

Bargoed Rail Station

South Wales 2007



Client	Caerphilly Council
Contractor	Hochtief Griffiths
Consultant	Capita Symonds

As part of the Greater Bargoed Community Regeneration Project the £25m Angel Way was constructed to help transform the town and surrounding communities. The new road construction required a large bridge structure to cross the Cardiff to Rhymney railway line. The original proposal was to construct bridge abutments with a precast concrete deck.

Hochtief Griffiths worked with Reinforced Earth Company (RECo) to develop a precast arch alternative to the proposed abutment structure, which would reduce the requirement to excavate into the adjacent slope to the railway and offer significant cost savings.

RECo designed and supplied a 150m long arch structure to span the railway, the arch was erected during night time possessions to minimise disruptive work. The arch was constructed from two pieces brought together and connected at the crown with an in-situ stitch prior to backfilling, thus creating the 15m overall span.

The design of the tunnel had many challenges to overcome such as having to be built on a radius to follow the rail track, and at one location a large sewer pipe had to cross over the line in the tunnel, special holes had to be incorporated into the arch design to allow the pipes to pass through without risk of fracturing.

The arch was founded one side by spread foundation on glacial till whereas the other side was founded on colliery spoil and required a piled foundation, the arch had to be designed to accommodate any differences in settlement from each side.

Precast arch thickness was only 300mm, which not only represented a large cost saving to the client but also a significant reduction on the environmental impact that an alternative structure would have had. To add value the arch spandrel and wingwalls were completed in Reinforced Earth, also supplied by RECo.