Ground anchors can be used for many applications in civil engineering and building projects in a wide variety of ground conditions.

Cementation Skanska has extensive experience in the use of ground anchor systems and can provide a full in-house service, from design and installation to testing.

Anchor capacities generally range from 100kN to over 3,150kN, with lengths of up to 70m. The capacity achievable depends upon the quality of the anchored ground and the number of tendons used.

A recent development has been the introduction of multistage anchors. These are used to improve efficiency and achieve high loads in poor ground through the use of multiple discrete unit bond lengths.

Tendons can be made of steel bar, wire strand or GRP and are fabricated under factory conditions. Various types of anchor are available to suit a particular application. Permanent anchors incorporate full double corrosion protection via two concentric corrugated UPVC ducts. Depending on the design life, temporary anchors may incorporate a single duct, or no corrosion protection at all. Removable anchors can be used where there are wayleave issues beneath adjacent properties.

We have a comprehensive fleet of ground engineering drill rigs ranging in weight from 1.5 to 12.0 tonnes. Anchor holes can be bored using a variety of drilling techniques including rotary, top-drive rotary percussive, down-the-hole hammer, and augering. The type of drill rig used will depend on the access, working room and ground conditions.

In difficult ground conditions simultaneous drilling and casing systems can be employed to temporarily support the boreholes prior to installation of the anchors.
When the borehole is complete, the anchor is either lowered into a pre-grouted hole or post-grouted after installation using an integral primary grout tube.

When the grout has achieved a compressive strength of 30MPa the anchor is stressed using a portable hydraulic jack and locked off against a head plate in accordance with BS8081.

Restressable head blocks with load cells can also be provided for long term monitoring and adjustment if required.