



### Sunderland Strategic Corridor SSTC3

#### Vibro Stone Columns

📍 Sunderland, Tyne & Wear

#### Project Background

To enable an ambitious £70.8m construction project, ESH Civils partnered with us to support the construction of a brand-new dual carriageway in Sunderland.

The scope of works included:

- Initial design carried out by Byland Engineering, validated and tested by us
- Installation of 210 vibro stone columns to support a Tensar reinforced soil block in a restricted access site
- Installation of vibro stone columns at depths of 7m-9m to account for the ground being firm clay overlying limestone bedrock with pre-boring required in places
- Bespoke zone load tests built for restricted access working area

#### Client Challenge

Initial ground investigation work on the site revealed that the ground itself would not support the weight of the new road and, given the surrounding environment, access was difficult.

#### Van Elle Solutions

We utilised our vibro piling technique to install 210 stone columns to support a Tensar reinforced soil block retaining structure which was to become the new dual carriageway.

Testing also proved difficult due to the restricted access on site, so a specially designed testing area, which included a two by two metre plate positioned over a group of stone columns and loaded with steel ingots, was built to monitor the settlement performance of the stone columns and ensure the design specification had been met.

#### Key Benefits

Innovation: **Vibro piling technique utilised to overcome weak ground conditions.**

#### Project stats

Client: **ESH Civils**

Value: **£80K**

Date: **2020**

Rig/Kit: **Vibro rig**

Client feedback:

**“From initial tender enquiry, the professionalism in service and engineering options and solutions were noted and upon contract award, Van Elle swiftly mobilised to site to successfully complete the work. The team’s knowledge and approach was commendable with adherence to health and safety, scope and programme. Our thanks to all involved.” - ESH Civils**