Park, and trucks hauled the three sections of the kiosk through Center City. After the kiosk was set into place, it was made operational by connecting the systems, installing the facade and green roof and attaching it to the foundation, all of which took place by the next morning. The new cafe was open to the public within two weeks of its installation. CVM's understanding of this site was critical to the success of the project.

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



The new Starbucks kiosk at Dilworth Park



*Aerial view of
installation process
(above) and the
completed site (left)*



Installation of the green roof

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:

| | | |
|--|---|--|
| Print name: Dan Donnachie, PE | Signature:  | Date: 5/22/20 |
| Submitting Firm: CVM | | |
| Mailing address: 1002 West 9th Avenue King of Prussia, PA 19406 | | |
| Telephone: 610.989.3800 | Fax: 610.989.3677 | Email: jcumpson@cvmprofessional.com Marketing Coordinator |