



Precast arches deliver for Southern Gateway

The Southern Gateway Alliance, lead by Leighton Contractors, was established in 2007 to deliver the New Perth Bunbury Highway in Western Australia, consisting of 70km of new road and 19 bridges. 5 of the bridges involved a total of 5000sqm of Reinforced Earth TerraPlus abutment walls with unique pattern recesses to each panel.

In early 2009 the alliance was additionally awarded the Mandurah Entrance Road project. The major elements of the Mandurah Entrance Road included 6.5km of 4 lane dual carriageway and two railway tunnels, one of which was an extension to an existing railway tunnel at Fremantle Road of some 170m length, and the other, a new 220m railway tunnel at Parklands.

Precast manufacturer

Reinforced Earth
Humes

Client

Southern Gateway
Alliance

Head Contractor

Leighton Contractors

Engineer

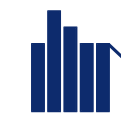
GHD

www.nationalprecast.com.au

Humes



REINFORCED EARTH
SUSTAINABLE TECHNOLOGY



NATIONAL PRECAST
CONCRETE ASSOCIATION AUSTRALIA
making precast easy



In July 2009, Reinforced Earth tendered and was awarded the design and supply of the 220 lineal metres of TechSpan precast arch tunnel at Parklands. The arch tunnel was 17.5m span x 7.5m in height. Elements were 350mm thick, weighed 24 tonnes and were manufactured with 50MPa concrete. Humes was awarded the 170m extension to the existing Fremantle Road tunnel which they had previously supplied. The reason for awarding the tunnels to two separate suppliers related to the tight program for track possession and arch installation though January 2010. Awarding to two suppliers gave the alliance partners some safety margin that the supply program could be met.

Reinforced Earth built four arch moulds to facilitate the arch supply program and engaged a local precaster to undertake the manufacturing. An electrical consultant was also engaged, as reinforcement to the arches was required to be electrically earthed.

Arch manufacture for Reinforced Earth went reasonably smoothly once all 4 moulds were brought in to service and completion of arch manufacturing was achieved in just three months. Arch installation also went without any major problems, being completed in 3 of the 4 weekend track shut-downs which were provided by the client.