

Engineering, Manufacturing and Technology Centre (EMAT)

Location:
Boston, Lincolnshire

Client:
Boston College

Value:
£3.5m



Civil Engineering

Structural
Engineering

Building Consultancy

Geotechnical and
Geoenvironmental
Engineering

Project Management

Specialist services

Boston College EMAT (Engineering, Manufacturing & Technology) Centre. This two-storey new college building provides purpose-built accommodation for advanced technical skills training in manufacturing, engineering, and technology.



The 1457m² facility has been built on the corner of an existing car park, opposite the Boston Conference and Management Centre on Skirbeck Road and it accommodates approximately 150 students.

Engineering and Design Factors

Alan Wood and Partners were appointed to provide full civil and structural engineering services up to completion. Initially in civil engineering terms AWP provided Flood Risk Assessment (FRA) and Drainage impact assessment (DIA) to support the planning application whilst also contributing to the Design and Access Statement. This then led into construction detailing of the drainage and externals which included negotiating the diversion of an existing Anglian Water Sewer crossing the proposed new building footprint and incorporating it into the new drainage proposals.

In structural terms with the building being an engineering workshop particularly at ground floor level general loading conditions were relatively high, up to 20KN/m², due to the equipment requirements which is quite unusual for a building of this nature. This coupled with the existing poor ground conditions in Boston which were generally alluvial silts led to the necessity of providing a suspended ground floor slab on driven precast piles. The main building frame comprised mainly two storey steelwork with precast concrete floors at mezzanine level. With the building being situated in a marine environment it was essential to ensure the correct protection system to the steelwork particularly where it was exposed directly to the elements.

Description of the Works

Boston College received grant support from the Greater Lincolnshire LEP for the creation of an Engineering, Manufacturing and Technology (EMAT) Centre at its main site in Boston.

The building itself comprised of a 'hub' on the ground floor, leading into two engineering workshops (one clean, one dirty); a storage space; an electronics laboratory; changing rooms, and a reception/staff office. The upper floor will feature a CAD/CAM suite, a large classroom, two general classrooms, another staff office/workroom and a 'break-out space'.

As already noted, Alan Wood and Partners provided Flood Risk Assessment and Drainage Impact Assessment for planning together with full Civil & Structural Engineering services. In addition, AWP worked closely with the Lead Appointed Party (LOA) who on this project was the Architect, CPMG, as an appointed party (AP) under BS EN ISO 19650 governing Building Information Modelling (BIM). The project was delivered successfully by our technicians using our Revit 3-D drawing authoring package, working wholly in a BIM level 2 environment.

This allowed clash detection and minimised any potential for conflicts on site. The project was successfully completed on time and within budget.

Core services

Civil Engineering / Structural Engineering

Sectors

Education