

Piling Equipment Specialists

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ABI Equipment Ltd supplied an ABI Mobilram TM 16/20 B telescopic leader rig and MRZV 28VV Vibro, with MZK 1200 Combi Clamp, to VolkerGround Engineering (VGE) for a major ground improvement project. This was for the installation of steel sheet piles as part of flood defence works in North Lincolnshire.

Lincolnshire Lakes, Flood Defences

Our client:

VolkerGround Engineering

Equipment used:

ABI Mobilram TM 16/20 B

ABI MRZV 28VV Vibro

ABI MZK1200 Combi Clamp



The work took place along the banks of the River Trent close to the town of Scunthorpe, where low lying ground either side of the tidal river is prone to flooding during peak high tide events as well as periods of prolonged rainfall.

Major flooding affected much of this area in December 2013 when these two phenomena combined to produce the most devastating floods in this area for 60 years – and it was this event that prompted this programme of works. An investment of £13.3m is being made in this phase alone, and is part of a wider regional investment of £1.2bn which will see major business, residential and infrastructure developments across North Lincolnshire.



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The sheet piling took place along the east bank of the River Trent, from the Keadby Bridge at Gunness in the north, to the M180 bridge in the south. The ground conditions in this area are alluvial clay and silt soils overlying sedimentary rock, and it was important for VGE to use a low-vibration method of installation so that there was minimal ground disruption to these soft friable soils.

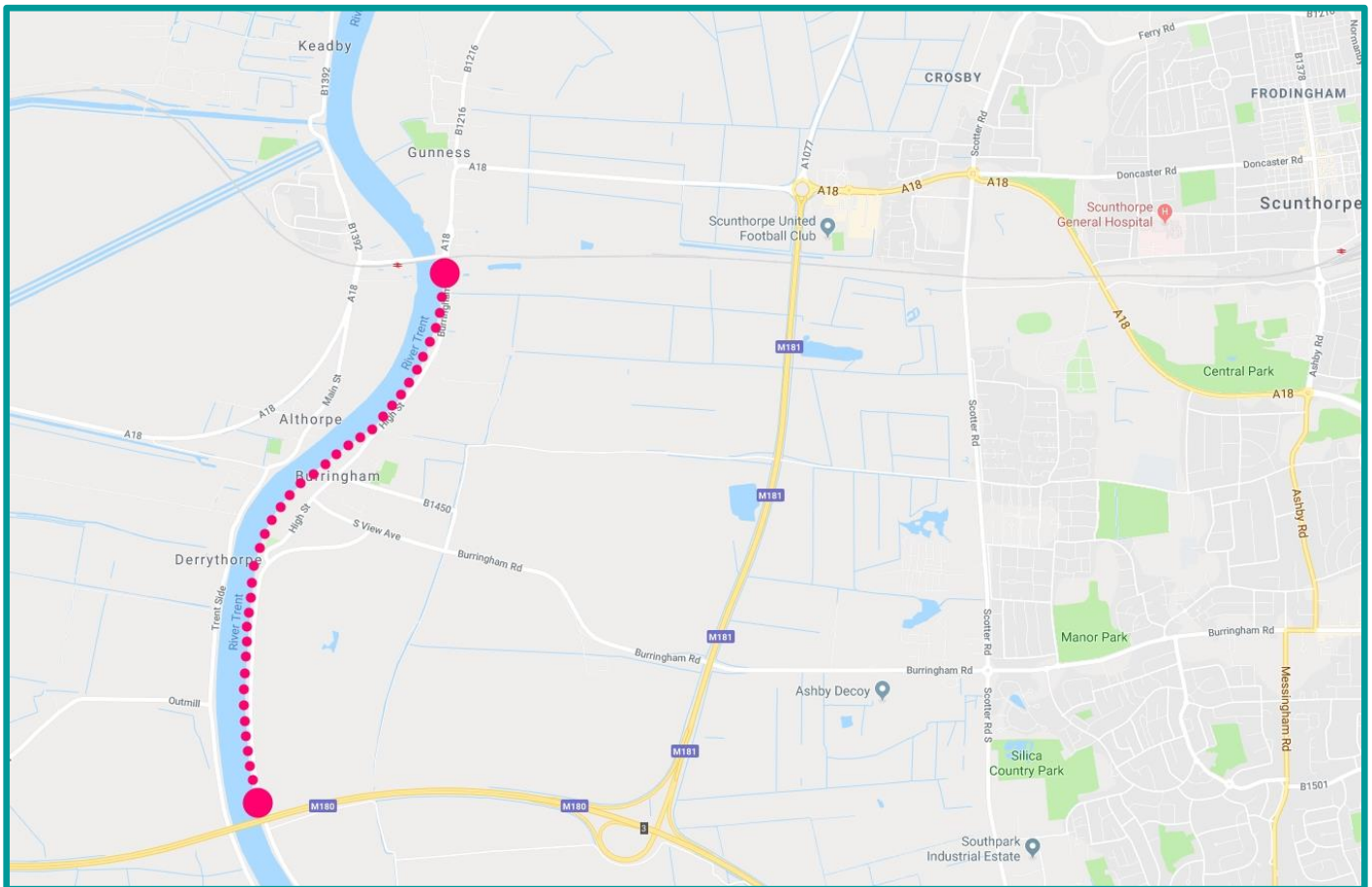
Having carried out the majority of the piling work, the TM 16/20 B was swapped for a more compact TM 13/16 SL rig to complete the final section of piling beneath overhead National Grid power lines. This was achieved easily enough by removing the mast head winch. This more diminutive rig was paired with an MRZV 17VV vibro, in addition to a Delmag D19-52 diesel impact hammer.

AZ26-700 steel sheet piles of 17m length were installed along a total of 2.2 miles (3.5km) of the River Trent.



Using the MRZV 28VV and MRZV 17VV vibros, with their unique variable static moment / variable frequency capability, meant that it was possible to install the piles easily, efficiently and with least disturbance.

What was a relatively straightforward piling project didn't necessarily pass without its own challenges. As well as having to negotiate the overhead powerlines, the team also had to contend with the winter weather - with wind being the main issue, especially in this flat exposed area.



This particular belt of land between Scunthorpe and the River Trent has been earmarked for the creation of six new villages to accommodate an expanding local population, and it is imperative that these flood prevention measures be in place before any development can begin. The proposed regeneration scheme brings to the area more than 6000 new homes, a commercial park, education, health, community, leisure and recreation facilities, which will be situated in artificially created lakeside environments.

Tim Davidson, Contracts Manager for VGE, commented:

“We are very impressed with the solid credentials of the TM 16/20 B – which is why we also have one in our own fleet – it is powerful and reliable, it just gets the job done! In fact, we used a wide range of equipment and tooling provided by ABI Equipment Ltd on this project, it all performed superbly, and their service and support were second to none.”