

Sustainable Landscaping

Written by By David M. Brown

Valley architectural firm **Architekton** is participating in a private-public team that hopes to certify the award-winning **Tempe Transportation Center** under a new program establishing voluntary guidelines and benchmarks for sustainable landscapes.



As part of the pilot Sustainable Sites Initiative™, the multi-modal center, Fifth Street and College Avenue, joins approximately 175 projects in 34 states as well as Canada, Iceland and Spain applying for accreditation from the first rating system covering green landscape design, construction and maintenance.

The SITES program is designed to encourage commercial, residential and municipal developments, with and without buildings, to create sustainable landscapes that are forward thinking and socially beneficial — promoting desirable outcomes such as cleaner water, reduced pollution restored habitats and pedestrian-friendly urbanscapes. The program is sponsored by the Lady Bird Johnson Wildflower Center at The University of Texas at Austin, the American Society of Landscape Architects and the United States Botanic Garden. During the past four years, more than 15 other organizations and 30 professionals have also participated in developing the rating system.

“Landscapes can be designed, constructed and maintained so as to rebuild the environment’s capacity to clean our air and water, reduce the local heat island effect, provide critical wildlife habitat, reduce flooding — and even increase property values,” says John F. Kane, FAIA, LEED AP, principal of Architekton and co-designer of the Tempe Transportation Center. “We have undervalued our landscapes in terms of what they could do for us, settling for attractive landscapes that met our basic needs,” he adds. “But, they can do so much more; the potential of the landscape in the built environment is still largely untapped. SITES aims to change that.” A hub for METRO light rail, local, regional and neighborhood bus routes, the 40,300-square-foot Tempe Transportation Center in downtown Tempe opened December 2008 — funded by federal transportation dollars and local municipal sources.

Sited on 2.7 acres below Hayden Butte, the three-story mixed-use building contains the city’s Transportation Offices, Traffic Management Center, Community Room, Transit Store, leasable office space, retail, restaurant and The Bicycle Cellar — the state’s first bike station-with secure parking for 114 bikes, showers, lockers and facilities for bike purchase, rental and repair.



Other participants in the Transportation Center are Otak, a Portland-based firm that partnered with Architekton on the design; A DYE DESIGN, the landscape architects who made the original SITES application; the Tempe office of Adolfson & Peterson Construction, construction manager at risk; the Phoenix office of the Michael Baker Corporation, civil engineers; and the city of Tempe Transportation Division, owner and project manager. Bonnie Richardson, AIA, LEED AP, the project manager for city, will be leading the submittal process and coordinating the team’s documentation for the SITES Initiative.

“SITES highlights the potential of the landscape to do much more than merely use less of precious resources like water, energy, and time,” says Steve Windhager, director of the Sustainable Sites Initiative and of the Landscape Restoration Program at the Lady Bird Johnson Wildflower Center, founded by the former first lady. “To use a bit of jargon,” he adds, “these projects provide ‘ecosystem services’ — goods and services that the environment has traditionally provided to humans for free, but when these cease to be supplied, must be replaced by the direct efforts of humans.”

SITES, then, focuses on environmental factors in the same way that Leadership in Energy & Environmental Design certification, sponsored by the United States Green Building Council, focuses on structures. The USGBC, in fact, plans to incorporate a number of the credits established by the SITES program into its LEED® Green Building Rating System™. Nevertheless, SITES will be self-standing for those projects wishing to extend beyond building-centric LEED requirements as well as for those projects that do not have enough structural components for LEED certification, Windhager explains.

Tempe, in fact, is seeking LEED Platinum Certification for the Transportation Center. The city required a high-performance building that would provide operational savings over the life of the building — in this case, an 80- to 100-year building. Many sustainable strategies are integrated to create a building that will reduce energy consumption by 52 percent, including a solar veil on the east face of the building to automatically reduce solar heat gain in the morning; waterless urinals and dual-flush toilets that fill with graywater from showers and sinks; and energy-efficient water pumps. In addition, materials and finishes, including furniture, are made of rapidly renewable or recycled products and can be recycled or reconfigured in the future.

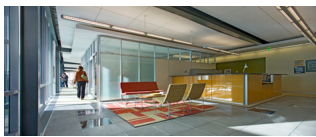
The Transportation Center has already won a variety of honors including the highly regarded EPA award for Smart Growth and Sustainability and, locally, two Crescordia Awards from Valley Forward Association.

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For the SITES initiative, the team is seeking credits for sustainable landscaping practices such as stormwater and graywater collection for low-water use irrigation; vegetated transit shelters; desert trees for pedestrian comfort and the reduction of heat-island effect; a sensitive site plan, respecting the sacredness of Hayden Butte to Native Americans; challenging manipulation of a transit site where visibility, not sustainability, is the primary focus; extensive daylighting and natural ventilation; a thermal-buffer green roof of desert-appropriate plants; and a water treatment system that removes minerals prior to use in the cooling tower.

"The SITES program will provide greater visibility for those elements of site design and construction that sensitively connect the community and the natural environment," says Angela D. Dye, FASLA, LEED® AP, principal of A DYE DESIGN, a Valley landscape architect for 23 years and immediate past president of ASLA, one of the sponsoring SITES organizations. As such, she has been deeply involved with the program as well as with the Tempe Transportation Building. "The Sustainable Sites Initiative embodies what we landscape architects do every day; in essence, it quantifies what we do intuitively, reiterating the importance of our design efforts in projects both with and without structures," she adds. "Correctly implemented, SITES will allow us to lay lighter on the land and produce regenerative projects for the future that better fit the community and the natural environment."



In November 2009, SITES released its pilot version with the credits acceptable in the initial rating system. Approximately 350 projects applied through the February 2010 close date, including academic and corporate campuses, public parks with hundreds of acres, transportation corridors and private homes on less than an acre. Approximately 12 percent of the participating projects are residential, Windhager notes.

In addition to the Tempe Transportation Center, four other Arizona projects were chosen for the final 175 projects in the pilot program: the Paseo Vista Recreation Area, a 65-acre Chandler park being installed on a closed landfill; the Scotland Yard Neighborhood Park in Peoria, on a vacant 8.3 acre grayfield site; Troon North Park in Scottsdale; and the Downtown Links Roadway Project in Tucson.

The Tempe Transportation Center, and all other applicants, will be reviewed for certification by June 2012, based on a 250-point scale comprising 15 prerequisites and 51 credits for areas such as the site selection, water, soil, vegetation, materials, human health and well-being, construction and maintenance. The projects can then be Pilot Certified at one- to four-star levels.

A final version of the rating system is scheduled for 2013, when SITES will open enrolment in the program for any project in the United States to submit information for certification. "I'm excited to see how our Tempe Transportation Center will perform under this analysis," Tempe's Richardson says. "As we focus on smart growth in the Southwest, we need appropriate guidelines that establish and protect green spaces and enhance the walkability of our cities. The Sustainable SITES Initiative will provide a way to measure our success as we address the natural resource and climate challenges ahead."

Adds Kane: "I hope the Sustainable Sites Initiative will foster more dialogue about the importance of landscape and the site relative to the built environment. We need to think about landscape the same way we think about masonry, glass and steel.

"The idea is to integrate architecture with its site and landscape and vice versa — each needing the other, neither more important than the other, working together like a natural system."