



Bioscience incubates within black polished precast

Australia's first purpose-built bioscience business incubator is being built at Thebarton in Adelaide. The BioSA Incubator is a \$12.9 million, 3,600 square metre building, located on a 3,000 square metre site at Thebarton's Bioscience Precinct. This purpose-built facility will provide office and wet-laboratory space coupled with an extensive business support program for up to 16 early-stage, bioscience companies. Its purpose is to assist commercialisation of new technologies and to nurture growth of early stage bioscience companies.

With its clean black polished precast concrete walls, the BioSA Incubator will be setting the style for future buildings within the Thebarton Bioscience Precinct. The Incubator has been designed by international firm Henn Arkitekten in collaboration with local Adelaide architects Jackman Parken Evans and Capital Architecture. According to Professor Gunther Henn, principal of Henn Arkitekten, the Incubator is designed as a "space for awareness and knowledge".

Black polished precast panels were selected by the architects and client for their beauty and durability and the need for minimal long-term maintenance. The panels are used on the East and West walls of the building and create a striking effect at the main entry. The North and South walls are primarily glass. Apart from the precast

Precast manufacturer

SA Precast

Construction Authority

Land Management Corporation

Client Agency

Bio Innovation SA

Architects

Henn Arkitekten with Jackman Parken Evans and Capital Architecture

Project Manager

Clifton Coney Group

Builder

Badge Constructions

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load-bearing walls, the structure is in-situ concrete with flat plate floors and band beams.

Precast panel sizes were typically 3,580mm wide by 8,080mm high with thicknesses of 175 and 200mm. The panels incorporated 20mm wide vertical sealed joints between panels. To emphasise the horizontality of the building, 50mm wide by 25 mm deep horizontal grooves were cast into the panels approximately 600mm apart. The horizontal grooves returned on the panel edges to emphasise the solid masonry effect sought by the architects. The grooves were washed down with a 15:1 water/acid wash to clean any cement laitance from the surface. Panel edges were given a 12mm arris. Fixing of panels comprised grouted dowels to the floor and a structural steel connection at the first floor level. Floor to floor level is 3.8 metres. In all, some 54 panels of 45 MPa concrete strength were provided.

Achieving perfection with black oxide

Black oxide used in concrete mixes sometimes produces inconsistent colour finishes between adjacent panel surfaces. So how did SA Precast ensure a consistent, blemish-free colour finish throughout all 54 panels used on the building?

Claude Pincin of SA Precast Pty Ltd shares how he achieved such a consistent colour on all black panels: "We used Black Imperial granite and 330 Bayer black oxide mixed in our own batch plant. Having our own batch plant made it possible to maintain the quality control required."

"The black granite was crushed to give a crusher run of 14mm aggregate right down to granite dust. This meant there was no need for other sand fines in the mix. The mix contained between six to eight percent of black oxide. Using only crushed granite and oxide ensured that there was a consistent colour finish throughout the panels," he said.

"When using colour oxides it's important to keep everything spotlessly clean. Because we have our own trucks we make sure that white concrete is carried on some trucks while black concrete is always carried on others to minimise any chance of colour contamination.

Meeting Part J of the BCA at the BioSA Incubator

To meet the Building Code of Australia Part J requirements for thermal performance, the architects found use for the load bearing properties of the precast wall panels. By casting shallow concrete columns on the back of the precast to integrate panels with the structure, a 300mm wide column-free cavity between the back of the precast and the wall lining, allowed for the addition of insulation. The space also provided for sufficient space to handle a multitude of concealed service runs for now and in the future. The Part J wall insulation requirements of the BCA were met handsomely with a high R-value for the total wall assembly.