

THE BRIDGE ACADEMY, HACKNEY

Bridge Academy is part of a national government initiative to build state of the art schools in the country's worst performing areas.

The brief was to design a city academy on a tight site alongside the Grand Union Canal and maximise space. The resulting £33M, seven storey building provides an internal area of 10,250m² with 5,500m² of external space on the 6,000m² site.

Steel was chosen as the structural material to meet the demands for long spans with integrated services, heavily loaded terrace area as well as truss elements and tension members.

The main building consists of a horseshoe of accommodation that terraces down to the open side with circulation galleries provided on the inner perimeter. In the centre of the horseshoe and suspended from the inner perimeter is a two storey structure that houses the learning resource centre and 'village square'.

The suspended structure enables the 'village square' to be a completely column free and flexible space.

The inclined inner perimeter is formed from 12 CHS sections arranged as an inclined truss and clad in lightweight ETFE.

All teaching spaces are naturally ventilated with air introduced at the outer perimeter and extracted via the circulation galleries where excess heat is recovered and re-used. The underside of the project's profiled metal decks are coated with a high emissivity paint developed by NASA that improves the heat transfer between the air and the concrete via the steel surface.

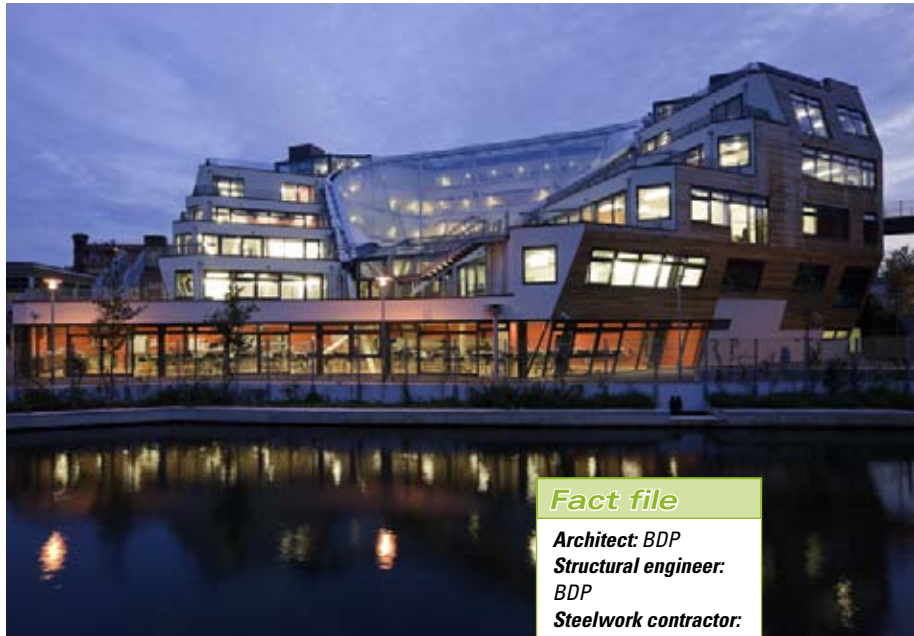


Image courtesy of Samma Fisher Payne/BDP

Fact file

Architect: BDP

Structural engineer: BDP

Steelwork contractor:

Watson Steel Structures Ltd

Main contractor: Mace Plus

Clients: Department for Children, Schools & Families; UBS AG

THE UNIVERSITY OF SHEFFIELD ADVANCED MANUFACTURING RESEARCH CENTRE WITH BOEING, ROLLS-ROYCE FACTORY OF THE FUTURE



The £15M University of Sheffield's 'Factory of the Future' was designed as an exemplar facility embracing renewable technologies and it is one of the UK's first carbon neutral buildings.

"The inclusion of 20 sustainable and specified environmental features, plus the tight programme meant steel was the only option," says Jason Hensman, Conder's Managing Director.

The building has achieved an 'Excellent' BREEAM rating and Geoff Halliwell, Director at Bond Bryan Architects says: "The structure has low environmental impact and has achieved the highest BREEAM rating for any building of its kind."

The building's steel frame consists of universal beam and columns, with cellular beams for office floors. The structure extends above single storey height along two sides with the front zone connected to the rear areas via three architectural bridges.

The roof structure was formed from steel tubing and Macalloy bars, while two trusses in each skylight add to the overall appearance and allow light to penetrate the building.

Buro Happold's Project Leader, Jason Gardner, sums up: "The carbon neutral target was achieved through a combination of good structural and building design."

Fact file

Architect:

Bond Bryan Ltd

Structural engineer:

Buro Happold

Steelwork contractor:

Conder Structures Ltd

Main contractor:

The Bowmer & Kirkland Group

Client: University of Sheffield