Pumping Station

Customer: Kitchen Civils

Location: Beverly, East Yorkshire

Products: GeoBrace 390, 550 & Tubeshor 610

Case Study

Altrad RMD Kwikform provides groundworks support for pumping station excavation.

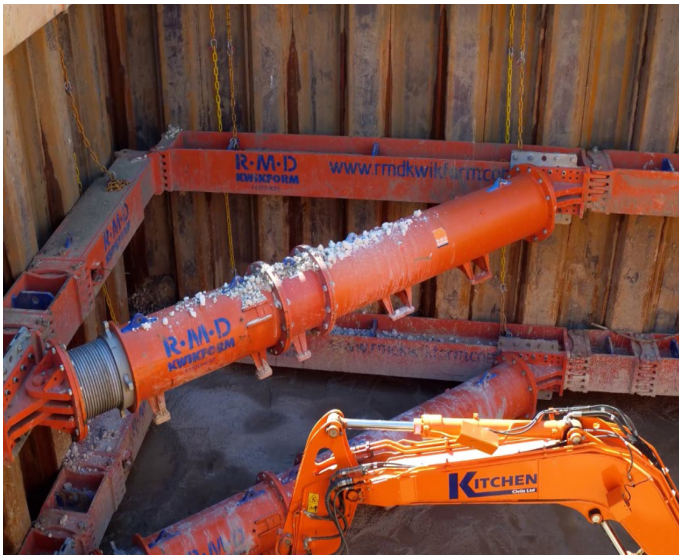
The construction of a new pumping station was underway to alleviate flood risks to a new housing development in Beverly, East Yorkshire.

Construction is being led by civil engineering contractor Kitchen Civils and supported by RMD Kwikform's Ground Shoring division. In order to excavate the 14.8m by 10.6m cofferdam, RMD Kwikform provided its 390 and 550 Geobrace hydraulic bracing system combined with its Tubeshor 610 hybrid props.

The works included the construction of two wet well pumping stations, and associated inlet chambers. Initially, these were to be constructed within their own separate excavations. However, following further site investigation it became clear the ground was very weak and a higher groundwater level was present. To make installation of both the temporary works and the construction of the permanent works easier, it was decided to build both pumping stations in one larger excavation. This reduced the number of frames required, reduced installation time, and it made the control of groundwater easier.

Due to the larger plan size of the excavation and the poor ground conditions, RMD Kwikform's Geobrace with Tubeshor products provided the optimum solution to support pre-driven interlocked sheet piles. Geobrace and Tubeshor Hydraulic systems are quick to install as the pinned connections enable faster and easier building of the frames on site, and there is no need for any on-site welding or cutting so waste is eliminated. The complimentary Tubeshor range was used to provide corner knee bracing which maximised the clear open areas within the excavation.

With many tubular props on the market, pressure exerted from the ground is carried by the hydraulic ram throughout the whole period of install. Therefore, whilst the excavation is open all the pressure is on the hydraulic lock off valve. Continued...



A key feature of the Tubeshor 610 prop, in addition to the Hydraulic lock off, is the mechanical lock off mechanism that carries the load.

This feature allows the hydraulic ram to be depressurised, basically turning the prop into a mechanical prop, giving the customer several safety benefits.

Simon Quibell, Construction Director at Kitchen Civils, said: "The ground conditions on site are very poor and the water table is also very high – this is quite typical around the Hull and Beverly area. We worked closely with RMD Kwikform to change the initial proposal; it wouldn't have been practical to have two excavations.

"The GeoBrace and Tubeshor propping system has been very efficient and robust in supporting the one excavation. As it's a hydraulic system, we've been able to extend the prop and mechanically lock off the cross struts – this has given us piece of mind in regard to safety on site, and reliability."