



By Stephen Mold, Chairman of the Architectural Cladding Association (ACA)

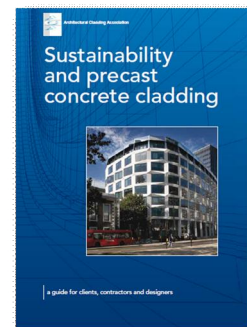
The UK construction industry and its customers now have higher expectations of sustainability. Specifiers and designers are asking for greater clarity about environmental credentials, clients expect supply chains to be using responsible sourcing standards and others want to know how to achieve zero-carbon buildings. Stephen Mold, Chairman of the Architectural Cladding Association reports.

Decisions at the design stage of a building have a fundamental impact on its sustainability from initial construction through to eventual demolition. Sustainable design can increase the building's performance during its life and eliminate unnecessary waste during its construction. Obvious lifetime implications are energy and maintenance costs.

Uniquely, concrete is 100% recyclable after crushing. Indeed, some construction companies report that 70–90% of concrete returns from their waste streams as aggregate. A further benefit of concrete is its inherent fire resistance, robustness, durability and long-term performance. Members of the Architectural Cladding Association (ACA) are committed to playing a leading role in this, promoting and developing sustainable precast concrete cladding construction techniques. These not only apply to the manufacture of cladding panels but, equally important, extend to their design and installation.

Guide

To underline the importance of sustainability in the construction industry and to inform designers and clients about the environmental credentials of the products they are specifying, the ACA in May 2009 launched its guide Sustainability and precast concrete cladding⁽¹⁾, which has been welcomed throughout the industry. It offers a clear and detailed explanation of a range of important benefits that specifiers can take advantage of by using precast cladding, including in-depth information about the precast manufacturing process and the various actions that ACA member companies are taking to improve the sustainability performance of their products even further.



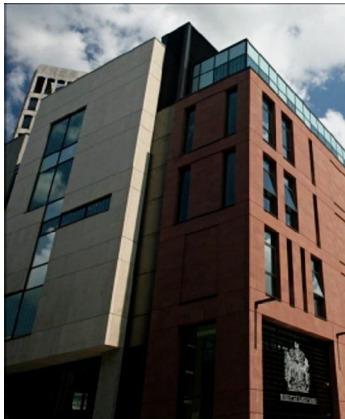
Whether for a designer, procurement specialist, contractor or client, the guide contains a range of useful insights, clarifying key issues such as energy efficiency, zero-carbon construction and responsible sourcing. It explains how precast factories contain specific features to save energy, reduce water consumption and make the most of automated manufacturing processes to optimise the use of materials, for example through recovery and recycling.

In addition, the role of the whole project team is highlighted – by making sensible decisions early on, this enhances the precast planning process and then it is much easier for the cladding manufacturer to achieve a client's sustainability objectives, for example by maximising the use of moulds and reducing the number of truck journeys to site.

But sustainability is not just about efficient manufacture. Importantly, precast cladding is a long-lasting product, which provides further benefits through its life. Once installed, the thermal mass, acoustic properties and resilience of precast concrete will continue to provide 'payback' to the client and all within an architecturally attractive building.

Manufacturing building components in factory conditions with permanently employed skilled workers has several immediate effects, notably the elimination of the effects of weather. Materials are ordered as needed and are carefully stored and protected against contamination. In addition, product defects are close to zero and energy consumption is lower.

Bristol



The new Bristol Civil Justice Centre

The new Bristol Civil Justice Centre was designed to provide modern court facilities and administrative offices to meet the anticipated workload for at least the next 25 years. Produced off-site in a controlled factory environment, the precast cladding panels were typically delivered on a just-in-time basis to suit site progress for off-loading and hoisting directly to their final fixing positions, so minimising any need for double-handling or temporary storage.

The Marble Mosaic Co carried out the detail design, manufacture, delivery and installation of the precast cladding panels. Produced in accordance with the recommendations of BS 8297⁽²⁾, the panels were faced with three types of natural stone: red sandstone, and limestone.

MediaCity

MediaCityUK aspires to the highest environmental and energy-saving ratings. In fact, it is the first development in the world to become a BREEAM-approved sustainable community. Techrete (UK) became involved with the scheme to clad several of the blocks. The scheme required high-quality architectural cladding that could be installed under a fast-track programme including fitting of windows into the panels off site and installation on site of the panels without scaffolding to give good value for money. Concrete was chosen for its high-quality finish, speed of fabrication and erection, and cost in comparison to masonry.



The MediaCityUK development in Manchester

As each cladding panel was cast, it was inspected, stored and made available for delivery on a just-in-time basis for off-loading and hoisting to its final position, ensuring quality with efficient performance and zero defects.

Canterbury

In Canterbury Augustine House, designed and constructed by Decomo UK is the largest project to have been commissioned by Canterbury Christ Church University since its first campus was constructed in 1963. The four-storey development provides a gross internal floor area of over 12,000m² and its impressive library will house around 300,000 books. Involved at the precontract concept stage, Decomo designed, manufactured and installed the architectural precast concrete cladding that was used extensively both to the external façades and the internal walls to the stunning 120m-long glazed atrium. In total, there were 270 individual panels covering some 1500m².



Augustine House, Canterbury

In addition to the 'reconstructed stone' cladding, Decomo's contribution included 30 special knapped flint-faced panels around the main entrance to the building: to achieve this, 5600 individual flints had to be handworked using traditional methods. The building was used as the pilot scheme for the new BREEAM Higher Education assessment category and received a rating of 'Very Good'.

Piccadilly Place

In Manchester, Argent's newest and most prominent mixed-use development, Piccadilly Place, has seen Techrete in action on-site. Apart from their extensive aesthetic quality, the buildings here were designed to achieve the BREEAM 'Excellent' standard. Set to be the number one place to be in Manchester once operational, the development offers five spectacular buildings incorporating residential and office space, car parking and a modern square.



Piccadilly Place, Manchester

Recyclability

In short, precast concrete cladding can be all things to all men, combining the required aesthetics with long life and, ultimately, recyclability.

REFERENCES

1. ARCHITECTURAL CLADDING ASSOCIATION. Sustainability and precast concrete cladding. ACA, Leicester, 2009.
2. BRITISH STANDARDS INSTITUTION, BS 8297. Code of practice for Design and installation of non-loadbearing precast concrete cladding. BSI, London, 2000.