

Harry H. Edwards Industry Advancement Award

Dodridge Street Bridge

Franklin County, Ohio

Owner	Franklin County Engineer's Office, Columbus, Ohio	Precast Concrete Specialty Engineer	GPD Group, Columbus, Ohio
Engineer of Record	E. L. Robinson Engineering, Columbus, Ohio	Contractor	J. D. Williamson Construction Co. Inc., Tallmadge, Ohio
Project	Janssen and Spaans	Project Cost	\$7,520,000
Engineer	Engineering Inc., Indianapolis, Ind.	Bridge Length	256 ft (78 m)
Precaster	Prestress Services Industries LLC, Lexington, Ky.	Photos	E. L. Robinson Engineering of Ohio Co.
Bridge Architect	Bridgescape LLC, Columbia, Md.		

“These engineers pushed spliced precast, posttensioned concrete U girders to a new length using a tie-down span.”

Special Awards Jury

The new Dodridge Street Bridge over the Olentangy River serves as a gateway into the Olde North neighborhood in Columbus, Ohio. The new structure handles more than 14,000 vehicles per day while also serving as a pedestrian path for local residents. "It is a unique bridge that local residents are proud to use as a landmark reference," says Rick Engel, vice president and lead structural engineer at E. L. Robinson Engineering, the engineer of record for this project.

Because the bridge is so important to the community, residents were given a chance to choose between a steel design and a precast concrete design for the new structure. They overwhelmingly chose the precast concrete option, Engel says. "They wanted the bridge to have a little pizzazz, and the precast concrete design had a special look."

Engineers of the new bridge, which replaced a deficient 206 ft (63 m) long two-span structure, employed an innovative, aesthetically enhanced design consisting of a three-span posttensioned concrete girder superstructure that is anchored on each end in hidden tub girders.

The architectural geometry of this bridge required the smallest structural section where peak design demand occurred, posing a significant design challenge," Engel says.

The two hidden end spans balance the effects of having a slender main-span structure. Tie-down anchors were used to provide stability for the bridge, which is other-

wise unbalanced in its three-span configuration. The tub girders were posttensioned in stages as dead load was applied to allow the girders to function as continuous beams, despite the appearance of a single-span gentle arch.

Achieving this delicate balance wasn't easy, Engel says. "The construction of this bridge required a careful sequencing of the posttensioning and tie-down forces to ensure the tub girders were stable throughout all stages of construction and at no time overstressed."

The design team also learned early in the planning phase of the project that there was a high volume of special needs individuals who use the bridge daily to access a nearby bus stop. To ensure their safety, the engineers incorporated a wider separated sidewalk and shoulders. Wider travel lanes, and improved roadway geometrics and street lighting, also increase safety for pedestrians and vehicular traffic and provide an opportunity for future bike lanes.

The project achieved further savings and environmental goals by recycling existing abutment blocks to support the new bike path retaining wall on the Olentangy River Greenway, which will allow users to navigate the trail while appreciating the aesthetic bridge features.

Both community members and the bridge owner are pleased with the result, Engel says. "This aesthetically pleasing structure will provide local residents with a beautiful gateway that can be enjoyed for decades."

