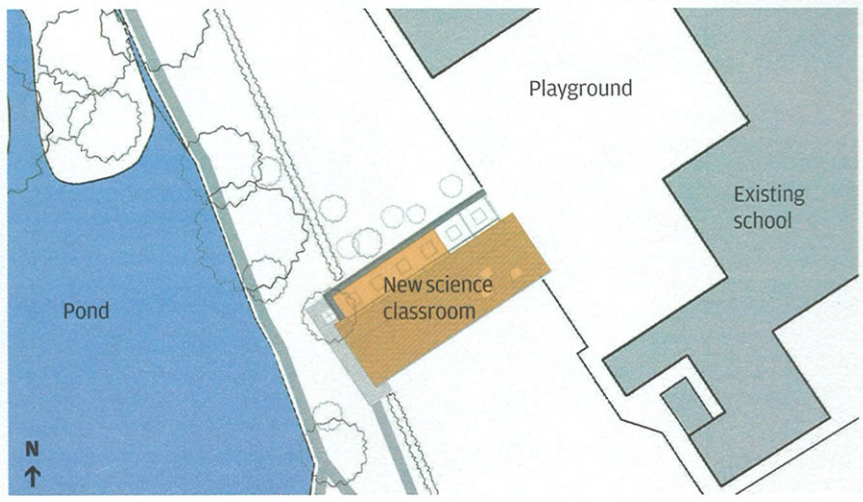
Nature study

Sarah Wigglesworth's science classroom in Sheffield gives pupils an innovative place to experience nature, writes Mark Dudek

PHOTOS: MORLEY VON STERNBERG



Previous spread: Mossbrook Primary School's new science classroom is clad with a collage of industrial construction materials – corrugated steel, polycarbonate sheeting and oak.
Above: Screens and windows are designed to match a child's height.
Top left: The site is located on greenbelt land that includes a wooded copse overlooking a pond.
Bottom left: Site plan.

Over the past five years, the government's policy of regenerating our educational buildings has focused on secondary schools. The assumption being that since high-profile antisocial behaviour at school only manifests itself during the later years, primary schools could, by and large, be left to their own devices.

As a consequence of this neglect, many primary schools are in a dire condition. Those that have been replaced, with a few notable exceptions, are part of large grouped school PFI contracts, and reflect a similar orthodoxy to their secondary school counterparts.

The classroom is rarely considered in its own terms. Yet at primary school level, it is the home from home, a life capsule where schoolchildren aged four to 11 spend most of their time. Where is innovation in the design of classrooms when so much is prescribed and reinforced by a stifling National Curriculum?

Giancarlo de Carlo once observed that "education is a result of experience. The wider and more complex the experience, the deeper and more intense the education."

How, therefore, can we make education more interesting for pupils by broadening the field of spatial and sensory experiences offered?

The Department for Education's Classrooms of the Future initiative was aimed at challenging current thinking on school building design, by focusing in particular on the primary school classroom. Innovation was the key to the projects, yet designers were expected to build their dreams, pretty much within the tight cost constraints of a normal school building.

Sarah Wigglesworth Architects was nominated to design and build a Classrooms of the Future project in Sheffield: a £335,000 science classroom based at the Mossbrook Primary School. Located on greenbelt land to the south of the city, the designers recognised this gift of a site, a wooded copse overlooking a pond bounded by an existing sensory garden. They decided to submerge the new building within this natural environment as much as possible. Slightly detached from the main school campus, the new classroom could develop its own distinctive architectural language and find new ways to exploit the rich natural environment.

Initially working with postgraduate students from the University of Sheffield Department of Architecture, both staff and children helped to develop a brief that fitted with the nature theme.

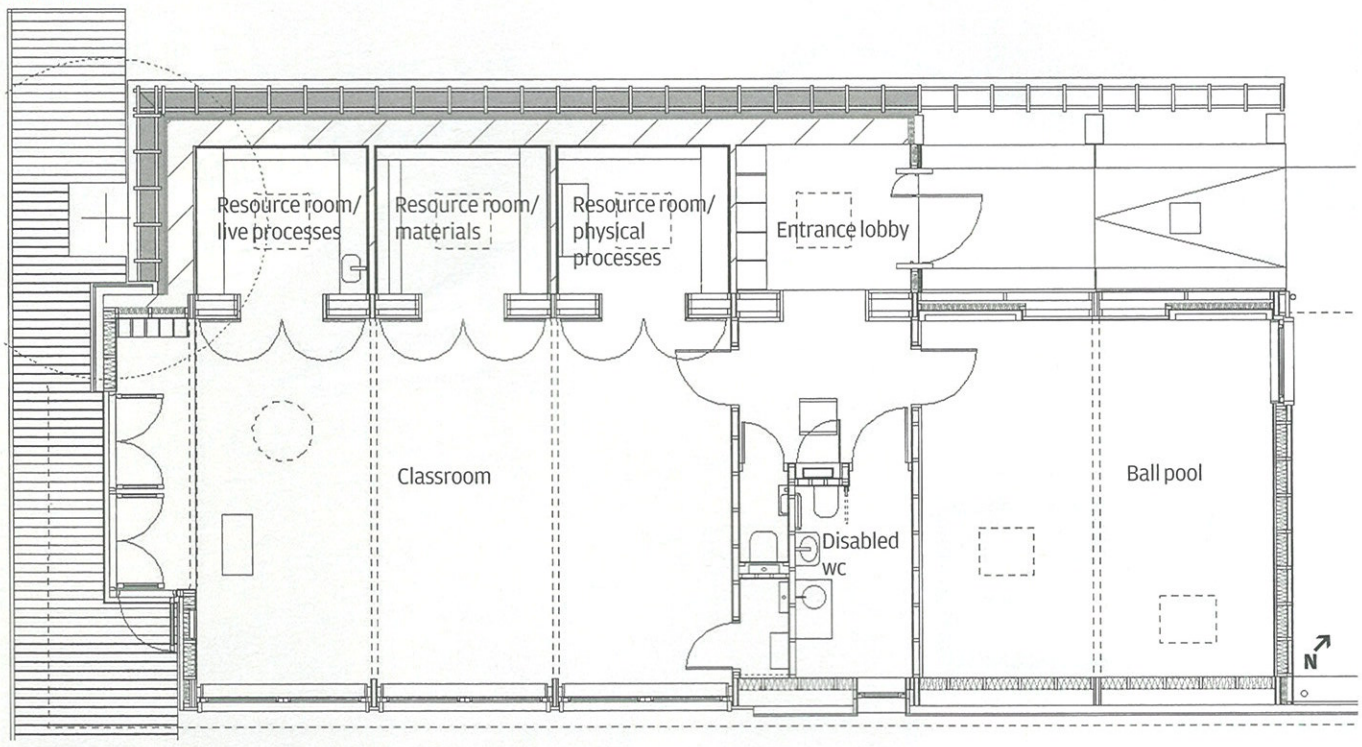
Mossbrook is a special school for children within the mild to extreme autistic spectrum. For children with learning difficulties, science at Mossbrook is taught in a demonstrative and experiential way. In this context, snail races are perhaps more useful than biology textbooks. Exploiting the sensory quality of materials within a learning environment has great value to a child who may be struggling to read and write. But this approach is also relevant to the wider school community.

As they got to know the children, the architecture students deepened and extended the consultation process over a number of months, and this shows in the finished project.

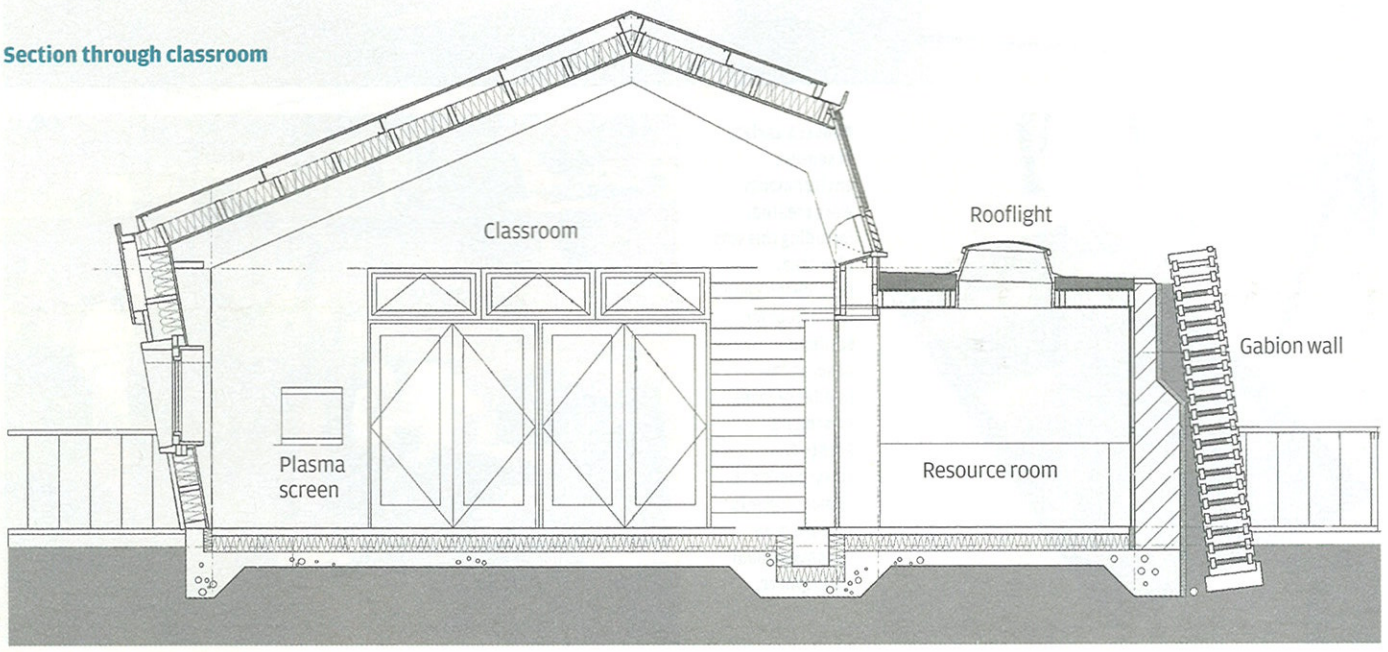
The building is full of intelligent and thought-provoking details that are orientated towards the perceptions of the children rather than adults. For example, within the entrance lobby, the workings of a toilet cistern at the back of the adjacent WC cubicle are revealed behind the Perspex casing.

There are vision panels in the walls and the floor that allow

Floor plan



Section through classroom



close observation of physical and natural phenomena under supervised conditions. An underground burrow has even been cast into the ground-floor slab, so that foxes or badgers can nest in full view of the children in their classroom above.

The building is clad with a collage of advanced industrial construction materials usually found on smart factory buildings in Munich. Corrugated steel, polycarbonate sheeting and oak form a robust exterior envelope. This has practical benefits from a security perspective, but it is perhaps an ironic nod back to the industrial heritage of Sheffield that has mostly disappeared over the past 25 years.

As headteacher Maggie Brough explains, the materials and the way they are used are intended to act as an educational resource in their own right, showing the way architecture works. It is a shame that most of these construction components are now made abroad. At least the gabion wall running along one edge of the new structure was put together locally. It appears to extend the adjacent sensory garden up one side of the building to form a rustic living facade.

Portal frames made of ply and softwood support acoustically treated ceilings that provide a generous volume inside the classroom. Child-height windows frame views of the surrounding landscape. As Brough observes, "the new building nestles into the landscape rather than standing apart from it, which we are all very comfortable about".

With its restful views of nature and spacious quiet interior, this building has a tranquil, almost spiritual, quality; at the end of their lessons, children simply do not wish to leave. There is a sobering comparison here between the architectural mediocrity of the existing school buildings and the new classroom.

One of the most innovative aspects is the use of virtual and electronic media to further transform the way in which children see. Collaborating with artist Susan Collins, webcams located in the conservation area and ▶

This building has a tranquil, spiritual quality; at the end of their lessons, children simply do not wish to leave

An unforgettable journey

The official opening last week of our amazing Classroom of the Future was the culmination and fulfilment of an incredible five-year-long journey, *writes Maggie Brough.*

At the end of the school year in 2000, we had the opportunity to bid for the Classroom of the Future initiative. We are a special needs school, taking pupils from four to 11 with a wide range of severe and complex needs. We wanted a space that would help our school be at the heart of the community – a classroom where children with special needs would meet and learn in partnership with their peers from mainstream schools. And where children and adults could learn about conservation, the environment, science and learning itself.

The process began with students from Sheffield University School of Architecture working with pupils on colour, light, space, shape and materials. It was a steep learning curve for the student architects, but they soon learned how to share ideas with our pupils. The teachers and I learned a lot, too, all of us being far more constrained with our ideas than our pupils.

We were lucky to have Sarah Wigglesworth as our architect. She spent hours exploring our vision for the classroom and asked us endless questions about how our children learn, why we do things this way and why the children react that way.

Our classroom is an inspirational experimental building that incorporates an exciting blend of audio-visual, graphic and interactive activities exploring the life surrounding it. It overlooks our wildlife conservation lake area, blending more and more subtly into its beautiful setting as the materials gradually begin to age, and has quickly become an integral part of the school community.

As for the children, they are excited and stimulated by the learning space. They enjoy the light, the space, the comfortable temperature and the acoustics, which together provide conditions for optimum learning. Both children from our school and those from the many other schools who have started to share the classroom with us are reluctant to leave it at the end of sessions – as are staff. It's hard to measure excellence, enjoyment and confidence in learning – but we know it's there.

It has truly been an unforgettable journey to our completed classroom, and I have to say that the journey was as exciting, stimulating and fulfilling as the classroom itself.

● *Maggie Brough is headteacher of Mossbrook Primary School.*

A classroom pool teaches children about which materials float and which sink.

PHOTO: PETER LATHEY