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The Parsons Avenue Streetscape Project refreshed a corridor in the historical Olde Towne East neighborhood.

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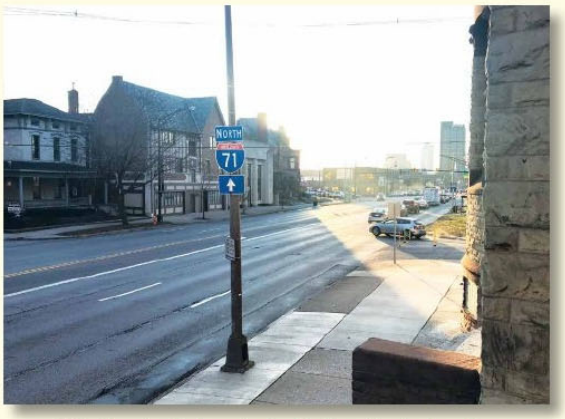
Innovative Design Elements for Columbus, OH, Streetscape Project

by Nathan Fischer, PE, Woolpert Project Manager and Senior Associate, **ASHE Central Ohio Section**

The renovated stretch of Parsons Avenue

The Ohio Department of Transportation's (ODOT) goal to improve I-70 and I-71 through Columbus included work on both ends of the Parsons Avenue Streetscape. In June 2014, Columbus selected Woolpert to provide preliminary engineering and design services for the complete reconstruction of this 0.16-mile stretch of Parsons Avenue. It extended from Franklin Avenue to Broad Street in the Olde Towne East neighborhood. One of the city's largest and oldest neighborhoods, Olde Towne East has more than 1,000 homes that date back to the 1830s representing roughly 50 architectural styles.

In addition to providing a structurally upgraded, aesthetically pleasing and environmentally advanced streetscape, the project was designed to improve corridor access by adding a westbound turn lane from Broad Street onto Cassady Avenue, on-street parking and bike facilities.



Woolpert collaborated with the city to develop a layout suitable to all stakeholders.

Challenging Design

According to Craig Goodnight, Woolpert lead engineer, nearly every aspect of the Parsons Avenue Streetscape Project was complex. "It was a challenge to create a design that met project goals within the existing conditions," he said. "We were tasked with connecting the existing roadway, adhering to ODOT's plans for this site and a separate city project to clear utilities while meeting the needs expressed by the community."

Woolpert began the project by collaborating with the city to develop a layout suitable to all stakeholders. The project was also presented to the Northeast Area Commission, which acts as a liaison between neighborhood groups, property owners, developers and the city. The group's feedback was considered during the design.

The next step was finding space underground to relocate utilities and accommodate a new water main, storm sewer, interconnect, ODOT fiber run and streetlight circuit. Multiple privately owned utilities also needed to relocate their infrastructure to accommodate construction. Further complicating the project was the presence of a shallow underground electric duct that could not be relocated or impacted. Quality Level A subsurface utility engineering services were applied at six locations. The team also coordinated at 11 other test holes performed by the utilities.

Maintenance of traffic during construction also presented significant challenges. The project team needed to reconstruct the entire roadway, from building face to building face, while maintaining vehicular traffic and a safe pedestrian pathway for neighborhood business patrons and residents. Northbound traffic through the project area was detoured, and southbound traffic was maintained. Temporary walkways and ramps helped maintain pedestrian access though the work zone and to local businesses.

The new granite curbs, street trees, downtown-style streetlights, signal poles and street signs provided stark contrast to the previous neighborhood features. Street furniture, such as trash cans and benches, was selected and placed. The city added a public art component to the project, requiring Woolpert to work with Ohio artist Olga Ziemska to find space within the project for the art, while maintaining ADA pathways and intersection sight distance. Ziemska's art is scheduled to be installed this year.

During the project design period, Columbus began upgrading to LED streetlights. Because the city had not yet finalized its preferred specifications, the design team analyzed available options and helped the city select the system best suited to its needs. The city also requested that permeable brick pavers selected for the project be tested to ensure they did not turn white due to efflorescence.

The city's established design standards and preferences also had to be integrated, and this project needed to blend into another ODOT project that called for more decorative styles. Woolpert worked with the city to ensure standards and styles were aligned.

Innovation Elements

This project offered the opportunity to trial innovative concepts and products:

- Flexi-Pave permeable tree surrounds were installed instead of traditional tree grates. Made from recycled tires, Flexi-Pave cleans water by removing phosphates and nitrates and is resistant to freezing, thawing and most chemicals. It absorbs the impacts of tree roots over time, unlike metal tree grates that can create tripping hazards.

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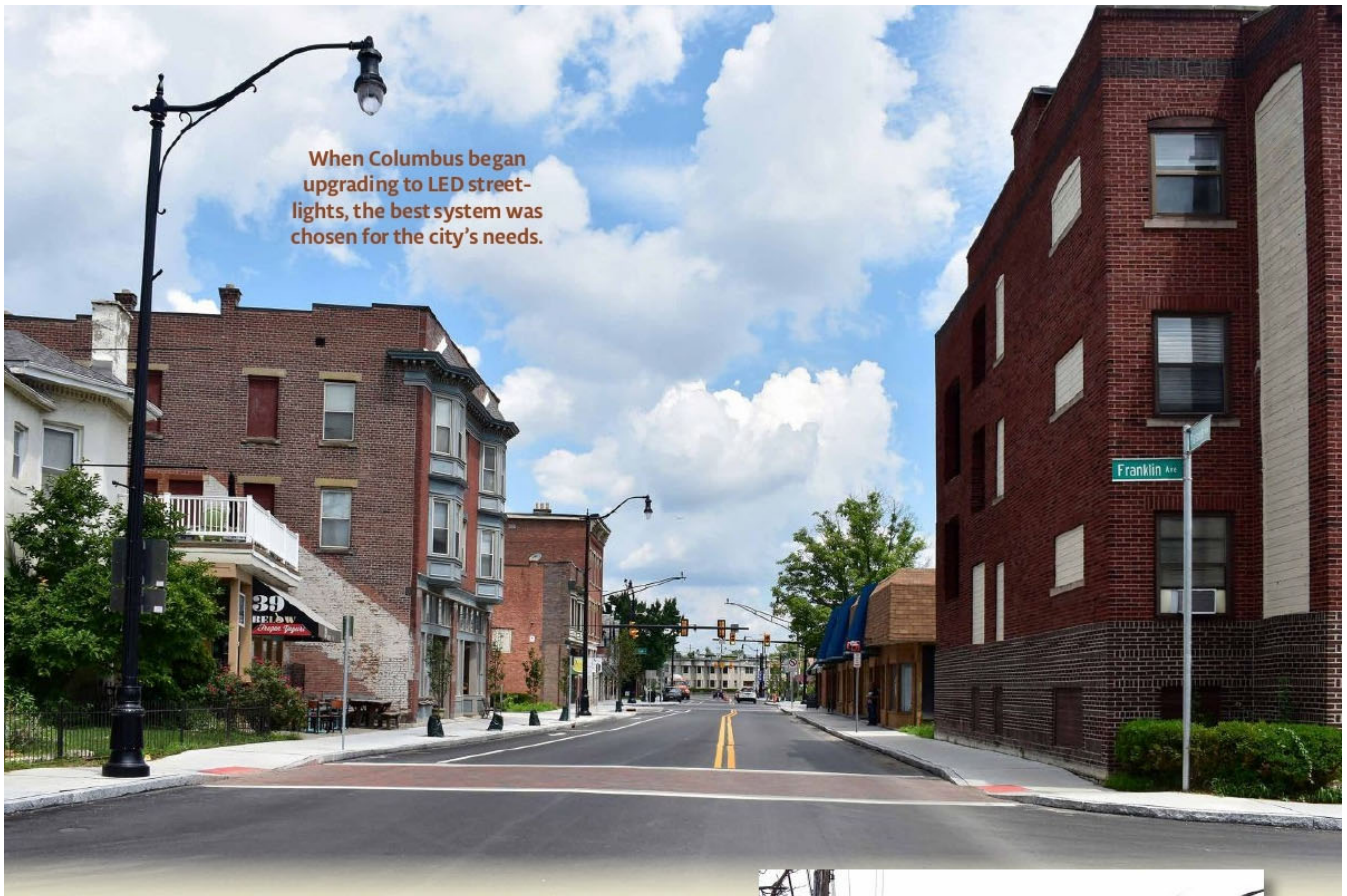

When Columbus began upgrading to LED streetlights, the best system was chosen for the city's needs.

Innovative Design Elements for Columbus, OH, Streetscape Project *(continued from page 25)*

- Silva Cell, a modular suspended soil system, was used under the sidewalks around the street trees, allowing for a looser soil mix and better growth environment for the street tree roots.
- The permeable brick pavers were placed in parking bay and along one alley to collect stormwater. The stormwater filters between the bricks and is stored in a stone layer under the pavers where it is slowly released into the storm system.
- The city, which had only used limited LED street lighting on post-top and traditional cobra head fixtures, wanted to tie this project into future area projects and expand its use of LEDs in teardrop fixtures. A street lighting feasibility study was performed for adding LED streetlights to the project in lieu of traditional high-pressure sodium lights.

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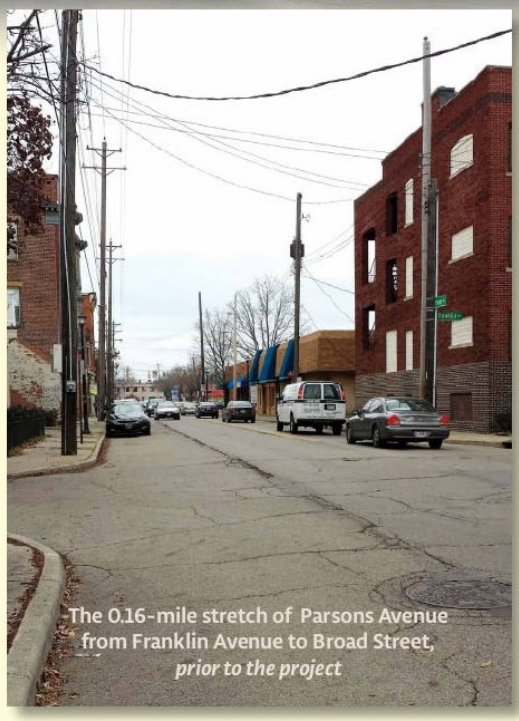

The 0.16-mile stretch of Parsons Avenue from Franklin Avenue to Broad Street, *prior to the project*

Construction on the streetscape began in April 2017, and the roadway reopened to normal traffic patterns in June 2018, with the substantial completion of construction in June 2019. The total design cost was $461,429. Construction costs were estimated at $3,528,492 with an awarded bid of $3,775,972.

Although there were many challenging elements to juggle in this project, collaboration between the city, its stakeholders and Woolpert led to a form and function that would most benefit the region.

"This project enhances the mobility, safety and quality of life for our residents and visitors," said Jennifer Gallagher, director of the Department of Public Service for Columbus. "It used an innovative and thoughtful approach that retained the uniqueness of the neighborhood, while expanding the vitality of a critical avenue for continued prosperity of its residents and businesses."