



CASE STUDY ASDA, LUTTERWORTH, LEICESTERSHIRE



MINI-PILING

CLIENT

swisslog

inspired solutions

MAIN CONTRACTOR

ASDA

SCOPE OF WORKS

Bottom-driven steel cased piles and pile caps

Project Brief

The phase two contract was for the design and installation of bottom-driven steel cased piles and pile caps to support a new mezzanine floor level within the existing ASDA Integrated Distribution Centre (IDC) at Magna Park, Lutterworth, Leicestershire. The Centre is one of the biggest Autostore operations in the UK.

Key Issues/ Requirements

- In order to maximise the use of space and develop more speedy and cost effective automated systems, the proposal was to extend the mezzanine floor level within the existing distribution centre.
- The centre is a strictly controlled environment with zero tolerance for fumes or solvents.
- All equipment to be used in the centre therefore had to be electrically powered, with generators located outside the building. The client's fork lift operators also required 24 hour access around the working area.





MINI-PILING



Solution

- Roger Bullivant Limited (RB) adopted the use of three electrically-powered piling rigs to deliver the piled solution for the phase two extended mezzanine floor.
- Before work could commence the floor slab was core drilled and sawn at each pile cap position. Arisings were lifted and mechanically removed.
- The 24 hour distribution centre operation had to continue while all works were carried out. Sound-proofed fencing was erected to lessen the noise and distraction that the operation could cause to the warehouse staff.
- 130 no. 220mm bottom driven steel cased piles were driven to an average depth of 11 metres to carry safe working loads of 250kN. All piles had to be pre-augered to a depth of 6 metres due to the compacted fill material.
- 35 no. reinforced concrete caps of varying sizes up to 1500mm sq were installed up to 600mm deep to finish flush with the existing floor slab.
- On completion, the main contractor installed holding-down bolts into the pile caps which provide the anchors for the columns which then subsequently support the mezzanine floor.
- Lutterworth IDC is already one of the most complex depots in Asda's logistics services network operating an automated goods-to-man materials handling solution on a massive scale.
- The Autostore system provides the highest possible rate of space optimisation teamed with extremely dense storage, as robots on the top of the mezzanine automatically store and retrieve goods with minimum space requirements. Compared with traditional automated solutions, AutoStore allows far greater capacity and storage density, with up to 60% more goods stored in the same space as a conventional warehouse.



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