

Concurrent Session B
Monday 31 August
11.45am – 12.35am



Session 4

The Institute of Marine & Antarctic Studies - a 5 Star Success

Mr David Uhlorn

Umow Lai

David Uhlorn is the Mechanical Group Director for Umow Lai, a Consulting Engineering firm with offices in Melbourne, Sydney and Brisbane. A qualified mechanical and fire safety engineer, David has been involved in the design of laboratories and advanced technology facilities for over 30 years. Based in Melbourne, he has led design teams for a number of high profile University laboratory projects in Australia and just recently New Zealand.

The Institution of Marine and Antarctic Studies (IMAS) is a joint project of the University of Tasmania (UTAS) which will bring together much of Tasmania's considerable strengths in marine and Antarctic studies in one precinct, offering opportunities for collaborative research of state, national and international significance.

Under the one roof of the new IMAS building accommodates the researchers and experts from UTAS, IMAS, CSIRO, the Australian Antarctic Division, Antarctic Climate and Ecosystems Cooperative Research Centre and the Integrated Marine Observing System.

The new IMAS building is a three-storey building located at Sullivans Cove, abutting CSIRO'S Marine and Atmospheric Research laboratories. The building is funded by the Commonwealth and on land provided by the Tasmanian Government, and provides teaching and research facilities for around 290 staff and students.

This building has become the second educational building in Tasmania to achieve a 5 Star Green Star - Education Design v1 rating by the Green Building Council of Australia (GBCA). This rating was a demonstration of the University's commitment to a more sustainable, productive and healthy education research facilities.

In line with the UTAS's commitment to achieve a minimum 5 Star Green Star certified rating for all new developments, IMAS incorporates a range of ESD features, including high performance facade, rainwater collection for the replacement of potable uses, optimised indoor environment quality and thermal comfort conditions and high levels of water and energy efficiency.

The building's environmental initiatives include:

Water

- Highly efficient fittings throughout; <60% reduction in water use through rainwater harvesting;
- 20,000L rain water harvesting tank serving toilets and urinals;
- Harbour heat rejection (closed loop) in lieu of potable water (100% reduction), and for maximum efficiency of chillers;
- Fire system water, storage for >90% water used for fire testing;
- Storm water filtration to best practice, providing clean water flows to the adjacent river.

Mechanical

- Active mass (concrete core) conditioning used for radiant cooling and optimal

thermal comfort;

- Sea water drawn from the Derwent River to cool the building
- Ventilation – exceeded rate of fresh air provision by 150% for optimal air quality;
- Mixed-mode, automated natural ventilation used for office spaces using stack effect of central atrium;
- Occupant sensing for setback of A/C provision when offices are unoccupied;
- Internal noise levels – quiet and low flow air system in used.

Energy

- Full building commissioning and tuning to ensure optimal operation of building in operation;
- Gas-boosted solar domestic hot water supply;
- Lecture theatre with full LED lighting;
- Window design and glass selection to optimise natural daylight levels while minimising unwanted solar heat gain;
- Energy optimised building management system with substantial metering;
- Lighting: occupancy sensors switch off lighting, manual switching is zoned for after-hours provision for occupied areas only;
- Stairs provided for internal floor-to-floor movement. Lifts for essential use only.

Environment

- Waste recovery during construction greater than 80%;
- Daylight glare controls – external shading, internal, glass selection for minimised solar heat gain, and user controlled blinds to all office/laboratory environments. Automated blinds and sun shading to public spaces.
- Learning display located in the building foyer to communicate to building users and visitors the environmental performance of the energy and water systems;
- Zero-ODP refrigerants used throughout, with full leak detection systems on high-efficiency chillers;
- Light pollution from the building is eliminated.

Materials

- Low VOC emissions carpet, paints, adhesives and furniture throughout the building;
- Formaldehyde minimisation in building materials and construction;
- Whole building recycling waste management and planning;
- Natural rubber-based and vinyl flooring selected for durability and environmentally-friendly manufacturing. Recycled timber and carpets manufactured to world's best practice and with recycled content;
- Steel manufactured to best practice environmental standards, and concrete contains minimum levels of recycled content.

Transport

- 33 secure staff bike parking spaces, including 3 for electric bikes, with full shower, change and storage facilities;
- Public and low emissions transport is encouraged. All car spaces are for small cars only, with a significant reduction in car spaces provided from the previous development;
- Excellent public transport connections to site and other campuses.

The IMAS building has been designed to be efficient and inspiring, flexible and adaptable and promote internal and external public interaction. The design is sympathetic to the important

history of the area and its former and current maritime uses, but will also be long-lasting and memorable.