

# GEOTECHNICAL ENGINEERING

## FOUNDATION INVESTIGATION AND DESIGN

A wide variety of foundation investigations and designs are carried out by the geotechnical division.

Investigations range from the simple trial pits to rotary core boreholes and in-situ penetration testing.

Penetration testing includes Standard Penetration Tests (SPT's), Dynamic Cone Penetration Tests (DPSH) and Dynamic Cone Penetrometer tests (DCP). Other in-situ testing includes vane shear tests and pressuremeter testing. All such tests are carried out by a geotechnical subcontractor or soils laboratory. When appropriate, disturbed and undisturbed samples are collected and tested in a laboratory, these tests usually comprise oedometer, shear box or triaxial tests.

Foundation types include:

- ◆ **Strip and spread footings**
- ◆ **Raft foundations**
- ◆ **Various types of deep piled foundations, including micropiles**
- ◆ **Caissons**
- ◆ **Anchored spread footings**



Mapping Geological Structure  
In A Foundation Excavation



Installation Of Inclined Micropiles  
Below Existing Retaining Wall



Anchoring Spread Footing Of A Viaduct Into Rock

We design foundations to support a variety of structures, including domestic housing, industrial and commercial buildings, road and pedestrian bridges, retaining walls and masts. Our expertise includes foundations in soils, as well as soft rock. We also carry out investigations into the causes of foundation related distress in buildings.



Pile Installation At Koeberg Interchange