

Eamont Bridge – Cumbria Flood Damage Repairs

Client: Cumbria County Council	Value: TBC
Location: Eamont Bridge, Penrith, Cumbria	Duration: 6 weeks

Project information

This project was the investigation, temporary works, repairs and reinstatement to the damage to Eamont Bridge, Penrith, after the December 2015 Cumbria Floods disaster, working in conjunction with Cumbria County Council, Mabey Engineering, Environmental Agency and various sub-contractors & Suppliers.

	<p>Mid-February, site clearance, clear stones, flood debris and silt etc., de-positioned by the flood waters, and create an access from the river bank into the river.</p>
	<p>Mid-February, investigation works to bridge via specialist remotely operated submersible drone after the flood levels had reduced, investigations to North and South Piers to ascertain damage and what repair works are required.</p>
	<p>Mid/late-February, create and install temporary coffer dam using bags of stone/sand, this is for site access, health & safety of work men and machinery, and to get access to the bridge piers to see damage and plan the repair works.</p>
	<p>Mid/late February, install temporary specialist pontoons for access for the work men, inspection of the bridge, and transporting small machinery, pumps, power supply and tools to the damaged areas.</p>

	<p>Early March, sadly a slight set back, due to river levels rising and the water backing up leading to the potential flooding of properties in Eamont Bridge, Cumbria County Council instructed the removal of temporary coffer dam to allow the river level to reduce.</p>
	<p>Early March, lift small machinery, pumps, equipment and products into coffer dam/river to prepare and commence the repairs to the North Pier of the bridge.</p>
	<p>Early March, create safe working platforms for men, equipment and machinery, and to get access to the North Pier. This enabled a storage area adjacent to the damaged piers.</p>
	<p>Early march, once access was available and safe for the work men, the first initial repair works being the installation of "Acro" props to support the damaged bridge. Pumping water out of the voids and scour holes could now commence.</p>
	<p>Early March, the first mass concrete pour into the large voids and major scours under the North pier, a large concrete pump was used situated South of bridge, specialist underwater setting concrete used to backfill the voids.</p>

	<p>Early March, specialist concrete pump and workmen manually installing specialist underwater setting concrete into the voids, avoiding river pollution. Vibrating of the concrete into the small voids and crevasses within the damaged pier, and to give the mass concrete more strength.</p>
	<p>Early March, underwater setting Concrete being pumped into large void/scour under bridge, and manually inserted into small voids and crevasses within the damaged pier, ensuring no damaged to the fragile existing stonework of the piers.</p>
	<p>Early/mid-March, the concrete in the voids and scours under bridge, the “acro” props initially erected to support the bridge have been submerged into the concrete backfill.</p>
	<p>Mid-March, installing the shuttering and formwork prior to second concrete pour, note the amount of water pumps required to keep the working area free from water and safe for the work men.</p>
	<p>Mid-March, shuttering and formwork in place ready for second concrete pour. The second concrete pour was on top of the initial concrete pour and this was above the current river and water level.</p>
	<p>Mid-March, manually pumping the second concrete pour into the voids, scours and crevasses to backfill the majority of the voids and scours. This gave full support to the exposed existing stonework on the piers.</p>

	<p>Mid-March, pressure grouting and pointing into all outstanding voids, crevasses and cracks to ensure all cavities and empty spaces are sealed, this will give full support to the existing piers.</p>
	<p>Mid-March, formwork stripped and preparation for undertaking and installing the stonework to the North pier of Eamont Bridge.</p>
	<p>Mid-March first layer of new stonework facing installed onto new concrete, additional layers will be installed to underside of existing stonework, with mortar used to seal from water ingress.</p>
	<p>Mid-late March completion of the concrete and stonework repairs to the South Pier at Eamont Bridge. Place stone baskets pinned to river bed and new stone as additional protection to the new stonework.</p>
	<p>During the whole of the works, many large pumps have been deployed 24/7 to keep water from the coffer dam and to keep work areas to a reasonable, safe and manageable levels, EA were constantly in attendance to supervise and assist.</p>
	<p>Repair works to the scour damage to the south pier, minor repair works (concrete protection) to the existing damaged ducts, clear the site and reinstatement works The A6 Road and Eamont bridge was re-opened to traffic and pedestrians 22/03/16</p>