

# ARINA PROJECTS



SCIENCE AND TECHNOLOGY

WHP Architects Pty Ltd  
Trading As: ARINA™  
Document version v1.0



**WHP Architects Pty Ltd**  
**Trading As: ARINA™**



**Head Office**

Level 2  
37-43 Alexander St,  
Crows Nest,  
Sydney NSW  
+61 2 9906 8186

**Sydney | Adelaide | Singapore | Perth**

[www.arina.biz](http://www.arina.biz)

**Contact**

Geoff Hanmer  
Managing Director  
+61 419 700 033  
[geoff.hanmer@arina.biz](mailto:geoff.hanmer@arina.biz)

**All Mail**

PO Box 1102  
Crows Nest  
NSW 1585

**Details**

Nominated Architects: Geoff Hanmer  
(NSW:5147, VIC:15897, TAS:914/CC6438)  
John Hyland (SA:2388) | SA Company Registration: 3250  
ARINA Consultants Pte Ltd (Singapore) Reg No 200604219E  
WHP Architects Pty Ltd Trading as ARINA™. ABN 45 073 497 391

# TESTIMONIALS



... ARINA was absolutely central to the development of a world-class campus design that tenders proved would be about half the cost per student compared with competitor institutions ... They demonstrated a great empathy for the strategic vision being followed by UNSW as well as having a thorough grasp of detail. ...

*Mark S Wainwright AM FTSE  
Emeritus Professor and former Vice-chancellor, UNSW*



... You and your team earned the trust of our staff ... Your ability and willingness to learn from us meant your suggestions and creative solutions were better able to capture our future needs ...

*Tony Moon  
Emeritus Professor, Office of the Provost and Senior Vice President  
University of Technology, Sydney  
Former Dean, Faculty of Science, UTS*



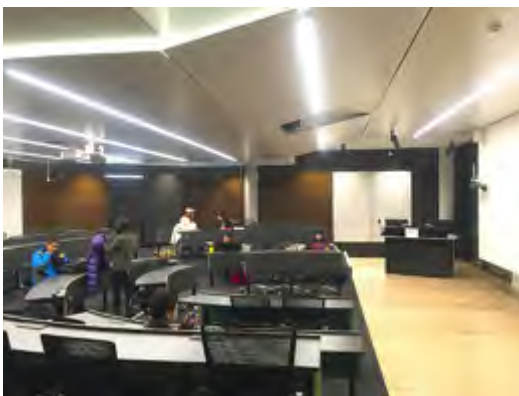
... I found [ARINA] to be expert across all facets of university facility design, from complex laboratories to student recreation facilities ... They combine a deep knowledge of teaching and learning with an understanding of academic research needs. They also have the ability to develop practical solutions which control both capital and operational costs.

*Professor Greg Whittred  
Dean, University of Auckland Business School*



... Many details had to be incorporated into the design of a multidisciplinary campus that was to house arts, business, science and engineering whilst working to a constrained budget. I found ARINA to be totally professional and expert, with the ability to provide excellent advice during all stages of the project.

*Professor Bruce Milthorpe  
Dean, Faculty of Science  
University of Technology, Sydney*



... The new teaching and learning accommodation, which was created from some very unpromising looking space, has proved extremely popular with students and teaching staff alike...The integrated teaching and learning space is amongst the very best that UTAS has to offer.

*Jacinta Young  
Executive Director, Commercial Services and Development  
University of Tasmania*





PROJECTS

SCIENCE AND TECHNOLOGY

*One of ARINA's key services is centred about Specialist University Facilities. Since its inception ARINA has developed a wealth of experience in a wide range of disciplines.*

---

Technical Consultation

---

Concept Planning

---

Briefing and Project Definition

---

Room Scheduling

---

Laboratory Planning and Design

---

Technical Review

---

Specialist Equipment installation

---

Scientific and specialist  
equipment auditing

---

Room Data Sheet and Equipment  
Scheduling

---

Design, Documentation and  
Delivery

---

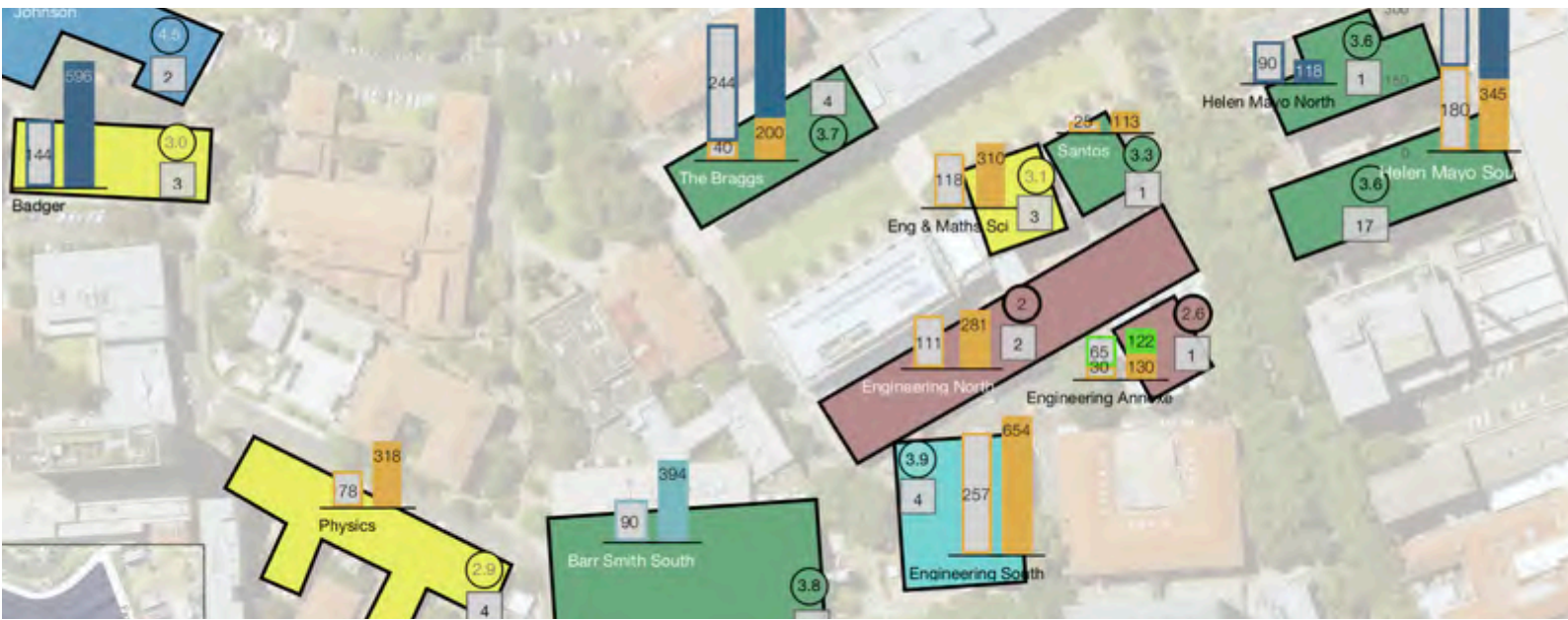
Benchmarking and Exemplar  
Reporting

## **PROJECTS:**

### **SCIENCE AND TECHNOLOGY**

University of Adelaide:	6
Deakin University:	7
Murdoch University:	8
Curtin University:	9
UQ: Science Precinct Building:	10
University of New South Wales:	11
UNSW Wallace Wurth:	12
University of Tasmania:	13
University of New South Wales:	14
Deakin University:	15
University of Technology, Sydney:	16
Monash University:	17
Curtin University:	18

# UNIVERSITY OF ADELAIDE: RESEARCH & LABORATORY TEACHING STUDY & CAPACITY STUDY



*Teaching Lab review, Benchmarking, Research Equipment Asset auditing and Database development*

Location:  
**Adelaide, South Australia**

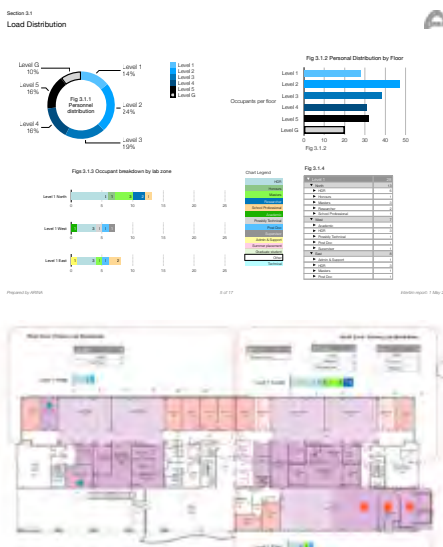
Project Period:  
**2019 - Current**

Client:  
**University of Adelaide**

*ARINA was commissioned to provide a series of analysis and studies for UoA, including: Research Accommodation, Research Equipment Audit, Teaching Laboratory Study and a research building capacity analysis.*

Components included;

- Research Equipment Audit: ARINA undertook field audit work at North Terrace, West End, Waite and Roseworthy, including photographing all equipment and affixing temporary bar codes, recording model number and description of equipment as well as developing a database to suit for the University of Adelaide's protocols and nomenclature conventions.
- Research Laboratory Study: ARINA conducted an analysis of existing research lab areas and capacities, conditions and also developed growth model scenarios.
- Teaching Laboratory Study: ARINA provided an analysis of existing teaching lab area and capacities, lab utilisation and conditions, also developed EFTSL growth and seat model scenarios.
- MLS Capacity Study: ARINA reviewed the availability of office spaces and developed the options to increase office seat. ARINA also reviewed the laboratory with ancillary spaces and developed a seat demand and area gap model for comparison against the existing lab space. Various options to improve the occupancy were offered.





# DEAKIN UNIVERSITY: RESEARCH INNOVATION SCIENCE & ENGAGEMENT (RISE) PRECINCT



*Project briefing and peer review assistance.*

Location:  
**Burwood, Victoria**

Project Period:  
**2019 - 2020**

Client:  
**Deakin University**



*ARINA provided a peer review role on the RISE precinct project which include brief development post sketch design.*

ARINA reviewed the current proposal for a new science facility at Burwood for disciplines which include materials engineering and environmental and life sciences. The review drew on ARINA's prior investigation into the research infrastructure at Burwood and Waurn Ponds including an understanding on the capabilities at Burwood that require support from spaces.

ARINA advised on the likely requirements to enable competitive research capacity matching metropolitan campuses. This included requirements for establishing analytical and characterisation facilities, and case studies on approaches to research innovation undertake by other university campuses.

# MURDOCH UNIVERSITY:

## VETERINARY LIFE SCIENCE DEVELOPMENT PLAN

### Agricultural Biotechnology Centre (WABC/SABC)

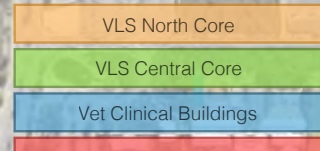
- Location of core, fire stairs and services not suitable for large capacity teaching rooms or superlabs.
- Current teaching labs are at maximum feasible sizes due to column spacing.
- Not recommended for large scale adaptation due to location of existing research institute and location of vertical circulation and egress.

### Veterinary Clinical Sciences (B260-262)

- Contains predominately non-VLS functions including The Animal Hospital and Central Teaching spaces.
- Contains a mix of functions and would recommend a purpose built facility for animal holding and associated animal research prior to relinquishing this facility.



- Two buildings with large area yield that are mostly dedicated to VLS Academic functions.
- Both buildings have an average of 3.4m floor to floor. By comparison contemporary laboratory facilities aims for 4.2m for improved sightlines and services clearances.
- Veterinary Biology Building is over 41 years old.
- Best candidates for large scale adaptation however fitness for purpose will be limited by ceiling heights and grid clearances.



### *Campus Planning and Consolidation, Research Space Review, Space and Student Forecasting, Development Plan*

Location:  
**Murdoch, Western Australia**

Project Period:  
**2017**

Client:  
**Murdoch University**



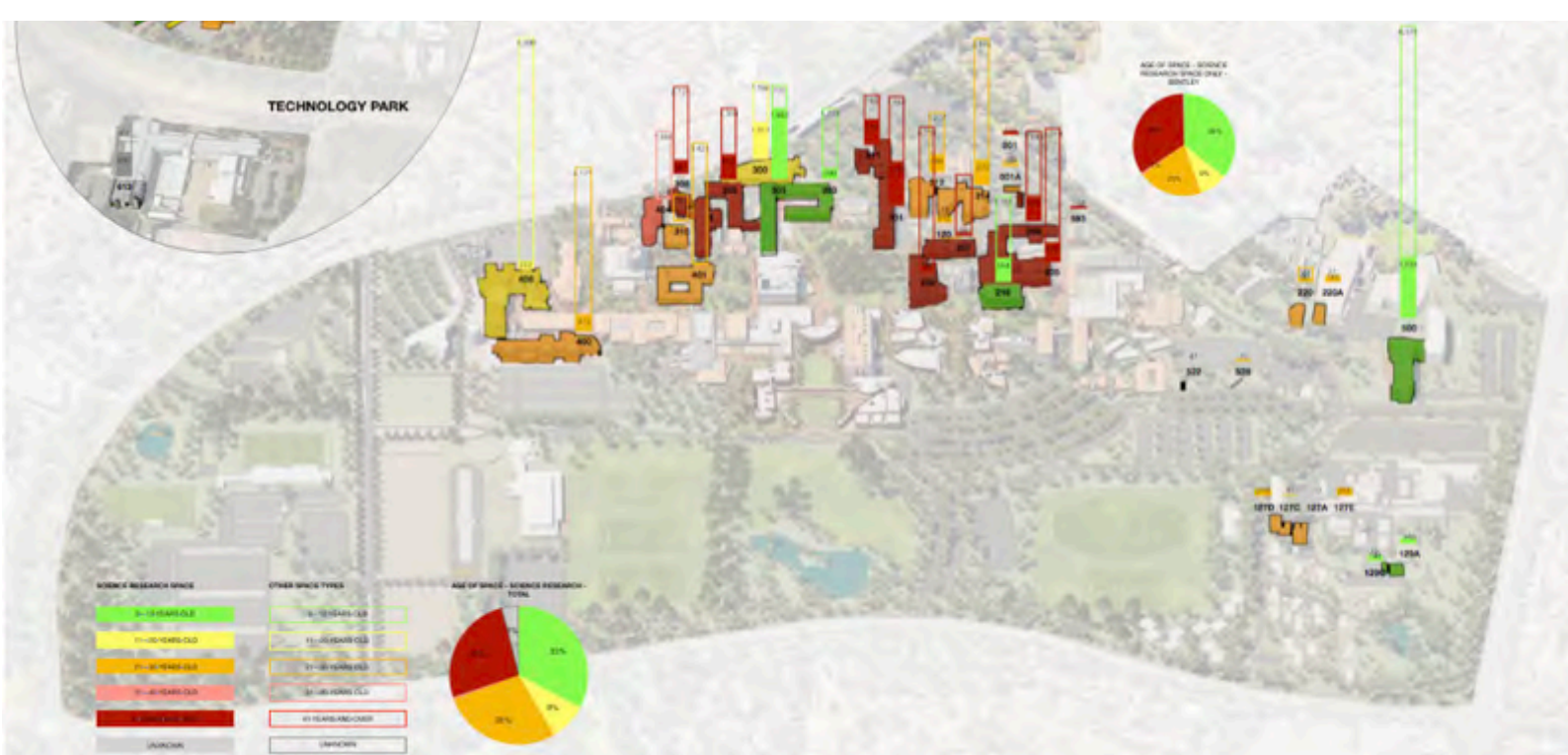
*ARINA devised a strategic plan allowing Murdoch to grow research whilst reducing space required for teaching.*

As part of the study, ARINA outlined a series of space plan options up to 2032. The plan considers; the fitness for purpose of existing buildings, building age and condition, potential sites for new development, and opportunities to consolidate staff and students into buildings wholly occupied by VLS.

A series of space plan options were devised to address short, medium and long term growth, to suit a variety of enrolment and financial outcomes.



# CURTIN UNIVERSITY: SCIENCE PROGRAM



*Spatial Analysis, Research Projections, Space Projections, Research Action Plan, Project Definition for a new science facility*

Location:

**Bentley, Western Australia**

Project Period:

**2016 - 2018**

Client:

**Curtin University of Technology**

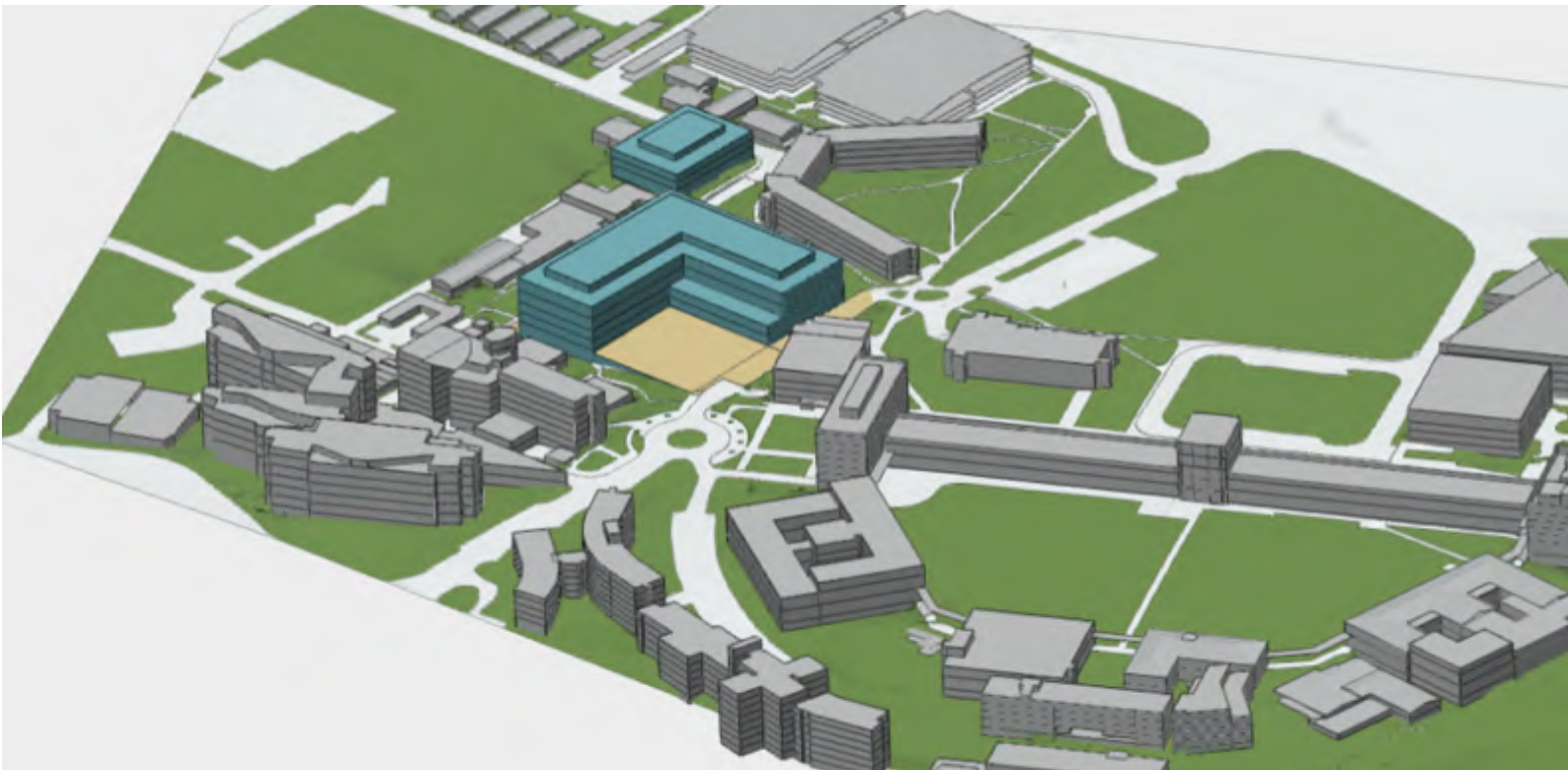
*Following on from spatial masterplans of the Bentley and Technology Park campuses, ARINA was commissioned to rationalise Curtin's existing science space and devise a space strategy to meet space needs into the future. A key outcome was a project to deliver a new central science building.*

ARINA worked actively within Curtin's project budget ceiling and established a series of options to achieve the space needs at the lowest cost. Options included delivery of a new building 'shell' and propositions to occupy backfill spaces relinquished as a result of a new science facility. Integral to the options presented was shared use of this precinct by two science faculties. A series of interdependent projects were established to encourage and test shared use of facilities. eg Building 311 PC2 Superlab.

ARINA worked with the stakeholders, project managers (NS Projects) and Curtin Properties Facilities and Development to establish and communicate a series of interdependent projects.



# UQ: SCIENCE PRECINCT BUILDING: GROW ACCOMMODATION BRIEFING AND SPACE PLANNING



*Project Briefing, Space Planning, Benchmarking, Stakeholder Consultation, Specialist Laboratory Advice, Design Competition Briefing and Management*

Location:  
**St Lucia, Queensland**

Project Period:  
**2019**

Client:  
**University of Queensland**

*ARINA was : to provide the project briefing and definition for a discipline blind science teaching and research laboratory facility, comprising; an analytical facility, teaching superlabs, learning spaces areas for industry engagement, and PC2/PC3 research laboratories.*



ARINA undertook extensive stakeholder consultation with working groups assigned to various parts of the project. A document containing objectives, missions and goals was prepared to guide consultations. The document also set expectation management and oversight procedures to keep the project within budget. ARINA developed a consultant selection brief and architectural competition brief complete with room schedule and specialist technical requirements including vibration and EMI, clean room class were specified.



# UNIVERSITY OF NEW SOUTH WALES: SCHOOL OF ANATOMY ACCOMMODATION REVIEW



*Business Case Assistance, Concept Design, Compliance Review, Specialist Advice (Anatomy), Identification of Short and Long Term Works*

Location:  
**Kensington, New South Wales**

Project Period:  
**2019**

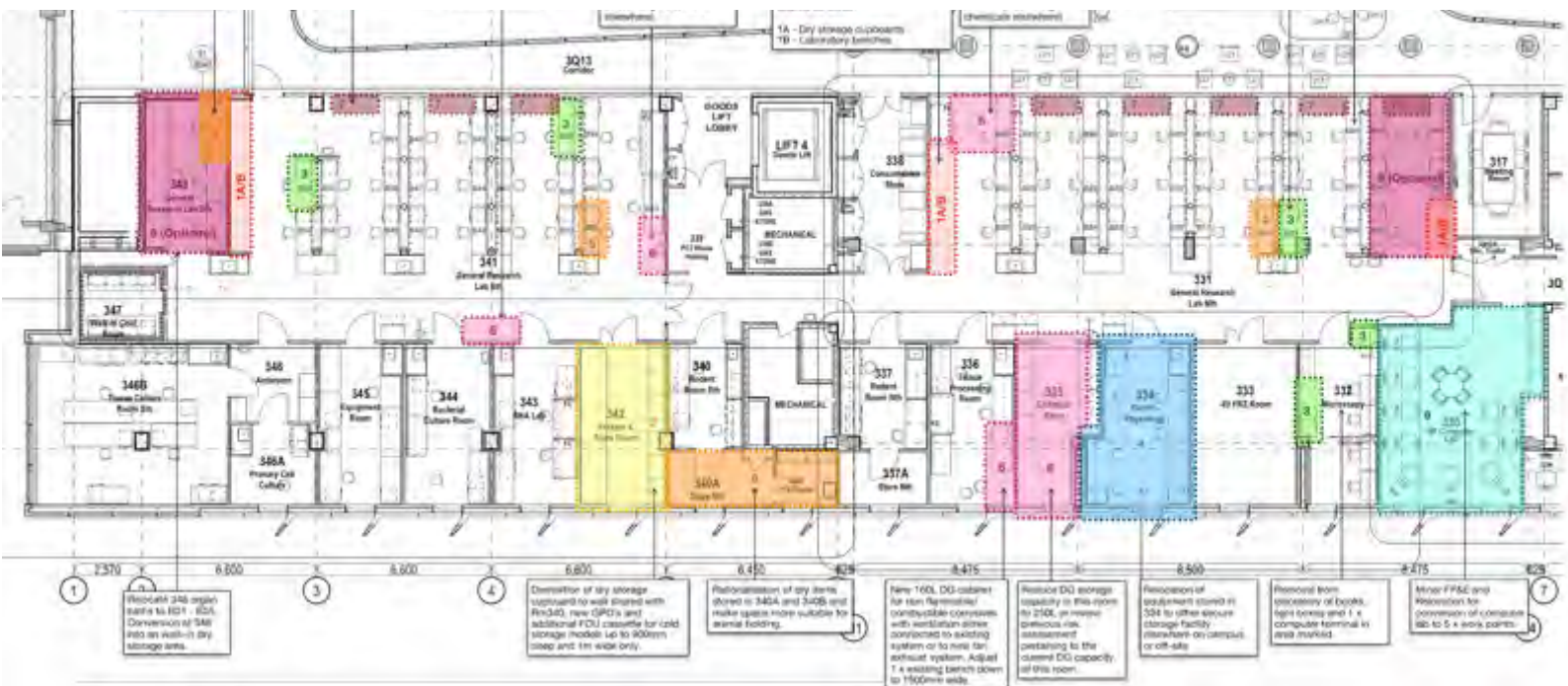
Client:  
**University of New South Wales**

*ARINA conducted a comprehensive review of existing facilities, covering all functional elements, research and teaching activities, cadaver counts, and conditions of the facilities.*

This culminated into a proposal for a series of short term upgrades to the morgue. ARINA benchmarked the existing and projected numbers against other relevant universities' data, and considered alternatives to cadaveric material, including 3D printing, plastination and VR, with stakeholders.

ARINA presented findings as a report and slide deck in support of meetings for establishing a broad direction for the future of the anatomy facility. In addition, ARINA reviewed remote anatomy operations and locations, including the remote sites of Port Macquarie, Wagga Wagga and Albury. ARINA also reviewed the information relating to the anatomy museum and the human disease museum with staff in reaching an understanding of how the museums relate to the anatomy teaching the the Human Tissue Act.

# UNSW WALLACE WURTH: LEVEL 3 EAST PC2 LABORATORY EFFICIENCY STUDY



*Benchmarking, Spatial Review, Identification of short and long term works*

Location:  
**Kensington, New South Wales**

Project Period:  
**2019**

Client:  
**University of New South Wales**

*ARINA carried out a spatial review into the efficiency and use of the Level 3 East Laboratories in the Wallace Wurth Building (WWL3E).*

This included benchmarking against other comparable facilities and an in depth quantitative and qualitative review into the existing storage practices. ARINA detailed a series of short term and long term actions (including refurbishment options) to rationalise the usage of WWL3E and enable greater intensification of researchers into the labs.



# UNIVERSITY OF TASMANIA: STEM PRECINCT



*Spatial Planning, Concept Design, Precinct Masterplan Principles, Architectural Vision and Visualisation, City Deal Assistance*

Location:  
**Hobart, Tasmania**

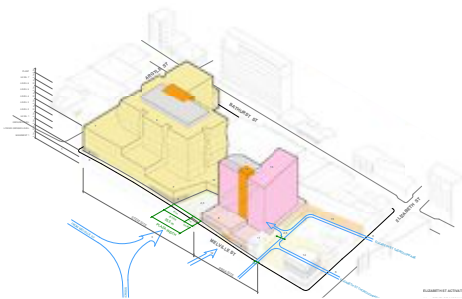
Project Period:  
**2016 - 2019**

Client:  
**The University of Tasmania**

*The University of Tasmania STEM project was the only education project identified on the Infrastructure Australia (IA) list of preferred projects in 2016, and has been independently assessed and recommended as an infrastructure priority.*

The proposed development at the STEM Building will bring in almost 3,000 students from the STEM Faculties who are currently taught at Sandy Bay. This alone will more than double the student density and the University's presence in Hobart City.

ARINA provided the horsepower to prepare the IA bid and was responsible for the development of the scope, feasibility, and vision study.



# UNIVERSITY OF NEW SOUTH WALES: TYREE ENERGY TECHNOLOGIES BUILDING



*Briefing and Specialist Advice, Competition Planning and Consultant Selection,  
Laboratory Specification Review: (Architect: FJMT)*

Location:  
**Kensington, New South Wales**

Project Period:  
**2012**

Client:  
**University of New South Wales**



*ARINA led the briefing and project definition for the facility and authored the competition brief.*

The UNSW Faculty of Engineering is one of the largest and most highly rated engineering faculties in Australia. The TETB was designed to bring together elements of the Faculty working to produce better solutions to the production and distribution of energy, including the School of Photovoltaic and Renewable Energy Engineering. UNSW Photovoltaic research has consistently led the world in efficiency for second generation cells, and the key challenge is now to reduce the cost of manufacturing which is the key focus of current research.

Part of the TETB program was the provision of a research pilot line for the manufacture of large format silicon solar cells. Integration of the line into the building was challenging, and ARINA carried out an extensive review of required specification standards.



# DEAKIN UNIVERSITY: AUSTRALIAN FUTURE FIBRES RESEARCH & INNOVATION CENTRE



*Project Briefing and Definition, Technical Review and Specification, Detail Design of Laboratory Components : (Architect: Woodhead / GHD)*

Location:  
**Warrun Ponds, Victoria**

Project Period:  
**2010**

Client:  
**Deakin University**

*ARINA delivered the project definition study and brief for this complex science facility which included the first university owned and operated carbon fibre pilot line in the world.*

ARINA also provided detailed design advice for the engineering laboratories which included resolution of issues relating to specialist safety equipment locations and associated reticulated services, safety stations and fume cupboard placement, fire egress compliance and clearances to adjoining areas.

The resolution of the pilot manufacturing line was the first in non private research institute. ARINA resolved OH&S issues related to the production of heat, flame blow back, and release of cyanide gas. The facility was also required to cater of dangerous and hazardous goods for which ARINA were able to prove design recommendations.

ARINA was also responsible for writing laboratory and manufacturing plant space relevant specification, and a full standards compliance review.



# UNIVERSITY OF TECHNOLOGY, SYDNEY: SCIENCE CONSOLIDATION



*Spatial Planning, Briefing, Project Definition, Stakeholder Consultation, Population and Space Modelling*

Location:

**Ultimo, New South Wales**

Project Period:

**1998 - 2004**

Client:

**University of Technology Sydney**



*Over a 8 year timeframe, ARINA provided front end briefing and stakeholder consultation to the Faculty of Science in devising an agreed space needs and accommodation model for all staff and students.*

ARINA worked with the University of Technology Sydney to consolidate all science teaching and learning spaces to the Sydney city campus and to plan the faculty of Science accommodation for the next 30 years. With more than 550 rooms, 300 staff and 1,400 students (EFTSL) using the facilities per week this was, at the time, the biggest single science project by a major Australian university in 20 years and was carried out without any direct comparable precedents in Australia.

ARINA provided front end briefing and stakeholder consultation to the Faculty of Science in devising an agreed space needs and accommodation model for all staff and students involved.

ARINA's front end briefing and consultation work originated the concept of the Undergraduate Superlab with the Dean of Science, Professor Tony Moon. The project was then implemented by Dean Professor Bruce Milthorpe into what is currently UTS Building 7 at Ultimo.



# MONASH UNIVERSITY: BIOMEDICAL LEARNING AND TEACHING BUILDING



*Laboratory Planning Briefing to Documentation stage, Stakeholder Consultation, Equipment Scheduling, Teaching and Learning Advice and Assistance.*

Location:  
**Clayton, Victoria**

Project Period:  
**2016 - 2017**

Client:  
**Monash University**



*ARINA was commissioned to provide briefing, project definition, and stakeholder management services for a 6 level teaching laboratory building for Monash University. (Architect: DCM)*

The scheme consisted of 8, 120 seat super labs which are able to be joined into a large 240 seat venue in each level. ARINA re-briefed the requirements on the basement level for anatomy to include spaces for wet and dry dissection teaching as well to comply with the Human Tissue Act.

ARINA advised on vertical circulation, functional sizing, and functional location. ARINA worked extensively with the different stakeholder groups to re-imagine their equipment needs in a large format shared laboratory setting. Complete room data sheets with mapped equipment was produced by ARINA as part of project definition for schematic design.

# CURTIN UNIVERSITY: BUILDING 311 PC2 SUPERLAB BRIEF



*Feasibility Study, Business Case Assistance, Project Briefing, Stakeholder Consultation, Change Management Consultation, Project Audit*

Location:

**Bentley, Western Australia**

Project Period:

**2016 - 2018**

Client:

**Curtin University of Technology**



*ARINA worked with Curtin Stakeholders to initiate a change management and building program necessary for two STEM Faculties to transition into shared superlab teaching.*

ARINA was commissioned in two stages to set the groundwork and substantiation for the redevelopment of the North Wing of Curtin's Building 311 into a superlab shared between Curtin Faculty of Science and Engineering (FSE) and Faculty of Health Sciences (FHS). This included an initial feasibility study and business case support, which lead on to ARINA developing a full facility brief.

The B311 project is a key science project for Curtin University as it is one of the first testing grounds for an interdisciplinary science teaching space and the move towards more efficient space use practices. Success of this approach would contribute to the co-operation necessary for Curtin's Science Program.

ARINA worked with both FSE and FHS staff on the change management implications surrounding shared laboratory use and running multiple classes. ARINA organised for stakeholders to visit the superlab facilities of other universities to show that these principles are possible.

Project design commenced in mid 2017 with ARINA retaining an audit role throughout the design and construction.



# ARINA PERSONNEL



**ARINA HAS A NON-DISCRIMINATING POLICY FOR STAFF EMPLOYMENT**



**Geoff Hanmer**

**TITLE**  
**MANAGING DIRECTOR,**  
**ARINA**

**QUALIFICATION**  
Adjunct Professor, University of Adelaide  
Master of Architecture, Bartlett School of  
Architecture and Planning (UCL)  
University of London

- RECENT RELEVANT PROJECTS**
- University of Tasmania Inveresk Space Masterplan and Concept Design
  - University of Tasmania Hobart Campus Consolidation Project
  - UQ Science Spatial Review and Consolidation
  - UQ Science Precinct Building Briefing and Space Planning
  - University of Tasmania - Tasmanian School of Business and Economics
  - University of Tasmania STEM Building
  - UNSW ASIA Campus
  - Curtin University B311 PC2 Superlab Brief
  - Curtin University Science Program
  - University of Technology Sydney Science Consolidation
  - Australian National University Masterplan Scoping Study

Geoff has over 35 years experience in delivering university projects and university masterplans and in the provision of strategic advice to complex matrix managed clients.

He has designed and delivered many well-known university buildings including the NIDA building at UNSW, the Sir John Clancy Auditorium and the Matthews Theatres at UNSW. He has written briefs and design managed many other well know building including ABC-TV NSW and Victoria, UNSW Scientia, the AFTRS, UNSW Law, Monash Law, UTS Science and the University of Sydney Business School.

Since 2000, he has specialised in delivering strategic advice, strategic plans and master plans for numerous universities including UTas, Flinders, La Trobe, UNSW, UNSW Asia, Murdoch, Curtin, UC, UTS and ANU. Geoff has worked with 34 out of the 39 universities in Australia and several overseas universities, including NUS, NTU and the Asian University for Women in Chittagong.

He has been the course coordinator and a lecturer in the Structures and Construction course for the Architecture Program at UNSW since 2001. As a result, Geoff is able to relate to the day-to-day concerns of academics in addition to understanding the concerns of students.

Geoff is a regular contributor on HE facilities topics to 'The Australian' and the 'Financial Review'.

Geoff has had substantial experience in complex STEMM projects. These include the research buildings for AFFRIC at Deakin University, particularly the carbon fibre pilot line, the SET Review for UTas, the UTS and ANU Science Consolidation Projects, the Curtin Science Program and the Brief for the Australian Institute of Nanoscience at the University of Sydney.

He is currently delivering strategic analysis projects for UQ, Deakin and Griffith University.





**John Hyland**

**TITLE**  
**PRINCIPAL,**  
**ARINA**

**QUALIFICATION**  
Bachelor of Architecture, The University of Adelaide

**RECENT RELEVANT PROJECTS**

- Monash University Biomedical Learning and Teaching Building
- La Trobe University Masterplan
- Tasmanian School of Business and Economics (TSBE)
- Charles Darwin University Australian Centre for Indigenous Knowledge & Education
- University of New South Wales Tyree Energy Technologies Building

An expert in database design and management John Hyland has developed all the ARINA database management tools. These database tools have been used to deliver both briefing and major audits of science facilities for National University of Singapore, La Trobe University, University of Technology, Sydney, and all other University related work by ARINA.

John has been instrumental in developing, customising and maintaining the briefing and auditing processes and infrastructure. John's recent work includes managing the audit process and databases for the La Trobe Master Plan, Curtin University Space Masterplan, Flinders Occupancy Audit, and Murdoch University Space Benchmarking and Review Project.



**Jacky Yuen**

**TITLE**  
**SENIOR ASSOCIATE,**  
**ARINA**

**QUALIFICATION**  
Master of Architecture, The University of New South Wales

**RECENT RELEVANT PROJECTS**

- University of Tasmania Inveresk Space Masterplan and Concept Design
- University of Tasmania STEM Building
- UQ Science Precinct Building and Grow Accommodation Briefing and Space Planning
- University of Wollongong Keiraville, Innovation Campus and SW Sydney
- UQ Space Management Plan
- Murdoch University Library Masterplan

Jacky has 7 years of experience in the Higher Education projects, managing data collection, analysis and co-ordinating architectural documentation for ARINA.

With a keen eye for the slightest details both graphically and numerically he ensures that all project outputs and reporting are to a high level of standard and accuracy.

Jacky has compiled a number of spatial analysis for the University of Tasmania ranging from proposed facility consolidations to campus re-programming options, and have led subsequent design vision exercises. He has been closely involved in the research space and HDR modelling for Curtin University, the projection of space needs for ACU's North Sydney campus, and the campus analysis for the ANU Acton Masterplan Preparatory Study.



**Graham Parry**

**TITLE**  
**SENIOR CONSULTANT,**  
**ARINA**

**QUALIFICATION**  
Bachelor of Architecture (Hons.), The  
University of New South Wales

- RECENT RELEVANT PROJECTS**
- University of New South Wales School of Chemical Science and Analytical Centre
  - Australian School of Business
  - University of Sydney - Australian Institute of Nanoscience

Graham is an architect and is a member of the AIA, the Australian Property Institute, and the Tertiary Education and Facilities Management Australia of which he was a founding director. He was the UNSW Deputy Director of Facilities during a period in which he overseen three iterations of the UNSW masterplan, and where the University significantly invested in new and refurbished buildings to a value approaching \$1B.

Prior to UNSW, Graham worked in NSW Government administration at the Property Services Group, the Public Service Board and the maritime Services Board, and had significant roles in the 'Suburban Office Relocation Program' for NSW Government employees.



**Janice Liu**

**TITLE**  
**ARCHITECTURAL GRADUATE**

**QUALIFICATION**  
Master of Architecture, The University of  
New South Wales

- RECENT RELEVANT PROJECTS**
- University of Tasmania STEM Building
  - Monash University Biomedical Learning and Teaching Building
  - UQ Science Precinct Building Briefing and Space Planning
  - UNSW School of Anatomy Accommodation Review

Janice has contributed to a broad range of Higher Education and Institutional projects, to which she specialises in combining digital technology in the development of architectural design solutions.

Janice also has a superior working knowledge of ARINA's production and output systems including our documentation and database tools. She has carried out production efforts on projects including Masterplanning exercises for the University of Tasmania, Curtin University and the University of Queensland.



