Project Profile

Sharpness Pier Repairs, Sharpness Dock

Duration: 4.5 Months
Value: £790,000

Client: Kier/Canal River Trust

Requirement:

Sharpness South Pier is located downstream of the outer gates (sea gates) to Sharpness Tidal Basin. The pier is effectively located within the River Severn, at the point where the river meets the Gloucester & Sharpness Canal. The function of both north pier and south pier is to guide ships into the Tidal Basin from the River Severn
In June 2020 theMV Lady Adele (photo inset) on arrival at Sharpness Port contacted the South Pier at Sharpness.
As a result of the vessel impact, the South Pier sustained damage which required urgent inspection as-well-as removal of seabed debris and loose elements that may become detached in the near future.

Solution:

TMS mobilised a reactive works dive team to both ascertain the full extent of the damage and make safe any unsecure structural element.
This involved installing new trestles with foundations drilled into the riverbed so that the damaged section could be re-built in the same format at the existing south pier.
In addition to the structural damage, mains power to the piers navigational aids was also severed, this increased the risk to maritime traffic thus increasing the urgency for permanent repair.

It was imperative that during all phases of work the port was kept operational thus reducing the commercial impact to both client and insurer.

Works were carried from aboard our working crane barge "Maverick", she came alongside within the port allowing the loading of plant and materials suitable to safely execute the works
To safely and remotely dismantle the existing structure a 35t excavator was loaded aboard Maverick with various quick hitch attachments including selector grab and sheer.

Access to the works was via a working dock through two sets of locks and a basin, this access was tidally restricted meaning 12hr working windows.
Our team therefore once alongside the works would be there for a 12hr shift, this shift pattern would often require night works
The repairs to the structure needed to be carried out at all states of tide starting with foundation works within the intertidal zone.
The timbers piles had been either snapped at the base or further up the structure therefore requiring replacement from their foundation up.
Piles were sheered or chain sawed down, then pulled from their foundation sockets using the excavator aboard Maverick.
Once removed the existing foundations would be broken out and removed allowing new timber piles to be installed.
Grout pumping was employed to safely tremie grout into the newly created pile sockets without allowing silt or grout lose into the water course.
The structure above was then rebuilt working up and down the tide using Maverick's crane and working vessels.
The works were completed on programme and to an equal or higher standard than previously employed, client and statutory stakeholders expressed their gratitude for the prompt and professional service