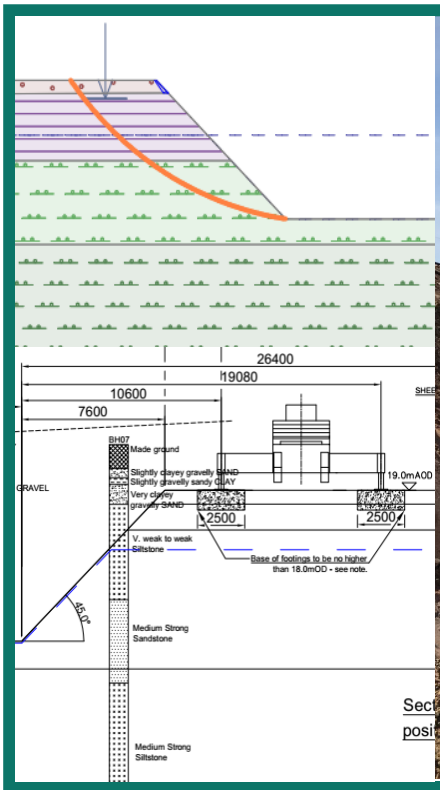

remedy geotechnics

CASE STUDY

Temporary Works Design

Prioress Mill Pumping Station

THE PROJECT

Construction of a new abstraction pumping station of the banks of the River Usk in South Wales.

THE PROBLEM

Instability when using large cranes next to a 7.5m deep excavation pit.

REMEDY'S SOLUTION

Careful ground appraisal & analysis to derive a safe elevation to transfer loads into the ground.

Leave the ground to us!

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When contractor Skanska needed to operate large cranes next to a 7.5m deep pit excavation, created to build a new water intake pumping station, they were rightly concerned about the stability of the pit sides under the high crane loading. They then turned to Remedy Geotechnics for an independent appraisal of the proposed working situation to see if an a safe and economic means of achieving the required heavy lifts could be devised.

Under the 124 ton out rigger loading there were concerns that shear failure through the pit sides would cause crane instability.

Ground investigation had revealed Sand and Gravel Glaciofluvial Sheet Deposits overlying Silurian Siltstone which was very weak becoming medium strong at depth. Of particular concern was the direction and dip of discontinuities within the siltstone.

Remedy's initial calculations with loading at ground surface indicated inadequate safety factors. The crane position could not be moved so Remedy's solution was to optimize the construction of mass concrete footings to transfer the load into the ground to greater depth. Stability was checked not only for dry conditions but for a more onerous flood condition, so that a satisfactory margin of safety could be assured even under high river water levels.

With Remedy's help Skanska was able to show that the proposed use of heavy cranes next to the excavated pit could be undertaken safely.

Contact Remedy Geotechnics - we'll give you an answer every time.

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