



## Crafting concrete: exploring the aesthetics

*Exposed concrete is often regarded as having an industrial aesthetic – grey, often smooth surfaces that are tough enough for the harshest industrial environments and commonly associated with the mechanisation of the 20th Century. But this is only one of concrete’s guises. In recent years, the trend is towards the expression of what might be called ‘natural concrete’, or concrete that appears hand-crafted and ‘of the earth’. This includes concrete that is pigmented to have an earthy tone or with surface texture and colour created by exposing natural fine and coarse aggregate. Elaine Toogood of MPA–The Concrete Centre reports.*

**T**he Bruder Klaus Field Chapel in Mechernich, Germany, designed by Swiss architect Peter Zumthor, is a widely published example. Completed in 2007, the raw materials for its concrete walls were reportedly sourced from surrounding fields, the concrete rammed into place to create distinct, sand-coloured layers with a crumbly texture reminiscent of geological strata. Zumthor used a similar technique for the construction of Secular Retreat in Devon, the most recent project of the holiday property company

Living Architecture, set up by writer and philosopher Alain de Botton. This house displays handcrafted, rammed concrete walls both inside and out and was completed in 2018. The process of creating rammed concrete is laborious and this, combined with challenges of providing reinforcement, potentially limits its wider application. Nevertheless, it has a strong aesthetic appeal.

Recent projects with a layered and geological aesthetic include the Yorkshire Sculpture Park’s new visitors centre and gallery, designed by Feilden Fowles



Left and above: Secular Retreat, Devon. (Photos: Jack Hobbouse/Living Architecture.)



Bruder Klaus Field Chapel, Mechernich, Germany. (Photo: LeonL.)

“In lives increasingly influenced by virtual reality and digital technology, it is not difficult to understand the appeal of natural materials, of free-flowing patterns and the connection to nature that they offer.”

Architects. Here, rather than ramming the concrete, slender reinforced walls were constructed using shallow layers of site-batched, fluid concrete with different pigment and aggregate combinations to reflect the natural strata and geology of its surrounding area. The surfaces were then shot-blasted to varying depths to add surface texture and enhance horizontality, giving a natural appearance. On a larger scale, the Forum :terra nova exhibition venue near Elsdorf, Germany by Lüderwaldt Architekten used ready-mixed concrete supplied with a variety of different earth-coloured pigments to create reinforced structural walls two storeys high, in layers of varying depth.

### Earthy colours

Examples of contemporary architecture using cast-in-situ concrete in earthy colours are numerous. They include: Bernardo Bader's russet-coloured Islamic cemetery in Altagh, Austria; the red concrete 'pyramids'

of Casa das Historias Paula Rego in Cascais, Portugal; and the beautifully simple clay-coloured temple near Pune, India designed by locally based Karan Darda Architects. Other favourites include the massive concrete façades of Barcelona's Ciudad de la Justicia and more recently – also by David Chipperfield Architects – the pinkish hues of Inagawa cemetery, near Osaka, Japan. Here the effect was enhanced by honing the surfaces to reduce their light reflectance to soften the impact.

Closer to home, the Respite Pavilion at the North Ayrshire Community Hospital by Graeme Massie Architects is constructed using concrete with a soft, brownish hue textured by horizontal timber formwork. And the sculptural cast-in-situ concrete façade of 168 Upper Street by Amin Taha Architects is terracotta inside and out.

The use of natural aggregates and pigments to colour architectural precast concrete is not a recent trend, with numerous examples in the UK alone. Take, for example,



Yorkshire Sculpture Park – new visitor centre. (Photo: Feilden Fowler Architects.)

the ground-floor façades of the East Village housing by Patel Taylor Architects, where expression was taken further by using a formliner created with a stone texture set out to include fake mortar joints. At Silverburn Shopping Centre, by BDP, large faceted cladding panels replicate a textured rock face around the perimeter, also using flexible formliners.

The textured internal concrete surfaces of Mole Architects' Houseboat in Dorset for Roger Zogolovitch took another approach. Here the surfaces of the cast-in-situ structure were heavily shot-blasted, enhancing the natural variation in the concrete surface and revealing the locally sourced coarse aggregate. The concrete is more creamy in colour than grey, due, in part, to the presence of GGBS. Another example of texture is at 21 Caroline Place, by Aman Taha Architects. Here the ceiling of the new basement was cast using ready-mixed concrete containing 50% GGBS and specially sourced pale aggregate, the entire surface was then point tooled to create a rough texture.

The reasons for any architectural trend will be complex and multi faceted and deserve far more consideration and space than is available in this short article.

In the UK, the good availability of pigmented ready-mixed concrete and the cost-effectiveness of earth-coloured tones (in comparison with blue and green hues, for example) will facilitate their use in a range

of projects. But it is not just economics in play: it is a broader set of considerations that influences design.

This includes the need to manage the impact that the built environment has on our sense of wellbeing. It is arguably of growing importance, based on the increase in uptake of environmental assessment standards such as the Well Standard (an assessment tool to measure and acknowledge design to support the health and wellbeing of building occupants) and the growing interest in biophilic design, recognised as part of such standards. The publication *14 Patterns of Biophilic Design. Improving Health & Well-Being in the Built Environment* written by environmental consultant Terrapin Bright Green<sup>(1)</sup>, is an interesting publication on the topic and contains numerous examples of the use of concrete.

In lives increasingly influenced by virtual reality and digital technology, it is not difficult to understand the appeal of natural materials, of free-flowing patterns and the connection to nature that they offer. In this regard the aesthetic of exposed concrete has a role to play and even more so for a concrete that takes its references from the earth and the natural aggregates from which it is made. ■

**Reference:**

1. BROWNING, W., RYAN, C. and CLANCY, J. *14 Patterns of Biophilic Design. Improving Health & Well-Being in the Built Environment*. Terrapin Bright Green, New York, USA, 2014.



The Respite Pavilion, North Ayrshire Community Hospital. (Photos: Russell Beard.)