Case Study:
M23 Smart Motorways Project Junctions 8-10

VAN ELLE
TOTAL FOUNDATION SOLUTIONS

Client:
Kier

Sector:
Highways

Services Provided:
600mm, 750mm and 900mm Bored Cast in Place / CFA piles

Location:
Surrey & West Sussex

Value:
£1.3m

Year:
2018/2019

The M23 upgrade sees over 11 miles of motorway being upgraded to Smart Motorway. The existing motorway is constructed on a number of embankments, within cuttings and also has a significant section constructed on a large viaduct.

Van Elle were appointed to provide piled foundation bases for over 200 gantries and minor structures along the length of the project.

Due to the range of structures to be constructed and the highly variable ground conditions the CFA (continuous flight auger) and cased CFA piles ranged in diameter from 600mm to 900mm with depths ranging from 5m to 19m. A number of locations had high strength rock present requiring rotary percussive drilling to get to depth.

Van Elle collaborated with Kier from the earliest stages of the project and due to Van Elle's comprehensive range of piling rigs different piling options were able to be evaluated. Space constraints and maintaining access through the work areas were key factors to selecting the final methodology which involved utilising flexible and powerful compact restricted access piling rigs. These rigs have been built to Van Elle's specifications and offer a unique capability in terms of diameter and depths of pile that can be achieved. These compact rigs require a smaller working platform and less temporary works compared to the large piling rigs that would traditionally have been used to deliver this type of work. As such Van Elle were able to pass on significant cost savings to the project without compromising on output and production rates.

To meet challenging programme constraints Van Elle had up to 3 pilings rigs on site working in multiple locations.

The success of the M23 project has subsequently led Kier to appoint Van Elle to carry out CFA piling works for minor structures on the M20 Smart Motorway upgrade.

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