

Dingle Brook Bridge

Warrington 1997



Client	Commission for New Towns
Contractor	Birse
Consultant	Atkins

Dingle Brook Bridge formed part of a single carriageway distributor road to serve the commission for New Towns housing development in Grappenhall Heys near Warrington. The bridge was designed to carry the road over a wooded ravine at an area known as Dingle Brook.

The Reinforced Earth Company (RECo) offered an alternative solution to the conforming bid to Birse Construction. It was proposed to install precast arches as the main spanning elements, with Reinforced Earth spandrel and wingwalls forming the structural infill support over the top of the arch backs. The cladding methodology was identical to that of concrete structures, employing wall ties to fix the bonded stonework to the Reinforced Earth walls.

RECo carried out full detailed design for the entire structure, with finite element analysis used to minimise the quantities of reinforcement and concrete used in fabrication of the twin precast arches.

The time saved on the original programme by utilising Reinforced Earth precast arches and walls was over 4 weeks.

As an example of a combination of Reinforced Earth products & methods, the bridge arrangement was put forward for, and won the 'Construction Industry Award for Innovation 1998' from the CONSTRUCT Structures Group both for the prefabrication element and the recognition of the increasing importance of durability requirements within bridge structures.