

SHEIKH ZAYED CENTRE - INSTRUMENTED TEST PILES.

Project Outline.

The Sheikh Zayed Centre is a multi-use complex currently under construction in Lahore, Pakistan. The complex will include residential and office towers, as well as conference halls and a shopping mall.

In the early stages of the project, monitoring equipment consisting of rod extensometers and strain gauges were installed to feed information back to the surface from different parts of the foundation piles. This system collected data at different points of the foundation allowing for detailed assessment of the behavior of the foundations.

Gage Technique International was employed to supply the structural monitoring equipment. A strain Gage specialist from Gage Technique International was also present to carry out the installation.

Installation Overview

Above Left : An aerial view of the reinforcement cages , each pile consists of one large and one small reinforcement cage.

Above Right : A close up of the sister bar mounted to the reinforcement cage. There is no welding required in the installation – the instrument can be mounted using wire or plastic cable ties.



Above Left : A photo of the pile cage taken from the top. Note the cable tied at the interface between the two cages.

Above Right : The reinforced cage is lifted by a site crane and positioned over the excavation. The two reinforcement cages are installed in the excavation separately.



Above Left : The bottom section of the reinforcement cage is lowered into the borehole.

Above right : The bottom section is suspended at the top of the borehole so that the top half of the cage can be positioned and joined.



Above Left : The top section of the cage is lowered onto the bottom and fixed together, The technicians stand next to the cage ready to install four sister bars at the point where both reinforcement cages are joined.

Above Right : Technicians climb the secured reinforcement cage to run the cables from instruments on the bottom reinforcement cage to the top of the completed reinforcement cage.



Above Left : Another task the technicians carry out as they climb the secured structure is joining the Extensometer tubes that run to varying depths inside the reinforcement cage. Once this is complete and the cabling is fastened the complete reinforcement cage is lowered to the full depth.

Above right : This photo shows the cables routed neatly to the top of the cage and covered with protective material at the top to stop the cables sheering. Clearly visible in this photo is the top cap, a steel ring, that will protrude from the ground.