SHEET PILING (UK) LTD

Steel Intensive Basement for new ASDA store, Birkenhead

Contract No:	C829
Client:	R.G. Group
Location:	Birkenhead, Liverpool
Value:	Approximately £335,000.00
Summary:	Design, supply, and installation of steel sheet piles to form a permanent basement retaining wall providing both temporary and permanent lateral earth retention for a car park to a new town centre store. The sheet piles permitted the excavation and construction of the proposed underground car park structure whilst also providing permanent support for the superstructure loads from the superstore above. The clutches were sealed by welding to give a watertight retaining wall.
Drawing Ref:	Steel Intensive Basement Plan, Sections & Detail

Sheet Piling UK Ltd were employed by Principal Contractor R.G. Group to design, supply and install a watertight sheet pile retaining wall to form a car park basement to the proposed new Asda store.

Working closely with the lead Consulting Engineer and R.G Group from an early stage, Sheet Piling (UK) Ltd were able to provide a "Value Engineering" solution which was delivered within budget and provided significant programme savings.

The 460 no. NSP.3W sheet piles at 6.0 to 8.0m long were installed using a Giken "Silent vibration free" hydraulic pile press due to the close proximity of the existing pedestrianised shopping centre and adjacent basement structures.

The general soil profile consisted of Made ground over stiff alluvial Clays. The retaining wall design was, in part, subject to Highways Agency Approval. Due to the depths of the cellular steel beams supporting the ground floor construction, the sheet piles were installed within a lead trench to enable the piles to be installed to final head levels eliminating the need trim the piles at a later date and hence reducing unnecessary wastage.

The design requirement for the sheet piles to support vertical loads form the building above was verified by carrying out non-destructive dynamic pile testing on "test Piles" using the pile driving analyser and CAPWAP calculation.

The clutches of the sheet piles were welded to give a fully watertight retaining wall and a concrete capping beam was constructed by the Principal Contractor.

Project Images

Downloads

Steel Intensive Basement Plan, Sections & Detail