



CONSTRUCTION

## Sustainable Construction - Mundy Junior School

### Summary

To replace an existing school with a building which championed sustainability and lay down a benchmark for 21st century construction. As such the design embraces Department for Education and Skills (DfES) exemplar designs, particularly that produced by Sarah Wigglesworth.

The school is designed to maximise educational benefit. The classroom was considered as a design entity to achieve the optimum teaching environment. Extensive modelling was undertaken to balance the competing needs for daylight and ventilation. Many options were considered before the final design was chosen.

To embrace sustainability the design includes features for recovery of grey water and off site construction techniques.

An analysis of the buildings carbon emissions, calculated using a method devised by the DfES, showed them to be 3.55Kg C/m<sup>2</sup>/year where the measure for excellence is 5Kg C/m<sup>2</sup>/year.

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## Layout

The layout divides the building into two distinct functional elements, the teaching areas and the hall with its ancillary accommodation. The classroom wing has six classrooms and shared resource areas. The classrooms are paired with a toilet and cloaks area. It is envisaged that each pair of classes will have a team of two teachers supported by a teaching assistant. The management of these areas is an intrinsic part of the design for acoustic performance. A statement of the proposed management regime formed part of the Building Regulations approval.

The teaching accommodation is linked to the hall block by two links. The first link contains the library. The second link houses a computer suite. The second space contains a group room, hall, a full kitchen, offices and storage. The space between the links and the main two blocks forms three external courtyards, one for each of the paired classrooms. Fences on the outer courtyards provide security.

In terms of construction the design was considered as a pilot scheme for the consortium's updated system, Scape. The external wall comprises of panels fabricated off site. The Kawneer windows utilised a new profile developed specifically to meet the needs of education. The configuration of the opening lights was carefully engineered to ensure the maximum natural ventilation could be achieved. The tartan grid of the external wall is achieved by a jointing section. Higher levels are formed with a Trespa rain screen. The roof is covered by an aluminium standing seam sheet. The roof is insulated and based on a roof deck spanning between the curved beams. The roof eaves are extended to provide some sun shading by means of a bracket.

Great care has been taken in the design details to ensure that the insulation is continuous with cold bridges eliminated and to ensure that air leakage is below that required by the Building Regulations.

Internally the walls are constructed of two layers of plasterboard to both sides of the partition. Different construction techniques are used to ensure that the partitions meet the varying acoustic performance throughout the building. The head of the partitions are taken to the underside of the roof deck to achieve the required acoustic performance.

The brief required that the building accept future adaptability in the form of extensions and different teaching methods. In response an internal glazed screen was included between the classroom and resources. It is intended that these partitions can be moved with minimal disruption to the operation of the school. This will allow the resources areas to be taken within the classrooms should that be required.

The routing of services are distributed in the teaching block above the resources area. They have been accommodated in such a manner that they can be easily accessed for future maintenance and replacement.

### Client and project architect:

Derbyshire County Council

### Project design champion:

Gerald Tommy, Deputy Chief Executive,  
Derbyshire County Council

### Contractor:

Skanska Integrated Projects carried out under the CLASP/Skanska Strategic Partnering agreement.

### Cost:

£2.4m including construction cost for the building and external works, fees and furniture. The construction period was 38 weeks.

## Contact

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