



CASE STUDY

GERRINGONG UPGRADE

Gerringong, NSW, Australia

TerraPlus®
Reinforced Earth® Walls
Full Height Fascia Panels

Owner: Roads and Maritime Services, NSW

Consultant: SMEC Australia

Contractor: Fulton Hogan Pty Ltd

Construction: Jan 2013 – Dec 2014

Background

The Reinforced Earth Company (RECO) was contracted to design and supply 5,600sqm of Reinforced Earth® TerraPlus® retaining walls and full height fascia panels for the Gerringong Upgrade Project, NSW.

Design of the Reinforced Earth® walls was carried out in our Sydney office, while manufacturing of the concrete facing panels was done in our Albury precasting facility. The supply of the galvanised Reinforced Earth® high adherence reinforcing steel strips was from our store at Tuggerah, NSW.

Roads and Maritime Services, NSW, awarded Fulton Hogan the role of Head Contractor to design and construct the Princes Highway upgrades. The Gerringong Upgrade is one of three staged upgrades of the Princes Highway stretching from Gerringong to Bomaderry. The site is located approximately 50km south of Wollongong and 30km north of Nowra.

Fulton Hogan commenced works for the Stage-1 Gerringong Upgrade in July 2012. The upgrade is between Mount Pleasant and Toolijooa Road and provides 7.5km of upgraded highway that includes two new interchanges with access to Gerringong and Gerroa.

Precasting, storage & transport

Reinforced Earth® concrete wall panels were cast at the RECO Precast Facility Albury which is located four hours south of Canberra and near the Victorian border. During the precasting period, RECO and Fulton Hogan engineers made frequent visits to the Albury yard to monitor the quality of the casting and the appearance of the end product. Upon inspection, all parties confirmed the acceptance of the precast products without reservation. As a result, the concrete panels were signed off and sent to the Gerringong site as required by the contractor. The panels were then installed in position according to the construction program.

Construction

The construction of the Reinforced Earth® walls was commenced in January 2013. Fulton Hogan supervised the construction of the walls with RECO project engineers making periodic site inspections. There are a total of 8 abutment walls in RECO's scope of work all of which are estimated to be fully completed by December 2014.



Main Picture: Reinforced Earth® Vertical Ribbed Panel Finish

Top: Reinforced Earth® Abutment Wall with TerraPlus® Concrete Facing Panels

Above: Belinda Street Bridge

Transport infrastructure



Left: Aerial view of site – Photograph courtesy of RMS NSW

Above: Full Height Fascia Panels in storage at Recast Albury.

Below: Full Height Fascia Panels with a Vertical Rib Black Oxide finish fully installed.

Challenges & solutions

Precasting of the concrete facing panels presented a number of challenges.

There were multiple panel types with varying finishes and with a different concrete mix for each design. The approved concrete mixes were specific to various wall sections. The different panels were cast in order according to the construction program rather than the type of finish, which was tricky to coordinate. Maintaining a large inventory of cast panels, some of them weighting up to 10 tonnes each, added to the challenges at hand.

The delivery logistics were complex with different panel types delivered in accordance to the staging of the construction work.

Interesting features

The project contained multiple abutment walls with varying panel types in the walls. Sometimes there were three different panel types within a small section of wall. RECO designed these arrangements so that precast panels work integrally together for the wall holistically.

Exceptional Feedback and additional projects

All parties concerned with this project have stated that they are very happy with RECO's performance and the quality of the finished product. Fulton Hogan is contracted for Stage 2 of the project at Foxground and Berry Bypass and RECO has been awarded the design and supply of the Reinforced Earth® wall components for this exciting next chapter.

Project specifications

System TerraPlus® & Full Height Fascia Panels

Finish Multiple finish:
Smooth Grey,
Vertical Rib Grey,
Vertical Rib Black Oxide

Structure 8 Reinforced Earth® Abutment Walls & Fascia Panels

Area 5,600m²

Max. Height 9.2m

Length 830m (total)

Design load 50 kPa (max)

Design life 100 years

