



CASE STUDY

FRANCIS ROAD RAIL OVERPASS

Lawnton, QLD, Australia

Reinforced Earth® Retaining Walls
TerraPlus®

Owner: Moreton Bay Council

Consultants: Arup

Contractor: CMC Group

Construction: Apr 2012 – Jan 2013

Background

The Francis Road Rail Overpass in Lawnton, Queensland was a project commissioned by the Moreton Bay Regional Council. It involved the construction of an overpass over the North Coast Rail Line and the connection of Gympie Road with a new road linking West Dianne Street and Dianne Street.

Prior to construction, traffic was taken through the town centre which caused considerable road congestion. Thus, the objective of this project was the redirection of traffic to the overpass in order to ease traffic congestion and create a safer, more convenient route. The new overpass also caters for pedestrians, cyclists and public transport access.

The project was awarded to CMC Group, who approached the Reinforced Earth Company (RECO) for the design and supply of 1964 m² of Reinforced Earth TerraPlus® Retaining Walls.

TerraPlus® is a Reinforced Earth® 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 finishes, rapid, easy construction and good performance on soft foundations.

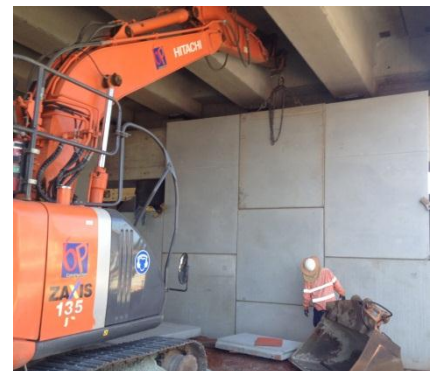
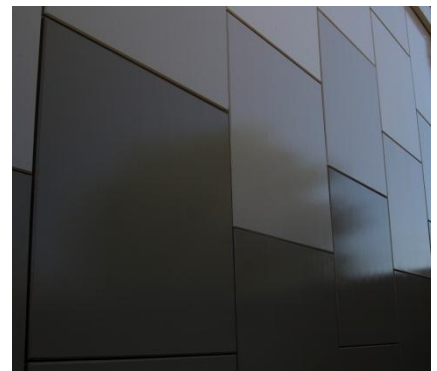
Challenge

The entire project included the construction of

- a 2-span bridge over the railway line
- Reinforced Earth® retaining walls for the bridge approaches
- intersection upgrades
- overlay on Gympie Road

Care needed to be taken to minimise the disruption to the local community during construction.

The project would be in construction for over 14 months and there needed to be constant interaction between Queensland Rail, Department of Transport and Main Roads and the local community to deliver the project smoothly and efficiently. Working with scheduled track closure to construct the majority of the bridge was particularly challenging for Queensland Rail.



Main: Front view of the Reinforced Earth® TerraPlus® concrete facing panels.

Above first picture: Close-up of the abutment wall

Above second picture: Lifting panels on site

Transport infrastructure



Above: Reinforced Earth® abutments at Francis Road Rail Overpass

Right and Above: Night construction

Solution

From a construction point of view the major challenge lay in the need to stage the construction. RECO was supplying as well as designing the retaining walls so the logistical arrangements were easier to arrange. Attention to time constraints and onsite space limitations ensured a smooth and efficient delivery of the project.

RECO worked closely with the clients' project team to incorporate site specific changes and requirements through the design and construction stage. These also included ongoing site inspections in order to monitor construction progress confirm the performance of the structures and resolve specific project issues.

RECO commenced precasting in our facility located in Sumner QLD in January 2012. Located 15km south west of the Brisbane CBD, our Sumner precast facility has some 1700sqm of indoor production space, and 7,000sqm of external storage space. It was well equipped to have the panels ready for the construction of the retaining walls which began in April, 2012.

The official opening ceremony of the overpass was held on the 24th April, 2013.

Project specifications

System	TerraPlus®
Finish	Smooth
Structure	Bridge
Area	1964 m ²
Max. Height	8.12m
Length	419.26m (total)
Design load	20kPa
Design life	100 years



Left: The completed structure of Francis Rd Rail Overpass



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