Hazelwood ASN School

General Introduction to Project

In August 2003, Glasgow City Council Education Services Committee issued a consultative document on the proposed establishment of a new school for children and young people aged 2-18 who have a profile of multiple disabilities and visual impairment or dual sensory impairment.

Following the consultation process, the decision was taken in November 2003 to close Kelvin School, which specialised in dual sensory impairment, and Carnbooth School which specialised in multiple disabilities and visual impairment, and merge them into the new Hazelwood School to be located adjacent to Bellahouston Park.

The design brief for the new school was drawn up in full consultation with the staff at Kelvin and Carnbooth, the school boards, parent bodies, Health Service and relevant voluntary groups. Pupils, staff, and parents voted and chose the name for the new amalgamated school.

Hazelwood is considered to be Europe's most advanced school for children with multiple disabilities and sensory impairments, and the school also fulfils a national function, with one pupil travelling daily from as far afield as Lockerbie.

The school is included as a case study as an innovative building that responds well to the diverse needs of the pupils.
**Key Project Data**

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<thead>
<tr>
<th><strong>Name of School</strong></th>
<th>Hazelwood ASN School</th>
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<tr>
<td><strong>Sector</strong></td>
<td>Additional Support for Learning</td>
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<tr>
<td><strong>Location</strong></td>
<td>50 Dumbreck Court, Glasgow</td>
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<td><strong>Client/Local Authority</strong></td>
<td>Glasgow City Council</td>
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<td><strong>School Capacity</strong></td>
<td>60</td>
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<td><strong>Procurement Route</strong></td>
<td>Traditional - JCT 98 (LA with quantities)</td>
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<td><strong>Project Value</strong></td>
<td>£7,743,305</td>
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<td><strong>Gross Internal Floor Area</strong></td>
<td>2663 m²</td>
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<td><strong>Design Team</strong></td>
<td>Gordon Murray &amp; Alan Dunlop Architects</td>
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<tr>
<td><strong>Contractors</strong></td>
<td>Sir Robert McAlpine</td>
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<td><strong>Start Date</strong></td>
<td>Autumn 2005</td>
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<td><strong>Completion Date</strong></td>
<td>Summer 2007</td>
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**Design Features**

Hazelwood School offers a comprehensive range of facilities, all customised to meet the complex needs of its pupils. They include a gymnasium with floor level trampoline and soft play equipment, hydrotherapy pool with mobile hoists, art, music, and cookery rooms, a library, media suite, open plan dining/assembly area, doctor, nurse and physiotherapy rooms, outdoor music and play areas and an outdoor sensory area. The school also features trailing walls, with a texture which changes as it nears a classroom, allowing pupils with visual impairments to navigate their way along the corridors. Included in the grounds is a stand alone, three bedroom house which is used to promote and develop pupils' life skills. In their final year some young people will stay in the house for one or two nights a week to experience living in a different environment from their own homes. The bedrooms are all twin bedded and en-suite.
The school is single storey and environmentally sustainable in both design and in its operation. The external area includes a sensory garden and great care has been taken to protect and include existing trees within the school's boundary. The school design and use of materials are sympathetic to its parkland context. Hazelwood has been recognised for its high standards of design quality and the imaginative use of a variety of natural materials such as wood, slate and cork.

The low profile of the building and the retention of mature trees allow the structure to nestle within its landscaped context without impacting upon its neighbouring conservation area. The school and life skills house are low mass and the use of natural materials creates a quiet response to the surrounding environment. The life skills house provides a cornerstone and creates a setting off point for the curved shape of the building. The shape embraces a south facing external amenity space which includes a tree garden, tactile space and music garden.

The 's' shape form allows the building to curve between existing trees and the scale and mass of the building helps pupils with visual impairments navigate around their environment. The north wall contains the sensory features, while the south side is glazed and faces the busy main road, designed to be more like a building the children would encounter in their everyday life outside the school. The emphasis is on unobtrusive, calming uncluttered spaces whilst at the same time not making things too safe and also encouraging the pupils to learn about their surroundings.

**Choice of Site**

The site comprises an open space adjacent but unconnected to Bellahouston Park. Over 50 mature trees lined the site, the great majority of which have been retained. The design responds to the specific site characteristics and in particular to the location of existing trees.

The retention of the trees was an important sustainable issue due to the wildlife they support, the carbon dioxide they consume and the visual amenity they provide the local community. The trees form an integral part of the landscape design, reinforcing the school's boundary and providing a focus to the smaller teaching gardens.
Sustainable Urban Drainage techniques have been used to reduce the quantity and improve the quality of run off water. The infiltration basins and soakaways reduce the potential for future urban flooding and improve habitat for wildlife in urban watercourses. To the south west of the site this system has become a landscape feature, exaggerating the rolling nature of the site and adding some visual drama.

Materials

The architects chose timber as a key building material because it is emotive, warm, tactile, and "smells good". The school has all the necessary qualities required to create an internal and external environment for children who depend on touch and smell to find their way around. Zinc was chosen for the roof. This material can be laid at a very shallow pitch, more so than tiles, thus ensuring that the ridge height would not rise beyond the beginnings of the existing tree canopy. This was important to ensure the building nestled into the parkland without impacting on its context or on the local community.

The timber cladding is larch produced from a sustainable source. Baffle walls, built to reduce traffic noise, are clad in natural slate. Timber is also used extensively throughout the construction of the school to ensure its carbon is as low as possible. The European whitewood glu-lam timber frame, the Finnish redwood all timber windows and the larch weatherboarding have all been sourced from accredited sustainable sources. This sustainable sourcing ensures that the forests from which the timber is taken are managed and the effects of deforestation are countered by appropriate replanting.

Standing Seem Aluminium and PVC single ply sheeting were both considered for the roof, but rejected on the basis of embedded energy and appearance.

Reclaimed Welsh roofing slate is used on the 800 square metres of slate clad walls. The reuse of this material greatly cuts down the embodied energy associated with such a product.

The highly textured nature of the slate cladding, chosen as a natural contrast to the timber weatherboarding is of great assistance to the children as they navigate around the building. Brick was initially considered instead of slate for the solid 'landscape' walls, but slate was eventually chosen to reflect the roofing materials of the surrounding houses.

Energy

Computer analysis was used during the detailed design stage to predict that energy consumption would match, or even better, good practice guidelines despite the high loads associated with heating the hydrotherapy pool.
**Lighting:** Large areas of high level glazing in the teaching spaces allow natural light to penetrate deep into the classrooms thus reducing the need for artificial lighting. Continuous clerestory glazing and areas of floor to ceiling glazes screens provide natural light to the main circulation space and entrance foyer. To further reduce electrical consumption, intelligent daylight linked light controls have been installed through the school.

**Solar Glare and Heat Gain:** The classrooms face north thus reducing the amount of solar glare and solar heat gain in these spaces. Timber louvers have been externally fixed to the glazing of the south facing circulation space. In conjunction with the extended south facing roof overhangs the potential for solar heat gain within these spaces is minimized. The minimizing of solar heat gain removes the potential need for mechanical cooling/ventilation.

**Ventilation:** All classroom and administration areas are naturally ventilated thus reducing the potential electrical consumption.

**Heating** is achieved by using underfloor heating fed by condensation gas boilers and hot water generated using high efficiency condensing water heaters. The pool was identified as a large consumer of gas and so smaller local boilers were provided to operate independently, avoiding the need to ignite the larger boilers during the summer months.

**Viewpoints**

**Client's Perspective**

The main aim of the project was to create a fully customised school to address the educational and developmental needs of the children and young people who will attend by providing a supportive, secure and stimulating environment which will enable the young people to achieve their full potential.

This was achieved by ensuring the brief was drawn up in full consultation with staff from both schools, school boards, parent bodies, health services and relevant voluntary bodies.
The staffing model for the new school was created to reflect the required balance between teaching, support and care staff.

Architect's Perspective

GM & AD Architects were chosen as the design team from a competition involving 6 other practices. It is the architect's view that in some ways it helped not having worked on a school before, as the design team had to think through problems and not just replicate what had been done before.

"Building a school is about how to avoid long, anonymous corridors and maximise daylight"

Alan Dunlop

GM+AD Architects

The vision was to create a centre of excellence for the education and the development of 'life skills' amongst children and young adults with multiple and severe impairments. It was important to provide an environment that would cater for the education of children with a wide and varied range of cognitive impairments including hearing, sight and mobility.

The consultation period was very important as some of the parents of the former schools were reluctant to relocate. During the process it was important to manage expectations and present information in a non-architectural way and as a result parents and the local community were brought into the process at an early stage. The local community now benefits from the use of the meeting rooms and sports facilities.

Users' Perspective


"The children move around as though they have been here for their whole life and they adapted to the school quicker than I did" -

Teacher

Staff and pupils' parents were consulted widely throughout the development of the project. Questionnaires were sent out to all members of staff asking for input on specific issues (e.g. room set-up equipment etc) and more general aspirations.

The new Head Teacher was utilised by the design team as a consultant on both large scale and detail design decisions, which benefitted the final design. An example of this was the inclusion and location of a large number of floor sockets which allows the flexible use of space and prevents the cluttering of cables.

The pupils and teachers are enthusiastic about the spaces within the new school which are flexible to the different needs of the pupils. The floor markings, the difference in acoustics with varied ceiling heights, the trail wall and the print, Braille, moon and graphical signage all help pupils with navigation. The pupils mentally map the external spaces, using the sensory features and the variety of different textures such as, grass, gravel, woodchip, the decking and even the sound of the traffic. Every aspect of the school sounds and smells distinctive which supports the young people in their navigation around the school campus.

"When our children leave this school, they will not go into jobs or go and live in their own flat or house- they will always need to be supported. Adults who are blind and have learning difficulties can lead passive lives. But the more independence they have, the more choices they will be able to make and the more stimulating their lives will be."

Monica McGeever, Head Teacher, Hazelwood

General Evaluation of Building

Relocating and amalgamating any school can be problematic for pupils, teachers and parents alike, but when children with dual sensory impairment are to be relocated from a familiar to
an unfamiliar environment, the consultation process is paramount. The result is a school that responds to the landscape of its small corner of Bellahouston Park by nestling close to the ground and winding its way through the existing trees to be as sympathetic as possible while making a significant architectural statement.

Both internally and externally, the materials selected are as natural as possible, for a variety of reasons. Externally they are selected to complement the park landscape and to make reference to the slate roofed sandstone houses in the adjacent terrace.

**Teacher commenting on the trail wall:**

"*One boy had been trying to trail for years, and within a week of being here, was doing it naturally. It is a visual and tactile school*."

Internally, the finishes are both natural and textured to reflect the fact that the users (in the main) rely on sense of smell and touch to navigate. This extends to the cork corridor wall that assists navigation through 'trailing', and the fact that the sunspace leading from the lower to the upper school is lined in slate, which delineates change of space through a change in material, but also, by virtue of the materials' ability to absorb solar energy, the slate wall also results in a change of temperature.

It is not only the choice of materials that render this building sensitive to its users needs. The classrooms are located to the cooler north side, where light levels remain even throughout the day, and are colour coded to assist navigation - nursery (yellow), primary (red) and secondary (maroon). All classrooms have dedicated adjacent toilets and in some cases discrete observation spaces which double as 'cool down areas' - all of which maximise attempts to conserve pupils' dignity and independence wherever possible.

Each classroom has instant access to the gardens, and - typical of the enthusiasm displayed by everyone at Hazelwood - the intention is that pupils and staff will now use this space to develop their own vegetable and herb garden.

**Lessons Learned**

Hazelwood is an exceptional school in terms of the range of additional support needs which it addresses. The interior of the school aims to maximise young peoples' independence and provide an optimum learning environment which ensures a secure but highly stimulating educational experience for all pupils.

The school is barrier free thereby minimising the challenge to pupils in terms of an obstructive physical environment. The inclusion of a house on the campus is an essential
component of the young peoples' development as it provides a domestic environment for the pupils to progress their independent living skills.

The design team consider that the 's' shape of the building reduces the perceived scale of the school and makes it less intimidating and more welcoming to the small children attending. The shape creates a series of small scaled, intimate, internal and external spaces. The application of a sensitive design approach has ensured that the school does not suffer from an institutional appearance and this is a key message for consideration in future projects.

Keir Bloomer, former Chief Executive of Clackmannanshire Council, Chairman of the Tapestry Group and renowned educationalist, says Hazelwood School "if anything, exceeds expectations. There is really so much to admire about it; the way the design is adapted to the site, the choice of materials, the linking of interiors to the exterior and much more. For me the complexity and avoidance of straight lines ensure constant interest and variety while still maintaining intimacy and human scale. I shall certainly keep on saying to anyone who will listen that it is the most exciting new school building in Scotland"
Further Information

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