

Monmouth & Brecon Canal

Overview:

Site Location:	>> Monmouth & Brecon Canal, Llangattock
Client:	>> May Gurney



The Canal & River Trust (formally British Waterways) is responsible for the conservation and maintenance works across 2,000 miles of waterways in England and Wales.

As part of the annual waterway stoppage programme, Glandwr Cymru, the Canal & River Trust in Wales, undertake essential maintenance works on the Monmouthshire & Brecon Canal and Lewis Civil Engineering have been appointed as a contractor for these works by the Omnibus Principal Contractor.

In October 2007 a serious breach occurred when part of the canal bank near Gilwern collapsed. As a result a key road was closed for a period which was initially expected to be several weeks, however contractors were able to reopen the road within a week of the breach occurring.

British Waterways announced in November 2007 that a 16 mile stretch of the canal from Llanover to Llangynidr would be drained completely, so that a full inspection of the canal structure could be carried out. Subsequently, they announced that a full geotechnical survey would be carried out, and that they expected the stretch to be closed for up to a year. Water levels on this section were reduced significantly.

The results on these investigations were announced by British Waterways in December 2007. They had found there were over 90 leaks on the section from Talybont to Gilwern, with less leakage on the stretch from Llanover to Goytre Wharf. A press release in February 2008 announced that the total cost of restoration was likely to be around £15 million, with major investment required in the 2008/9 financial year, in order to repair the breach and to deal with other areas identified as being of top priority. The aim of the work would be to ensure that the canal would be safe and fully open from March 2009, but further work would be required during the following four winters in order to complete the process.



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In 2008 to 2010 Lewis Civil Engineering was appointed to undertake a number of projects which predominately focused on soft bank repairs to address the leakage issues in low risk areas. However, in certain areas the canal runs along the hillside at a higher level to some surrounding properties where the risk of a burst meant a concrete lining was required.

Lewis Civil Engineering was chosen by May Gurney, the Principle Contractor, to carry out the relining works on behalf of the Canal & River Trust. The contract began in November 2012 with an overall 20 week programme working 7 days a week. This regime was required in order to meet the required timescale for re-opening of the canal for the Easter weekend of 2013.

The works comprised of the following:-

- Excavating the canal bed and establishing a haul road in the bed of the canal, managing 2,200m³ of surplus slurry and the installation of a twin wall drainage pipe along the edge of the canal that was to be lined.
- The side slopes of the canal were surface trimmed to the required profile in preparation for the installation of the PVC waterproof membrane by "Landline Ltd".
- The PVC liner was laid on a geotextile protection fleece layer. This prevented the PVC liner from being punctured from below. The PVC liner was then covered with a 125mm thick layer of concrete which forms the structural lining and protection. Approx 500m³ of concrete lining was poured using a concrete pump with static lines to pump the concrete over a distance of 400m.
- Armortec concrete blocks were installed to protect the sides of the off-side canal bank above water line. Approx 855m² were installed. Porcupine blocks were also installed to provide a mooring section on the tow path side.
- During the contract both the surface water runoff and the canal drainage had to be managed using various pumping techniques through a very inclement winter.



The canal was re-watered on 19/03/13, on programme, to allow navigation of boats for the Easter week. The tow path reinstatement and aquatic planting along the tow path was completed subsequently.

On the re-opening of the canal, Vince Moran, the Canal & River Trust operations director, said: "Repairing, maintaining and caring for the canal and river infrastructure underpins the cause of the Trust. We spend around £50m every winter on lock gate repairs and replacements, brick work repairs to lock chambers as well as embankment maintenance, essential works on reservoirs and many other activities. We care for over 25,000 different structures across England and Wales. Our work requires a wide range of expertise including civil engineering, operational specialists, heritage and environmental experts, hydrologists and education and interpretation professionals.. Few people realise that the many canal locks, buildings and structures of the waterway network comprise one of the finest working pieces of Britain's industrial revolution. "Repairing and maintaining these waterways is a painstaking task, which requires traditional materials and methods to be used to preserve this vital part of our heritage. However, they've become more than just a historical monument; they're now wildly recognised for being crucial for wildlife and are a well-loved leisure resource for millions of people every year."