Westfield Shopping Centre Development, Stratford

Contract No:	C687
Client:	Westfield Shopping Towns Limited
Location:	Stratford, East London
Value:	Approximately £4,500,000.00
Summary:	Design, supply and installation of steel sheet piles to Plant Basement and Future Proof Basements. The clutches were sealed by welding to give fully watertight basements.

Sheet piling (UK) Ltd were employed by Principal Contractor Westfield Shopping Towns Limited to Design, supply and install a watertight cofferdam to the plant basement of the new shopping complex adjacent to the Olympic Park site. Shortly after sheet pile installation commenced it was decided to install a watertight sheet pile cofferdam for the future proof basement area, and the works were carried out as one continuous visit.

The design required the use of NSP 111W & 1VW section sheet piles in lengths varying from 10m to 12m long. The future proof basement piles were designed to act in cantilever but the plant basement piles in the core areas required supporting in the temporary condition. This was achieved using various options including ground anchors, tie rods and steel propping.

The plant basement cofferdam consisted of approximately 1180 No piles and approximately 1460 No piles were installed in the future proof basement and core cofferdams.

The soils consisted of approximately 2m of lime stabilised material overlying 2m of alluvium, overlying 2m of river terrace gravels , overlying the Woolwich & Reading beds. The high strength of the lime stabilised layer, and the possibility of obstructions in the underlying soils, resulted in pre-drilling of the sheet pile lines being required.

Sheet piles were installed using ABI and Bauer telescopic leader rigs fitted with vibro hammer. The majority of the sheet piles reached design level with the vibro hammers, but those that refused were backdriven using a 2.4 tonne hydraulic drop hammer. The sheet pile clutches were fully welded as excavation proceeded to give a fully watertight basement.

The gap in the sheet piles shown in the photograph on the left is the temporary access between the plant and future proof basements. The sheet piles were installed and then cut down to provide the access, which will be reinstated by welding the sheet piles back into position.

Project Images