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Better face facts

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Thanks to its versatility and durability, consistent high quality and sharpness of detail, factory-produced architectural precast concrete is increasingly and deservedly being recognised as the cladding material of choice for many prestigious and high-profile new building projects.

This progress means that the Architectural Cladding Association is often spoilt for choice when it comes to selecting which contracts to feature in its twice-yearly publication *Façade*. Take the summer 2007 issue, for example:

- 198–202 Piccadilly, London a premier location on a world-famous thoroughfare
- Upgrade to Wembley Park station, London
- Clarence Dock regeneration, Leeds
- Centre for Contemporary Arts, Nottingham.

198–202 Piccadilly

The over-riding requirement for this project in the heart of London was for a landmark design that did justice to its premier location. The building adjoins a Wren church on one side and the old Simpson's building – a pioneering modernist structure from the 1930s – on the other. This mixed retail and commercial development contains over 6500m^2 of office space and nearly 2800m^2 of shops. The main impact of the eight-storey building lies in the Portland and Savonniers limestone facings coupled with cast bronze column capitals. Large granite-crested dormer windows and turned limestone urns, 3m high, create a dramatic silhouette against a sloping roof.

The building used stone-faced precast concrete cladding panels from The Marble Mosaic Company in Weston-super-Mare. Indeed, through main contractor Sir Robert McAlpine, the company was responsible for detail design, manufacture, delivery and installation of the panels in a contract worth in excess of £3 million (US$6m approximately).

As well as the limestone facings, Chinese Constellation Grey, Sanhe Red and Kashmir Gold granite facings were used, along with three types of stock brick facings. The materials were assembled into cladding panels with reinforced concrete backings. In addition, some units were designed to act as structural elements supporting other cladding materials. Complete panels weighed up to 10 tonnes.

Wembley Park station

For over a century, the original Wembley Park station was the main rail link to sporting events at Wembley National Stadium, Exhibition and Conference Centre. However, it was clearly unsuitable to cope with the increased passenger demand of the new National Stadium. Advantage was therefore taken of the stadium closure to provide a significant new extension, while maintaining a fully operational commuter station for the 18-month construction of the station works. Decomo UK, working for Taylor Woodrow Construction, designed, supplied and installed the architectural concrete elements.

The new works employ a palette of materials dominated by precast concrete panelling, all of which had to undergo London Underground's rigorous acceptance procedures as regards value for money, durability, life-cycle costs and performance in fire.

Terracotta coloured polished concrete cladding was used for the walls to the six platforms, the auxiliary concourse, the stair tower and end elevations of the staff accommodation building. The latter's main elevation features full-height columns with balconies spanning between these at intermediate floor levels. At ground floor, flat panels replace balconies and at roof level, parapet panels incorporate an integral coping section. All units were manufactured in a white acid-etched concrete. A similar arrangement of columns and balconies/panels was adopted for the rear elevation of the stair tower with the curved panels above and below its glazing, also in the white acid-etched concrete.

The station remained operational throughout the contract and much of the work, particularly on or adjacent to the platforms, was carried out during weekend or night time 'possessions'. Craneage was closely controlled and all works to the north end elevation of the staff accommodation building had to be executed behind a fully encapsulated scaffold, capable of preventing any panel or other object or person from falling onto the tracks less than two metres away from the building face.

Clarence Dock, Leeds

Close to the centre of Leeds and adjacent to the Royal Armouries Museum is an area of regeneration known as Clarence Dock. The compact development consists mainly of medium and high-rise apartment buildings with various approaches to the treatment of façades, the high quality of which complements that of the surrounding infrastructure.

Tower Block D features prominently, largely because of the sweeping curves of the elevation and the prominent whiteness of the precast cladding supplied by Techrete. The 20-storey building, which steps to 15-storeys, incorporates 433 cladding panels typically 3m × 5.5m; apart from the end elevations, they are all curved on plan. Most of the panels arrived on-site factory-preglazed by the window trade contractor, adding to the economies offered by the easy access and a speedy enclosure.

The Techrete mix fulfils the demand for a panel finish as white and as sharp as possible and adding a high degree of panel-to-panel uniformity soon after casting. Panels were individually attached to the frame with projecting corbels transferring the load onto the floor slab adjacent to the columns and restrained at four points with a system of galvanised steel brackets and plates, etc. Maximum panel weight was a little over 11 tonnes and the double-sealed mastic joints between each were designed at 20mm.

To circumnavigate the projecting falsework at roof level, a 'C' hook was used extensively for the erection operation, enabling the panels to be landed onto the floor slab in a safe single operation. Overall, an efficient scaffold-free system was provided in a competitively short period.

Centre for Contemporary Arts, Nottingham

Stunning lace designs that helped establish a world famous industry in the heart of Nottingham have been set in concrete as part of an iconic arts centre.

The major challenge for Trent Concrete, was to reproduce a unique lace pattern in the reconstructed stone cladding being manufactured for the £13m ($26m approximately) Centre for Contemporary Arts Nottingham (CCAN). The design is based on a sample of Victorian lace found in a time capsule, unearthed when a new supermarket was being built in the city.

Design specialists at Derby University used lasers to replicate the exact pattern on a piece of timber that was sent to Germany, where leading rubber mould supplier Reckli transferred the design onto a durable rubber mat.

In total, 1100m^2 of green scalloped wall panels, ranging in height from 4–11m, will be made, the heaviest of the 93 individual units being 11.5 tonnes. Trent has developed innovative methods of handling, storing, transporting and erecting the panels to ensure that the stunning finish is protected. The company is also providing a 200m^2 black polished concrete plinth of varying heights to surround the base of the building.

Designed by Caruso St John Architects, the centre, featuring 1300m^2 of gallery space, education rooms, a café and bar, is due to open in the autumn of 2008. CCAN has received substantial support from Arts Council England and the development is being led by Nottingham City Council, in partnership with Nottingham Trent University and the University of Nottingham – who will set up a charity to operate the site.

[Further information]:
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[Figure captions]:
Figure 1: 198–202 Piccadilly.
Figure 2: Wembley Park station.
Figure 3: Tower Block D, Clarence Dock, Leeds.
Figure 4: Clarence Dock, Leeds.
Figure 5: Centre for Contemporary Arts, Nottingham.