

PROJECT PROFILE

PRODUCT

Landmark retaining wall system

MANUFACTURER

Anchor Block Company
St. Paul, Minnesota

EARTHWORK CONTRACTOR

Veit and Company
Rogers, Minnesota

INSTALLER

Sunram Construction, Inc.
Corcoran, Minnesota



Project site prior to wall construction.

Minneapolis Convention Center MINNEAPOLIS, MINNESOTA

THE CHALLENGE

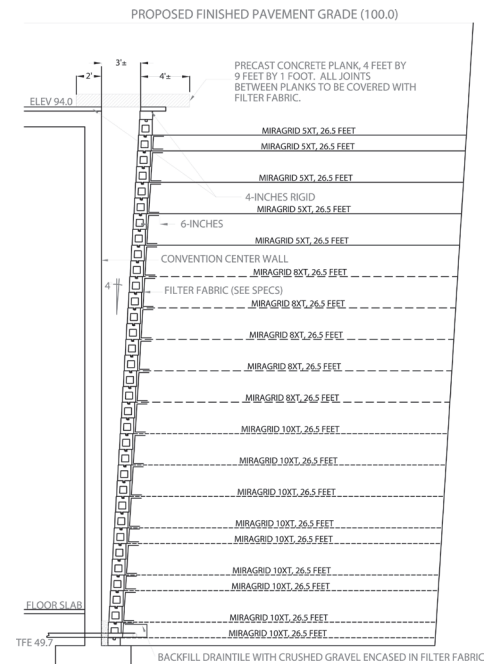
Find a cost-effective retaining wall that could sufficiently bear the lateral pressure of over 40 feet of soil surrounding the Minneapolis Convention Center's new, below-grade addition.

THE SOLUTION

Design and install a below-ground stress-relief wall featuring the Landmark retaining wall system that would be sturdy enough to support significant earth pressure and surcharge loads.

THE FULL STORY

The Minneapolis Convention Center hosts thousands of visitors each year for a variety of trade shows and events. To meet demand for its facilities, the Convention Center recently added 670,000 square feet of exhibit halls, including a below-grade equipment storage area. A portion of the addition extended 50 feet below the ground, creating a challenging construction predicament. How could the engineers prevent lateral fill loads from being imposed on the new, below-grade structure? A traditional solution would require very thick, labor- and equipment-intensive cast-in-place reinforced concrete walls with large, expensive buttresses. A team consisting of the project manager/estimator of Veit and Company, a TC Mirafi sales representative, an Anchor Wall Systems engineer



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and an Anchor Block Company architectural representative proposed a far more economical solution: the Landmark retaining wall system. The performance characteristics of the Landmark system made it ideally suited for this type of application. The Landmark system's efficient mechanical connection reduced the required strengths and number of layers of reinforcement.

HOW THE LANDMARK RETAINING WALL SYSTEM MADE A DIFFERENCE

First, knowing that the Landmark system would bear the lateral pressure of surrounding loads, the new Convention Center structure featured conventional 1½-foot reinforced concrete walls. The Landmark system, ranging in height from 41 to 44 feet, was built adjacent to the basement walls, extending approximately 175 feet in length. Mirafi geogrid was used to reinforce the soil mass behind the Landmark block face. To ensure that the below-grade building foundation wall was free from lateral soil pressures, an air space was left between the Convention Center wall and the Landmark system. The Landmark system was buried. A precast plank was placed to span the void between the Landmark system and Convention Center walls. Approximately 5 feet of fill and pavement were placed to create a truck loading area and a 100-car parking lot.

This project demonstrates sound engineering principles, making use of current technology in ways that provide more economical solutions.



Project site mid-wall construction.



Project site near wall completion.



The mechanical connection of the Landmark retaining wall system.

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For high performance under extreme loading conditions, the Landmark retaining wall system is a cost-effective option evaluated by HITEC. The Landmark system features a unique mechanical connection, which allows the system to generate extremely high connection values, independent of blocks above the connection. Developed specifically to meet the high standards of the transportation industry, the performance features of the Landmark system make cost-effective design solutions possible using either the American Association of State Highway and Transportation Officials (AASHTO) or the National Concrete Masonry Association (NCMA) design methodology.