

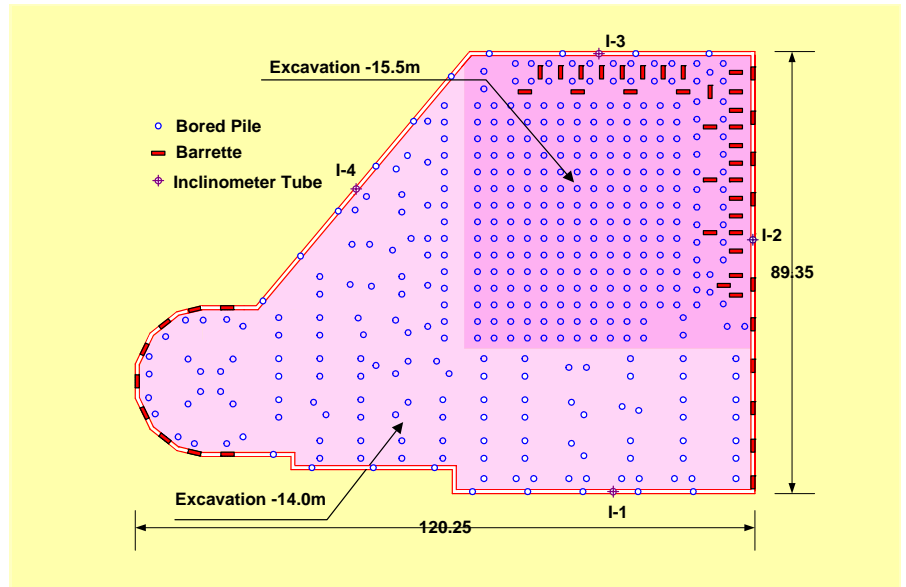
SATHORN COMPLEX

Bored Piles and Diaphragm Wall

Technical Reference No. 02/99

GENERAL

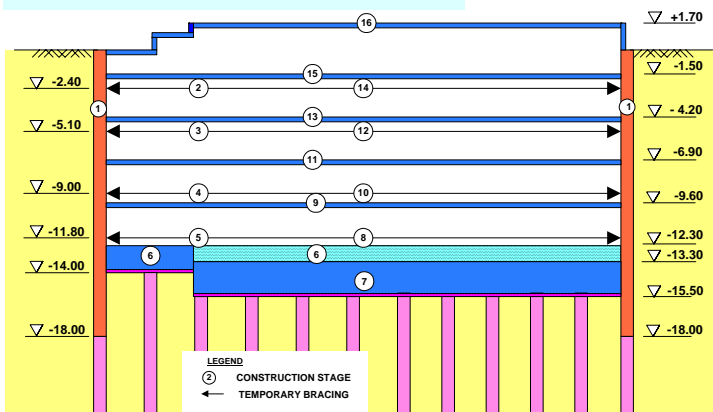
The Sathorn Complex project is planned for a multipurpose office and shopping complex. It is located at the Sathorn and Rama IV Road intersection. The foundation bored piles and barrettes are embedded 60m deep in sand layer to support the building. A 0.8m thick cast in-situ diaphragm wall 18.0m in depth, with three-level temporary bracing was initially planned for construction of a four-level basement. After completion of diaphragm construction, basement excavation was later modified with four level-bracing to allow excavation down to 15.5m below ground level for construction of five basement levels. For the foundation in the area of the main tower, barrettes were employed together with bored piles to increase load bearing capacity. Bored piles and barrettes were also incorporated as legs in the diaphragm wall to carry the load of building.



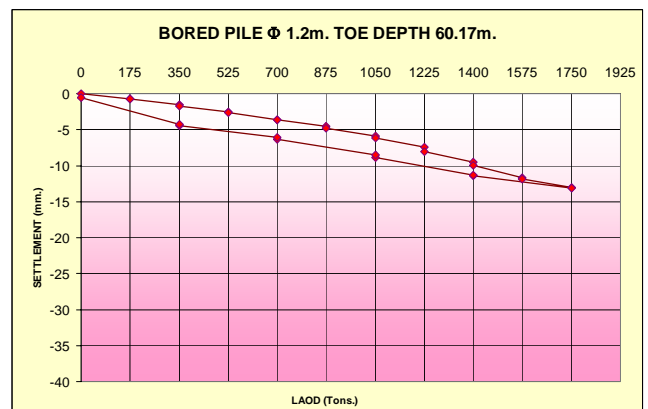
Foundation and diaphragm wall layout.

WORK UNDERTAKEN

BORED PILES:	Dia. 1.2mX60.0m	443 nos.
BARRETTES:	0.8mX2.7mX60.0m	50 nos.
DIAPHRAGM WALL:	7,002sq.m. (0.8m Thick)	
INSTRUMENTATION:	4 Inclinometer Tubes in the wall	



Basement excavation and construction sequence (Schematic).



Pile load test result.

TYPE OF WORK:	Foundation Piles, Diaphragm Wall and Barrettes
OWNER:	Quality Houses Public Company Limited.
MAIN CONTRACTOR:	Kay-Thai Co., Ltd.
DESIGNER:	K.C.S. Associates Co., Ltd.
PERIOD:	1995-1996



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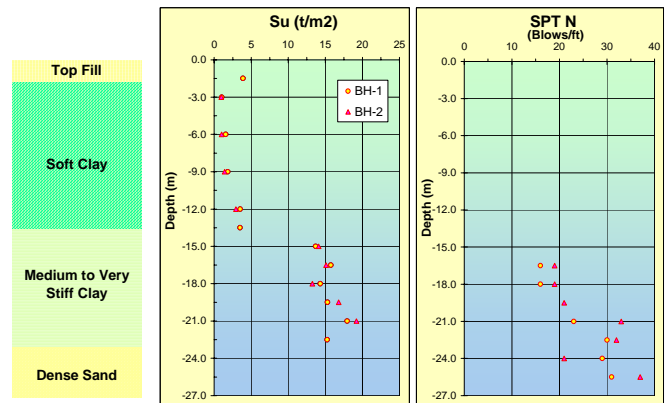


Lowering a reinforcement cage attached with inclinometer tube void former.

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Exposed diaphragm wall.



Subsoil conditions at the site.



Work in progress.



Exposed barrette top sections.

References:

- Thasnanipan, N. and Singtogaw, K. (1996), "Construction of Diaphragm Wall and Bored Piling for Sathorn Complex Project (in Thai)", Technical Seminar and Site Visit on Construction of Deep Basements using Short Embedded Diaphragm Wall in Bangkok, organized by Engineering Institute of Thailand. Bangkok, 19 December 1996. Pp. 129-143.
- Teparaksa, W., Thasnanipan, N., Maung, A. W. and Wei, S. H. (1998), "Prediction and Performances of Short Embedded Cast In-situ Diaphragm Wall for Deep Excavation in Bangkok Subsoil", Fourth International Conference on Case Histories in Geotechnical Engineering, St. Louis, Missouri, March 9-12, 1998. Pp. 686-692.
- Teparaksa, W., Thasnanipan, N. and Tanseng, P. (1999), "Analysis of Lateral Wall Movement for Deep Braced Excavation in Bangkok Subsoils", Civil and Environmental Engineering Conference - New Frontiers & Challenges, AIT, Bangkok, November 8-12, 1999.

