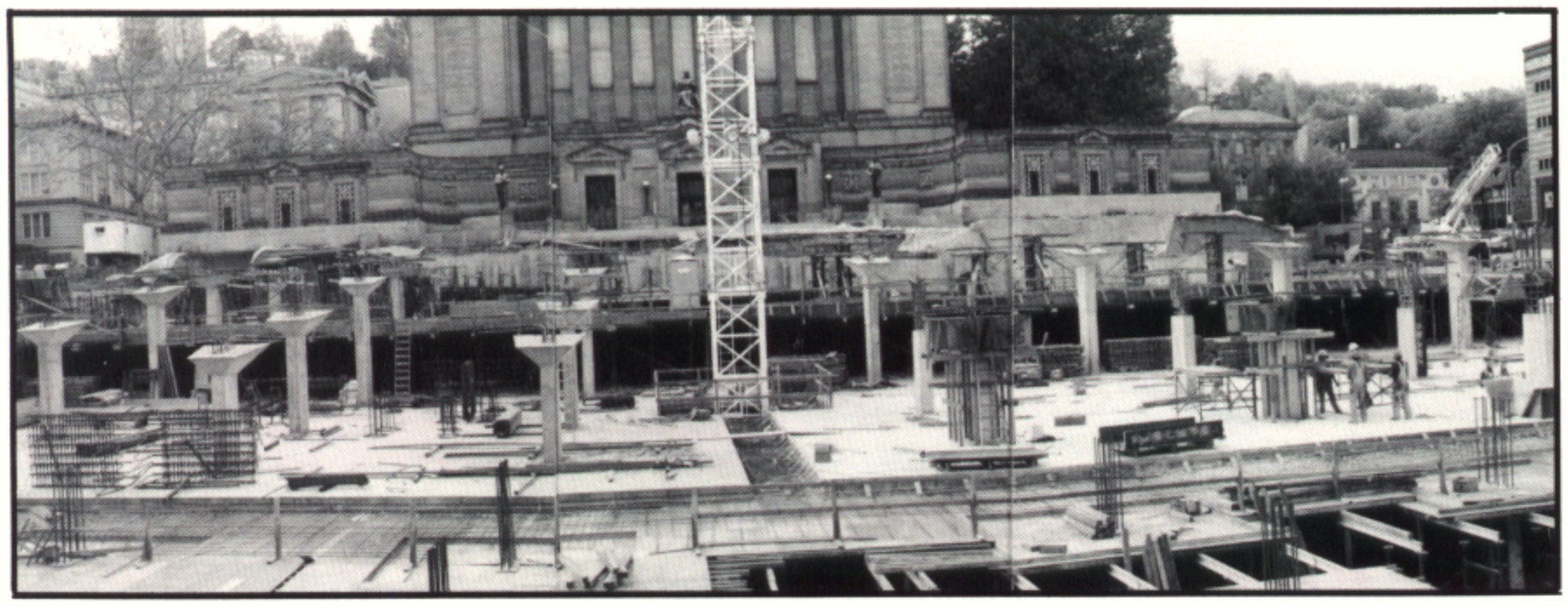
ELASTIZELL EF (Engineered Fill)

RESEARCH REPORT

LANDSCAPING AND PLAZA FILLS

Jefferson National Expansion Memorial
National Park Service.
St. Louis, MO

PROJECT: SOLDIERS & SAILORS MEMORIAL - PITTSBURGH, PA



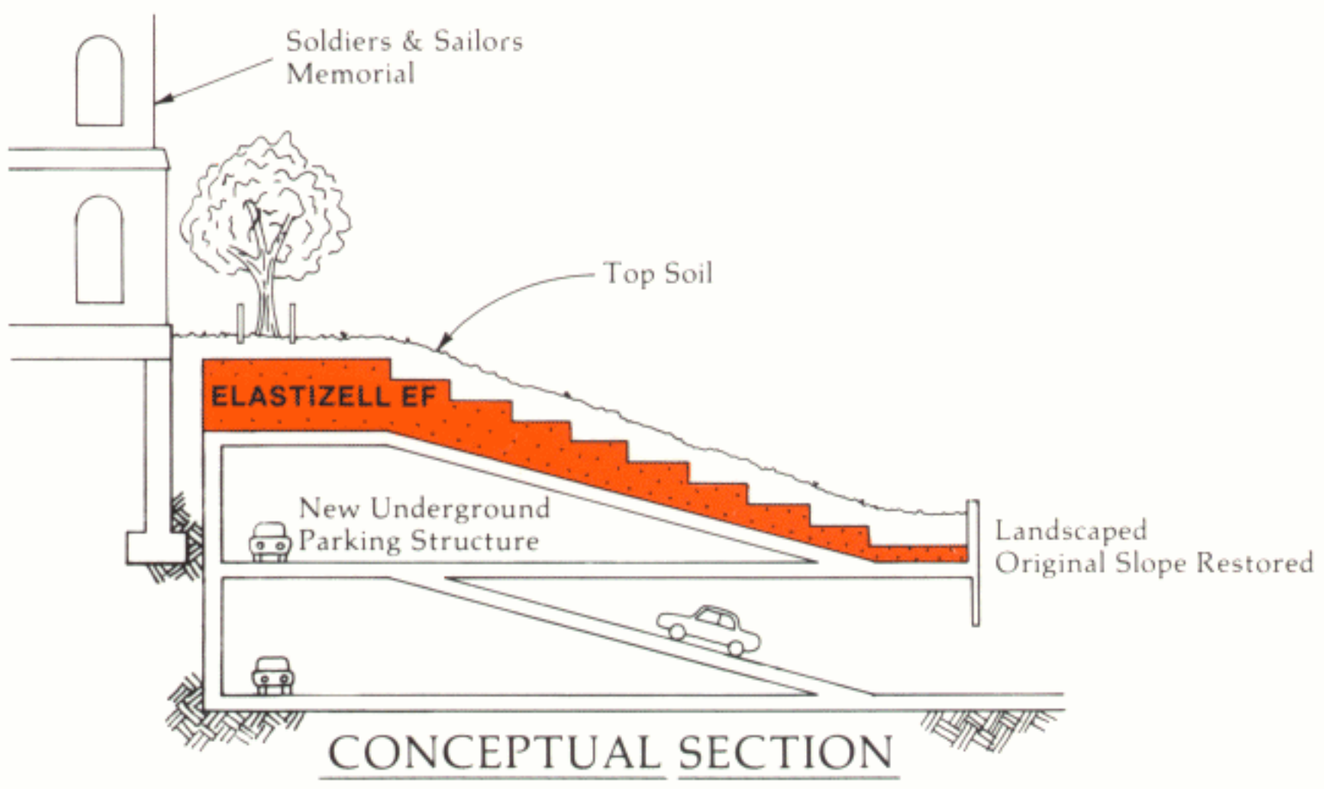
Construction progress of multi-level underground parking structure in front of Soldiers & Sailors Memorial. Landscaping will restore site to original sloped condition.

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 its appearance.

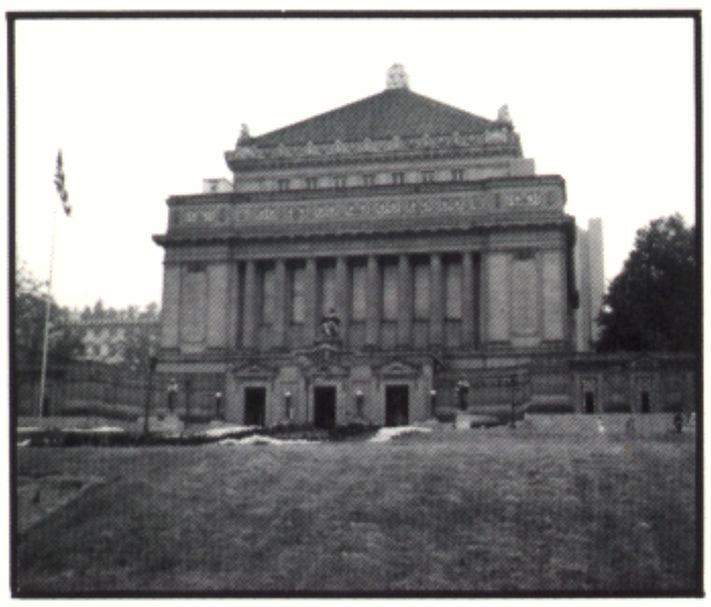
Since it was necessary to restore the site to its original condition, significant savings were realized with **ELASTIZELL EF** reducing the dead weight instead of strengthening the supporting structure.

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**



CONCEPTUAL SECTION



After Landscaping

PROJECT: REHABILIATION OF "ST. LOUIS ARCH" MUSEUM

BACKROUND:

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 this plaza with a solution protecting the valuable exhibits in the museum for future generations and maintaining the grassy park under the Arch.

PROBLEM:

The Underground Museum was constructed with a 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 this 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.

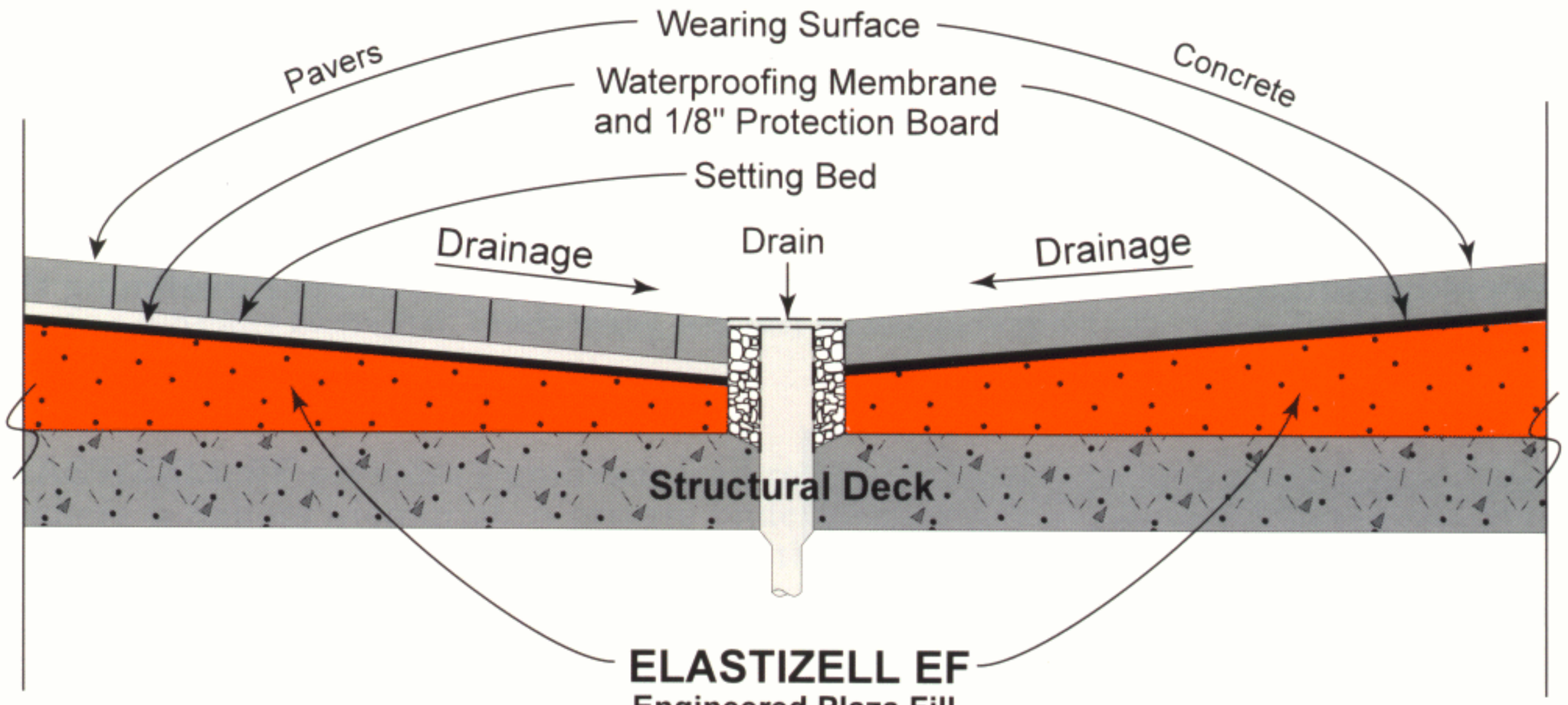
A two-layer waterproofing system insures long term performance of this renovation. The first layer applied over the repaired roof slab protects against moisture intrusion into the building. A second layer placed over the sloping **ELASTIZELL EF** directs water off the roof of the Museum. This two-layer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

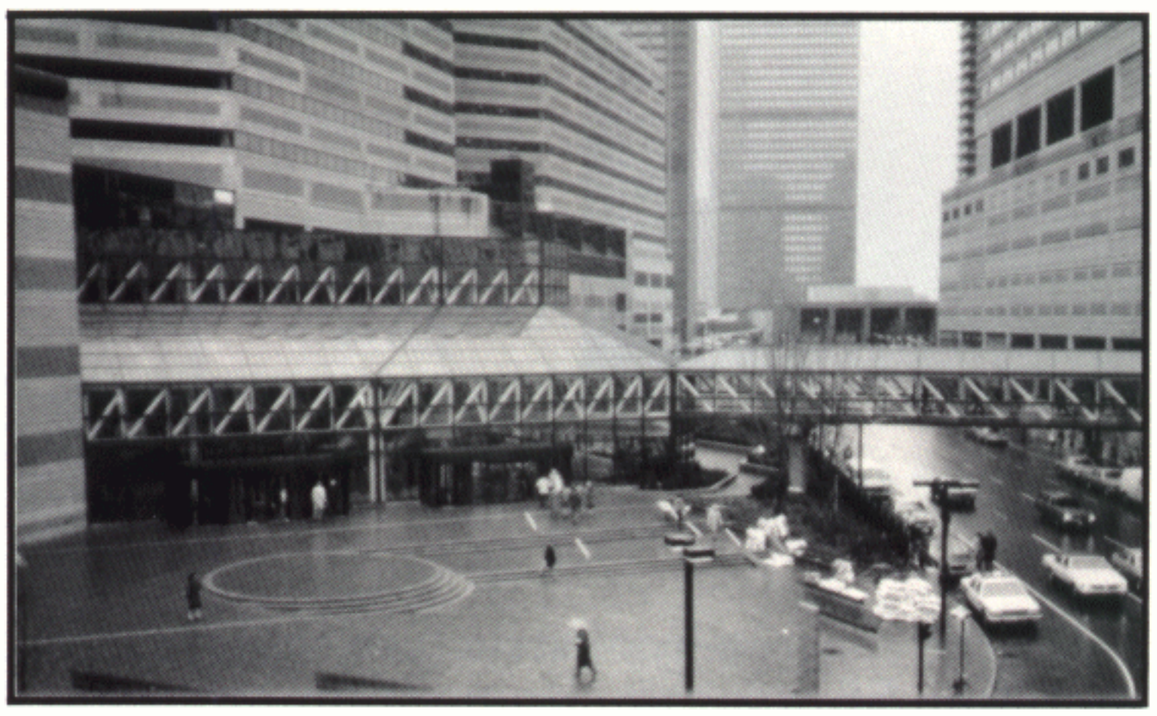
CONCLUSION:

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 is 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.





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Please contact the ELASTIZELL CORPORATION OF AMERICA or your local applicator for additional specific design values and more detailed specifications.

Elastizell Corporation of America

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