

Construction of Pre-Bored H-Piles



The IEC site during the piling works.

The International Exhibition Centre (IEC) is located at the eastern side of the Hong Kong International Airport and is part of the Sky City development. In 2004, Intrafor Hong Kong Ltd. has carried out the foundation works for the 66,000m² of the IEC's first phase development.

To overcome the unexpected difficult soil conditions, and to deliver the works within the challenging programme, an exceptional amount of equipment, 14 piling rigs and 23 soil investigation rigs had been mobilized in order to achieve the following scope:

- 588 pre-bored H-piles, totaling 17,500m,
- 74 concrete columns 600mm diameter,
- 13,000m of pre-drilling, to determine the rock profile,
- 1,000m of proof-drilling,
- monitoring of settlement markers, vibration monitoring for the MTR zone; utility detection.



Construction of Pre-Bored H-Piles

The pre-bored H-pile is a small diameter pile 610mm, equipped with an 'H' steel section and filled with cement grout. The capacity varies between 400T and 580T per pile depending on the steel section.

Each pile has a minimum socket into good quality rock (Grade III or better with TCR > 85%). The design considers the rock/grout friction (500 kpa in rock Grade III) to determine the socket length in order to carry the full load.

The drilling tools for the installation of these piles comprises:

- ODEX, Symmetrix or equivalent system to install a temporary casing 610mm diameter within the soft ground above the rock head.
- Down-the-Hole (DTH) hammer to form the rock socket 550mm diameter.



Drilling Head



Sections prepared for laboratory testing

OWNER :
Airport Authority Hong Kong

ENGINEER :
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