

# Hard/Hard Secant Wall

## Salamanca Street

LONDON, UK



### Hard/Hard CFA secant wall & LDA piles with plunged columns and under reams

#### The Site

The site is located just off the Albert Embankment in the London Borough of Lambeth SE1.

The development will consist of luxury apartments, some of which are currently being refurbished from existing buildings.

Two new build blocks of 11 and 14 storeys with three levels of basement for parking are to be constructed as part of the development.



General site arrangement

#### Ground Profile

A site investigation was carried out by Bachy Soletanche prior to being awarded the main contract. Soil profile found was fill, sands and gravels followed by London Clay.

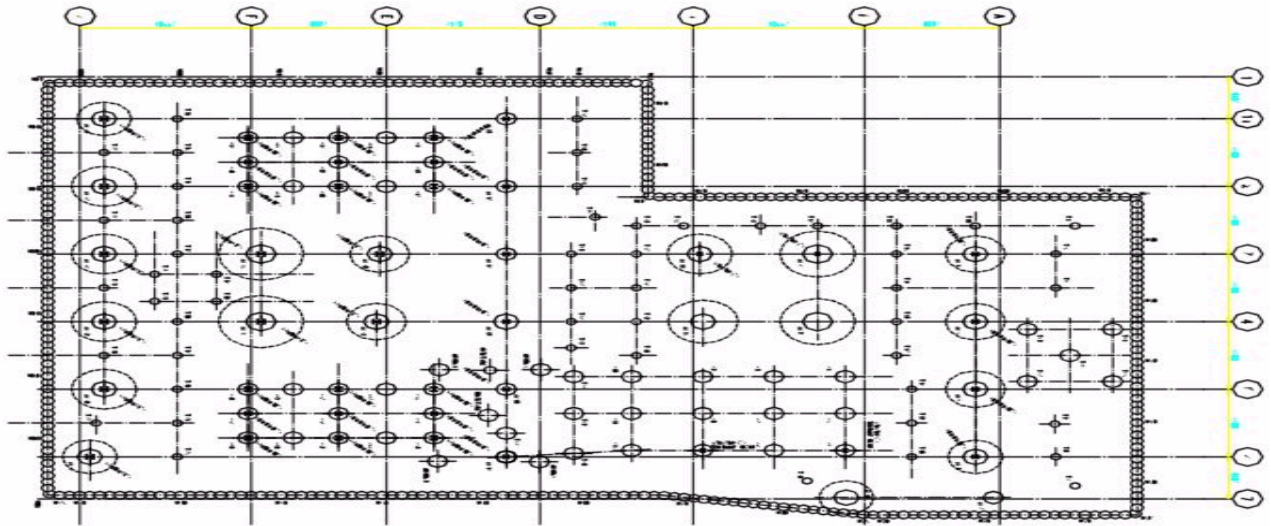
Due to extensive basements, left from the previous buildings which had been demolished, the whole site was excavated by the Main Contractor, to a minimum of 4m to remove all obstructions.

Backfill consisted of hardcore, sand and gravel compacted with a roller.

CLIENT:	Berkeley Homes
MAIN CONTRACTOR:	O'Rourke Civil Engineering
CONSULTING ENGINEER:	Waterman & Partners
DURATION OF WORKS:	April to July 2002

#### WORKS QUANTITIES

750mm CFA	352No	Up to 22.4m
1800mm	4No	26.0m
1500mm	16No	31.0m
1200mm	53No	21.0m
600mm (Tension)	51No	31.0m
Plunge columns	42No	
Undereams	19No	
1No 1200mm diameter Preliminary Test Pile to		
1No 750mm diameter CFA Working Test Pile to 2580KN		



Pile Layout

**Contract Works**

The works comprised of a 750mm diameter Hard/Firm secant wall around the whole site, bearing piles of various diameters, some with plunge columns and some with under reams, together with 600mm diameter tension piles. Two pile tests were also carried out, one CFA pile to 150% of working load and one on a non works bearing pile to 210%.

Bachy Soletanche carried out all pile design based on loadings provided by Waterman, who were employed directly by the main contractor.

A CM 700 was used for the secant wall together with a static mixer drum and attendant service crane. All the female piles were unreinforced and contained C15 concrete whilst the males contained C35 and generally had 9No T32 bars.

A KCA 130 mounted on a Casagrande C90 was used for all the bearing piles together with an Ajax C60 which was used as a service crane to handle a PTC casing vibrator. A Bauer BG18 hydraulic rig was used to supplement the KCA 130 for the tension piles. Due to the restricted nature of the site it was only mobilised to site once the CFA contract was completed. The bearing piles included 19No under reams some to 5100mm on 1800 diameter piles. Plunged columns were installed in 42 of the piles, some of these columns weighed up to 10 tonnes. Pile cut off levels were generally 10m below ground level.



CM700 Rig boring wall piles



Secant Wall & Columns