PROJECT REPORT

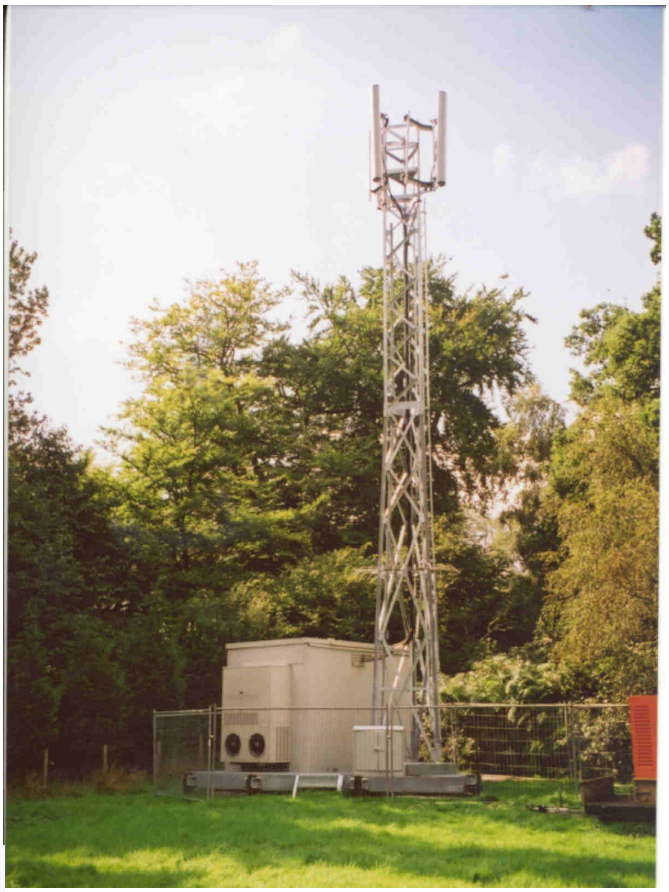
GRUNDTUBEN MINI-PILES SUPPORT TELECOMMUNICATIONS MAST FLEET, HAMPSHIRE

Client: **BT Cellnet**
Main Contractor: **Elliott Group**
Project Engineers: **WS Atkins**
Installer: **WT Specialist Contracts**

Requirements

As part of an on-going contract, Elliott Group needed secure, stable foundations for a platform to support a BT Cellnet telecommunications mast and switching gear housing at Fleet in Hampshire.

On the recommendations of WS Atkins, this was one of the first UK projects to use the ingenious new Grundtuben instant mini pile which can be installed almost anywhere, avoids the need to excavate and level the ground and is able to accept instant loads, in both compression and uplift.



Installation

Eight Grundtuben were installed into the clays, to a depth of 5.8m, by WT Specialist Contracts, using a machine-mounted hammer with special mandrel attachment.

Once in the ground, an expansion tool with four mini hydraulic rams was lowered inside each of the 159mm diameter piles, to a set depth and position. This was then used to force open the pre-split sides of the Grundtuben, at two levels, to twice its original diameter. The steel platform, which supports the 15m mast and the housing for the electronic switching gear and air conditioning unit, was then bolted via special plates through the top of the piles using Elliott's own design. In this instance 25kg of drymix concrete was also poured into each pile to enhance performance by sealing the tube.

Each Grundtuben is a hollow steel tube, sealed at its base, available in three different diameters and in lengths to suit the ground conditions. Installation is extremely rapid and immediate loads up to 250kN can then be applied. In this case the working load was a 20kN uplift.

An example of a Grundtuben mini pile that has been burst open. Clearly visible on the expansion tool inside the pile are the mini hydraulic rams that are used to force open the four, diametrically opposite, split panels on the sides of the pile.