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ABI Equipment Ltd were asked to supply VolkerGround Engineering Ltd (VGE) with a Mobilram TM22 piling rig with MRZV 36VV vibrator, an MZK 1200 Combi Clamp, and an MDBA 7000 auger drive, plus tooling. The equipment was required to carry out sheet piling works for the construction of the Luton DART. This is part of a vast schedule of improvements and expansion taking place in and around London Luton Airport.

London Luton Airport, Luton DART

Our client:

VolkerGround Engineering Ltd

Equipment used:

ABI Mobilram TM 22

MRZV 36VV Vibro

MZK1200 Combi Clamp

MDBA 7000 AugerDrive

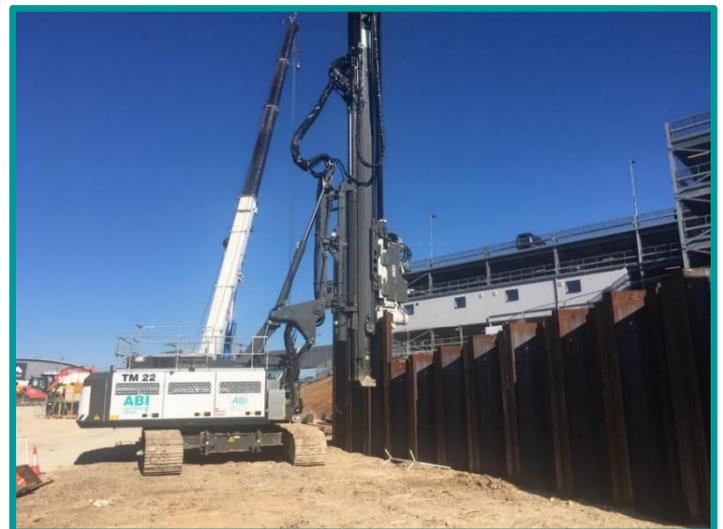
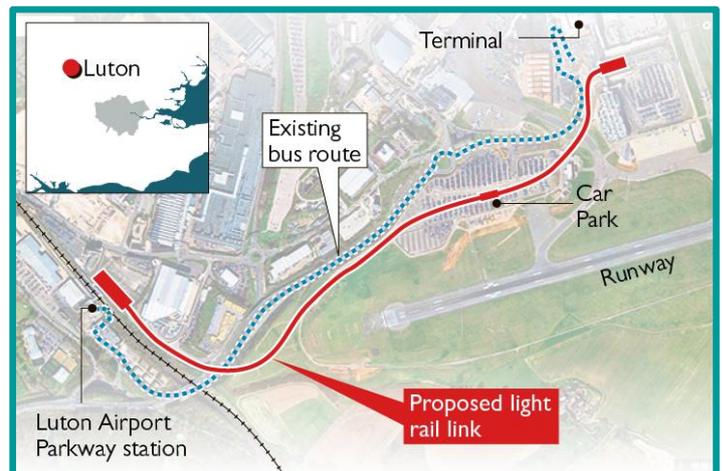
Application: Sheet Piling



The Luton DART (Direct Air Rail Transport) will be a fully automated people mover. It will be a light rail double shuttle that transports passengers smoothly and efficiently between Luton Airport Parkway railway station and London Luton Airport, 24 hours a day, seven days a week.

VGE have been working in several locations on site as part of this project, and the TM22 rig was required at three of these: Central Station (the Airport terminus for the DART), and two stretches alongside Airport Approach either side of the current underpass (Site 14 and Fire & Rescue, as shown on the plan below).

Given the fact that this work is taking place at a very busy airport, and therefore a highly sensitive environment, VGE needed to select specialist equipment that would minimise both noise and vibration on site, and produce as little disruption as possible for travellers, instruments and surface traffic. Selecting the MRZV 36VV model vibrator with ABI's patented variable static moment / variable frequency capability



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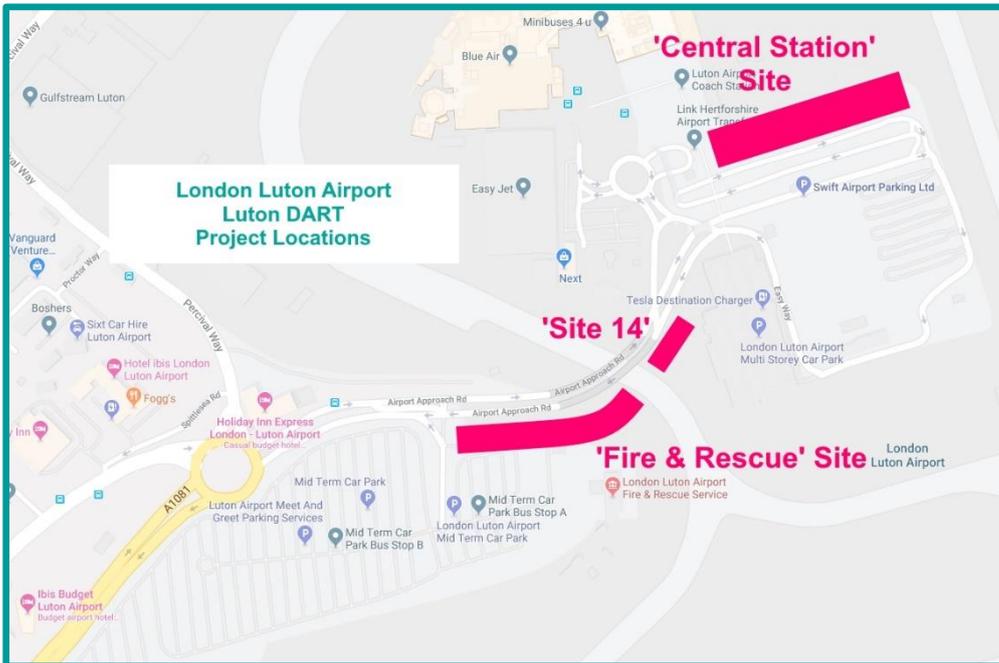
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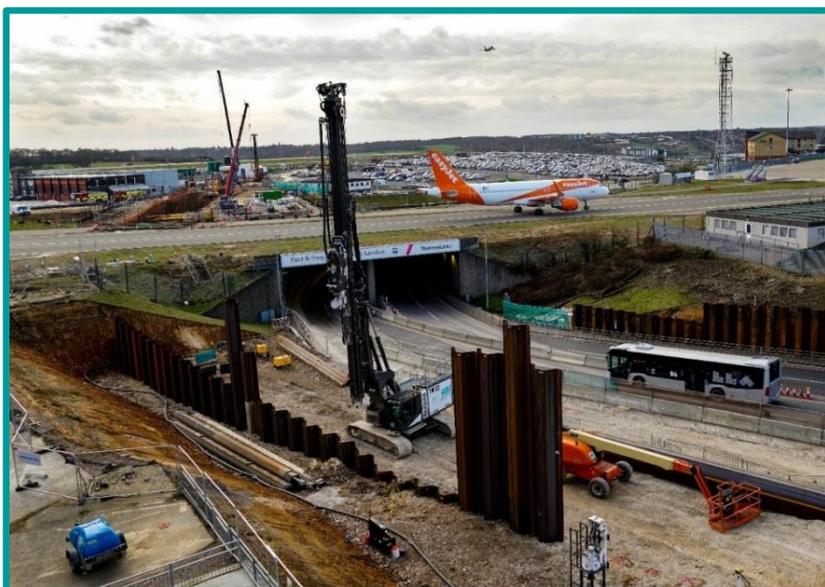
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meant that the vibration frequency could be adjusted, and therefore what could have been potentially harmful resonance would be minimised.

The Central Station site was the most sensitive of the sites, being immediately adjacent to the main passenger walkway. Here the 19.7m AZ38-700 piles were initially installed to resistance level (approx. 9m deep) using the vibro, and then driven to target depth using an impact hammer. At Site 14, 16m – 17.6m AZ32-750 piles, and at the Fire & Rescue site 13.2m – 16.7m AZ32-750 piles, were installed using just the VV vibro alone.



ABI's range of MRZV-VV vibrators are the very latest state-of-the-art units, and they offer unique patented technology. They give both variable static moment and variable frequency control of the piling process – and this, combined with electronic monitoring and software control systems, mean these units deliver a very real commercial benefit to the piling contractor. In short, there is a greater overall efficiency of the piling process; with increased piling production rates, reduced fuel consumption, reduced noise levels, and reduced engine and hydraulic component wear.

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The TM22 is a powerful and sturdy rig, and VGE were the first contractors to hire this particular brand new unit, which had arrived in the UK from the manufacturing plant in Germany only one week before. They were so impressed with the performance of this rig that they have since gone on to purchase this model for their own fleet of equipment.

VGE's work on this part of the project is planned for completion in the Autumn of 2019, whilst the overall Luton Airport DART works are planned for completion by August 2021.



Tim Davidson, Contracts Manager for VGE, commented:

“We needed to use specialist equipment on this sensitive site – equipment that would mean we met the noise and vibration restrictions in place. In addition, the ground conditions in this area are hard flint over chalk and so we needed to use a rig with the power to break through this and produce consistent results. We already have several ABI Mobilram rigs in our own fleet, so we knew that we could rely upon the TM22 in terms of output, quality, reliability and handling. This specialist equipment helped us to deliver these particular phases of the project on time and to the immense satisfaction of all involved. As always, ABI Equipment Ltd's service was second to none.”