

## Learning lessons in architecture

Neill Werner, Head of Architecture at construction and property consultancy Pellings LLP explains why delivering good educational space is a collaborative effort, and verifies his claim using the team's recent redesign of Willow Dene School.

eacher led design is key to creating successful educational environments for pupils. This applies to all schools, but particularly to schools that are undergoing complex remodelling or expansion, an activity that has increased rapidly in line with the soaring demand for pupil places, and the scarcity of affordable land for the development of new schools. For existing schools to be remodelled successfully, architects must work closely with teachers to understand how they approach their curriculum, and the design solutions that will support it.

Teachers often have specific ways of working and using space that is specifically relevant to their school and which has been built up over many years. They know what works, and their style helps form the characteristics that make the school individual and enables successful education. A failure to have input from important teachers during a school's redesign can risk eroding these benefits to the detriment of pupils and staff. However, this needs to be balanced against the local education authority's need to have flexible space to deliver a range of teaching styles.

Government, teachers and architects need to ensure that standardised design does not threaten teacher led design. The Education Funding Agency's base line design for schools guidance was introduced in 2014. It promotes standardised design specifications across a range of educational facilities, providing guidelines on how the Priority School Building Programme's PFI facilities can be met within specific cost and area allowances.



Although well intentioned, the guidance encourages rigid design, is unsuited to complicated school redesign projects, and often leaves little room to incorporate the individual school's approach or teaching methods. The guidance focuses on cost, rather than involving teachers in the design process.

What should be remembered is that bespoke educational space designed with teachers input, is more likely to get nearer to falling within The Education Funding Agency's guidelines (£1113 per square metre). Teacher led design can improve efficiency and use of space because teachers want to get the most out of









their school's floor area. Teachers are often imaginative, and can creatively plan the teaching day around the flexible use of space and effective pupil circulation. They know how space should be used in their school. For example, with the advent of multiple meal sittings teachers can provide intelligence that helps designers to create more efficient dining spaces.

Delivering good educational space is a collaborative effort. Architects' skills lie in teasing a brief out of teachers, and working with them to deliver teaching space that is cost effective, but importantly works for the individual school.

Whilst BB103 may be praised for being a significant improvement on its predecessor BB99, because it allows the overall space allocation to be used more flexibly and is not so prescriptive, it does this by focusing on priority space that supports the curriculum as well as flexible space that works within the curriculum in order to meet prescribed area reductions. However, this is sometimes at the expense of social or circulation spaces.

Therefore a school project designed under BB103 guidance can only be successful with the considered input of a teacher led design body and a thorough investigation of curriculum needs together with a creative approach to compromise.

## **Considered** input

A pioneering example of a modern Special Educational Needs (SEN) primary school, Willow Dene is an innovative use of architecture tailored to pupils' needs following in-depth consultation with school staff.

The £12.5m BREEAM Excellent, 179-pupil school, comprises 26 classrooms including a pre-school playgroup, and was built for the Royal Borough of Greenwich. 80% of the school is new build, replacing older school buildings that were no longer fit for purpose. An array of new ancillary space caters to children with a range of learning difficulties and further complex needs. The internal accommodation includes a warm water pool, sensory rooms, a rebound room together with medical and physiotherapy facilities.

The existing school comprised a number of dilapidated buildings on a steeply sloping site, connected to one another via a series of external uncovered timber ramps, which provided access on fine days but limited use of the site otherwise. They defined external amenity space but often led to awkward and difficult to use spaces. The existing buildings did not provide the services the school required to operate successfully, and children and staff had been travelling to other sites to access facilities such as a warm water pool.

Prior to construction, in-depth consultation was undertaken with the local community who were largely in favour of the school's redesign. However, some local residents raised concerns that the new school could have interrupted the identity of the local area. In response the school was designed as a series of pavilions, promoting a small village feel while ensuring its scale was not overwhelming. The architectural language of the pavilions references woodland to the south and west of the site, and cedar cladding is combined with coloured HPL planks to create a woodland motif along the building's facade.

The school's village design and palette of materials used references the surrounding residential vernacular, while still allowing for its own identity. Rendered panels and pitched roofs refer back to the domestic architecture of the local housing, while the school's composition and range of colour and materials used present an animated frontage to the public side of the school, reinforcing its place in the community.



Overcoming complex architectural challenges, particularly relating to accessibility, were key to the development of Willow Dene School. Significant level changes across the site and the requirement to retain an existing central building led to the development of a largely two storey building. It is arranged with Key Stage 1 accommodation at lower ground, and Key Stage 2, shared teaching, therapy and medical facilities at ground floor level. Key Stage 2 pupils are purposely placed on the higher level to provide a sense of progression as they move up through the school.

A central ramp connecting the two levels is installed for pupils unable to use stairs or lifts, although the use of stairs is encouraged throughout to enhance mobility. Classrooms are paired and





share a centrally located bank of hygiene facilities, and are accessed via a wide central corridor, which provides easily accessible storage space for mobility equipment. Canopies for coaches and cars adjacent to the school entrance ensure that children remain dry when they are dropped off.

Large elements of glazing to classrooms enable a strong visual link with outdoor spaces, providing a sense of calm for pupils. Throughout the school glazing maximises natural light, creating a sense of openness and reinforcing links with the outdoors. Playgrounds and external spaces are easily accessible, with all lower level Key Stage 1 classrooms having immediate access to inspiring outdoor learning and play areas. An innovative external glazed bridge spanning over the Key Stage 1 playground connects Key Stage 2 children to their own playgrounds.

All outdoor space meets pupils' needs. Colourful vegetation and newly planted trees connect with play areas with bespoke external play equipment for learning and fun. A stimulating sensory garden, funded by the school, is calming and benefits the children with activation points for fountains, musical features, and other installations that heighten the children's senses.

Willow Dene School needed to be fully operational as quickly as possible, and modern construction methods and techniques were used. A steel frame and modular hybrid solution was employed with several elements manufactured offsite, which significantly accelerated the construction process. The school remained fully occupied during the construction period, and the programme of works was devised with the school's input to minimise disruption. Site access and building work were separated from operational areas of the school, and considered precautions were agreed to ensure pupils were not subject to distress, and that there was no impact on site access for school staff and emergency medical services. Carefully designed entrances and hoardings hid construction work, while noisy building work was undertaken outside of school hours.

Sarah Jones, the architect of Pellings, commented: "Willow Dene School offers a secure but welcoming environment. Ironically, the topography of the site enabled us to explore the opportunities offered by the considerable gradient from north to south and create a range of lively indoor and outdoor spaces in line with the school's requirements."

Co-head teachers Carolyn Vagg and Rachel Harrison said: "This stunning modern, purpose-built school affords great opportunities for teaching and learning. Its up-to-date facilities closely reflect the diverse and complex needs of our growing school population. Whenever we walk into our new building we have a daily reminder of the aspiration we hold for our children – seeing possibilities, realising dreams."

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