

THE COLUMN TOWER

Bored Piles and Diaphragm Wall

Technical Reference No. 04/99

GENERAL

The Column Tower is located on Ratchadapisek Road, Sukhumvit, Bangkok. It is a 42 storey office and shopping complex with three basement levels 4.5m in height floor to floor. Foundation bored piles of 1.0m in diameter and barrettes (1.0x2.7m) founded in sand layer at depths of 55m, support the building. A 1.0m thick cast in-situ diaphragm wall (toe depth 24.0m below ground level) with three-level temporary bracing was used for basement excavation and construction. The maximum excavation depth was about 15.0m. For bored piles in the area of the main tower, base grouting was employed to improve the pile capacity. Bored piles and barrettes were also incorporated in the diaphragm wall to carry the load of building.



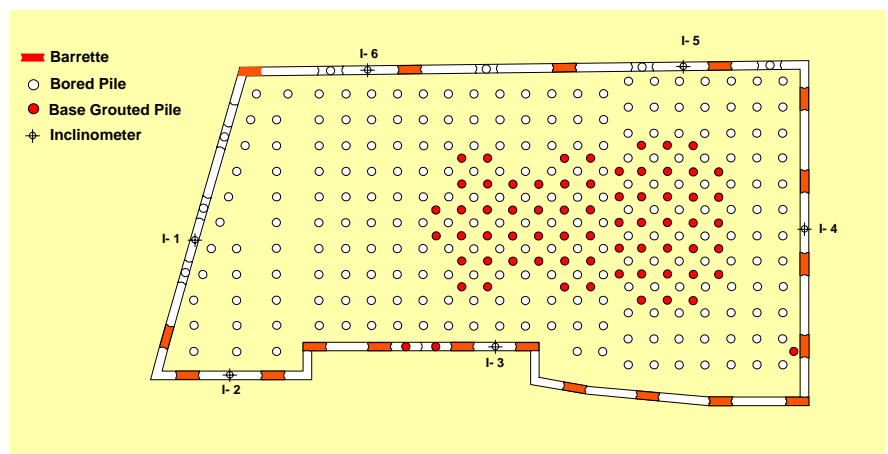
Site location

WORK UNDERTAKEN

BORED PILES:	Dia. 1.0mx55.0m	305 nos.
BASE GROUTING:	67 piles	
BARRETTES:	1.0mX2.7mX55.0m	19 nos.
DIAPHRAGM WALL:	5,392sq.m. (1.0m Thick)	
INSTRUMENTATION:	6 Inclinometer Tubes in the wall, 2 Sets of VWSG., 8 Settlement Plates, 6 Heave-Settlement Points, 1 Standpipe Piezometer and 2 Vibrating Wire Piezometers	



Panel excavation



Diaphragm wall and foundation layout

TYPE OF WORK:
OWNER:
SUPERSTRUCTURE CONTRACTOR:
DESIGNER:
PERIOD:

Foundation Piles, Pile Base Grouting and Diaphragm Wall
Gateway Estate Co., Ltd.

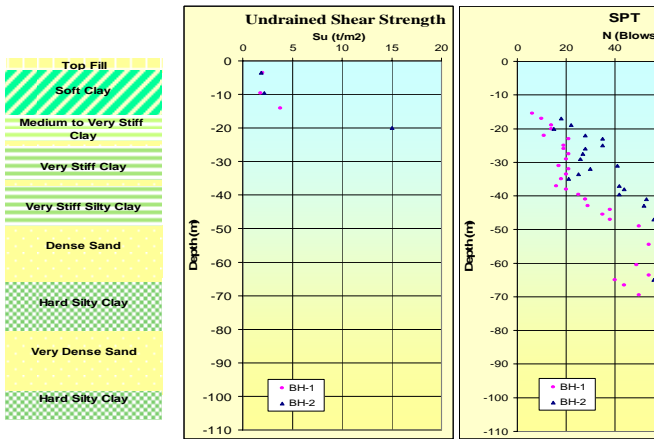
Samsung Corporation
Arun Chaiseri Consulting Engineers Co., Ltd.
1994-1995



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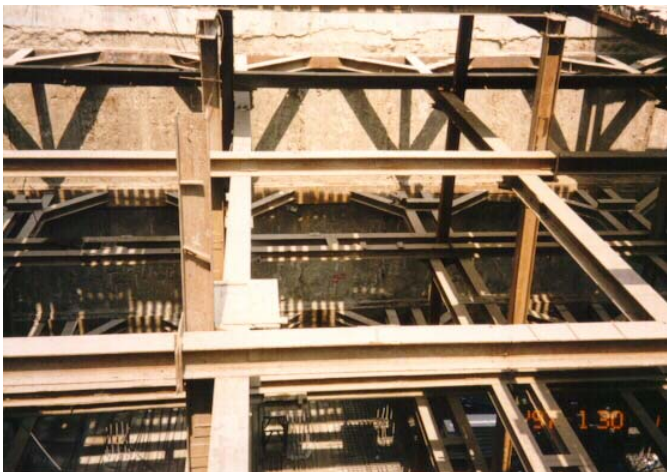
Subsoil conditions.



24m long reinforcement cage installation.



Work in progress.



Temporary bracing system for basement excavation.



Base slab (mat foundation) at 15.0m below the ground.



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