

Australia dives head first into marine research

Vast and untapped – the Indian Ocean is the third largest ocean in the world yet is one of the least explored marine environments. This biodiversity hotspot is home to many species of fish, invertebrates and other organisms – over 80 percent of which are not found elsewhere in the world. Research into the effective management, sustainability and the conservation of marine resources within the Indian Ocean is critical to support economic growth and prosperity in Australia and along the Indian Ocean rim.

With the help of a brand new research centre - being built with precast concrete - Australia's research into the Indian Ocean is about to be revolutionised.

Located on the University of Western Australia's (UWA) Crawley Campus, the Indian Ocean Marine Research Centre will be the new hub for more than 240 researchers, conducting intensive research into a variety of areas, including climate change, physical oceanography, conservation strategies and modelling coastal dynamics. The facility will work alongside the newly refurbished Research Centre at Watermans Bay. Combined, the two cutting edge facilities will be the largest marine research capability in the Indian Ocean rim.

The building and redevelopment of these two facilities is the brainchild of the Indian Ocean Marine Research Centre partnership. As the leading marine science partnership in the Southern Hemisphere, its partners include the Australian Institute of Marine Science, the CSIRO, the University of Western Australia, and the Western Australian Department of Fisheries. Funding through these partnerships, as well as a grant from the Australian Government has made the development of the Research Centre possible.

Precaster

Delta Corporation

Builder

BGC Constructions

Client

University of WA

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ESD AIMS FOR 5 STAR RESULT

The \$62 million Marine Research Centre has been designed to maximise the building's life and life cycle costs, and will be constructed to meet environmentally sustainable development principles and UWA's commitment to sustainability. The Indian Ocean Marine Research Centre is aiming to be awarded a 5 Star Green Star Rating when the building is complete.

The building was designed with this in mind and the precast concrete plays a key role in achieving this. Through an innovative concrete mix design, Delta was able to meet a 15% reduction in Portland cement use while still maintaining a consistent colour controlled Architectural concrete.

A PRACTICAL AND ARTISTIC DESIGN

As well as being sustainable, the Centre has been tailored to cater to the needs of researchers, technicians and post-graduate students. The six-storey purpose-built marine research facility includes flexible wet and dry laboratories, loading bays, technical areas, outdoor undercover field staging and boat storage. The ground level features a multi-purpose lecture theatre, connected to a large interaction space with an external courtyard. The facility will also be home to the Centre for Offshore Foundations Systems and a new centrifuge, which will operate the National Geotechnical Centrifuge Facility.

As well as being a practical building for its tenants, the Research Centre exudes marine life in its stunning appearance. National Precast member, Delta Corporation won the tender to manufacture various precast elements for the structure. Delta supplied both architectural walling panels and Deltacore hollowcore flooring planks for the main building and the southern storage facilities.

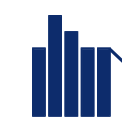
Working closely with Ferguson Architects, the precaster was able to achieve a very high quality architectural finish to the precast. Key elements of the building's nautical design are featured in the panels.

The feature panels, which each weighed approximately 14 tonne, cover almost 200 square metres of the façade and are surrounded by 114 panels. These are cream coloured panels with a timber boarded finish cast from timber-lined forms, which add interest and are in keeping with the existing buildings on the Crawley Campus. Delta also manufactured 53 wall panels for the southern storage facilities, which tie into the main building with the same timber boarded finish. Precast can also be found inside, encapsulating the highly specialised geotechnical centrifuge. Delta's Executive Director Matt Perrella is extremely proud of the precast contribution to the development.

"Knowing the importance of the research that will be conducted here, we feel privileged to have been part of this important project. It is always an achievement creating beautiful precast, and in this case it will help researchers to lead the way in scientific exploration of the Indian Ocean," Mr Perrella said.

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