



## CASE STUDY

# Weakleys Drive Interchange

Beresfield, NSW Australia

Retaining Walls  
TerraPlus®

Owner: Roads and Traffic Authority

Consultants: Roads and Traffic Authority

Contractor: Fulton Hogan

Construction: Start March 2007

### Background

The Weakleys Drive Interchange project involved the elevation of the New England Highway over the intersection with Weakleys Drive and the extension of Weakleys Drive to a new roundabout at Glenwood Drive. Located in the Hunter Valley region of NSW, the aim of the project was to reduce traffic congestion and increase safety for motorists.

### Challenge

The Roads and Traffic Authority (RTA) approached The Reinforced Earth Company (RECO) directly to undertake a design of the Reinforced Earth® retaining walls for the New England Highway flyover. The project was then competitively tendered for supply.

During the design process, the RTA specified a horizontal rib finish be used on the facing of the retaining walls. This finish, as well as issues identified during the design process, presented RECO with many challenges.

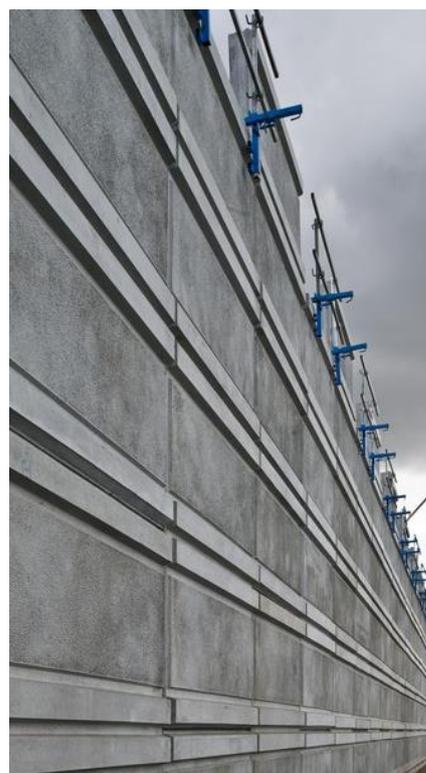
### Solution

RECO designed, and later supplied six Reinforced Earth® retaining walls for the Weakleys Drive Interchange. The TerraPlus® system was used for these structures.

TerraPlus® is Reinforced Earth's square or rectangular shaped, modular, precast concrete facing panel system. RECO developed it in response to client demand for non-proprietary shaped panels and the widespread popularity growth of project specific architectural finishes. Its broad market acceptance is a result of its ability to accept a wide range of architectural finishes, rapid, easy construction and good performance on soft foundations.

During the up-front design process, not only did RECO guide the client with respect to coping with foundation issues, internal design and aesthetic issues, but also identified various issues / problems before the project went out to tender thereby reducing the RTA's exposure to unforeseen variations, says John Ritchie, RECO's Sales and Marketing Manager.

The design process involved multiple iterations, for which the accompanying drawings were all done in 3-D: a lengthy process, which RECO repeated diligently until the right design was achieved.



Main & Top: Horizontal rib panel finish. Above: REhas® galvanized steel reinforcing strips are unmatched for structural capacity and reliability.

Transport infrastructure



**REINFORCED EARTH**  
SUSTAINABLE TECHNOLOGY



Left: Construction of Reinforced Earth® abutments and retaining walls at Weakleys Drive Interchange.  
Above: TerraPlus® panels are delivered and stored on site. As a rule, panels should not be stored more than 5 high.

Mr. Ritchie believes that it was development of a strong familiarity with the complexities of the project during the design phase that translated to an award for the supply by the main contractor Fulton Hogan.

One of the challenges on this project was mediating between the RTA and the precasting company, Beresfield Concrete Products (P/L) (BCP) to ensure the panel finish met with the client's needs. The panel detailing incorporated clean-cut indentations and ridges, as well as an off-form finish, with a pebbled appearance. The RECO Project Manager went to site regularly to maintain contact with the client and installer. His main activities whilst on site were quality assurance, client relations and logistical planning to ensure there were no delays between the supply of products and the construction.

#### Special features/benefits

- RECO did an up-front design leading to a smooth transition from design in to construction.
- During the design RECO guided the client with respect to coping with foundation issues, internal design and aesthetic issues.
- A unique horizontal rib finish was developed for this project.
- Typically, a more random architectural finish would provide more capacity to accommodate wall movement from the poor foundation conditions without obvious distortion of the desired architectural effect. In this instance however, the RTA was very keen to adopt the horizontal ribs to the walls. It is arguable as to whether this was a good decision and the long-term aesthetics of the walls will be of interest.

#### Project specifications

<b>System</b>	TerraPlus®
<b>Finish</b>	Horizontal Rib
<b>Structure</b>	Retaining Walls
<b>Area</b>	4250m <sup>2</sup>
<b>Max. Height</b>	8.8m
<b>Length</b>	818m
<b>Design load</b>	25kPa
<b>Design life</b>	100 years

**Adrian McRae, Project Manager, Fulton Hogan gave the following feedback "it has been a good experience with RECO on this project, I wish you luck in the future, and hope to work together again on future projects."**