Portland Landslip

Overview:

Site Location:	>> Portland, Dorset
Client:	>> Wessex Water
Contract Value:	>> £190k
Project Duration:	>> 10 Weeks (Critical works)

Torrential rain over the early spring months caused a catastrophic landslide in the harbour at Portland severing an existing 700mm diameter gravity sewer. The main was fully disjointed over a 100m length and posed a significant Environmental Risk being located within the Port Harbour Authorities land and in an area known for its fisheries and shellfish activities. Lewis were employed by Wessex Water to work alongside its Emergency reactive teams to firstly control and provide a robust overpumping arrangement and revised spill philosophy for peak flows and secondly to develop a strategic solution for reintroducing the flows.

The initial overpumping and flow control/philosophy were established immediately and Wessex Operations Team worked alongside our teams to ensure full pollution prevention measures were introduced. Temporary screens were installed alongside duty and standy pumps and robust stopper installs and flow/inflation schedules agreed. This ensured a further Environmental incident was avoided whilst also protecting our proposed working environment and as importantly the stability of the embankment which would be severely jeopardised by further saturation.

Alongside the above our Management Team worked alongside the designers and our own appointed Temporary Works Design Team to firstly establish the stability of the embankment for further movement, secondly to create a safe place of work and thirdly design the most efficient solution to the issue.

Movement monitors were installed over the entire embankment firstly which allowed us to identify the areas unaffected by the slippage. These became our fixed points in terms of connections and the design needed to facilitate these. Once these were selected and given obstructions (existing Oil tanks) and the likelihood of further movment on the embankement between these two points, an overhead diversion was proposed. Standard steel sections were used with the RC base height providing the required gradient allowing an accelerated Steelwork design and manufacture by standardisation.

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Once the solution was identified we were able to engage our supply chain. By having pre determined Frameworks supported by Wessex, we were quickly able to carry out a Commercial comparison between the DI/ Welded Steel/PE/concrete options alongside a Helath & Safety assessment of each of the materials. This was complete within the initial feasibility period and provided a 40k saving and the quickest delivery available to meet site installation programme requirements. A result for the whole team.

Whilst the fabrication of the steel sections was being undertaken all RC works were completed and the Frames/brackets/pipe straps and bolted ductile iron flanged pipework was installed systematically and to programme. Extremely tight construction tolerances driven by pipe availability was overcome by designing in flexibility/slide bolts etc within the support plinths. This demonstrated the level of understanding of the team and the experience needed even in reactive environments to consider the difficulties of construction during design to minimise risk and time at site.

By understanding the entire process Lewis bring the buildability advice and guidance to the design team and allow a 'right first time' solution. The Management Team employed by Lewis offered confidence to the Operations Team and client that they had a Contractor who understood their business and the needs of the project and were reacting within the timescales necessitated to resolve. Extensive liaison with all other parties such as the Ports Authority and affected residents etc ensured the success of the project.

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