


architecture case studies



Curved zinc for Quarry house

In the heart of suburban Kent, Munkenbeck and Marshall's curved Quarry House in Sevenoaks is built on the edge of a disused quarry. The design of the home had to accommodate the unusual manmade topography while blending with homes nearby and, in response, linking of quarry floor and ground-level was achieved using a stepped construction. The innovative use of otherwise dead land contributes much to the building's environmental credentials, construction of the four-storey building having been undertaken where residential development of any other kind would have been unlikely.

Several timbers were considered while concepts were being created, but a combination of larch for the structural timber, and zinc for the roof, was chosen to provide two materials with similar natural ageing properties. The larch's silver grey will blend with the gradual patination of the dramatic, curved zinc profile. Timber was specified from an FSC-accredited source, while zinc – supplied by VM Zinc (Umicore) Ltd – was chosen for its shaping practicality and low-energy use in manufacture. From ore, it uses the lowest energy level of the non-ferrous metals – less than half that of copper, and a quarter that of aluminium.

The existing house is being retained, and with other homes having an outlook onto the site, the overall roof height was restricted by planners so as to be no higher than existing structures. Even so, while giving the impression of being single storey when viewed from the ground, the curved roof in fact covers two levels.

At 5100sq ft, the design uses the environment to assist cooling of the building by drawing air over the rock face of the cliff. The roof structure provides shading for natural cooling, while providing a major breakthrough in contemporary design. An internal box gutter has been used to take rainwater away through the balcony areas via hoppers and rainwater pipes, also made of zinc.

Zinc's attraction in designs of this nature stems in part from its recycling credentials – 90 per cent of rolled zinc recovered from roofs and rainwater systems is now being reclaimed in Western Europe for use in galvanising, as well as manufacture of brass and zinc oxide. Though not yet in widespread use as a roofing material in the UK, zinc's sustainable credentials have already established it in common use for cladding.

SMC plans the future of education

SMC Alsop has won an international competition to design the Michael Faraday Primary School, the first facility to be transformed under the Southwark schools for the future programme and the beginning of the Aylesbury estate regeneration. This is part of the borough's vision – Southwark 2016 – to transform Southwark into a place where families want to live, work and learn. The project will extend primary school provision and provide adult learning opportunities for the neighbourhood.

Cllr Caroline Pidgeon, Southwark Council's Executive Member for Children's Services and Education, said: "Southwark has an exciting future ahead. The council has embarked on one of the largest regeneration projects in Europe, which will transform the borough. Education has a vital role to play in building safe and sustainable neighbourhoods so we are building new and better schools for the young people of Southwark."

"We want Southwark to be a place where good-quality education and children's services support families and communities, who choose to live, work and learn here. We want our schools to be stimulating, safe and successful learning environments. They will be there for children and young people, but they will also provide facilities for the communities they serve."

The new Michael Faraday community school will replace the existing cramped and inflexible 1970s buildings, located at the centre of the Aylesbury estate. It will give pupils and staff a teaching and learning environment worthy of the 21st century, as well as providing learning facilities for adults. As housing in the area will double, the school will expand to cater for the increase in children and their families.

Run by Southwark schools for the future, RIBA and Aylesbury New Deal for Communities, the invited limited competition for this new school was between dRMM, SMC Alsop, Walters & Cohen and DSDHA. SMC Alsop hailed the competition process as exemplary because, unusually, it allowed the architects access to the school and its pupils. Jonathan Leah, Project Director at SMC Alsop, said: "In our experience, this kind of competition is really to be commended – it enabled the project team access to the users, to explore initial ideas, needs and dreams with the pupils and staff to produce a conceptual design that reflected users' concerns and aspirations."

SMC Alsop's early concept has a hub at the centre of a flexible and dynamic learning environment. Classroom and community activities are wrapped around this central core to create a rich layering of indoor and outdoor spaces. Learning within the school would be visible to build a collective awareness of activities and the environment around them. The pupils and head teacher worked with the architect to develop the initial single-storey linear school design into a multi-level building with views onto the world beyond the school.

Will Alsop concluded: "It is very important for us to create a school that will live in the imagination of young children before they even start school."

