

MARCH 2011 CASE STUDY: TRANSPORTATION

Valley Metro Light Rail and Tempe Transportation Center

A brief glance into the *Design Criteria Manual* for the Valley Metro Light Rail system project highlights the importance of providing shade to users of the system that connects Phoenix, Tempe, Chandler, Mesa, Glendale and Peoria in Arizona. The word “shade” is used 40 times in the final draft and every design element is carefully executed to alleviate heat gain and create cool, comfort zones.

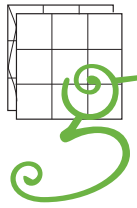
The Valley Metro Light Rail uses **greenscreen®** panels in conjunction with tensile shade cloths and sun louvers at transit platforms to provide a cooler, shaded environment for waiting passengers at the Phoenix stations. Native plant material is nestled between panels at the pedestrian level to help reduce reflected heat from adjacent hardscape areas and also to maintain maximum shade with changing sun angles. The panels are used as a repeating modular element throughout the 28 stations, but in a variety of shapes, curves and columns to allow for unique, custom applications. The unique designs utilized over 30 different panel configurations while still meeting tamper resistance and security requirements. In response to the program requirements, preliminary infrared research has shown that the designed shade areas can be up to 30° cooler than hardscaped areas exposed to full sun. The project also included a comprehensive *Vine and Vertical Research Study*, which has been incorporated into the METRO Design Criteria Manual and was awarded a 2006 ASLA Merit Award.

At the award winning Tempe Transportation Center, custom colored **greenscreen®** panels and native plants are again used to provide shade, vertical enclosure and thematic relationship to the adjacent light rail stations. The standard **greenscreen®** panels were spliced together during the manufacturing process to provide a custom application at a very low cost while helping to provide a human scale to the platform structures. In addition to the shading benefit, the incorporation of plant material at this level provides an additional cooling benefit due to evapotranspiration. Evapotranspiration occurs when plants take up water through the roots and release it in the form of water vapor through the foliage. The additional moisture given off helps to cool the ambient air and both projects benefit from this evaporative cooling. The shelters are also very intentional in their sustainable design. The gentle butterfly roof harvests rainwater to irrigate the plantings and benches are designed to provide adequate shade regardless of the sun angle.

Continued:



greenscreen®



MARCH 2011 CASE STUDY: TRANSPORTATION

Valley Metro Light Rail and Tempe Transportation Center

CREDITS:

Valley Metro Light Rail

Client: Valley Metro Light Rail stations
Architect: OTAK/DWL Architects/Leo A.
Daly/Architekton/Huitt-Zollars Architects/
Architectural Resource Team (ART)
Landscape Architecture: A Dye Design
Contractor: Archer Western Contractors
Completion date: December 2008

Project Specifics:

20,130 sq. ft. **greenscreen®** panels on 28 waiting platforms, at average cost of \$20.54 per sq. ft., consisting of custom panel sizes and custom trim configurations and including crimp-to-curve panels, notched panels, 16gauge trim and radius cuts. Attached with custom clips and hardware to structural steel support (by others)

Tempe Transportation Center

Client: Tempe MTA
Architect: OTAK, Architekton
Contractor: AJ Roberts Industrial, Inc.
Completion: 2008

Project Specifics:

2745 sq. ft. **greenscreen®** panels at average cost of \$8.88 per sq. ft., attached with custom clips and hardware to structural steel support (by others)

For more information on additional transportation/transit projects or case studies, please contact us at sales@greenscreen.com or check out the transportation/transit case studies on our website.

Additional links:

http://archrecord.construction.com/projects/bts/archives/transportation/10_Tempe_Transportation_Center/default.asp

<http://www.tempe.gov/greenprograms/transitcenter.htm>

