

OPEN INFORMATION EXCHANGE

The University of Melbourne's proposed new ABP Building will come to be known as an icon not only for its architectural expression but because of the high quality design partnerships and achievements it inspires and supports. This building must function as the centrepiece of the faculty, a social and academic connector, the nexus at which students, academics, researchers and industry come together and through which new teaching learning and research practices flow. In this project, the University of Melbourne is not just instigating a new capital works project, it is creating a new teaching, learning and research paradigm, one that is capable of actively contributing to the fast pace of international academic endeavour and discourse.

THE BUILDING SHOULD BE REGARDED AS THE 'THIRD TEACHER', AND THE WAYS IN WHICH THIS IS DONE WILL DEMONSTRATE THAT THE DESIGN IS WORLD LEADING.

DEFINING BUILT PEDAGOGY

'Built pedagogy' is being redefined in the 21stC through the more holistic and integrated concept of 'learning technologies' in response to the convergence of information communication technologies and responsive, sustainable buildings. Furthermore, academic buildings are responding to the online/face-to-face experience increasingly being occupied by all with wireless broadband, mobile communications and the need to look at sustainable ways of learning and researching.

Pedagogy as experienced by adults is referred to as androgogy, and this requires a more subtle design approach. The building should support motivated and self-directed students, process-driven learning, interaction, research-based methods and the idea of knowledge transfer. The virtual transfer of knowledge needs to be mapped over the physical to have a coherent strategy for a 'built pedagogy'.

THE UNIVERSITY OF MELBOURNE IS NOT JUST INSTIGATING A NEW CAPITAL WORKS PROJECT, IT IS CREATING A NEW TEACHING, LEARNING AND RESEARCH PARADIGM.

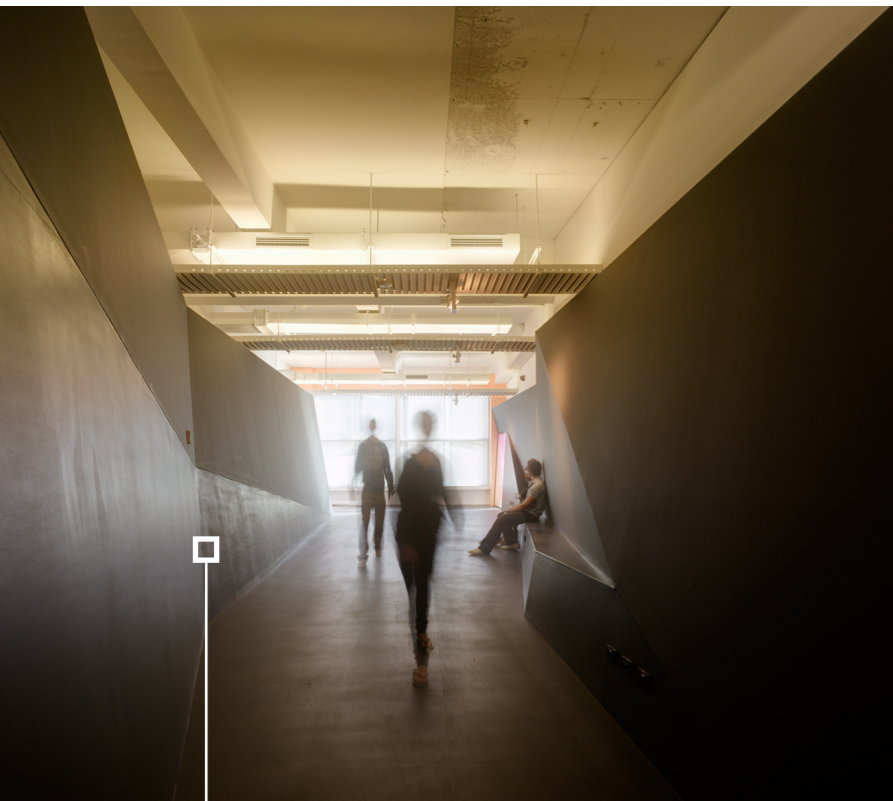
EOI FORUM IS A PILOT STUDY - ESTABLISHED BY WSH, WOODS BAGOT AND MEINHARDT - TO DEVELOP SYSTEMS FOR THE OPEN EXCHANGE OF IDEAS BETWEEN THE DESIGN TEAM AND MELBOURNE UNIVERSITY.

CLICK HERE > EOIFORUM.BLOGSPOT.COM

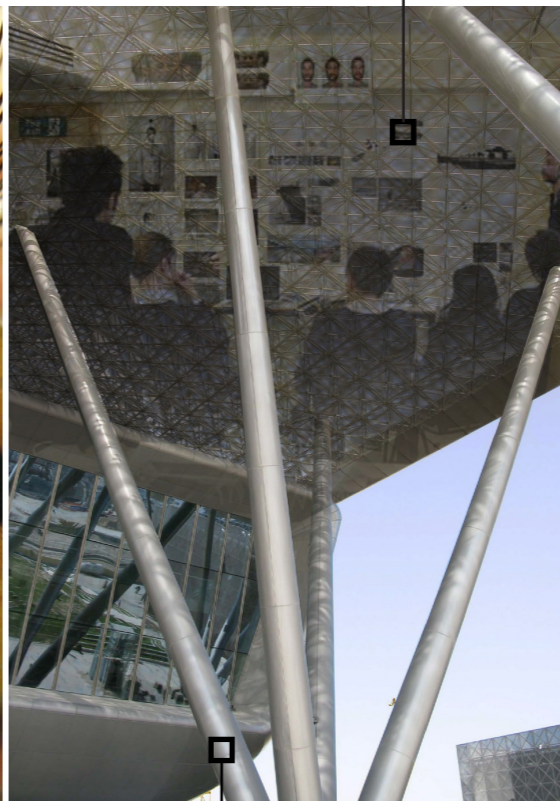
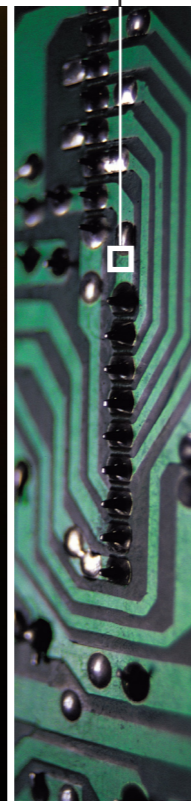
THE RESPONSIVE LABORATORY

How might this building be designed as the physical manifestation of contemporary teaching method and activities? Within this question lies several lines of inquiry: the design and procurement process as a vehicle for teaching, learning and research; the building as a teaching and learning resource; the operation and use of the building to facilitate a range of pedagogical models. The overlap between virtual and physical environments, and low and high technologies, provides a means of interrogating this building as form, space, material, data, concept, network, temporal experience, organism, landscape, and so on: a locus for empirical knowledge that reflects the disciplines contained within.

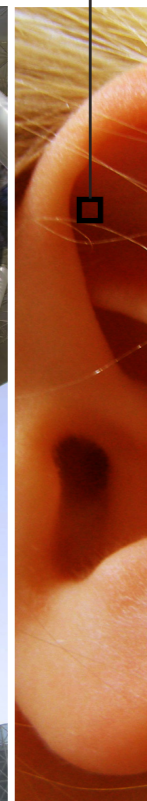
It will be a dynamic and flexible entity that has the potential to adapt to changing needs and opportunities over time. The inclusion of emerging information technologies will allow the building to 'come-alive' by responding to changing conditions in real time. Embedding smart feedback mechanisms into the building, will allow its operational performance to be constantly monitored and managed over its lifecycle, within the framework of teaching and learning.



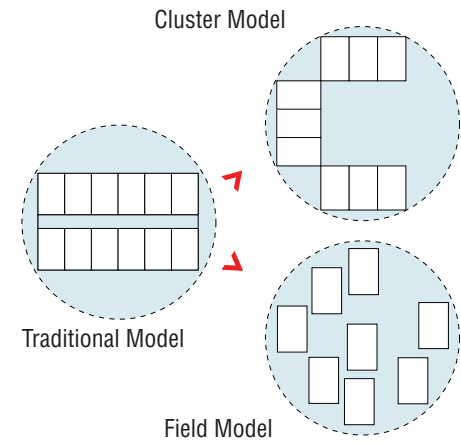
MONASH ARCHITECTURE SCHOOL
WSH (2008, 1200sq.m, \$2.2M)



QATAR SCIENCE AND TECHNOLOGY PARK
WOODS BAGOT (2008, 115000sq.m, \$400M)

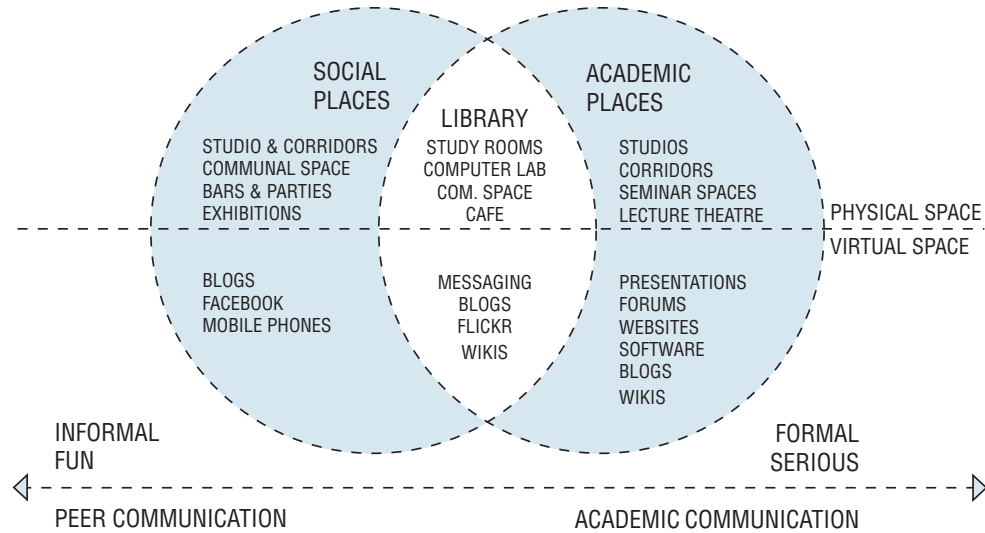


MELBOURNE EXHIBITION AND CONVENTION CENTRE
WOODS BAGOT AND NH ARCHITECTURE (2009, 126000sq.m, \$1B)



COMPARISON OF SPATIAL MODELS WHICH ALLOW FOR NEW TYPES OF ARRANGEMENTS BETWEEN ACADEMIC CELLULAR OFFICES AND RESEARCH/SUPPORT STAFF

WE NEED TO TALK ABOUT THE NEED FOR COLLEGIALITY AND SERENDIPITOUS CONVERSATIONS WITH FELLOW ACADEMICS. THE DESIGN SHOULD FACILITATE COLLABORATION, NOT ONLY IN DEDICATED STAFF AREAS, BUT IN THE CORRIDORS, STAIRWELLS, CAFE, DESIGN STUDIO, ROCK GARDEN, BASKETBALL COURT...



2063 AND BEYOND

The FABP building should be designed for 2013, for 2063 and beyond. A robust yet flexible design response is needed that acknowledges the swift development of new technologies, the flow of intellectual capital, and the unpredictability of global markets (academic, demographic and economic) which in turn drive change within research, teaching and learning environments. The form, function and perception of the building will be strengthened by its flexibility, adaptability and responsiveness: an appropriate loose-fit building that will satisfy Melbourne University's emerging needs and goals.

WE SHOULD STOP SEEING LIBRARIES AS PLACES OF FUNCTION – STORING THIS, LENDING THAT, CHECKING THE OTHER, AND MORE AS PLACES OF FREE AND SHARED EXPLORATION AND LEARNING VIA ALL MEDIA, A DEMOCRATIC SPACE WHEREIN TO FREE YOUR MIND

RESEARCH THROUGH DESIGN

The commonly held belief in two primary research paradigms - the two academic fields of the sciences and the humanities - does not hold for the built environment design disciplines, which synthesises artistic, cultural, political, economic, environmental and technological imperatives. Consequently there has been a degree of uncertainty in both defining and measuring legitimate research in architecture and the other creative built environment disciplines. This has resulted in conventional research models of evidence-based hypothesis testing, primarily in the areas of history and theory, and technology.

The new building for the Faculty of Architecture Building and Planning offers a platform for the conceptualisation of research 'in' or 'through' design, which can mediate and integrate many of the existing specialisations or sub-categories of architectural and building research. The potential to redefine models of design research will in turn provide a experimental and cutting-edge building that offers new cultural insights and generates new images, artifacts, spaces and experiences.

RESEARCH LED TEACHING

A key part of the Melbourne Model is the idea of research led teaching. The FABP, being a professional degree environment, sees a great deal of action-based research in its curriculum programs. The very best universities make significant use of adjunct teachers from the professions, and this model should be the target at FABP. The very best professionals should be attracted to the University for studio sessions in association with resident academic architects. To this end, the teaching, research, learning and working environment should go beyond best practice in industry.



FUTURE LEARNING SPACE, ENGINEERING FACULTY, UNIVERSITY OF SOUTH AUSTRALIA, WOODS BAGOT (2008, 1120sq.m, \$1.2m)

LA TROBE UNIVERSITY LIBRARY, MELBOURNE WOODS BAGOT (2002, 2000sq.m, \$7m)

BROADMEADOWS URBAN DESIGN COMPETITION WSH (2005)

WOODS BAGOT MELBOURNE STUDIO



RESPONSIVE TEACHING ENVIRONMENTS

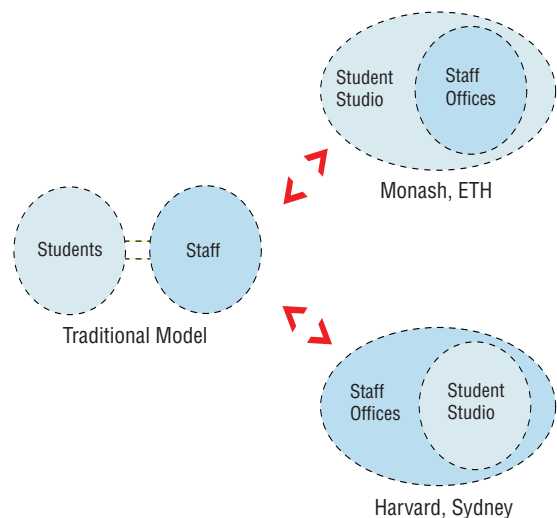
Consider a teaching space which adapts the moment a student walks in...

Motion detectors sense the movement. Lights switch on to illuminate the space efficiently, ramping down in response to available daylight and providing the desired lighting level regardless of the light source's age and condition. A motorised damper in a mechanical ventilation duct opens providing fresh air to the space. LED array lamps adjust subtly giving more red & white light spectrums for morning time, responding to circadian rhythms. Colour changes, similar to those in sunlight can also be programmed to improve the occupants attention spans at times of the day when attention typically flags. Building occupants feel most comfortable when they can adapt the environmental conditions in their space to suit themselves.

A single data point provides power, network access and VOIP to a desktop computer, which is now just a screen and keyboard. (Processing and storage happens remotely, removing the associated heat loads from the space.) Settling into a workstation, the occupant pulls up the environmental control panel menu on the PC screen. Addressable lighting control allows the user to dim artificial lighting to suit their needs.

Next, the room user sends an open signal to the remote motorised high level louvres on the nearest facade which will provide greater levels of fresh air and air movement, automatically shutting off any local mechanical ventilation. The in-slab hydronic heating and cooling system readjusts its priorities to maintaining the occupant's thermal comfort needs in response to the outside air temperature and airspeed now entering the space. Such a space requires less wiring, less power outlets and less datapoints thereby reducing labour and materials.

The class is about to begin...or, perhaps it's already started.



COMPARISON OF SPATIAL MODELS WHICH PROMOTE STUDENT TO STAFF INTERACTION

WHAT ABOUT SETTING UP OUR OFFICE ON CAMPUS - A LIVE DESIGN STUDIO - A GLASS HOUSE THAT DIRECTLY ENGAGES WITH THE FACULTY AND ITS TEACHING AND LEARNING PROCESSES

CASE STUDY 1

Monash Architecture is the first new school of architecture to be established in Australia for 30 years. As the academic staff for the architecture school had not yet been engaged by the start of the design phase, WSH took a lead role in developing the brief, planning and conceptual agenda for the project.

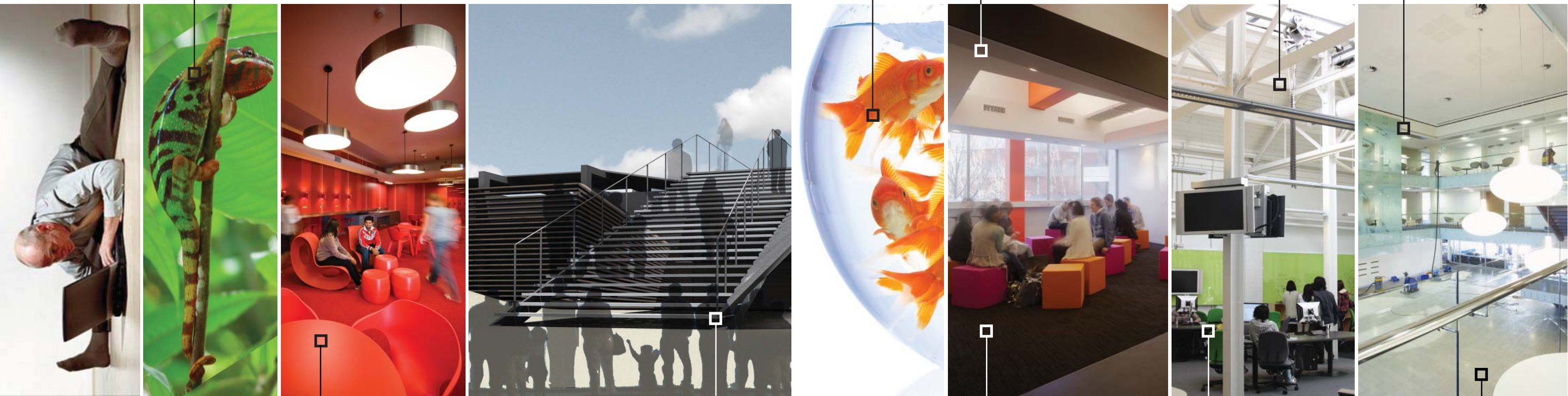
The project focused on: engendering a collegiate learning environment that recognised the importance of social interaction in promoting discourse; promoting the schools engagement with cutting edge technology and the critical use of workshop facilities; providing flexible spaces which maximized the opportunity for different pedagogical models and modes of teaching; reconsidering circulation as important zones for exhibition and places to foster casual interaction.

THE DESIGN STUDIOS SPACES MUST FOSTER A SPIRIT OF DISCOVERY AND PROVIDE SIGN POSTS FOR STUDENTS AS THEY JOURNEY INTO THE BUILT ENVIRONMENT DISCIPLINES.

CASE STUDY 2

UWA Business School project addressed student and staff desires to regain the sense of being part of a broader academic community. The building paralleled an organisational shift to encourage academics with similar teaching and research interests to form academic clusters with their researchers and PhD students. The result was a spatial shift reflecting contemporary, open plan workplace design. Smaller high quality office spaces were designed to provide academic staff with privacy and quiet while still promoting interaction with students.

THIS PROJECT IS AN OPPORTUNITY TO TAKE FULL ADVANTAGE OF THE WIRELESS, BORDERLESS VIRTUAL WORLD OPEN TO MOST OF US, AND TO WEAVE THIS INTO THE PHYSICAL



FUTURE LEARNING SPACE, ENGINEERING FACULTY, UNI SA WOODS BAGOT (2008, 1205sq.m, \$1.2m)

SEAFORD LIFE SAVING CLUB AND COMMUNITY CENTRE COMPETITION WSH (2005, 500sq.m, 2.0m)

MONASH ARCHITECTURE SCHOOL WSH (2008, 1200sq.m, \$2.2m)

STUDENT LEARNING CENTRE, ENGINEERING FACULTY, UNI OF MELBOURNE WOODS BAGOT (2007, 1120sq.m, \$2.2m)

UNIVERSITY OF WESTERN AUSTRALIA WOODS BAGOT (2008, 9500sq.m, \$42.5m)



HEAVY BUILDING

Mass - stability - comfort. A thermally activated building mass provides stability of comfort throughout the year.

LIGHT BUILDING

Daylight is integral to creating a sense of lightness, space and comfort. The facade should not only be oriented to optimise access to sunlight but it should track the sun, assisting in the control and redirection of usable natural light while closing at night and dark daytime periods. The building should not only be well oriented, but shaped to maximise the availability of sunlight to internal spaces. Partially enclosed sheltered spaces below will encourage people to gather in filtered light. At the top of the building direct sun and wind can maximise onsite renewable thermal and electrical energy generation.

VERY LIGHT BUILDING

Natural ventilation and low tech fans can provide low energy modes for air movement. Natural ventilation is low cost cooling that provides a sense of connectedness with the outdoors. Fans provide efficient enhancement of thermal comfort giving occupants additional means for controlling their immediate environment. Mixed mode ventilation should be used wherever possible in private and public spaces.

ACTIVE SKIN

Energy flow in the building can be channeled through building structure and skin. The building's foundation piles will absorb heat and coolth from the ground. An active façade works in tandem with the structure to maintain comfort and air quality. At times of extreme weather the skin is impervious - a protective physical barrier from excessive heat or cold. It insulates from heat loss in the cold and strategically opens to allow unwanted internal heat build-up to dissipate to the outside, maintaining thermal comfort for the occupants through thermoregulation. At all other times the skin becomes pervious taking full advantage of ambient conditions to provide comfort and connection with the outside.

SYSTEMS IN THE BUILDING WILL BE SELECTED NOT ONLY FOR THEIR ABILITY TO REDUCE STANDARD ENVIRONMENTAL METRICS, BUT ALSO BY THEIR ABILITY TO ENHANCE LEARNING THROUGH THE CONNECTION TO THE PHYSICAL AND DIGITAL ENVIRONMENT.

ORGANIC BUILDING

The landscape merges boundaries between interior and exterior and allows the building to develop its own natural bioclimate. Vegetation intersects architecture, technology and comfort - a building that grows it's own 'food'.

BUILDING BIORHYTHMS

Thermal energy flows unaided from high to low temperature. Traditional cooling systems remove heat from the building at the hottest time of the day - against the temperature gradient - which is energy intensive. This building should be synchronised with the temperature rhythm of the day. Its structure is cooled at night (by removing energy from the building) when the temperature is low and stored as coolness for the following day. Winter sun should penetrate inside the building and heat up the slab to provide additional free heating. The temperature within the building can vary according to an adaptive thermal comfort strategy: one that is not constant, but allowed to drift to reflect seasons and time of day and night.

THE BUILDING THAT EATS ITSELF

The building effectively reabsorbs its own waste to enable further growth.

Existing concrete and brick can be incorporated into the new construction to reduce waste to landfill. Materials will be selected for their potential for reuse in the ongoing lifecycle of the building. It will work towards self-sufficiency: utilising renewable energy and water production to create a positive environmental footprint which works to restore its surroundings.



QATAR SCIENCE AND TECHNOLOGY PARK
WOODS BAGOT (2008, 115000SQ.M, \$400M)

EVERSHEDS, LONDON
WOODS BAGOT (2008, 15000SQ.M)

COLLEGE OF THE NORTH ATLANTIC, DOHA
WOODS BAGOT (2006, 80000SQ.M, \$365M)

CLOUD No 9 IN FITZROY
WSH (2009)

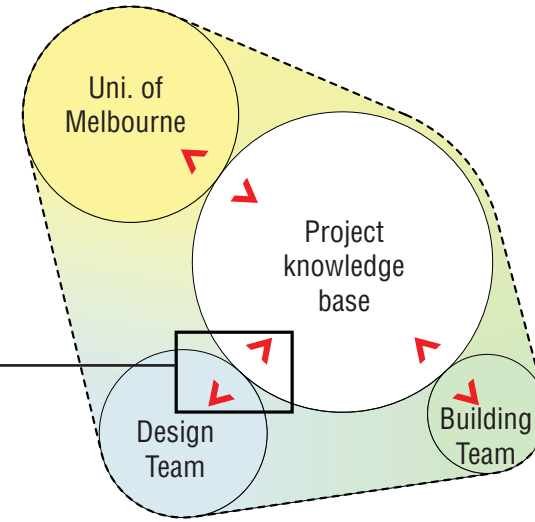
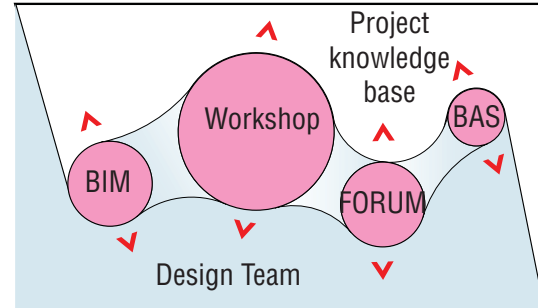
IVY, SYDNEY
WOODS BAGOT, HPG, MERIVALE GROUP (2008, 20000SQ.M, \$75M)



THE EOI FORUM

The on-line EOI Forum is intended as a digital framework for the transparent and open exchange of information and ideas within the team of WSH Architects, Woods Bagot and Meinhardt Group. Importantly, it is organised to allow for the future inclusion of comments and responses from academics, staff and students from the University of Melbourne. This online interaction and gathering of knowledge begins to form a rigorous and inclusive working method that is fundamental to our delivery of the EOI for the new building for the Faculty of Architecture Building and Planning at the University of Melbourne. It is an opportunity to showcase our collaborative process of design and problem solving (as distinct from the building) – one which seeks to anticipate a radical alternative to traditional modes of project delivery.

A PROJECT WHERE BIM MEETS SECOND LIFE



WHOLE TEAM

The design team is organised as a “high performance collaboration” that brings together premier local and international architecture, engineering and construction innovation and expertise in a process that facilitates optimal effectiveness and efficiency. This extends to collaboration with the client and the need for an understanding of Melbourne University’s process, time for critical feedback, and being able to work around key decision makers at Melbourne University.

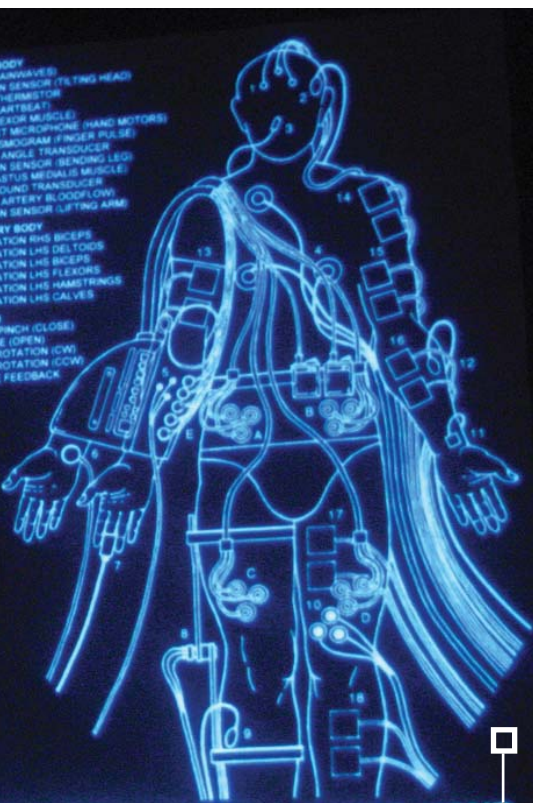
The team is structured to be non-hierarchical where all ideas are welcome - we envisage a comprehensive way to address architectural, structural, environmental, mechanical, zoning, cost and construction disciplines in parallel. The process is facilitated through a mutual trust and shared commitment by the team, and made concrete through the use of Building Information Modelling (BIM) in conjunction with an Open Source Collaborative Environment to coordinate the design within a central physical location (possibly on campus) while working within decentralised on-line network.

The collaborative nature of the ‘whole team’ environment is the key to an exceptional outcome.

OPEN SOURCE

The EOI Forum constitutes a pilot study for the development of an on-line open source collaborative environment that would provide a sophisticated and world-leading process for community engagement. The pilot study has potential to expand and be a far more powerful resource for the sharing of ideas and information between the various constituents of the design building and procurement process. It is evidence of our capacity to deliver a project that meets the University of Melbourne’s aspiration for a new building that “will demonstrate the best possible processes of design, collaboration, procurement and construction.” An Open Source collaborative network provides a means of complementing meetings, phone conversations and other conventional modes of knowledge transfer with a virtual community of project team, client and users collaborating on-line.

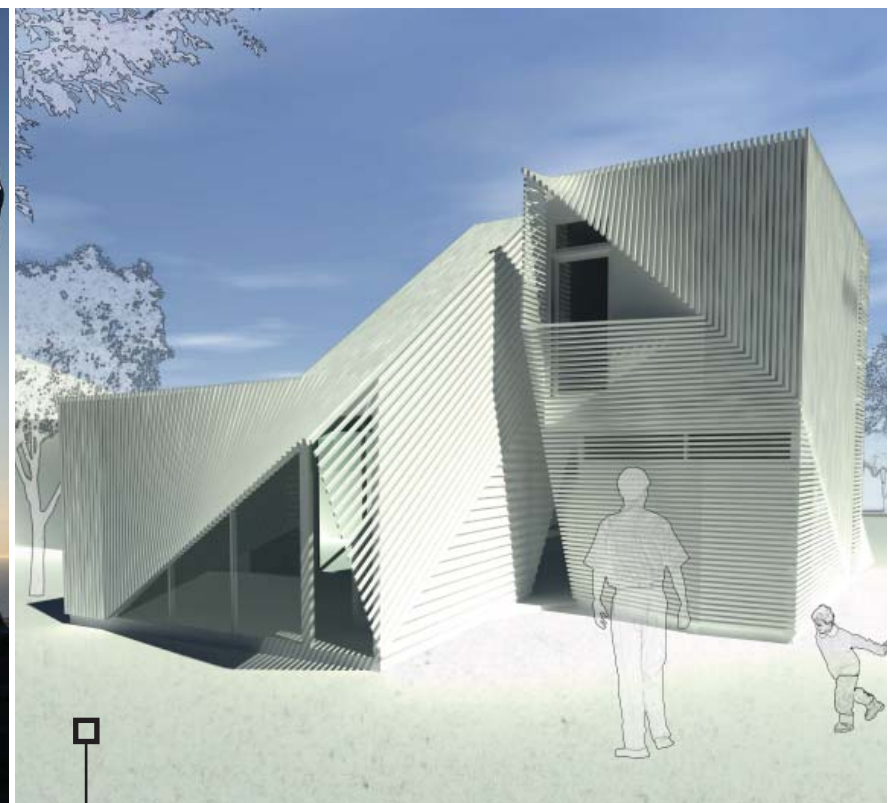
....TO TRANSFORM RELATIONSHIPS, AMONG STUDENTS, AMONG STAFF, BETWEEN STUDENTS AND STAFF, AND BETWEEN THE INSTITUTION AND ITS COMMUNITY.....TO HELP IDENTIFY STRATEGIES FOR PERMANENTLY TRANSFORMING THE WAY THE UNIVERSITY IS EXPERIENCED BY ITS MULTI-CAMPUS COMMUNITY...THESE DEVELOPMENTS, TOGETHER WITH THE ABILITY TO BIND DISPARATE COMMUNITIES AND TO WORK ACROSS THE GLOBE WILL MARK THE NEXT FEW YEARS IN HIGHER EDUCATION



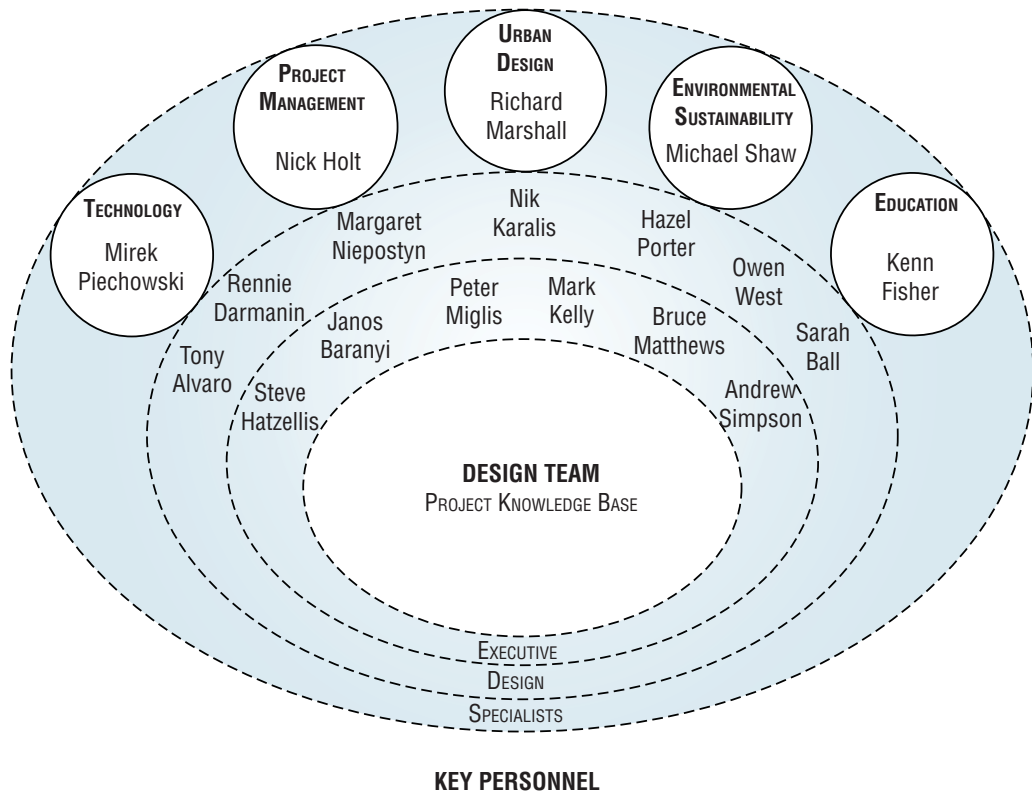
STELARC



SKYLIGHT PROJECT, KEW
WSH (2008, 165sq.m, 0.5m)



BRIDGE HOUSE, BALWYN
WSH (2009, 126sq.m, 1m)



WSH REFERENCE

WSH's professionalism in undertaking and managing the job was outstanding. Every issue raised by Monash as clients, or which emerged during the job, had already been anticipated and planned for by the firm.

The result is an outstanding design which not only provided for all the requirements of the brief, but has in many ways gone beyond it. The design advances thinking about educational environments generally and ones for architecture in particular, and has provided an exemplar project for the University. The design has provided for the new Architecture program an Architectural embodiment of everything it is trying to achieve in education and research.

Professor John Redmond
Dean
Faculty of Art & Design
Monash University

MEINHARDT CONSULTING ENGINEERS REFERENCE

I am writing to thank Meinhardt Consulting Engineers for their work on the design of the new Bowden Centre at Mt Annan Botanic Garden. The project was a very challenging one in terms of its complex brief and limited budget and, in particular, because the client had specified that they wanted the building to be both innovative and technically advanced in its use of resources and to demonstrate best practice in sustainable design.

The work Meinhardt Consulting Engineers did in developing the building's unique solar heated, ground coupled, water based, airconditioning system alone was both exciting and rewarding. Not only did you provide us with exactly what the brief required but did so in a professional, timely and cost efficient manner. Frankly, I cannot speak highly enough of the work your firm has done.

Steve Kennedy
Director
Kennedy Associates

WOODS BAGOT REFERENCE

The CEPFI award is testament that the Student Learning Centre is the product of prudent and inventive planning and design...[Woods Bagot's] expertise and collaborative efforts with the University of Melbourne are warmly appreciated.

Professor Glyn Davis
Vice-Chancellor
The University of Melbourne

"The challenge for Woods Bagot was to transform an old library archive room into a welcoming, efficient and workable student administrative centre and yet celebrate the beauty and the age of the building".

"The result has been outstanding".

Brian Shirrifs
Client
University of Melbourne, School of Engineering

RECENT PUBLICATIONS

Donaldson, Ross, *Education Futures*, Woods Bagot, 2006
Karalis, Nik, *Spatial Tactics*, Woods Bagot, 2006
Kelly, Mark, *A Human Thing*, Woods Bagot, 2009
Architecture Australia, March 2009
Architecture Review, April 2009

RECENT AWARDS

Latrobe University Library, RAAI Regional Prize 2003
UTS Faculty of IT, RAAI Sulman Award 2003
Seaford Life Saving Club, Commendation Award, 2005
University of Melbourne, Engineering Faculty Student Learning Centre, CEPFI, 2008
Qatar Science & Technology Park, Middle East Architect Award, 2008
Bowden Learning Centre, Award for Sustainable Architecture, 2008

ARBV REGISTRATION

West Simpson Hatzellis P/L (WSH) A RBV Reg 50873
Woods Bagot ABRV Reg. 50198

ANDREW was the lead designer on the Monash Architecture School project. M.Arch (Harvard), B.Arch (Melb), B.A.Int. RMIT

STEVE is an expert in digital architecture as applied to advanced architectural design and fabrication. M.Arch. Urban (AA), B.Arch (Melb).

PETER is recognised for innovative design thinking, design leader of the \$400M Qatar project. B.Arch 1st Hon. (Uni.SA).

KENN is recognised as one of the leading educational planners practising internationally. Rubida Research P/L, PhD (Flinders), PhD (Deakin).

MARK has developed a special expertise in the masterplanning and design of education & research facilities. B.Arch, Dip. Arch (Edinburgh)

RICHARD is a Director of Urban Design and was Director of the Urban Design programme at Harvard. M.Arch. Urban (Harvard), B.Arch (UOA)

MIREK is team leader of the Building Science Group and his expertise is in ESD & mechanical systems. PhD (Melb)



Andrew Simpson
WSH, Director
Design



Steve Hatzellis
WSH, Director
Design



Peter Miglis
Woods Bagot, Principal
Design

Hazel Porter
Woods Bagot, Associate
Design

Sarah Ball
Woods Bagot, Principal
Education



Tony Alvaro
Meinhart, Dep. Man.
Director, Facade Group

Janos Baranyi
Meinhart, Nat. Director
Building Services

Rennie Darmanin
Meinhart, Design
Director, Structures



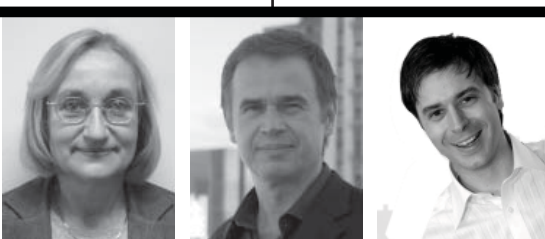
Kenn Fisher
Woods Bagot, Consultant
Education



Nick Holt
Woods Bagot, Studio
Manager, BIM

Nik Karalis
Woods Bagot, Director
Design

Mark Kelly
Woods Bagot, Director
Education



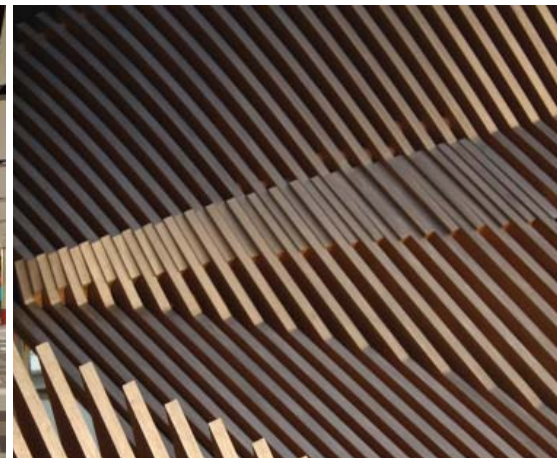
Richard Marshall
Woods Bagot, Director
Urban Design

Bruce Matthews
Meinhart, Managing
Director

Margaret Niepostyn
Meinhart, Associate
Fire Services

Dr Mirek Piechowski
Meinhart, Associate
Building Science Group

Owen West
WSH, Director
Design



MELBOURNE EXHIBITION AND CONVENTION CENTRE
WOODS BAGOT AND NH ARCHITECTURE (2009, 126000sq.m, \$1b)

MELBOURNE EXHIBITION AND CONVENTION CENTRE
WOODS BAGOT AND NH ARCHITECTURE (2009, 126000sq.m, \$1b)

HONG KONG UNIVERSITY, SBM & IAS
WOODS BAGOT (2007, 27000sq.m, \$150m)

PLATFORMS FOR PLEASURE
WSH (2008)