CASE STUDY

Hazelwood Mine

Morwell, VIC, Australia

Conveyor Tunnels
TechSpan®

Owner:	International Power
Contractor:	Roche Thiess Linfox Joint Venture
Construction:	Stage 1: Sept 2003 Stage 2: Nov 2003

Background

Morwell, 148 kilometres east of Melbourne via the Princes Highway and 80 metres above sea level, is situated in Victoria's energy centre, the Latrobe Valley.

The International Power owned Hazelwood Mine is located in Morwell. Dredgers operate at the coalface, extracting 19 million tonnes of brown coal each year. The coal is then carried along huge conveyor belts to surrounding power stations. The conveyor system, which is over 50km in length, is capable of carrying in excess of 2,500 tonnes of coal per hour.

Challenge

An access road was to be diverted over a coal conveyor (Stage 1), and the clearance envelope was to include for pedestrian and vehicular access to the conveyor for maintenance purposes. A cost effective and rapid construction technique was sought.

Two similar structures were also required to cater for planned additional coal conveyors (Stage 2) with exactly the same clearance requirements. The chosen method for the first structure would likely be adopted for these additional structures.

Solution

The Reinforced Earth Company (RECO) offered the TechSpan® arch system to accommodate the design and construction requirements and was awarded the job in August 2003.

Stage 1 consisted of a 24m long arch structure on a 1:50 grade whilst the stage 2 tunnels were on a steeper 1:12 grade.

By designing a new arch shape to exactly match the required clearances, RECO ensured the most economical arch was provided.

TechSpan® Arch construction at Hazelwood Mine

Mining infrastructure

REINFORCED EARTH
SUSTAINABLE TECHNOLOGY

Left: Two of the Three Hazelwood Mine Conveyor TechSpan® Arches
Above: Completed access road above TechSpan® Arches and conveyor.

An advantage of the TechSpan® system is the speed and efficiency of its construction. With RECO personnel on site during the erection, each 24m length of tunnel was erected in a single day. This efficiency exceeded the client's expectations and saw the tunnels completed in record time.

A major concern of the client's was the ability to keep the conveyor clean and well maintained. By casting ferrules into the roof of the TechSpan® arch units, the conveyors could be hung from the arch, facilitating accessibility for cleaning and maintenance operations.

TechSpan® can be specifically designed to accommodate the individual circumstances of each project.

Special features/benefits

- New TechSpan® unit developed especially to conform to the Client's clearance requirements, thus allowing access to conveyor of vehicles for assistance with maintenance.
- The arch design and mould could be used repeatedly by the client for similar structures on the same site.
- Arch footings were designed by RECO in accordance with the designated arch bearing pressures.
- Each tunnel was constructed in a single day. A RECO representative was present for construction to ensure trouble free erection.

Project specifications

System	TechSpan®
Arch Type	TST
Span	10.40m
Height	3.60m
Length	24m
Thickness	200mm
No. Units	75

REINFORCED EARTH
SUSTAINABLE TECHNOLOGY

Reinforced Earth Pty Limited
Level 4, 20 George Street
Hornsby NSW 2077 Australia
Ph +61 2 9910 9910
Fax +61 2 9910 9999
www.reco.com.au

Reinforced Earth Limited
PO Box 72 734
Papakura Auckland New Zealand
Ph +64 9 236 3385
Fax +64 9 236 3385
www.reco.com.au

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