

West Mill Bridge



Overview

A road bridge over the River Cole in Oxfordshire, incorporating glass and carbon fibre reinforced composites.

Details

Location	Near Highworth, Oxfordshire, UK
Description	Road bridge over River Cole
Client	Oxfordshire County Council
Date of project	2002
Where FRP composites are used and why	Demonstrator project as part of ASSET EU research project. GFRP deck developed as durable lightweight alternative to reinforced concrete.
Specific design details	4 no. GFRP box sections stiffened with CFRP flanges, spanning 10m. Cellular GFRP deck spans transversely over GFRP beams. Reinforced concrete abutments, reinforced concrete parapet beam with steel parapets.
Type of composite used	Deck – multi-axial pultruded sections of E-glass fibres in polyester resin. Main beams – multi-axial pultruded sections of E-glass fibres in polyester resin, with resin infused medium modulus carbon fibre flanges.
Performance in service	Principal inspection (2008 and 2014) confirmed no change in structural condition. Some algae/mould growth on surface of GFRP edge fascia due to moist/shaded environment. Cracking (due to local flexing and freeze/thaw) with some local wear/loss of road surfacing.
Project partners	Designer – Mouchel Contractor – Skanska Manufacturer - Fiberline

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