parts took place using a very complex method. Following the electronic scan, the foam polystyrene igloo was first of all sawn up into over 100 parts. These 'puzzle pieces' then served as finished moulds for the glass fibre reinforced concrete elements, which have a wall thickness of just 2.5 cm.

AA DRL-Pavilion, London (England)
Architecture: Dempsey, Huang

To mark the 10th anniversary of the AA Design Research Laboratory (Fig. 9), entries were invited to a design competition in which an innovative structure made of 13 mm thick, glass fibre reinforced concrete slabs was sought. A walk-in, complex pavilion in the form of a shell and measuring 10 x 10 x 5 metres was the result. In joining together the individual concrete sections, which serve simultaneously as support structure, façade, floor, walls and fittings, the tensile strength of the glass fibre reinforced concrete slabs was put to use and a simple interlocking notch connection was developed that is held together by a precisely fitting rubber seal.

Fig. 9. AA DRL-Pavilion, London

Bridge Pavilion, Zaragoza (Spain)
Architecture: Zaha Hadid

Another impressive building with glass fibre reinforced concrete elements is the 275 metre long bridge pavilion built for the world exhibition EXPO 2008 in Zaragoza in Spain (Fig. 10). The architect chose triangular panels made of glass fibre reinforced concrete for the outer skin. A sophisticated pattern of 29,000 glass fibre reinforced concrete panels in different shades of grey produces an effect like shiny fish scales.

Fig. 10. Bridge Pavilion, Zaragoza

Graphic concrete, colour & form liners

Photoconcrete: University of Applied Sciences, Eberswalde (Germany)
Architecture: Herzog & De Meuron

In photoconcrete, a photographic contrast image is created on the concrete surface by means of the pixel-by--pixel application of the retarder. The effect of the retarder is that the concrete hardens at different speeds in different places. The results of this are rough and smooth areas as well as light-dark graduations. The light areas of the motif remain smooth, whilst the dark ones are washed out.

One of the largest photoconcreteproject so far has been the library of the University of Applied Sciences for Forestry in Eberswalde (Fig. 11). Its façade shows fourteen different motifs on around 800 concrete precast parts.

Fig. 11. University of Applied Sciences, Eberswalde

Bodega Berdugo, Aranda (Spain)
Architecture: Viné, Daroca

Abrupt, inaccessible and fascinating – the warehouse and filling hall in North Spain defies all external climatic influences. Two young female architects designed it and compensated for the low budget with a great deal of dedication and appetite for experimentation. They created an impressive debut work from brilliantly dyed concrete precast elements in a multiplicity of red nuances. Each concrete panel is anunicum. Although the concrete was industrially premanufactured, the colours were mixed in manually, so that each individual panel exhibits different colours, colour gradients and patterns (Fig. 12). The precast concrete parts have a two-layer structure with thermal insulation on the inner side and hence, thanks to their good thermal behaviour, provide for a constant room climate despite the extreme outside temperatures.