University of South Australia | M² Building and The Plasso
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University of South Australia
Mawson Lakes Campus

“The M² Building is intended to be a catalyst for innovative learning and teaching and high quality research in the materials and minerals science and engineering hub located at Mawson Lakes. The building facilitates the engagement between undergraduate and postgraduate coursework students, higher degree research students, leading researchers and industry stakeholders in a flexible, open and creative space aimed at stimulating innovation in relevant areas. The building will ensure the delivery of contemporary practice-based education programs and internationally significant research.”

University of South Australia’s Project Vision Statement for M² Building and The Plasso

The University of South Australia set an ambitious brief to create a new landmark building at the physical and philosophical centre of the Mineral and Materials research hub at the Mawson Lakes Campus. The intent of the M² Building is to underpin a nexus between learning, research and industry in view of propelling this aspect of science well into the future. The Plasso is a unique and complimentary landscaped area that strongly integrates this new building into the fabric of the Mawson Lakes Campus.

The 7,300m² building will accommodate 55 academic staff and 45 HDR students, representing both the Mawson Institute and The Wark, and will include an experiential learning studio for use by 120 honours level students. The collocation of these groups is in part focussed around the new Minerals and Materials degree to be offered by UniSA in 2012.

Intended to promote knowledge transfer, the building will offer a range of spaces where industry representatives and researchers can come together in small collaborative settings or in a large theatre setting designed for optimum engagement across a diverse group of researchers and integration with a global research network through advanced information and communication technologies.

The building comprises a range of laboratory facilities in a unique combination with a series of experiential learning spaces. The Cell Therapy Suite will be certified by the Therapeutic Goods Association.

The building is on target to achieve a 5 Star Design Rating under the Greenstar Education Tool. In addition to this the university has set a maximum carbon emission target of 80 – 85kg of CO²/m². The building layout, orientation, façade treatment, material selection, and building services design are all critical to achieving these goals. The building services design utilises chilled beams, active mass cooling and fabric socks to deliver supply air to the laboratory spaces. UniSA are cognisant of the imperative for efficient water use and the building incorporates rain water harvesting and grey water technologies.

The design response has been informed by a robust examination of the project brief and vision set by UniSA, coupled with specific reference to the campus and locality. The design of this project is informed by and responsive to a series of themes set from the earliest stage.
Built Environment and Landscape
The site is positioned at the threshold between the western edge of the university campus and Mawson Lakes Town Centre. The formal engagement with the town centre is in alignment with Light Common opposite. The overlay of the natural landscape, with the Dry Creek Linear Park, Sir Douglas Mawson Lake, adjacent wetlands and campus landscape provides an opportunity for the site to be engaged with the landscape. The project is underpinned by the unique coalescing of the built environment and landscape.

Nexus for Learning, Research and Industry
The location of the M² Building, between town and campus, establishes a platform for engagement between industry and visitors (from town), with staff and students (from campus). This positioning underpins a ‘Nexus for Teaching, Learning, Research and Industry’. The design response incorporates a permeable ground plane, and a lively central vertical stack of spaces designed for engagement between researchers and industry representatives.

Stratification
The theme of stratification is in response to the surrounding context of the creek, lake and wetlands around Mawson Lakes. This theme is also pronounced in the analogies related to minerals and geological formations. The concept of stratification is apparent in the landscape treatments and the patterned precast concrete facade has been developed with reference to mineral samples that can be found locally.

Cast and Mould
The theme of the ‘cast’ and the ‘mould’ has been inspired by the Mawson Institute’s association with advanced manufacturing and materials, and the environmental surfaces science being conducted by The Wark. In particular, these influences are apparent in the figure ground of the building - a negative space at Reception is conceived as the mould, and the positive or the cast, is conceived as the Theatre.

Blurred and permeable ground plane
The threshold defining the external and internal spaces at ground level is both visually and physically permeable. The blurring of the edges at the perimeter of the building integrates the external landscape with the building interior. The ‘soft’ transition between inside and out promotes an active ground plane, with the ground level reading as an internal public street – further underpinning a nexus for learning, research and industry.

Building zones
A rational building zone comprising a strand of laboratories and services to the south, and a more fluid working zone to the north, establishes the idea of stratifying the building into the functional spine (south), and a flexible working zone (north). This allows for a clear articulation of the diverse programs in the building, yet allows for an in-built flexibility that will support future change and growth.

Project Managers:
University of South Australia

Architects:
John Wardle Architects and Swanbury Penglase

Consulting Architects for Learning Spaces and Laboratories:
Wilson Architects

Urban Design:
John Wardle Architects

Greenstar Consultants
Umow Lai

Structural and Civil:
Wallbridge and Gilbert

Building Services:
Umow Lai and Associates and Bestec

Façade: Arup

Acoustics: Sonus

Building Surveyor:
Katnich Dodd

DDA: Disability Consulting Services

Audio Visual: Artisan Technical Services

Landscape Architecture:
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Quantity Surveyor:
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