

# MIDDLETON

📍 Guildford

Van Elle were selected to deliver ground improvement works at the Middleton (GU2 8SG) site on behalf of MCS Group. The project formed part of the development of Units 1-3 and required enhancement of the existing ground conditions to support both the main foundations and ground bearing floor slabs.

## PROJECT BACKGROUND

- Appointed by MCS Group.
- Our scope comprised the installation of Vibro Stone Columns across the site, with a total of 1,611 No. columns installed to a treatment depth of 3.0m. The works were delivered over a 16-day programme using the VBR7 Vibro Rig, alongside a preboring rig where required.
- The primary objective was to increase the bearing capacity of the soils to accommodate slab loads of 55kPa and foundation loads of 150kPa, while ensuring settlement remained within allowable limits.

## CHALLENGE

One of the main challenges on the project was the discovery of previously unidentified existing foundations within the treatment area, which introduced uncertainty and had the potential to impact the planned installation sequence.

The ground conditions were generally well suited to Vibro Stone Columns, comprising gravel like made ground overlying firm to stiff clay. However, some localised dense pockets were encountered, requiring alternative methods to achieve the specified column depths.

## SOLUTIONS

To address these challenges, the team adopted a flexible and adaptive working approach. The sequencing of works was continually reviewed and adjusted to accommodate the client's requirement to remove unexpected obstructions, ensuring progress was maintained without impacting overall programme delivery.

Where dense ground conditions were encountered, preboring techniques were introduced to enable successful installation of the Vibro Stone Columns to the required depth. This ensured consistency in column performance across the site.

The chosen Top Feed Vibro technique proved highly effective for the prevailing ground conditions, providing a robust and efficient ground improvement solution.

## AT A GLANCE

**Sector:** Infrastructure

**Solutions:** Ground Improvement

**Techniques:** Vibro Stone Columns

**Client:** MCS Group

## EQUIPMENT

- VBR7 Vibro Rig
- Pre-boring Rig

