

## **Anns Grove Primary School, Heeley, Sheffield**

### **Education to Support Regeneration**

In Autumn 2005, the Heeley area of Sheffield will have an inspiring new primary school. The new school has set itself a challenging target - to both complement and expand the community and environmentally led regeneration of the Heeley area.

The existing school – Anns Grove primary – is housed in Victorian buildings of architectural importance that are now Grade II listed. The buildings are no longer suitable as a teaching and learning environment however and the new school will occupy an adjacent part of the existing site.

Sheffield City Council is taking this opportunity to replace the school with facilities that will support Heeley's wider regeneration. The project brief has been developed jointly between the Council, the school and community organisations that are key to Heeley's quality of life – the Heeley Development Trust and Heeley City Farm. Both these organisations are in close proximity to the school and are actively supporting close working between school and community.

The significance of this project was emphasised by the client's decision to run an RIBA competition to appoint the Design Team.

### **The Brief for the School**

Key aspirations from stakeholders for the school are to:

- provide an inspiring atmosphere for teaching and learning;
- deliver an environmentally and ecologically sustainable design;
- demonstrate innovation and exciting landscape design to support environmental education for the pupils;
- revitalise and complement the community, expanding community involvement through use, access and, where possible, local procurement; and
- be a role model for other schools.

### **The Building Concept**

The proposed design for the new Anns Grove School starts with best practice environmental design. It will use optimum orientation and natural ventilation and daylight to ensure a healthy teaching and learning environment that supports concentration and well-being.

The primary structure will be a combination of glue laminated timber frames, steel and pre-fabricated concrete. The external envelope will be primarily comprised of super-insulated breathing timber cladding

with timber framed, high performance double glazed window and door systems. This approach maximises the use of timber – a beautiful, natural, renewable resource – and reduces the use of materials such as steel and concrete to the extent needed to support the environmental and structural strategy.

Where possible, self-finished natural materials will be used inside and out, limiting resource use and fit-out, decoration and lifetime maintenance costs. The materials used will age naturally over time, taking on a patina of their own and adding to the aesthetic of the building.

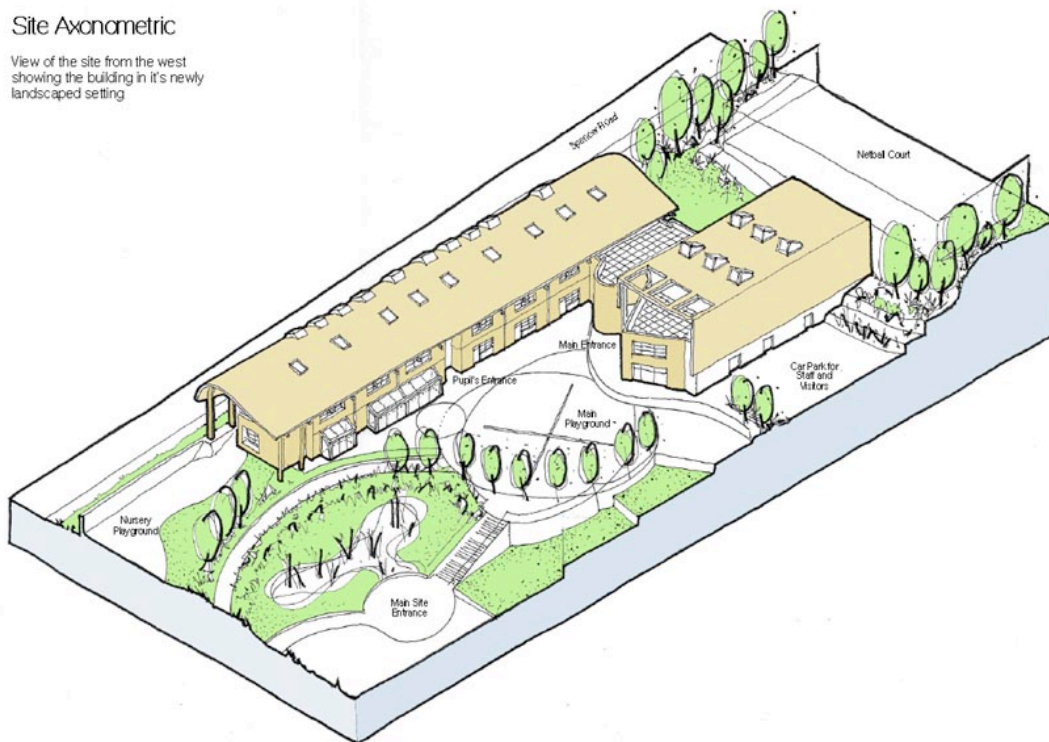
An environmentally innovative design for the new school is a high priority. The school will be designed to maximise natural ventilation and natural light. The mass of the concrete in the classrooms will form a thermal sink, which will moderate the temperature in the associated spaces. The form of the glulam frame will promote stack ventilation, whilst also providing a space of interest, opportunities for creative mixing of functions (combining circulation with storage and social spaces for example) and architectural delight.

### Outline Designs

The new Anns Grove School is an exciting design that is already bringing a buzz to the local community, as the images below demonstrate.

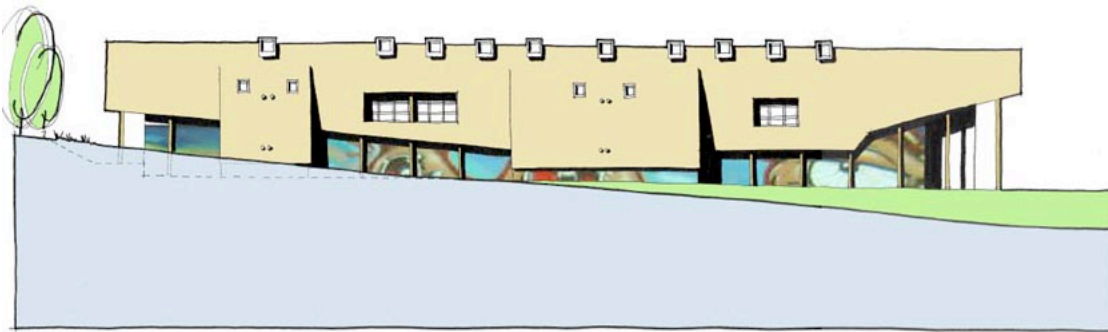
#### Site Axonometric

View of the site from the west showing the building in it's newly landscaped setting



## Elevation along Spencer Road

Showing changes in level from east to west.  
Also showing profile of timber clad roof with window and roof-light penetrations, and opportunity for school mural or artist's input at low level

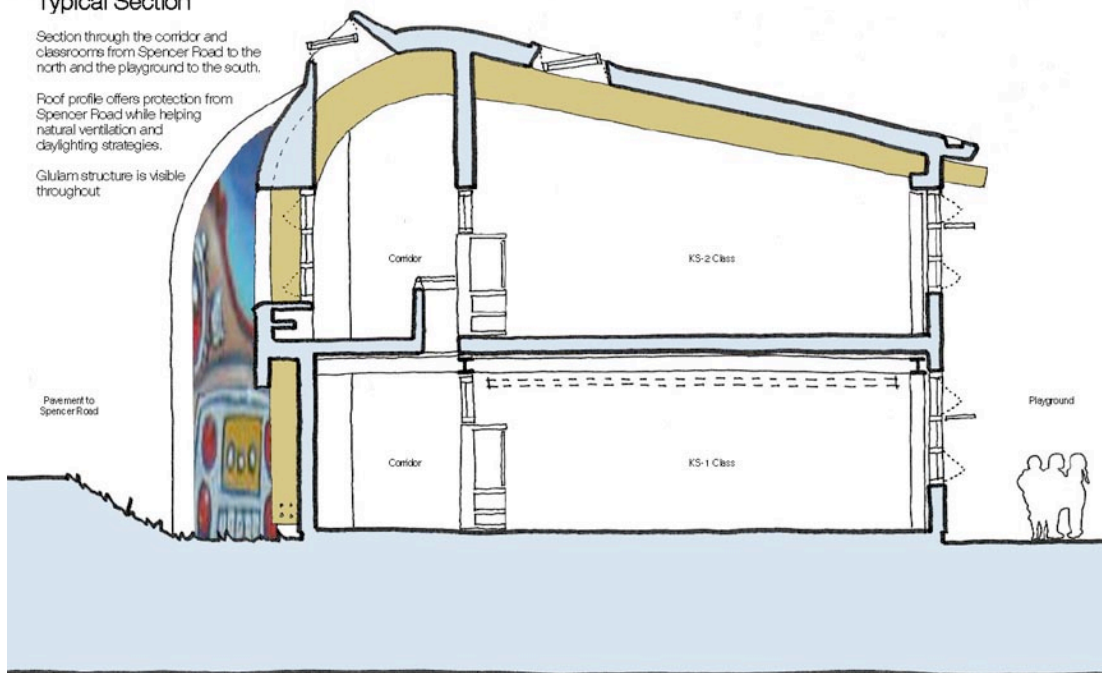


## Typical Section

Section through the corridor and classrooms from Spencer Road to the north and the playground to the south.

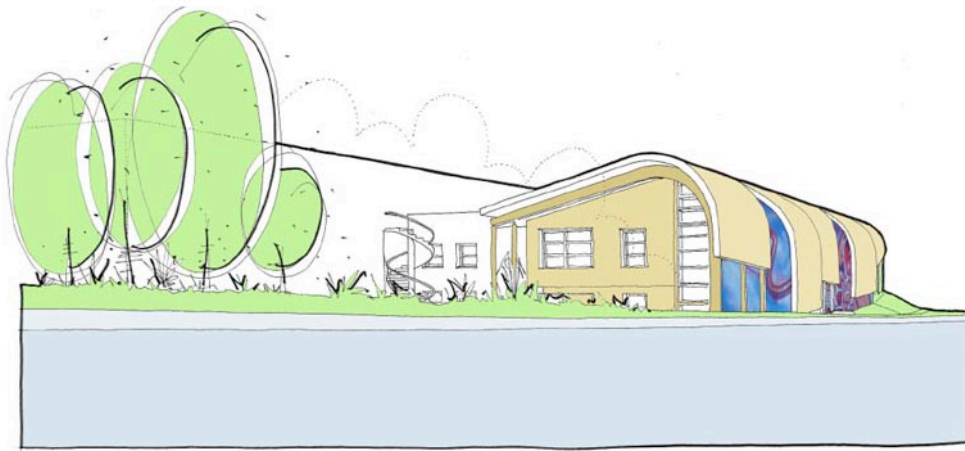
Roof profile offers protection from Spencer Road while helping natural ventilation and daylighting strategies.

Glulam structure is visible throughout



### View from top of Spencer Road

Perspective view from the east



### Preferred Materials, Construction Techniques and Curriculum Links

The following examples illustrate the way in which environmental and sustainability principles will be demonstrated in the project. This will not only contribute to reducing the building's environmental impact; it will also provide material for teachers to integrate with the school curriculum and involve the local community in the project.

Glulams – both new and recycled. Recycled from Hull (Kinloss Primary School). Trada, Wood for Good, Lilleheden, WDC and Broady's (Hull demolition contractor) are involved. New glulams from Lilleheden.

Biomass Boiler – linked to Clear Skies application for funding.

Insulation – recycled denim from a start up company based in Heeley. This will contribute to the local economy and provide a demonstration of the market opportunities for this product.

Concrete – recycled glass as aggregate within concrete walls used as bracing for the building. The school is keen to involve pupils and community in collecting glass to help make a visible connection between people and the impact of their actions on the environment.

Rainwater harvesting, with visible service connections between the collection, storage and distribution systems – this needs to be built in from day 1, as does the sustainable urban drainage system (SUDS). Both of these provide opportunities to demonstrate water conservation and the water cycle in action to pupils.

Photo-voltaic cells and solar panels will be the subject of funding applications. These will be a rich source of curriculum related work.

Timber cladding – currently specifying Western Red Cedar, presumably sourced from Canada. We would prefer to use a UK-based supply of timber (e.g. Sweet Chestnut) but this is difficult to match on price, quantities and availability. Can Trada advise on various options and the detailing of cladding panels?

Natural ventilation and daylight – incorporation of an automated natural ventilation strategy and as much natural light as possible, whilst optimising solar gain. Government and other studies have demonstrated the direct link between good environmental design and school performance in areas such as attendance, sickness absence and SATS results.

Use of local suppliers and subcontractors will be made where possible –RDAs elsewhere in the country see the connection between this kind of initiative and the sustainability of the local economy and have provided funds on other projects. This needs to be explored with Yorkshire Forward.

Other aspirations include the use of recycled carpet, 'Marmoleum' natural linoleum, 'Firestone' natural rubber roofing membrane, as well as minimizing pvc and aluminium products within the building.

Integration with the curriculum – it is intended that the building, its structure, services and landscape will all act as an integrated educational tool.