

# SITES CERTIFIED PROJECT

## THE UNIVERSITY OF TEXAS AT EL PASO

### CAMPUS TRANSFORMATION PROJECT

2016

**SITES SILVER**

El Paso, TX, United States



**THE Sustainable**  
**SITES**  
**Initiative®**

# SITES CERTIFICATION

**Address:** El Paso, TX

**Project Size:** 11.57 acres

**Project Type:** Institutional / Educational

**Former Land Use:** Greyfield

**Terrestrial Biome:** Desert and xeric shrublands



+ In July 2016, the CTP received SITES Silver, and became the first project certified under v2 of the SITES Rating System, recognizing the project as a model of sustainability in desert climates.

## The University of Texas at El Paso

**SITES v2 Silver (2016) 87\***

Site Context 10/13

Pre-design Assessment + Planning 0/3

Site Design - Water 11/23

Site Design - Soil + Vegetation 13/40

Site Design - Materials Selection 8/41

Site Design - Human Health + Well-Being 17/30

Construction 11/17

Operations + Maintenance 2/22

Education + Performance Monitoring 6/11

Innovation Or Exemplary Performance 9 /9

\*Out of a possible 200 points and 9 bonus points  
Certified 70–84, Silver 85–99, Gold 100–134, Platinum 135–200

“UTEP is extremely happy to achieve this rigorous certification for their school. The site acts as an outdoor living laboratory for students to study native plants and stormwater technologies. It is also a place for social interaction—whether small groups or large community events. The green infrastructure technologies and aesthetic are now an urban model for El Paso and the Chihuahuan Desert region.”

**- Christine Ten Eyck, FASLA, president and principal in charge of UTEP's CTP**

## PROJECT BACKGROUND

### Site Context & Project Summary

The project is located at the University of Texas at El Paso in the center of campus. The Chihuahuan desert ecoregion receives an average of 9.6 inches of precipitation per year. The annual low temperature is 51.8 F and the annual high is 77.5 F.

UTEP is the educational center of a community uniquely situated at the U.S.-Mexico border. In 2015, the institution was ranked #1 among U.S. universities for the fourth year in a row in social mobility for its success in helping students achieve prosperity through hard work, fortitude and initiative. To celebrate its 100 years of service to the Paso del Norte region, the University transformed the heart of its campus into an inviting, pedestrian-friendly, multiuse gathering place that reflects the beauty of the Chihuahuan Desert. The Centennial Plaza area promotes community with its richly detailed outdoor gathering spaces, such as a 130-seat amphitheater, and conservation with native and drought-resistant vegetation in stone-strewn gardens designed to absorb and channel stormwater.

### Constraints & Opportunities

Pre-design constraints included the sloped topography, limited ADA accessibility, and extensive bedrock. Pre-design opportunities included reconnecting historic arroyos, redefining stormwater as a valuable resource, and increasing the native plant palette to reflect the beauty of the Chihuahuan desert ecoregion.

### Challenges

The CTP is one of the first and largest green infrastructure projects in the region. The green building market in El Paso is underdeveloped, making sustainable construction landscape practices and procurement of materials more challenging. To overcome this challenge, Ten Eyck Landscape Architects provided daily construction oversight and worked directly with the contractors and owner to reach project goals.




## ■ PROJECT GOALS

**Transform** the heart of its campus into an inviting, pedestrian-friendly, multiuse gathering place that reflects the beauty of the Chihuahuan Desert.

**Strengthen** the connection between the city, the campus, and the land.

**The CTP is one of the first and largest green infrastructure projects in the El Paso region, and one of the few projects in the region that displays the diversity and beauty of low-water-use plants native to the Chihuahuan Desert.**





■ VALUE OF SITES

“SITES provides third-party verification and outside recognition of sustainable landscape design, construction and maintenance achievements. SITES also supports an integrative design process, and requires the design team, contractors and maintenance professionals to work together to achieve performance goals that can be easily communicated to demonstrate the success of the project.”

**- Heather Venhaus, Principal of Regenerative Environmental Design in Austin, Texas**

## PROJECT TEAM

Client: **University of Texas at El Paso**  
Landscape Architect: **Ten Eyck Landscape Architects**  
Architect: **Lake/Flato**  
Civil Engineers: **Quantum**  
Stormwater management: **Biohabitats**  
Irrigation consultant: **Aqua Engineering**  
Mechanical and Electrical Engineers: **EEA**  
Lighting consultant: **Yarnell Associates**  
Structural Engineer: **AEC**  
Sustainability Consultant: **Regenerative Environmental Design**  
General Contractor: **Jordan Foster Construction**



## ■ STRATEGIES



### + **Green Infrastructure:**

The stormwater system mimics the function of natural desert corridors similar to a river bank. Stormwater is collected from upper portions of the watershed and moves slowly across the landscape in a series of vegetated arroyo bioswales (main waterways that gather runoff from the mountain and rooftops), acequia bioswales (smaller bioswales that run along walkways), and detention basins. The bioswale system reconnects historic arroyos that were filled when the campus was constructed. Contractors conducted a watershed analysis that extended beyond the project boundary to determine the stormwater volume moving through the site.



### + **Diverse Native Plant Palette:**

The CTP is one of the few projects in the El Paso region that displays the diversity and beauty of low-water-use plants native to the Chihuahuan Desert. Prior to construction, the project area was comprised of roads, campus parking and turf grass lawns with few trees. The redesigned landscape dramatically changes the experience of site visitors.



### + **Waste Management:**

As part of the specification requirements, the SITES sustainability consultant worked with the contractor to develop a Waste Management Plan that spanned demolition and construction. Recycled materials were sorted on site and placed in recycling bins that were labeled and kept separate from trash.



### + **Protect Air Quality:**

A construction project such as UTEP's Campus Transformation demands the use of heavy machinery and vehicles of all sizes. With that understanding, University officials, in collaboration with members of its construction team, set up policies to reduce the levels of carbon emissions. The University, landscape architect and general contractor successfully enforced these specifications during the two-year project.



### + **Cultural And Historic Places:**

The campus, with its mountain settings and distinctive architecture, is unique among Texas colleges. Campus buildings imitate the architectural style of the Himalayan country of Bhutan. The Bhutanese style was suggested by the wife of the school's first dean, Kathleen Worrel, who was inspired by a feature on Bhutan in the 1914 National Geographic Magazine. Distinctive features include sloped walls, decorative brickworks and a wide overhanging roof.



"I have found the SITES prerequisites to be a helpful tool for communication and maintaining best practices throughout all stages of the project. One example is soils, SITES recognizes the importance of soil in a sustainable landscape, and the prerequisites and credits support teams in establishing expectations and verifying quality and performance. Another example is the prerequisite for a sustainable site maintenance plan, which encourages early coordination, a shared vision for the long-term performance of the site, and agreement that the goals can be accomplished." - **Heather Venhaus, Principal of Regenerative Environmental Design in Austin, Texas**

## FINAL DESIGN

This project is one of the **First Examples** in the El Paso area where soils, vegetation and green infrastructure were used to **Manage Stormwater**. It provides **New Insight** into how stormwater may be used as a **Sustainable Resource** to increase green space and provide habitats in a desert ecoregion.

+ The core of the project includes **Centennial Plaza** and **Centennial Green**, richly detailed outdoor gathering spaces that feature a performance lawn and amphitheater.

A diverse array of native plants and local stone create **Campus Malls, Courtyards, Promontories and Desert Gardens** that invite students and the community to embrace and enjoy nature.



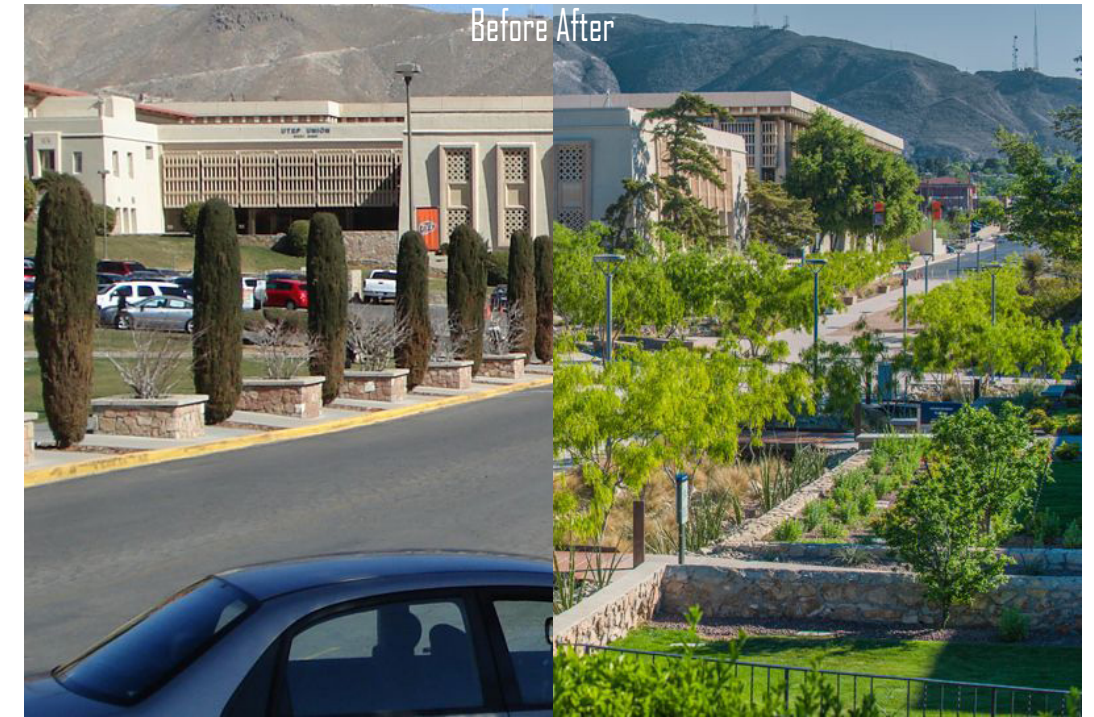
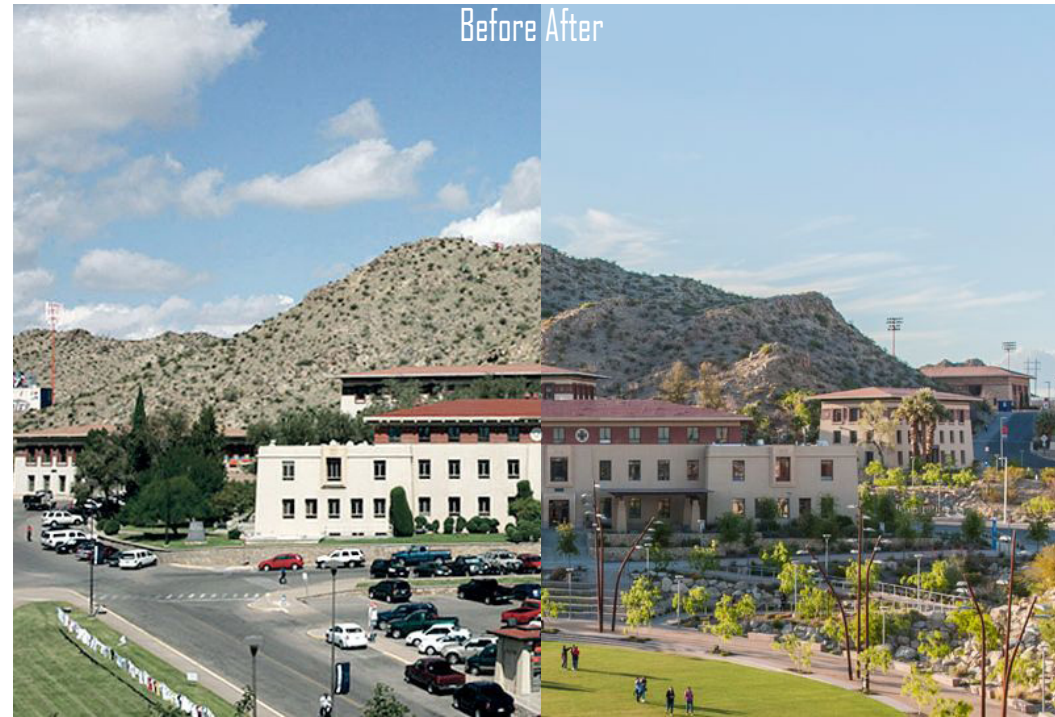
BIRD'S EYE VIEW



## ■ FINAL DESIGN

The project strengthens the connection between the city, the campus, and the land by converting acres of sloping streets and parking into a beautiful and accessible green space that promotes outdoor learning and celebrates ephemeral stormwater.

Acres of sloping asphalt streets and parking have been replaced by a pedestrian-oriented landscape that promotes outdoor learning, gathering and recreation and integrates the surrounding Chihuahuan Desert into the urban fabric of the campus. Centennial Plaza and Centennial Green are richly detailed gathering spaces that comprise the new heart of the campus. New campus malls shaded by native mesquite trees promote connectivity and extend the spirit of the core to the greater campus, linking existing buildings with new courtyards enlivened with a rich palette of Chihuahuan Desert plants.



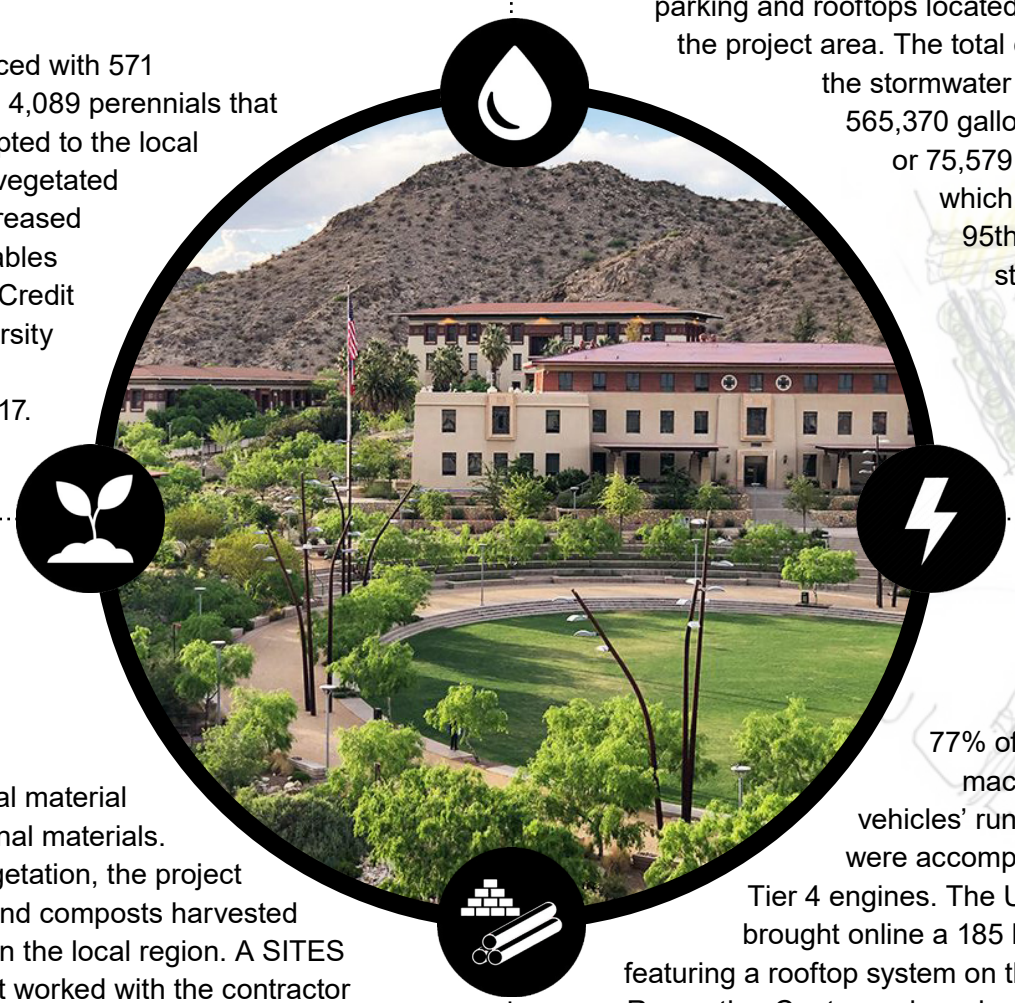
# VALUE OF SITES

## + Plants

Asphalt has been replaced with 571 trees, 1,831 shrubs and 4,089 perennials that are either native or adapted to the local ecoregion. In total, the vegetated area of the site was increased by 60%. According to tables referenced in Soil+Veg Credit 4.8, the existing biodiversity density index (BDI) was 0.85. The built BDI is 2.17.

## + Materials

39% of the project's total material costs qualified as regional materials. In addition to native vegetation, the project also used rocks, soils and composts harvested and manufactured within the local region. A SITES sustainability consultant worked with the contractor to develop a Waste Management Plan for demolition and construction. The project diverted 99% of demolition materials from the landfill.



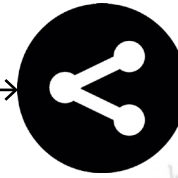
## + Water

In addition to the impervious surfaces within the project boundary, the system also manages stormwater from the mountainous region to the north, and parking and rooftops located outside of the project area. The total capacity of the stormwater features is 565,370 gallons per day or 75,579 cubic feet, which exceeds a 95th percentile storm event.

## Energy +

77% of the heavy machinery and vehicles' runtime hours were accomplished with Tier 4 engines. The UTEP team brought online a 185 kW system featuring a rooftop system on the Student Recreation Center and a solar carport for the Facilities Services Building.

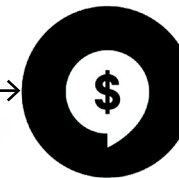
## ENVIRONMENTAL FEATURES



## SOCIAL

The project area has 641 quiet outdoor spaces for mental restoration. Each location, whether in the sun or shade, provides visible and physical access to a diverse array of native and adapted vegetation. To mitigate noise and distraction, the spaces are located on the plaza's edge or outside major pedestrian corridors.

The transformed campus core can accommodate the social interactions of 1,884 students, staff, faculty and visitors. The two largest grassy areas are the Centennial Plaza and the adjacent Geology Green, which are multifunctional turf grass lawns that attract students for lounging, as well as organized or impromptu recreation. A unique and very popular nighttime feature is the ornamental fire pits that the University lights for special occasions, and can be reserved by groups for evening events.



## ECONOMIC

The university can count on saving \$32,000 a year in energy costs based on modeling the future of clean energy for its students and community.

Recycled materials included 5,000 tons of concrete and rock, 3,000 tons of asphalt, 500 tons of vegetation, and 4.5 tons of steel, providing an estimated savings of \$827,713.

■ VALUE OF SITES

"SITES is most successful and more likely to fall within budget when it is considered from the beginning of a project and incorporated into each phase of development from design to construction. SITES professionals who work closely with the design team can help embed the necessary criteria into design solutions and construction documents, so that the requirements are clearly understood and are integral to the success of the project. " - **Heather Venhaus, Principal of Regenerative Environmental Design in Austin, Texas**