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01.

Project: Monash Centre for Electron Microscopy

Location: Clayton Campus, Melbourne

Budget: \$14 million



FULL MAGNIFICATION

Laboratories and research facilities with a human context and dimension are rare commodities. Monash University has a dedicated new facility designed by Architectus and the result combines technical virtuosity and luminosity.

The world of electron microscopes demands highly specialized, purpose built environments. At a technical level this requires an understanding of the need to create a facility insulated from any external interference either magnetic, electro-magnetic, or any kind of vibration.

Such design parameters could easily have led to a dry, bland design with less of an eye on the needs of the staff who must operate such a facility. Architectus' response is a luminous, lightweight structure that belies its solid underpinnings and 'grounding'.

A shell of inert glass and an extensive use of the material throughout creates a unique facility that promotes a culture of openness and interaction. The building's geometry is pure and simple – a square on a segment of a sphere. Its freestanding form continues the original tradition of pavilion type buildings on the Clayton campus.



Internally, the play with scale and light continues. Tall corridors surround the separate, sealed labs and imbue these spaces with a lofty, ethereal feel. Circulation is intentionally designed to promote crossing of paths acknowledging that casual interaction and exchange of information is an important part of science. The minimal, neutral colour palette and extensive use of timber impart a sense of calm and warmth.

The stringent technical requirements have been incorporated into a beautifully composed form. The building's plan is a perfect square, with the roof sloping across the diagonal. The lack of fenestration or doorways removes any reference points offering an indication of scale. From afar, viewed as an object in the landscape, the walls could be 10 metres tall, or equally 30 metres.

Considerable emphasis was placed on creating a humane environment for the select number of senior students who work with the microscopes. While addressing the technical demands, there was an emphasis on ample natural light and

comfortable working conditions. The lunchroom is positioned to allow casual interaction. Internally, the scale is not at all institutional, appropriately responding to the small number of scientists using the spaces.

On a technical level, vibration was reduced by using construction techniques that totally isolate the microscopes. Ruth Wilson of Architectus Melbourne, explains that detailing had to be meticulous to achieve the minute tolerances required for optimum performance of the microscopes.

The design team went to great lengths to attenuate the presence of electromagnetic fields in the labs. Any moving large metal object creates its own electromagnetic field, so cars, trains or trams are all potential causes of disruption. No mild steel could be incorporated in the building as continuous lengths of steel can form magnetic loops. The structure is fabricated entirely from timber, roofed in ply, and clad with inert glass. The concrete

reinforcement was individually earthed, no fluorescent lights could be used near the microscopes, and all metal ductwork and pipework had to be fitted with isolation breaks every 6 metres. All cabling had to be installed in twisted pairs, and the specific kind of cable found to be most inert was a type developed for off-shore petrochemical rigs. Specialized shielding was installed in the FEGTEM lab, which reduced the EMF level to the lowest ever achieved in Australia.

Ultimately, this building effectively cocoons its nine precious microscopes within the core, protecting them successfully from anything which could adversely affect their performance. It is a building of layers, from the sheltering mound of earth, to the outermost skins of the structure, right down to the innermost containers which hold the microscopes themselves.

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02.

Project: Canterbury College Junior School

Location: Brisbane, Australia

Budget: \$12 million



BRISBANE MASTERCLASS

Tropical and sub-tropical Queensland provides a special opportunity for building occupants to be connected, rather than isolated from their environment.

Such environmental connection is a defining quality of Architectus' Brisbane office and its latest work at Canterbury Junior College.

The practice is recognised as specialist in educational design and the Canterbury project demonstrates this new thinking. Architectus design director Professor John Hockings identifies three of the key design approaches for schools as:

- Multifunctional, flexible learning spaces to foster formal and informal connections between students and their teachers.
- Generous provisions of indoor/outdoor public spaces that respond to the local climate and encourage an inter-disciplinary understanding between staff and students.
- Embrace the school context.

Situated at Waterford, some 30kms south of Brisbane, Canterbury College has an overall student population of 1,418 with 350 catered for in new campus buildings. Comprising 12 classrooms over two floors, the project includes associated administration, library, multi-purpose spaces, and a new main entrance to the school.

Initially Architectus prepared a master-plan to guide campus growth. This highlighted the need for the refurbishment of existing buildings and the design of new, intelligent buildings.

Sustainably focused, the buildings are sited to maximise their northern aspect and respond to their surrounding context. The new junior school



building relates directly to the existing oval by opening the northern façade through the use of glazing and verandah spaces. Material selection and landscaped spaces have been used to ensure a coherent campus design throughout.

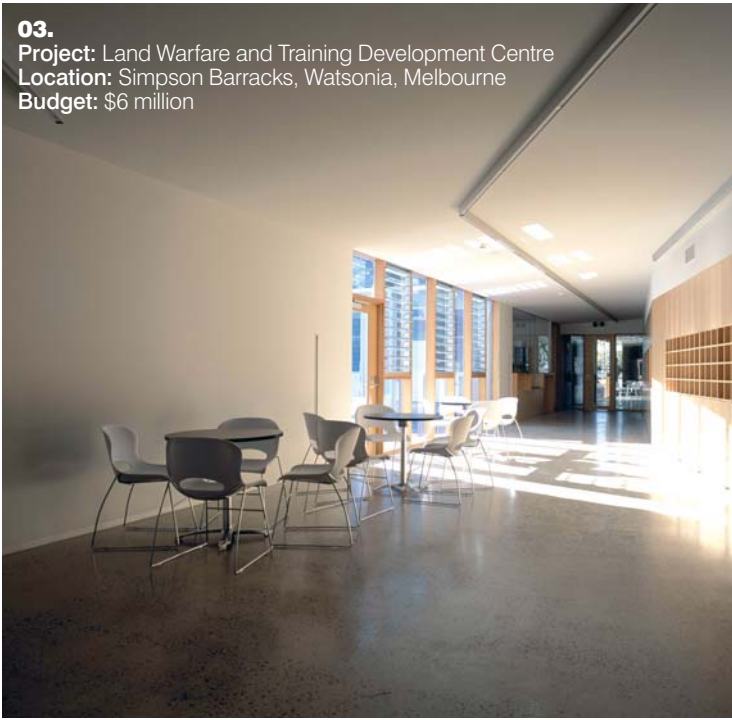
Courtyards provide indoor/outdoor classrooms and the generous verandahs are used for formal and informal student teaching and gathering. The refurbishment of existing buildings incorporates new verandahs, covered open learning areas, and an amphitheatre. These buildings are linked to outdoor learning and courtyard spaces that overlap the new junior school buildings.

"The 'new' schools consist of much more than classrooms and formal lessons. They are total environments where children and staff interact in a variety of settings," observes Professor Hockings. "The quality of these settings is now recognized as an important ingredient in the learning process and the acquisition of knowledge."

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03.

Project: Land Warfare and Training Development Centre
Location: Simpson Barracks, Watsonia, Melbourne
Budget: \$6 million



TACTICAL PERFORMANCE

Educational innovation and truly green performance are inherent qualities in a new educational building for the Department of Defence at its Simpson Army Barracks in outer-Melbourne. Architectus was given a stringent brief that demanded a high level of compliance with Department of Defence security requirements and performance criteria.

Such tight parameters could easily have inhibited or hamstrung the design and yet the architecture has emerged with conviction and assurance. The architecture needed to achieve a comprehensive performance including ESD issues, yet provide a convincing aesthetic. Briefing drawings indicated a monolithic building. Architectus project director Peter Slifirski and his team responded in a highly considered, subtle way.

Sited amongst established River Red Gums, the building is carefully blended with its environment. Great care was taken to retain significant trees to maintain environmental integrity. This quality is enhanced by the silvery, low-slung form and restrained material palette that assists with the building's discrete 'camouflage' fit.

The initial building concept offered a strong, pure form, with three distinct zones. Primarily designed for two Defence training units, the facility is shared by the Training Development Centre (TDC), and Land Warfare Centre (LWC). Both departments have administration areas, individual offices, and shared resources in the facility's southern zone. Teaching spaces in the northern zone include 10 medium sized seminar spaces and a computer teaching lab, and are also used by TDC and LWC. The third zone comprises a further shared space for reception, amenities, break-out and lecture theatre.

Comprising three wings, the structure is arranged around a generous central courtyard edged with arid landscaping. A subtly detailed northern façade comprises a colonnade of staggered blade columns offset from the building skin angled behind. A continuous band of windows with a common window head tapering upwards runs along all the teaching spaces, culminating in the break-out space at the western end.

This powerful and elegant design solution was maintained from the very initial conceptual stages right through to delivery. Architectus

managed to achieve this without a budget increase from the previous scheme, along with a better arrangement of spaces from a truly sustainable structure.

Consistent with this is the adoption of diverse ESD strategies that results in a project of high passive energy performance. Extensive cross-ventilation, solar collectors, heat purging, water collection and recycling are just some of the features that signal its response.

Architectus' aim to produce humane, sensitive, and tactile buildings for clients and occupants is achieved with this thoughtful resolution that transcends its tough, military brief.

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04.

Project: Islands

Location: South Beach Western Australia

Budget: \$ 115 million



SOUTH BEACH BEAUTY

A rich industrial history and spectacular coastline are two key drivers behind the Islands project at South Beach near Freemantle. The project's commercial success largely influenced by its imaginative and thoughtful design.

Merging Mediterranean charm with contemporary Australian living, Islands comprises 99 luxury residences on the spectacular coastline of South Beach near Freemantle. The project exemplifies innovative residential design, balancing opulence with a concern for ecology.

Islands is the flagship for Stockland's development at South Beach with apartments being completed in 2009. The first phase of 25 apartments sold out within hours of being offered.

Mediating between urban park and fragile dunes, this project delivers a unique opportunity to both enliven and rehabilitate this iconic section of the Western Australia coastline.

Drawing on the site's industrial heritage and the spectacular setting, this will be a landmark of design excellence and environmental sustainability. Award-winning design directors Lindsay and Kerry Clare and Peter St.Clair led the project's design for Stockland.

"A principal planning objective is permeability from east to west, three permanent through site links have been established to define public areas and preserve ocean views throughout the development," says Lindsay Clare. "The staggered alignment of these buildings creates space for four different and unique beach courtyards towards the ocean – these courtyards are enriched by the placement

of beach houses which balance the scale between the 5 storey apartment buildings and the adjacent streetscape".

Environmental design strategies include high levels of ambient daylight, reduced direct solar loadings, emphasis on natural ventilation, and reduced reliance on mechanical cooling, water harvesting, and recycling. In addition the project minimises dune impact with its setback and re-vegetation.

Views include the Freemantle marina to the north-west and due west to the Indian Ocean. The distinctive limestone bases of the industrial sheds which originally occupied the site will be returned to the ground as paving and street front walls.

"The design required thoughtful siting to mediate the harsher natural elements," notes Lindsay Clare. The placement of the buildings provides a transition between the contrasting environments of urban park and natural reserve and has created a variety of housing types including, dual aspect apartments, 2 and 3 storey beach houses, and penthouse apartments. The result is understated luxury with a considerate eco footprint. The message for developers is that they will be rewarded by the market for such work."

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05.
Project: Powerhouse
Location: Brisbane
Budget: \$3.6 million

STAGE CRAFT

Arts venues need to constantly reinvent themselves, more so those in old buildings where the transformation and fashion of the day can quickly lose its novelty value.

Refurbishment of Brisbane's Powerhouse picks up where the 2000 transformation left off. It finishes old and inserts new elements left stranded by budgeting constraints and completes other building projects that support the new management direction.

The client's objectives included making the venue rely less on performances for revenue and increasing its mainly free public activities. To achieve these aims it was necessary to increase capacity of the main theatre to pay for more international and touring shows. Projects that supported the more obvious objectives of improving operational efficiency dipped below the cut off line.

The riverside balcony and roof top terraces, part of the original planning approval, recognise and respond to the then heritage advice, touching the existing building lightly and exposing much of the original fabric in an over-scaled construction that speaks of vast engineering projects. The details are derived from those of the 2000 transformation. Roofs to these areas support the objectives of financial diversity by protecting functions and venues from the vagaries of subtropical sun and rain.

Freed from all the theatre hordes who generally throng to the riverside, the foyer bar was re-orientated, holes punched in walls to give better clues to its whereabouts and a good sized kitchen and store added.

Activities in the turbine hall, sitting as it does above the smaller of the two theatres always had to be managed around the theatre activities, and the free public performances in this, effectively the third theatre, were severely curtailed by considerations of airborne and impact noise. This last remnant of the turbine hall had a strong dimensional relationship to many of the older European courtyard theatres, stirring our collective memories and giving strong clues to the direction the design of the space should take.

Balconies were added to two sides and widened on the third to make standing room for spectators, enclosing stalls and stage, encouraging an intimate and dynamic relationship between actor and audience.

Most of the acoustic isolation problems between hall and theatre below were solved with floating floors, air locks, and improved door seals. In the Powerhouse Theatre, the major problem facing the hirer was that the large productions, mainly dance, were expensive and expansive to stage.

High operational costs and dwindling revenues created a clearly unsustainable practice. The theatre, with its 'end on' stage lacked intimate audience connection. The side galleries, previously used only for production purposes were modified for audience seating and a small balcony was added across the rear of the auditorium. Stairs and doors were modified for access. The result is both dramatic and intimate.

Though modest in scale and budget, these changes allow for a more diverse programme and an increase in public participation. There is also the prospect of increased prosperity and continued longevity through a sustainable critical mass with dining and functions as complement to the performance programme.

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STOP PRESS

Sydney Office Moves

Architectus Sydney has made a vital strategic shift from North Sydney into the CBD. Their new base at Level 3, 341 George Street, Sydney provides 1,300m² for more than 90 staff with the prospect of further expansion and flexibility. The success of the highly collaborative nature of the practice across its Australian and New Zealand offices has also added to the demands on space and staff.

Located adjacent to Martin Place and Wynyard Park, the office further improves staff and client accessibility as well as merging staff from the old office on two levels across to one open-plan office.

Sydney Director Kerry Clare says there are multiple benefits in the move that results in a

contemporary fit-out in a classic sandstone Victorian building.

"The design is based on how best we work and we wanted to express our keen interest in creating healthy environments; places people like to be part of. We were very careful in planning the layout to make the views to the city accessible to everyone as they moved around the office and that there was a good distribution of natural light," she says.

"As designers you also look to achieve a fine balance between private and collective space and how the whole team can fit comfortably and function with maximum efficiency. The office now has a real 'working studio' feel."

Clare enjoyed the challenge of a fast program and a modest budget (\$1,000.00 per m²) to deliver their fit-out. "Following finalisation of the lease in November we wanted to move in by mid March. We had to be decisive with the design and mindful of the disruption of the Christmas break. Our interiors team put in the hard yards to bring it to fruition.

"The new office," she says, "achieves a calm and tranquillity yet retains the necessary buzz of a high energy office."

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Win with BIM

Architectus has just been recognized with a prestigious Revit BIM Experience Award.

The award celebrates building industry professionals and educators around the world who help drive transformation of the building industry through building information modelling (BIM). Each month, Autodesk honors one organization for its innovation, leadership, and excellence in implementing the Autodesk Revit platform for BIM.

"We are design technology leaders for one reason only and that is to produce better architecture. It's that simple!" says Rodd Perey of Architectus. "Management understands the need to use the best technology and that technology is Autodesk Revit. Revit improves our processes and allows us to concentrate on the building design," says Perey who featured as guest 'interview' in the previous issue of 'Architectus'.

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CARSTEN AUER

Carsten was appointed a Director of Architectus Auckland in January 2008. He joined the firm in 1999 from London. Career highlights include key projects for the University of Auckland and Victoria University, Wellington along with a broad range of commercial and secondary education work.

How would you describe your job in one sentence?

To find the best solution to a design problem and that lies at the heart of what I try to do every day.

What's the best part about being an architect?

Two things really. Being able to make a contribution to the built environment and dealing with people. Ultimately that's what it takes, teamwork within the office, the consultant group, client and wider community.

Though when we think of so many of the great architects in history we rarely have a sense that there was ever any real 'team'. It was 'them' as Starchitect with a fairly anonymous group of 'others' in the background.

Well I guess that's the other side of it, the lone renegade who fulfils his vision but I don't see myself as operating in that environment. We promote a far greater team approach, work through a process and are very options based. We develop options rather than claiming to immediately produce the ultimate solution. I wouldn't subscribe to the 'Corbusian' way of working.

What or who has been your biggest influence?

I distinctly remember discovering the work of Louis Sullivan, the father of the modern skyscraper. On one of my trips overseas I visited Sullivan's early skyscrapers in Buffalo and Chicago and saw work based on function and technology, but here was someone who was also quite comfortable with ornament and was able to integrate that into his buildings.

What is the best advice you have received?

I had a teacher who was passionate about the need to be considerate of the context rather than being wilful or indifferent to the place in which you are working. I was advised to think carefully before breaking the rules and going against the grain of place. At first this might seem more relevant to the intact historic urban areas of Berlin rather than the fragmented development around say, Auckland. But if you think about it, you soon realise that you must strengthen the more successful aspects the urban landscape.

What building would you have loved to design?

The first thing that springs to mind is the 'Campo' in Siena – one of the greatest public spaces I have visited. I'm sure I could think of a building if I really had to.

What's special about living and working in Auckland?

The opportunity here is the promise and potential of Auckland's natural harbours and topography. We need to make much better use

of it than we have. I remember arriving in New Zealand from Germany and being pretty disappointed. I had looked up Auckland in the atlas, as you did pre-internet, and read about the volcanoes, harbours and everything, but it was an anti-climax when I arrived. I don't think Auckland makes the most of a pretty incredible opportunity.

How has global warming influenced the way you think, act and work?

I'd say it has influenced our clients more than Architectus as a practice. We've been using sustainable design principles since before I arrived, which was around 10 years ago. We were probably ahead of our time and since then clients have become more aware of ESD, especially with the introduction of the Green Star system in New Zealand. This makes it easier for us to incorporate sustainability in our designs and convince clients.

What do you do outside of architecture?

I have an 11 month old son now and that obviously has a huge impact on my life.

I like to do as much outdoor sport as possible and I love road cycling.

Are you too late for the Olympics?

Not if they come up with a non-traceable drug. I'd say I need a fair bit of help to get there.

What has been your biggest mistake?

Well I tried to get into the army in Germany to get military training out of the way but they wouldn't accept me (we have a conscription army in Germany). Maybe I wasn't macho enough!

What about your greatest success?

Getting out of the army.

Are you an optimist?

Definitely.

Who are your heroes and villains?

Well short-sighted people fit into the villain category. As for heroes I do respect determination without being at the expense of other people.

When did you realise that architecture was your calling?

Relatively late. I stumbled into it at the end of my commerce degree. It was really a suggestion by a friend to consider architecture so it was as simple as that. I can't really claim to have been playing with blocks from an early age that led me to this point.

What makes a good client? Someone with deep pockets is often considered a good starting point.

No. A client with strong ideas and someone prepared to listen.



If you weren't an architect, what else would you do?

The scary thing is that I would probably be a lawyer. When I registered to practice in New Zealand I had to take some law papers at University and I really enjoyed that.

What are your three favourite cities?

It would definitely have to be Berlin. I was there when the wall came down and the changes that followed so I was very fortunate to experience that. And I think there is hardly any other city in the world that has quite so many layers of history that are apparent to the naked eye. The others would be Sydney because of the way it addresses its harbour and of course New York.

What can't you live without?

Morning tea which I've just finished.

If you could invite just three people from history to dinner, who would you choose and why?

A group of explorers from the past would make a fascinating evening for me - especially today where it seems every part of this planet has been so well documented - so how about Shackleton for swashbuckling English adventurism, Cousteau for exploration and conservation and someone like Cook for just sailing into the great unknown.

Do you have a standard piece of advice for aspiring architects?

To travel and take in as much as possible, because the answers to most problems are out there.

What would be a key piece of advice you would offer to someone before they embarked on a lifetime of architecture?

The ability to draw is something younger students should develop and hang onto in the age of the computer.

So less mouse and more drawing and imagination?

Yes. I can't say I'm the best drawer in the world and maybe that's something I've learned the hard way.

What do you believe in?

These are hard questions! Simply being honest and doing the best you can.

Is the future of architecture in technology or poetry?

I don't believe it's in technology and I'm not sure poetry has the answers. I'd say it's about making environments work correctly and keeping architecture relevant.

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