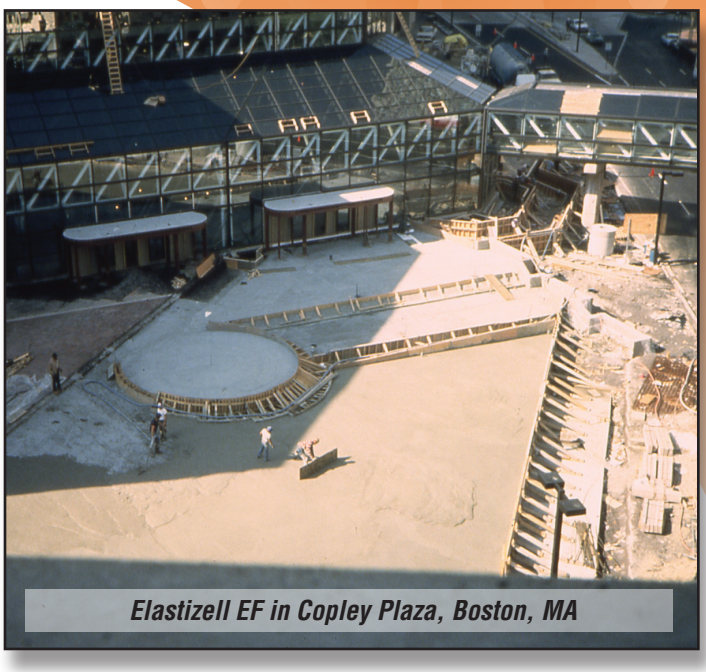
Elastizell EF Permits the Landscaping of a Plaza

Soldiers & Sailors Memorial Hall & Museum, Pittsburgh, PA



Elastizell EF in Copley Plaza, Boston, MA

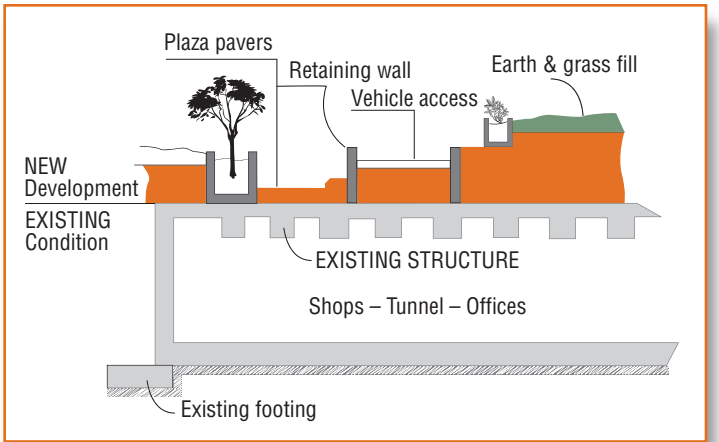
Problem

Existing plazas already have the maximum allowable loads which preclude landscaping with planters, retaining walls, earth fill or reflecting pools. How could a reflecting pool area be repurposed without overloading the structure?

Discussion

Renovation of plazas and office malls is often a more desirable solution than constructing a new facility. The new look can revitalize an otherwise drab area. Tenant and visitor interests may be rekindled in the location.

The fill for this application needs to be lightweight, strong, permanent and easily placed.



Solution

Elastizell EF was cast over the waterproofed plaza after new planters and retaining walls had been installed. This greatly reduced the dead load on the plaza structure yet still permitted enough load carrying capacity for the earth fill to create grassy slopes or other vegetative accents.

Advantages

- *Elastizell EF reduces dead loads.*
- *Ability to support equipment needed to create landscaping.*
- *Resistance to freeze/thaw cycles and water absorption make Elastizell EF ideal for this application.*
- *Elastizell EF can create positive slope for drainage and ADA accessibility.*
- *Since it is pumped into place, Elastizell EF can form various architectural curves and shapes.*

= ELASTIZELL EF

PROJECT: SOLDIERS & SAILORS MEMORIAL - PITTSBURGH, PA

Construction progress of multi-level underground parking structure in front of Soldiers & Sailors Memorial. Lanscaping will restore site to original sloped condition.

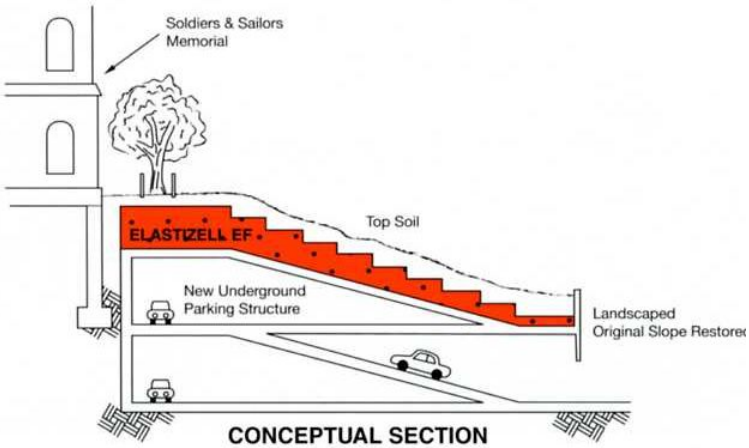
ELASTIZELL EF provides significant load reduction for restoring a sloping grassy park at the Soldiers & Sailors Memorial. A private underground parking structure was built under this sloping entrance to a historical building without changing it's appearance.

Since it was necessary to restore the site to it's original condition, significant savings were realized with ELASTIZELL EF reducing the dead weight instead of strengthening the supporting structure.

Conventional backfill and lightweight aggregate fills are too heavy and would overload the new structure. They are difficult to contour to the desired slopes. Soil was placed over ELASTIZELL EF to complete the landscaping restoration of the site.

Casting ELASTIZELL EF

After Lanscaping

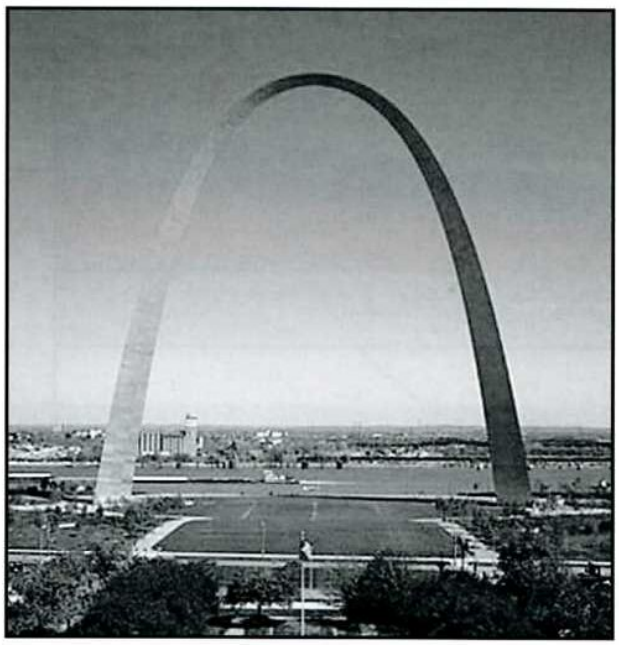


CONCEPTUAL SECTION

PROJECT: REHABILITATION OF "ST. LOUIS ARCH" MUSEUM

BACKGROUND:

The St. Louis Arch Underground Museum completed in 1965 has been subjected to the ravages of water migration. The National Park Service chose to repair the plaza with a solution protecting the valuable exhibits in the museum for the future generations and maintaining the grassy park under the Arch.



PROBLEM:

The Underground Museum was constructed with as flat roof. Water percolated through the soil to the deck where it sat in puddles on the waterproofing membrane. Eventually, the water migrated through the roof structure into the interior of the museum threatening the exhibits and the building.

SOLUTION:

ELASTIZELL EF provides drainage slope for the flat roof. It will not overload the roof structure or deteriorate over time. It provides a solid base for waterproofing and supports the soil for the landscaped plaza.

PROCEDURE:

The soil was removed so that the concrete roof structure could be repaired and waterproofed. 5000 cubic yards of ELASTIZELL EF was cast sloping from 28" to 8" for positive drainage. After waterproofing the ELASTIZELL EF, 14" of topsoil was placed along with an underground sprinkler system to maintain the grassy park under the Arch.

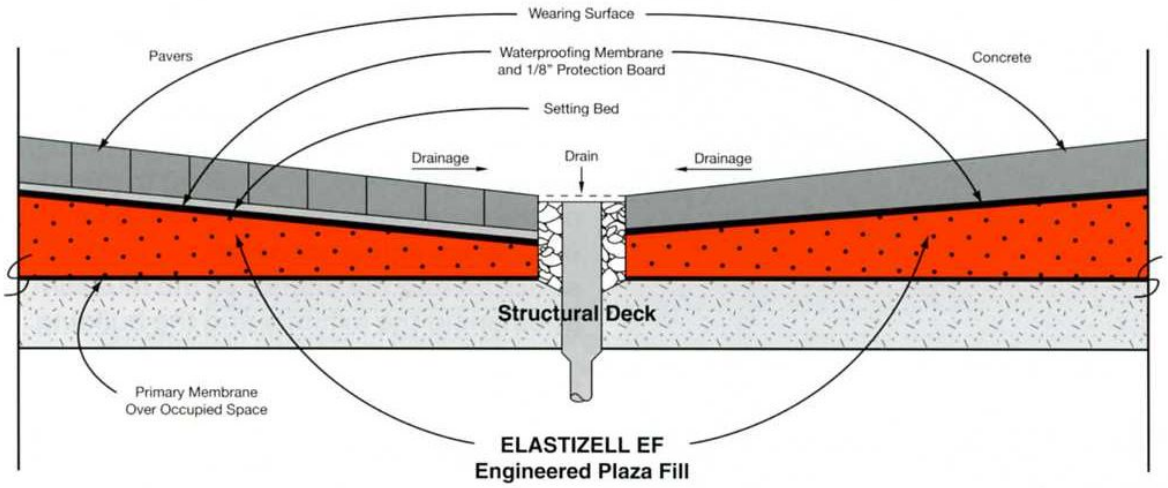
A two-layer waterproofing system insures long term performance of the renovation. The first layer applied over the repaired roof slap protects against moisture intrusion into the building. A second layer placed over the sloping ELASTIZELL EF directs water off the roof of the Museum. This two-layer system is *critical* since underground sprinklers irrigate the grassy park under the Arch.

CONCLUSION:

ELASTIZELL EF was selected because it is easily sloped to create positive drainage. Its low density permits the re-landscaping of the park without increasing dead load. Weight reduction is achieved by load balancing - replacing heavier soil (120 pcf) with lighter ELASTIZELL EF (42 pcf). The insulation value of the museum roof increased significantly to R = 24.

PEDESTRIAN PLAZA APPLICATIONS

Renovations of existing plazas often have load restrictions which preclude landscaping with planters, retaining walls, earth fill, or reflecting pools without exceeding the design loading. ELASTIZELL EF increases the potential for various landscaping possibilities to an existing or new structure by significantly reducing dead loads.



Copley Place
Boston, MA

Please contact the Elastizell Corporation of America or your local applicator for recommendations.

Elastizell Corporation of America
P.O. Box 1462 • Ann Arbor, MI 48106
tel 734.761.6900 • fax 734.761.8016
www.elastizell.com

10/2009