VolkerLaser

Tintern Wireworks Bridge

VolkerLaser was contracted by Gloucestershire County Council to undertake strengthening and refurbishment to the Tintern Wireworks Bridge.

The Tintern Wireworks Bridge is a Grade II listed bridge across the River Wye at Tintern in the Wye Valley. Our full scope of works included the full removal of the timber deck and replacement with a steel deck to meet the required capacity for future use, strengthening of the structure, grit blasting and repainting, as well as repointing masonry supports.

For the team to undertake grit blasting works, scaffolding was erected and fully encapsulated to protect the surrounding environment during this process. Whilst visually the bridge appeared to be in poor condition, during the grit blasting operation, it was found the majority of the structural steel was in remarkably good condition, although some repairs were needed. The steelwork was treated to prevent any further corrosion or deterioration.

The team removed the existing deck planks and cross bracing, which allowed all bridge girders to be grit blasted, inspected and painted, ready for the new steel deck to be installed. The new deck, which had a timber aesthetic in order to meet heritage requirements, was built off-site and transported site once the team was ready to install.

To facilitate the installation of the new deck, temporary cross-beams with a roller and guide arrangement were set up, spanning between the bottom flanges of the existing bridge beams. The beams, rollers and guides are referred to as a ‘launching system’ and allowed the beams to be pushed across the span of the existing bridge and into position.

The team used a 40t crane to lift the new steelwork onto the launching system. The site team pushed each of the five beam sections into position by hand and the first centre string was installed in approximately four hours. The beam string was then checked for alignment and jacked up to the correct level, ready for welding. Following the installation of the first string, the outer strings were delivered and installed over a weeklong period and were fully welded together to create the new deck structure.

Throughout these works, the team carried out all stonework and masonry repairs to the bridge abutments and piers. Working in conjunction with both Gloucestershire and Monmouthshire County Council’s conservationists, the existing mortar was chemically analysed to allow an accurate match to be made. Although, the new mortar contrasts quite noticeably at the moment, time and weathering will gradually reduce the contrast.