

JUNE 2009

the roadbuilder

and CONSTRUCTION EQUIPMENT JOURNAL

inside

- ★ **Bunbury Port Access Road**
- ★ **Northern Access Road**
- ★ **F5 Freeway Widening**
- ★ **Deer Park Bypass Opens**
- ★ **Project Information from
around Australia and Much More...**

from Darra to a station at Richlands and duplicating the Centenary Highway from two to four lanes from Richlands to meet with the existing Logan Motorway interchange at Carole Park. This stage is due for completion in 2011 at an estimated cost of approximately \$800 million.

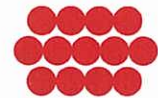
The Darra to Springfield Transport Corridor Project, Stage 1, is being delivered by The Horizon Alliance, a collaboration between QR (Queensland Rail), Department of Main Roads, John Holland Pty Ltd, GHD Pty Ltd (GHD) and Kellogg Brown & Root Pty Ltd (KBR).

Please note this list is only a sample of the sub-contractors and suppliers engaged by The Horizon Alliance to construct the Darra to Springfield Transport Corridor Project.

Subcontractors and Suppliers

- 1300 Locate
- Advantage Fencing
- Aquarius Slipform
- Ash Industries
- Ausco Building Systems Pty Ltd
- Austin Engineering Ltd
- Bachmann Plant Hire
- Bastow's Earthmoving
- Beaumont Stabilising
- Bluestar Civil Pty Ltd
- Boom Logistics
- Brisbane Cityworks
- BRS Civil Australia
- Campac
- Cemex Australia Pty Ltd (Brisbane)
- Charjule Pty Ltd
- Civilbuild Precast Pty Ltd
- Coates Hire Operations Pty Ltd
- Coffey Information Pty Ltd

- Communication Networks Australia
- Crescent Project Services & Systems
- Crib Retaining Walls Pty Ltd
- D.B. Farrell's Pty Ltd
- Deneefe Signs Pty Ltd
- Downer Edi Works
- E.V.S. Group
- Fencepac Commercial Pty Ltd
- Fenco Noise Barriers Pty Ltd
- Fleet Plant Hire Pty Ltd
- Frankipile Australia Pty Ltd
- Geofabrics Australasia Pty Ltd
- Global Cranes
- Hyatt Ground Engineering Pty Ltd
- JBJ Enterprise Plumbing & Drainage
- Keith Rubach Trenching & Earthmoving Pty Ltd
- Liway Logistics
- Manpower Services (Aust) Pty Ltd
- Mini Tankers Australia Pty Ltd
- Pioneer Road Services Pty Ltd
- Poly Panel Industries (Aust) Pty Ltd
- Procast Australia
- Quickcell Technology Products Pty Ltd
- R.A & A.M Dennis P/I
- Rollpress Proplate Group Pty Ltd
- Roofsafe T Systems
- Sasazat Contracting Australia Pty Ltd
- Sherrin Hire Pty Ltd
- Sovereign Energy Pty Ltd
- The Landscape Construction Company Pty Ltd
- The Reinforced Earth Company
- TTM Consulting (Qld) Pty Ltd
- Waco Kwikform Limited
- Wagstaff Piling Pty Ltd



Reinforced Earth

Sustainable Technology

**Supplier of TerraPlus®
Reinforced Earth bridge
abutments for the
Yamanto Interchange**

Reinforced Earth Pty Ltd
Trading as The Reinforced Earth
Company
ABN 53 001 215 327

Level 2, 20 George Street, Hornsby
NSW 2077 Australia

Phone: (61) 2 9910 9910

Fax: (61) 2 9910 9999

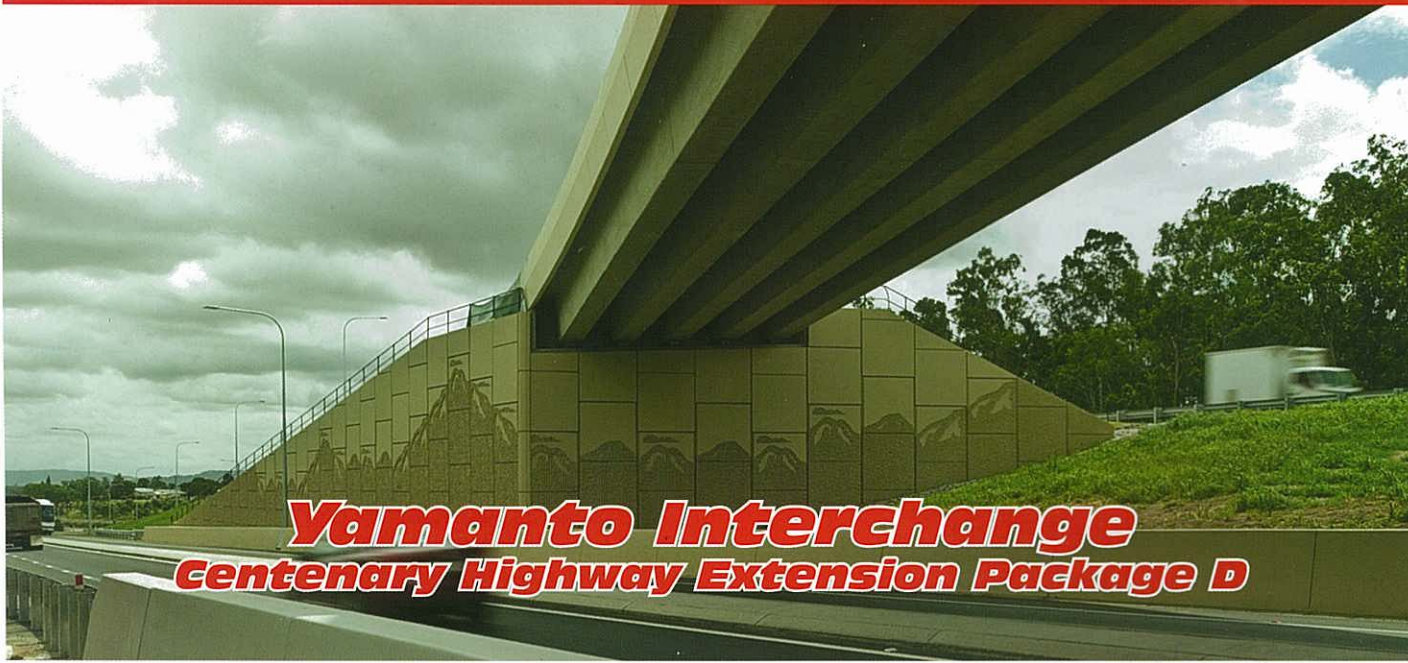
Email: recoaustralia@reco.com.au

Website: www.reco.com.au

© Signifies a registered trademark of
Reinforced Earth Pty Limited



Quality
ISO 9001
SAI GLOBAL



Yamanto Interchange Centenary Highway Extension Package D

Centenary Highway Extension, west of Brisbane, is an 18km extension of the Centenary Highway from Springfield to Yamanto. Package D is the 3km section from South Deebing to the Cunningham Highway at Yamanto.

This project provides a vital extension to the existing road infrastructure and significantly reduces travel times for the local community. The project will also improve the standard of living for communities in the Western Corridor by:

- Servicing the transport needs of the growing Springfield and southern Ipswich areas;
- Providing better connectivity to the Cunningham Highway/Ipswich Motorway route supporting future growth in the greater Ipswich region;
- Linking the two key Ipswich urban centres of Springfield and Yamanto.

The Reinforced Earth Company (RECO) were approached by winning contractor, Fulton Hogan, to design, manufacture and supply three Reinforced Earth (RE) retaining walls for the new \$44 million extension:

- Two at the Yamanto Interchange abutments (Area=910m², maximum height=10.98m); and
- One at the Kerners Road Overpass abutment (Area=236m², maximum height=5.28m).

The Yamanto Interchange is a major five span bridge over the Cunningham Highway that will carry eastbound traffic onto the new Centenary Highway Extension. As well as functionality, Main Roads (QLD) has taken into consideration the visual impact the interchange will have on the Yamanto area.

Bridge headstocks are painted an impressive red to create a gateway statement, while the RE abutment walls feature patterns reflecting mountain views available from the highway to the Great Dividing Range to the west.

Environment and Heritage Branch (Engineering & Technology Division, Main Roads (QLD)) were responsible for the design concept, developed as a context sensitive

10 - The Roadbuilder

response to the local setting, including textural and visual references to ambient rock forms, eucalypt bushland and regional visual amenity. Ribbing incorporated into the pattern design was also selected to deter graffiti vandalism.

The RE walls combine selected granular, engineered backfill with REhas® (Reinforced Earth High Adhesion Steel) steel strips and a modular facing system to produce an unrivalled, durable retaining wall. The RE wall provides a sustainable engineering solution with a lower carbon footprint than conventional construction techniques, for example cast in-situ concrete.

RECO engineers overcame numerous challenges when designing the false abutment and retaining wall at Yamanto Interchange. These included insufficient room for the REhas® reinforcing strips due to the bridge headstock and wing walls, the need to withstand horizontal braking forces at the abutment sill beam and the ability to support a crane working load of 212kPa at the crane mat when the bridge was put in place.

Mould Fabricator, F&E moulds, prepared six special mould types to produce the custom designed panel finish. Type 6 being a plain Finish, Type 5 being a RECKLI® mat finish then four other types of moulds with various indentations and raised surfaces were created using a combination of RECKLI® mats and plain surfaces.

As the construction program was brought forward by three months, the various types of panels needed precasting simultaneously adding complexity to the manufacturing schedule.

The bridgework was conducted in stages to minimise the impacts on traffic and traffic signs were placed to inform motorists of changed traffic conditions and reduced speed limits in the area.

The current design will enable an easy upgrade to a full grade-separated interchange to accommodate increased traffic volumes in the future and the RE walls have a 100-year service life.



TEAM Rock Anchors is a drilling and ground engineering contractor, specialising in many fields of ground anchoring, drilling & casing techniques; sprayed and retention system design & construction; heave and stressing; curtain and injection grouting; and equipment hire.

TEAM Rock Anchors is part of the TEAM companies whose four directors share over 50 years experience specifically in the post-tensioning anchoring fields of construction.

Formed in July 2006, TRA quickly found itself in a challenging market and established itself as one of the leading players in the drilling and rock anchoring South East Queensland.

Over the years, the list of completed projects and clients has grown considerably.

TRA has also had the privilege to be involved in some of the largest infrastructure projects in the history of Brisbane.

Our vast array of construction services include: drilling; stitch drilling; line drilling; casing; Tubex, Simcas, retrievable casing / screw pile; diamond coring; anchoring; multi-strand post-tensioning anchors; permanent stressbar anchors; permanent bolts; permanent rock nails / soil nails; temporary anchors; temporary rock bolts; temporary rock nails; hollow-core / Ischebeck anchors; micro pile wall; bored piers; drilled drains; structural steel shotcrete (sprayed concrete); pressure grouting; grouting; curtain grouting; stressing; jacking; head plant hire; concrete pump hire; other equipment hire; retaining walls; design & construct; etc.

Since its inception TEAM Rock Anchors has performed work on the following major projects:

- **Infrastructure** - Hamilton Road Upgrade; Bridge Upgrade (Gateway 2); Boggo Road North South Bypass Tunnel (Zone 3, 4 & 5 - Avenue, Ipswich Road, Fig Tree, Toll Road