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In March 2022 ABI Equipment Ltd were contracted to supply Deep Soil Mixing Ltd with an ABI TM17 Mobilram and VDW Double Auger Drive for use on the construction of the new Gull Wing Bridge in Lowestoft, Suffolk.

Soil mixing is an environmentally friendly ground improvement and soil stabilisation technique that is used to reduced settlement and improve the bearing capacity of soil. Specialist contractor Deep Soil Mixing were called upon to undertake this process on the site of the new Gull Wing Bridge.

The Gull Wing Bridge, named by local school children, is the third crossing of Lake Lothing, which divides south and north Lowestoft. This much needed crossing, has been campaigned for by residents for 50 years, will ease the traffic congestion within the town.

This project with Deep Soil Mixing Ltd was one of the first that our new ABI TM17 Mobilram was used on. The rig was equipped with one of our ABI VDW Double Auger units - which is typically utilised for "Front of Wall" secant pile formation (also called Cased CFA or CSP).

The VDW unit has two rotaries, one inside the other. The lower rotary normally drives the outer casing with the upper rotary driving the inner auger. Deep Soil Mixing Ltd have adapted this capability and designed their own soil mixing tools for large diameter columns. Essentially, they have harnessed the counter-rotating feature with inner and outer mixing paddles to generate a high

Gull Wing Bridge Lowestoft

Client: Deep Soil Mixing Ltd

Equipment: ABI TM17 Mobilram
VDW Double rotary unit

Technique: Soil mixing



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Location for Gull Wing bridge, Lowestoft

Extent of works for Gull Wing

speed, high shear soil mixing process that is highly productive, efficient and accurate in appropriate soil conditions.

The Gull Wing Bridge has been fabricated in three sections, by Victor Buyck Steel Construction in Ghent in Belgium. The sections were then transported across the North Sea by barge from Rotterdam in The Netherlands to Lowestoft. The first element, the North Approach Viaduct, was installed in October 2022 with the remaining two sections, North Approach Viaduct two and three, being installed in 2023. The combined weight of the three steel structures is 783 tonnes.



Photo Credit: www.chpv.co.uk


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Robert McGall from Deep Soil Mixing Ltd said:

“The ABI TM17 performed extremely well during this project. We have used ABI rigs for many years and were particularly impressed by the power and fuel efficiency of this new model.

Reduced exhaust and noise emissions are very much welcomed on our projects. Our piling techniques are typically geared towards minimising our impact on the local environment.

This rig has also been equipped with a grout hose package making it easier to manage the grout hoses as the machine moves around the job site.

The larger under carriage and wider track pads also enabled an efficient design and construction of the working platform.”

