

Steel Intensive Basement for new ASDA store, Rugby

Contract No: C693

Client: RG Group

Location: Chapel Street, Rugby

Value: Approximately £550,000.00

Summary: Design, supply and installation of steel sheet piles to form a permanent basement cofferdam for the car park for the new town centre store. The clutches were sealed by welding to give a watertight basement.

Sheet Piling (UK) Ltd were employed by Principal Contractor RG Group to design, supply and install a watertight sheet pile cofferdam to form a car parking basement to the proposed new ASDA store.

The design required NSP 111W section sheet piles in 6m & 8m lengths, however in one area it was decided to use NSP ZU-1600 section sheet piles 9m long, which have been recently introduced to the UK by Sheet Piling (UK) Ltd. The ZU-1600 section is 900mm wide and has the advantage of less clutch welding being required in a sheet pile basement.

The soils consisted of approximately 1.5m of made ground, overlying approximately 4m of medium dense sand, overlying stiff to very stiff clay.

A total of 537 No 111W section and 64 No ZU-1600 section piles were installed giving a total perimeter of approximately 380 linear metres. The sheet pile installation was completed in six weeks including the backdriving.

The sheet pile installation was carried out using a Bauer RTG16 telescopic leader rig with 1000kN variable moment vibro hammer. The backdriving was carried out using a 2.4 tonne hydraulic drop hammer.

The design requirement was for the sheet piles to support vertical loads from the building and this was verified by carrying out non-destructive dynamic pile testing on random piles using the Pile Driving Analyser and CAPWAP calculation.

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

The store is now fully open and the car park is very popular and convenient for local residents and visitors to the town centre.

Project Images

