

New Generation of Travel Plaza

John Steinbeck wrote back in 1960 that the Interstate Highway System would someday enable motorists to drive coast to coast and “never see a thing.” However, there is something new worth seeing along I-95 in Delaware.

Since they began catering to road-weary travelers in the 1960s, service plazas along the nation’s 46,876 miles of Interstate Highways have become as visually boring as the mileage markers between state lines. Most are now dated in both design and mix of services because replacement of deteriorated pavement by state departments of transportation has been a higher priority than upgrading or replacing service plaza infrastructure. An exception is the recently completed Delaware Welcome Center, a replacement facility developed and operated by HMS Host, along the Delaware stretch of I-95. This eye-riveting blend of stone, glass, and metal sets the pace for the next generation of these facilities. With its distinctive curvilinear roof, generous expanse of glass curtainwall, and contemporary mix of food and other services, this facility

raises the bar for what is built elsewhere down distant highways. The two-building complex, which includes a separate Sunoco fuel center and convenience store, began operating earlier than expected in June 2010 on a 35-year lease from the state.

HMS Host wanted to create a unique design statement for what is the only service plaza along I-95 in Delaware. The result is far removed from the typical grab-and-go for food, fuel, and a visit to the restroom. This one should produce a memorable stop for travelers.

CHA, Inc. (Albany, NY) provided overall project management, civil engineering, and landscape architectural design. The New Jersey and Philadelphia offices of Environetics (www.environetics.com) served as the project architects, struc-



tural, mechanical, plumbing, and electrical engineers. EDiS Companies (www.ediscompany.com) was selected as the construction manager-at-risk for a Guaranteed Maximum Price contract. Although competitively bid, the design team and EDiS quickly worked together in refining the design and specifications to adhere to the state's desire for LEED standards. The finished facility has, in fact, been submitted for certification by the US Green Building Council.

EDiS was given only nine months to complete a project that would normally require a 13-month schedule. The main building and site work were the exclusive responsibility of EDiS, although its contract included the subgrade work for the replacement fuel center and convenience store developed by a Sunoco team. The EDiS contract called for completion by July 1, 2010, although the construction manager delivered the plaza fully operational on June 24. This was achieved despite losing 97 days to work-paralyzing rain events. The project's more than 120 workers made up for the lost days by working many times from 7 a.m. until 11 p.m.

Even under normal conditions this project would present a challenging schedule. Therefore, EDiS applied BuildingBlok™, a new web-based construction management system, as an important tool for managing the project which had 18 sub-contractors. Change orders alone eventually reached 66 items worth a total of \$800,000 and a high amount of payouts every month. The change orders stemmed mostly from unforeseen site conditions involving waste material from the original center's construction waste and VOC contamination from years of fueling operations.

EDiS collaborated for two years in developing the BuildingBlok construction management system with IT entrepreneur Justin Nolan who was inspired by his earlier experience working as a project close-out specialist for a prominent construction services consulting firm. From the earliest vintage punch list tool he developed, Nolan and EDiS evolved his technology into a comprehensive web-based system that puts all those involved in a project—owners,

architects, engineers, managers, and sub-contractors—on the same secure webpage updated throughout the construction process. Field managers on the project site use their iPhones to update, share, and store critical documents on the webpage, including change orders, requests for information, submittals, blueprints, reports, schedule status, punch lists, and other related communications. Changes or required actions notated on blueprints can be referred to on the iPhone screen, and voice mails stored for transcription along with information compiled off-line for later uploads. Instead of cumbersome walkie-talkies, reams of exchanged documents and larger handheld electronic devices common now in field communications, the BuildingBlok uses an iPhone application. The technology inherently enforces accountability and allows managers to act sooner on issues.

Design Traits

Environetics established the Delaware project's floor plan primarily on a north/south axis with the 36-ft high main entrance facing the northside parking lot. The east/west axis provides covered entrances for commuter and tourist buses. This axial arrangement quickly orients travelers upon entering the center where they are met with an unobstructed view throughout the large central dining hall. As important here as in a sports stadium, multiple restrooms are provided off this pivotal main space, which eliminates anxious lineups that occur with arriving buses.

Although clearly a contemporary building, the 42,657-sq ft facility shares some concepts with the monumental rail transportation centers of the past. It has the vaulted high space over a dynamic core space with support and fast-service food businesses—Starbucks, Burger King, Popeye's, and Zmarket to name a few—situated to the side. Additional tables and seating exist at an open-air patio to one side of the building's frontage. The bold, curvilinear standing seam metal roof was supplied by Centria (www.centria.com). The generous amount of low-emissivity glazing supplied by Guardian incorporates a

frit pattern (dots) applied by JE Berkowitz to the inboard lite of the insulated glass. The glass rises at a 14-degree angle from the base, which suggests on a smaller scale the geometry and angular glazing of some airport terminals designed by Eero Saarinen. Centria also supplied the architectural metal wall panel system used in tandem with buff-colored stone veneer and polished architectural block.

This building's emphasis on daylighting, green materials, and energy- and water-conserving equipment are the evident traits of sustainable features for LEED registration. Unseen are the 60, 450-ft deep wells for the HVAC system's geothermal 2 1/2- to 6-ton rated water-source heat pumps controlled by an energy management system, all by Trane. Other energy-conserving features include makeup air units with variable speed drives to offset kitchen exhaust.

Environetics engineers also specified water-conserving restrooms that include hands-free low-flow faucets and waterless urinals whose motion sensors use light to charge a highly efficient capacitor, providing power even in rooms with occupancy-controlled lighting. The overall specifications also emphasized locally manufactured products to reduce transportation. EDiS applied a waste-management plan that recycled as much as possible to reduce landfill hauls. **GE**



BuildingBlok™ web-based construction management system was used to manage the project, which had 18 subcontractors. iPhones were used to update progress.