

Case study

New Cold Store

Alan Wood & Partners (AWP) provided Civil and Structural, Geotechnical and FRDA services to this new cold store for Magnavale.

The project involved detailed engineering and design for a 104-metre-long, 30-metre-wide and 14.5-metre-high extension to the existing cold-storage facility. The new structure was developed as a steel portal frame set on pad foundations, with a ground-bearing floor slab designed to accommodate heavy operational demands. Floor loading criteria included allowances for forklift traffic and seven tiers of mobile racking, each with leg loads of 140 kN. The floor build-up comprised a 200 mm structural topping slab over a 200 mm thermal layer, supported by a 200 mm lower structural slab to ensure adequate load distribution and thermal performance within the cold-store environment.

The foundation system was designed using pad bases to support the portal frame, supplemented by strip footings to carry the pre-cast perimeter wall. The ground-bearing slabs were placed on well-graded granular material to ensure settlement control and long-term durability. AWP also undertook the design and detailing of the below-ground attenuated drainage system, incorporating flow control and storage measures to meet the agreed discharge rates.

AWP advised the Client on two existing electric cables that crossed the site, recommending that these be diverted before construction commenced. Their proposed new alignments were indicated clearly on the drawings with appropriate warning symbols. AWP additionally assisted with on-site trial holes to establish the location and characteristics of the foundations beneath the existing building, allowing the architectural grid to be refined to avoid clashes between old and new foundations. These existing foundation locations were recorded on the drawings to ensure site operatives were alerted to their presence and potential risks.



Location:
Warrington,
Cheshire



Client:
Magnavale



Architect:
Campus Park



Value:
£6m



Civil
Engineering

Structural
Engineering

Geotechnical and
Geoenvironmental

Engineer /
Manage /
Deliver /

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AWP's role encompassed the preliminary design of the superstructure, slabs and foundations, together with investigation works associated with the existing building's footings. The commission also included preparation of the Flood Risk Assessment and drainage strategy, which involved liaison with the drainage authority and sewer undertakers to agree permissible discharge rates and ensure overall compliance with regulatory requirements.



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