CASE HISTORY
Ref: CH / USA 150 - Rev: 0, Jan 2016

HAROLD COURT EAST REGIONAL SERVICE CENTER
AUSTIN, TEXAS

REINFORCED SOILS
Product: Terramesh System and Gabion Mattresses

Problem
The Harold Court East Regional Service Center (HCERSC) is a City-owned multi-purpose facility shared by multiple departments including Public Works, Watershed Protection, Fleet Services and the Austin Water Utility. The site is used for material storage, vehicle maintenance, equipment storage and office space.

Unstable slopes on the western and southern boundaries of the property have resulted in periodic movement of the embankment. The City of Austin contracted engineering, geotechnical and environmental studies to respond to the conditions. The findings concluded that permanent slope stabilization was required. An existing 48-inch storm drain outfall at the bottom of the western slope had become displaced and damaged due to the shifting embankment and was in need of repair. Any further lateral movement could have potentially damaged an existing wastewater main in the area. The erosion of the embankment along the southern perimeter had eliminated the original storm drain outfall.

Solution
The project was initially designed as a series of 9 ft. tall gravity retaining walls along the steep slope with 10 ft. terraces in between. The challenging in-situ conditions lead the designer to review and optimize the design into a series of 9 ft. mechanically stabilized earth (MSE) retaining walls separated by vegetative terraces by using innovative and HITEC evaluated Maccaferri Terramesh System.

The project improvements included slope controls constructed on the eroding embankment along the western and southern perimeters of the facility to prevent further migration of the material into Fort Branch Creek and to provide improved worker safety and function of the site for the material storage yard. The slope controls consists of multiple rows of Maccaferri Terramesh® System walls separated by vegetative terraces with a service road to provide access to the proposed bio-filtration pond. The project improvements also include repairs and upgrades to the existing storm sewer system currently serving the facility and a water quality treatment system. Additional benefits to the existing facility included upgrades to the existing sidewalks, screening from adjacent landowners, and landscaping that would

Owner:
CITY OF AUSTIN
Main contractor:
AUSTIN FILTER SYSTEMS, INC.
Products used:
MACCAFERRI TERRAMESH SYSTEM AND GABION MATTRESSES
Date of construction
2012-2015
bring the site into compliance with current codes.

Several challenges arose during construction, such as additional excavation; borrow material and removal of waste. The contractor encountered many unforeseen conditions including an unstable, saturated slope resulting in a series of slide failures, endangerment of a high voltage tower, an undocumented storm water system, underground seeps or spring, which surfaced during excavation.

The original contract allowed 330 working days for completion of this project, but the unforeseen challenges lead the project to be completed in 2015. The improvements at HCERSC are now completed and the attention to detail and construction by the installer, Austin Filter Systems, has added invaluable precautionary measures when it comes to safety, environmental protection and structural stability.

With the superior quality of work along with the choice of the best materials, the outcome is a solid, pleasant looking and is one of the few MSE wall systems that have been HITEC evaluated. The City of Austin, is well known for its outstanding effort in green and environmentally friendly solutions, was able to have most of the in situ material reutilized. This was possible due to the following reasons:

- Austin Filter Systems was capable of treating and reutilizing the in situ soil.
- With the Terramesh® System the quantity of rock is limited in lieu of a larger quantity of structural backfill and,
- The City of Austin’s authorization to allow the utilization of the fill material to consist of a mix of limestone rock and crushed concrete deriving from the demolition and excavations.