

# COMPANY PROFILE





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**Trading As: ARINA™**

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WHP Architects Pty Ltd Trading as ARINA™. ABN 45 073 497 391





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# 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*



# CAPABILITIES AND SERVICES





**A** RINA is a unique architectural, development, education and research consulting firm catering to the Higher Education (HE) sector across Australia and SE Asia. A relatively small number of experienced principals and staff work closely with clients and stakeholders to provide a full range of services from strategic analysis to delivery options.

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Spatial analysis and management

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ARINA provides front end professional services in the fields of architecture, design management and masterplanning for the HE sector.

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Space programming and projections

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- Space programming and projections
- Campus and precinct masterplanning and Urban Plans
- Briefing, planning and specification for special purpose HE facilities (Libraries, Laboratories, Complex Teaching Venues)

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Campus and precinct master and urban plans

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- Project definition and feasibility
- Load projections and model for students and staff
- Value management and related services
- Teaching space review, analysis and action plan
- Condition and fitness for purpose review
- Business case development.

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Briefing, planning and specification for special purpose HE facilities: (Libraries, Laboratories, Complex Teaching Venues)

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Project definition and feasibility

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- Project delivery and design management.

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Load projections and model for students and staff

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ARINA has worked with 34 of Australia's 39 universities including all of the Go8. ARINA also has a substantial number of international clients, including the National University of Singapore, the Asian University for Women in Chittagong, IIT in Sri Lanka, Taylors University in Malaysia and the Brilaxmi Foundation in Kolkata.

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Value management and related services

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Our success in providing tertiary planning services for large specialist academic buildings have been demonstrated in our recent projects including;

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Teaching space review, analysis and action plan

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- Monash University Biomedical Learning and Teaching Building (Briefing and Laboratory Planning)

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Condition and fitness for purpose review

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- Curtin University Science Program Options (Scoping and Feasibility Study with NS Projects)

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Business case development.

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- Curtin University B311 PC2 Laboratory Brief
- Deakin AFFRIC (Briefing, Laboratory Planning, and Specialist Advice)

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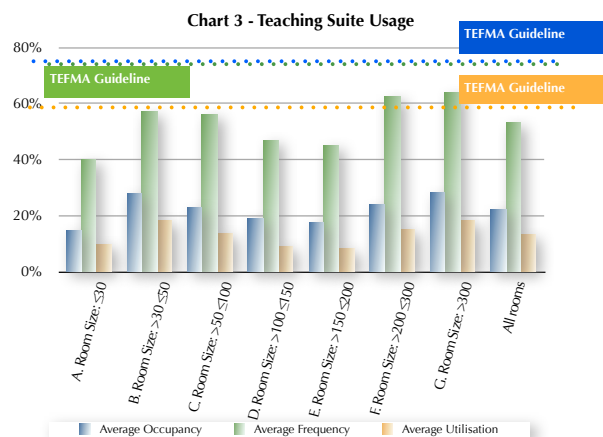
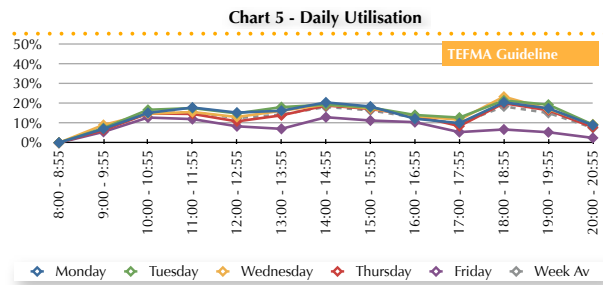
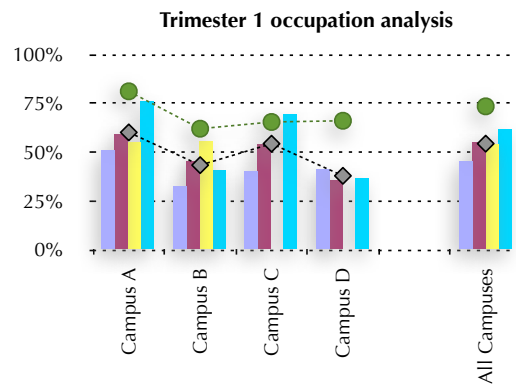
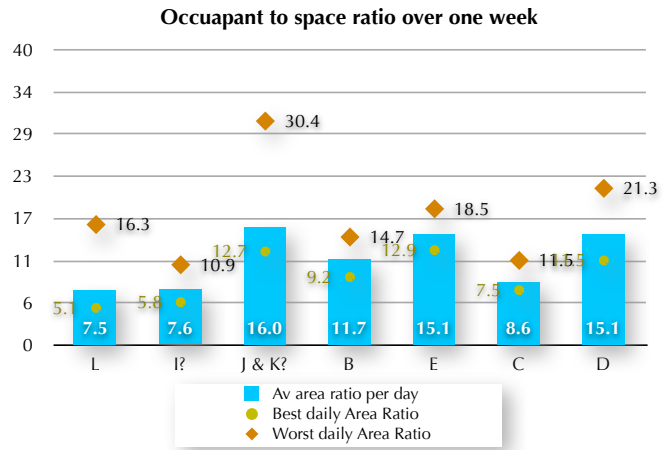
Project delivery and design management.

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- UNSW Tyree Energy Technologies Building (Briefing, LDC Selection, Design Management)
- ARINA are able to carry out comprehensive whole of campuses space review. This draws on from our library of benchmarks, considers the university forward load projections, and make recommendations on existing space usage and space conditions. Recent whole of campus studies include;
- Curtin University Bentley 2030 Academic Neighbourhood Space Masterplan.

- Curtin University STEM Research Hub and Science Program Options
- Murdoch University Space Planning and VLS Research Space Action Plan
- ANU Masterplan Preparatory Study
- University of Wollongong Keiraville and Innovation Campus Scoping Study
- University of Wollongong SW Sydney Space Programming
- ACU North Sydney Space Masterplan

ARINA space planning solutions are contemporary, relevant and designed to underpin the effort of our clients to manage both capital and operational expenditures while providing competitive learning outcomes, improving student engagement and creating great campuses. We have found that being able to show stakeholders (rather than just assert) how other facilities work and how much space they use in comparison to similar institutions or competitors is a very effective way of opening up a constructive dialogue on space use and consequently in the development and implementation of solutions





PROJECTS

CAMPUS STRATEGIC PLANNING





**S**trategy and broad scale upfront planning is at the core of ARINA's skillset ARINA advice in pre project planning has consistently provided to our facilities clients significant financial savings and other tangible benefits

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Business Case Development

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Space Modelling and Forecasting

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Student Load Modelling and Projections

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Physical Masterplanning Principles

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Urban Plans

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Concept Design

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Campus Vision Studies and Visualisation

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Space Action Plan

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Identification of Future Projects

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Space Review and Benchmarking

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Database Review and Scoping Study

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Benchmarking

## PROJECTS:

### CAMPUS STRATEGIC PLANNING

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# UNIVERSITY OF QUEENSLAND: ST LUCIA CAMPUS SPACE MANAGEMENT PLAN 2020 - 2030



*Stakeholder Consultation, Student and Staff Projections, Space Use Benchmarking and Space Demand Modelling, Campus Planning and Capital Management Framework*

Location:  
**St Lucia, Queensland**

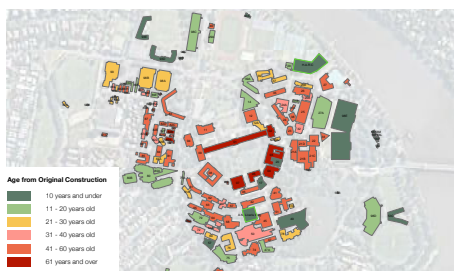
Project Period:  
**2019 - 2020**

Client:  
**University of Queensland**

*ARINA developed a space management plan for University of Queensland's St Lucia Campus. The document serves as an information bridge between the University's master plan and its capital plan.*

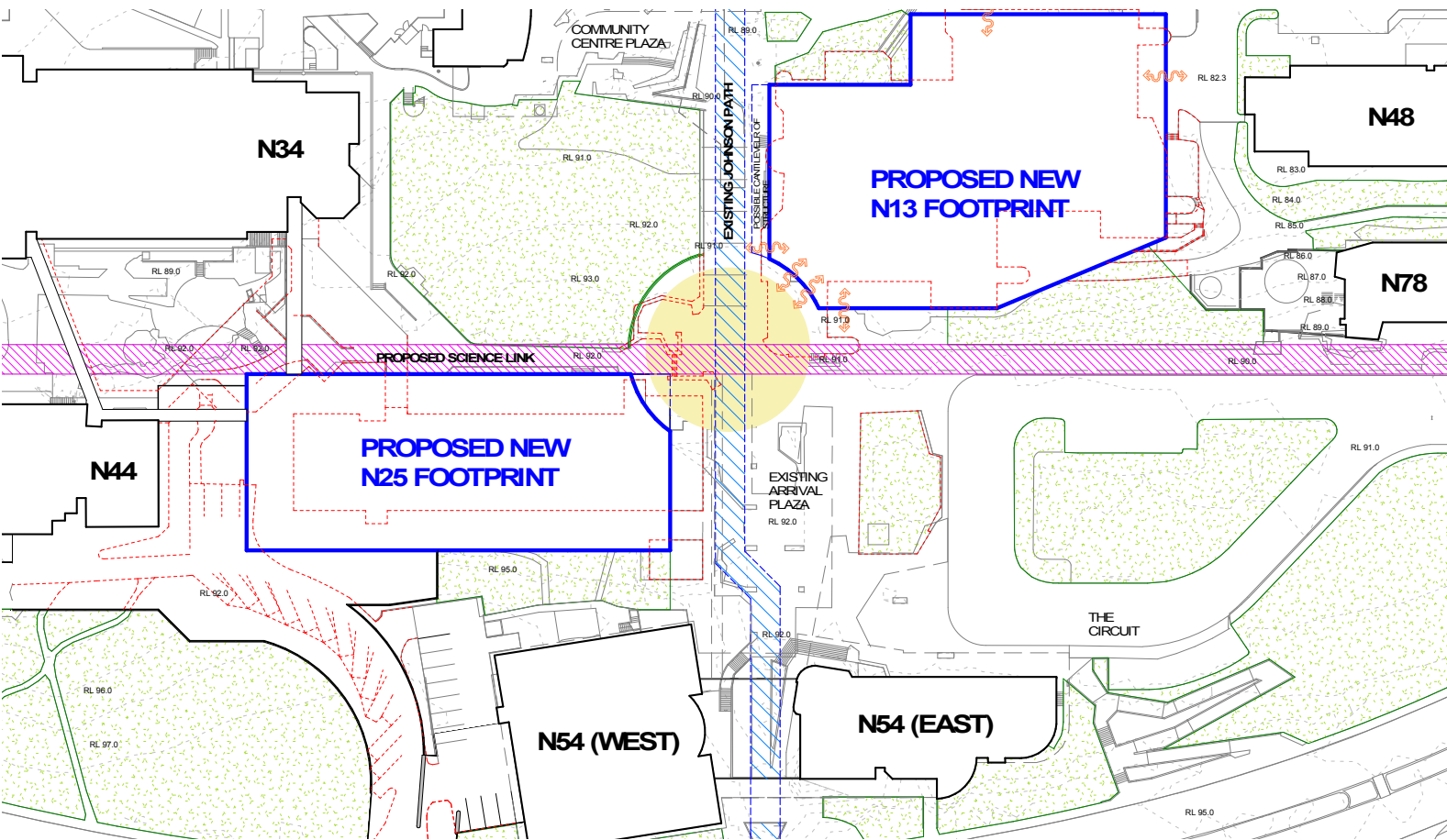
The St Lucia Campus Space Management Plan outlines an estimate of space needs by discipline, spatial function and the aspirations noted by several stakeholder groups. The condition, efficiency and amenity of existing buildings were reviewed and factored into the space demand forecast to arrive at a gap analysis for new floor space requirement by 2030.

Spatial projections also considered both the qualitative and quantitative goals established by the University in other masterplanning documents relating to teaching pedagogy targets, learning seat targets and disposition, office accommodation guidelines and targets identified in the University's retail masterplan. The report outlined a staging path to redevelop the sites of existing buildings approaching end of life into developments yielding better floor space ratios whilst observing sustainable capital expenditure and the planning objectives of the university's masterplan.



# GRIFFITH UNIVERSITY:

## SPATIAL ANALYSIS AND PRELIMINARY DESIGN



*Spatial Analysis and Demand Modelling, Accommodation Strategy and Options, Project definition and identification of projects.*

Location:  
**Nathan and Mount Gravatt,  
 Queensland**

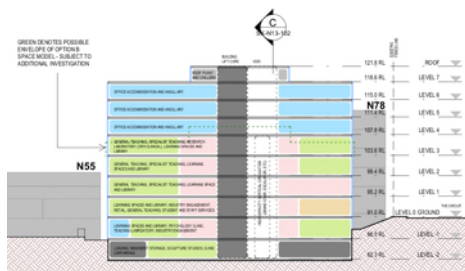
Project Period:  
**2019 - 2020**

Client:  
**Griffith University**

*ARINA undertook a spatial analysis and preliminary design for two new buildings on the Nathan Campus to rationalise science research functions and consolidate two campuses into one.*

ARINA arrived at a spatial estimate to accommodate over 2,500 EFTSL in a manner that is fit for purpose but not excessive in space. The following model methodologies were carried out by ARINA; best practice office space allocation, teaching contact hour and best practice utilisation targets for the disciplines accommodated, library and learning seat benchmarks.

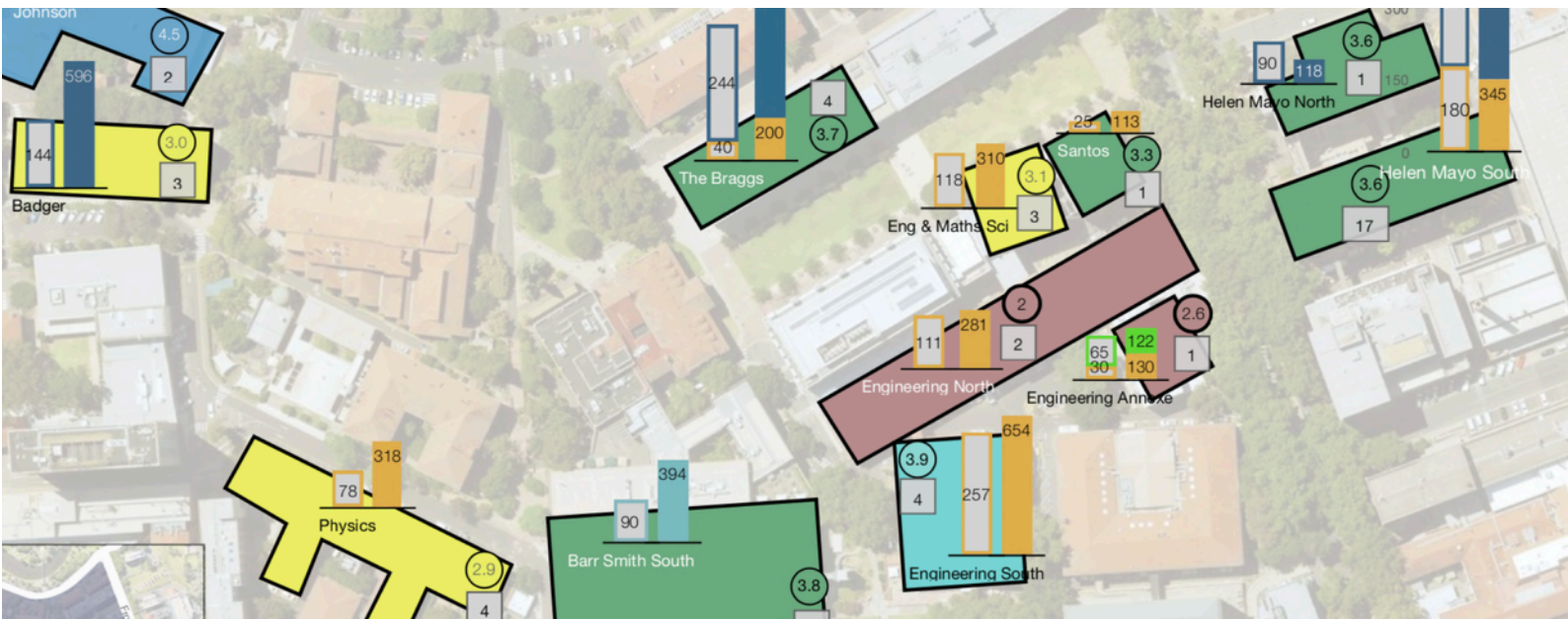
ARINA provided accommodation options to the university including a series of space reduction strategies by leveraging off existing spare capacities within existing buildings in the host campus. Over \$50M in savings were identified in this manner.





# 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**

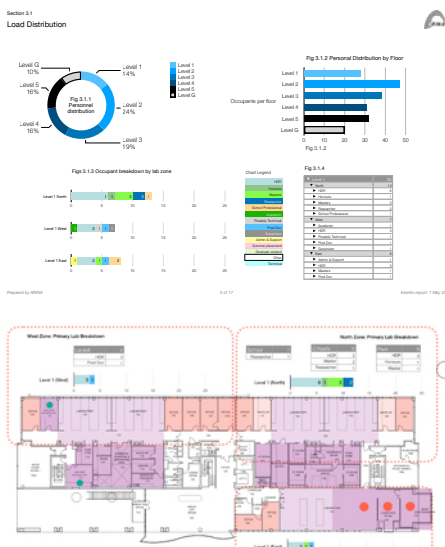
Client:

**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**



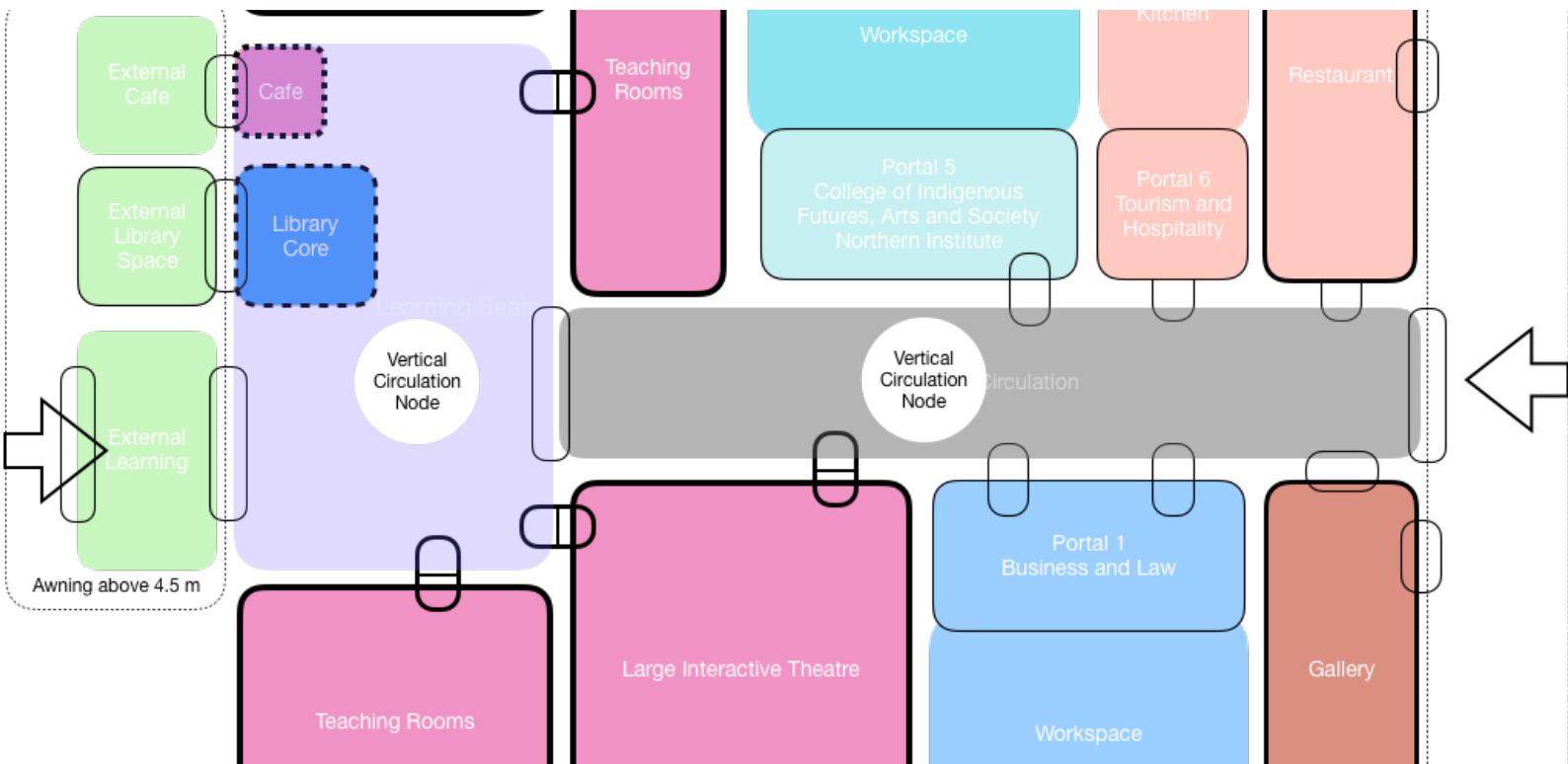
*ARINA provided a peer review role on the RISE precinct project which include brief development post sketch design.*

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.



# CHARLES DARWIN UNIVERSITY: FUNCTIONAL BRIEF FOR CBD CITY DEAL CAMPUS



## Functional Brief and Stakeholder Consultation

Location:  
**Darwin, Northern Territory**

Project Period:  
**2019**

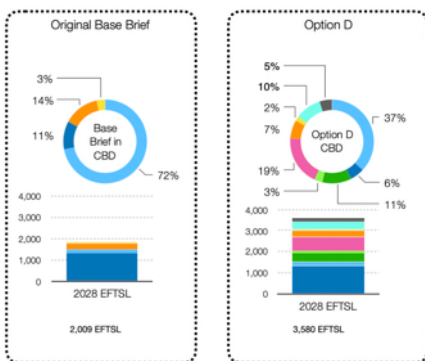
Client:  
**Charles Darwin University**

*ARINA advised on the strategy and accommodation needs related to the new Darwin City Deal Campus.*

A multi site analysis of demand for teaching seats was carried out using a seat hours methodology to determine the best load balancing across the Darwin sites and the proposed CDU facility in the heart of Darwin.

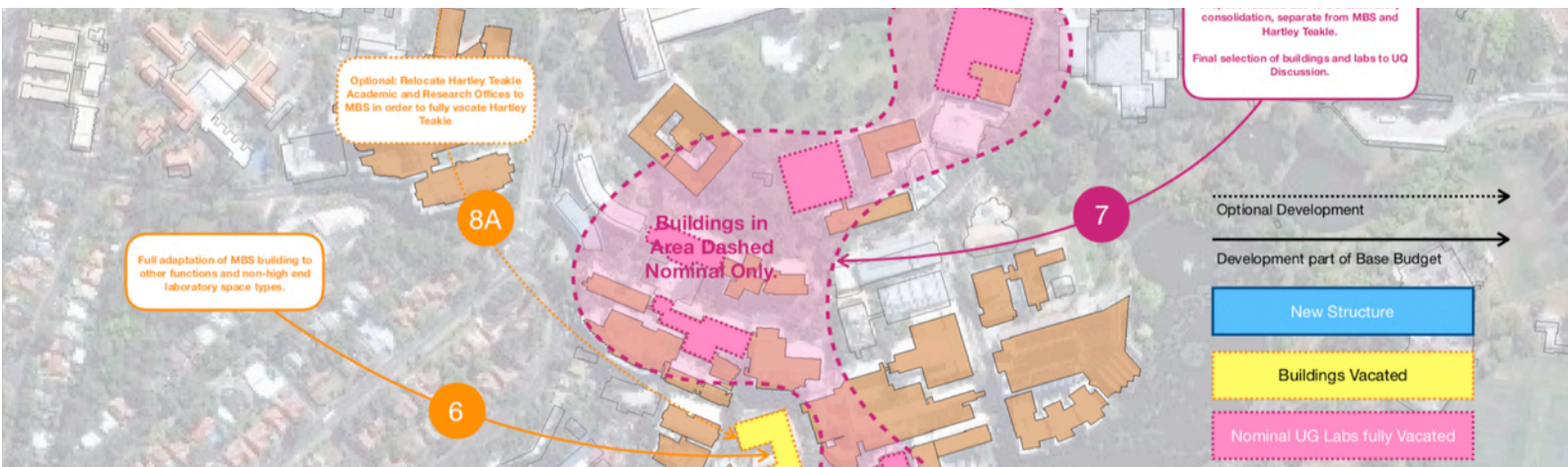
ARINA developed an accommodation schedule and functional blocking and stacking diagrams for the facility to accommodate university faculties including Law, Business, Education, Indigenous Studies and speciality TAFE entities including, Tourism, Hospitality and Culinary Arts. The detailed accommodation schedule covered functions such as an art gallery, library, informal learning, staff accommodation, general and special teaching suite and parking. A touchdown suite for Casuarina based Executive was also scheduled.

ARINA provided a report for consideration with CDU stakeholders incorporating options considering a range of feasible spaces scenarios, ARINA also implemented a consultation plan with stakeholders to review the space model and delivery model.



# UNIVERSITY OF QUEENSLAND:

## LABORATORY SPACES REVIEW & ACCOMMODATION STRATEGY



*Building condition and fitness for purpose assessment, Laboratory benchmarking, STEMM projections in students and staff, Gap analysis and future space forecast modelling, Accommodation strategy*

Location:  
**St Lucia and surrounding sites, Queensland**

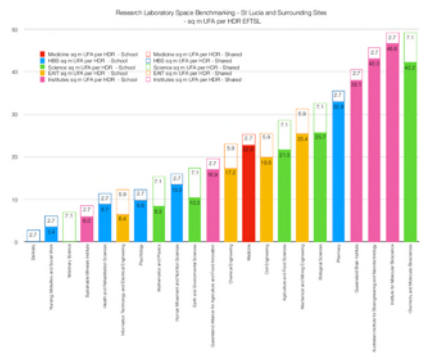
Project Period:  
**2018 - 2019**

Client:  
**University of Queensland**

*ARINA carried out an in-depth study of STEMM teaching laboratory and research laboratory spaces across UQ's St Lucia campus and surrounding sites.*

This involved:

- Condition and functionality review (fit for purpose) of existing laboratory spaces.
- Benchmarking of existing space available to research, broken down by faculty and school. Comparison of this to the average allocation provided by other universities to provide a high level assessment of the utilisation level in research laboratory spaces across the campus.
- Review of available laboratory seats and its theoretical utilisation across the campus to identify opportunities for consolidation of laboratory teaching. Review forecast space savings if UQ teaching were moved into superlab teaching formats.
- Review of scientific equipment, its distribution across the campus and opportunities to consolidate analytical equipment.
- Forecast of growth in STEM UG, PG Coursework and HDR students based on historic performance and a gap analysis of laboratory space provisions to satisfy current and projected numbers.
- Devising a high level accommodation strategy involving two new facilities and a series of consequential works including refurbishment of spaces vacated into new facilities. This then informed the briefing and project definition for an integrated science learning, teaching and research building for UQ.





# UNIVERSITY OF TASMANIA: HOBART CITY CAMPUS SPATIAL MASTERPLAN



*EFTSL/FTE review and projections, high level development cost estimate, benchmarking of space needs, Space demand model for various components of the proposed University functions in Hobart*

Location:  
**Hobart, Tasmania**

Project Period:  
**2019**

Client:  
**University of Tasmania**

*As part of this study, ARINA developed a comprehensive functional space model to estimate the space needs of various faculties and schools across all university space types.*

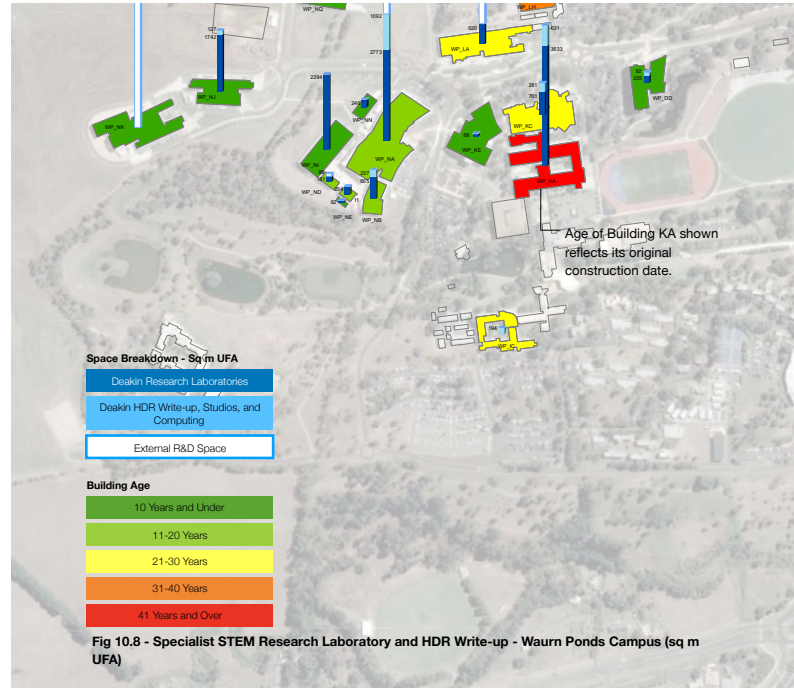
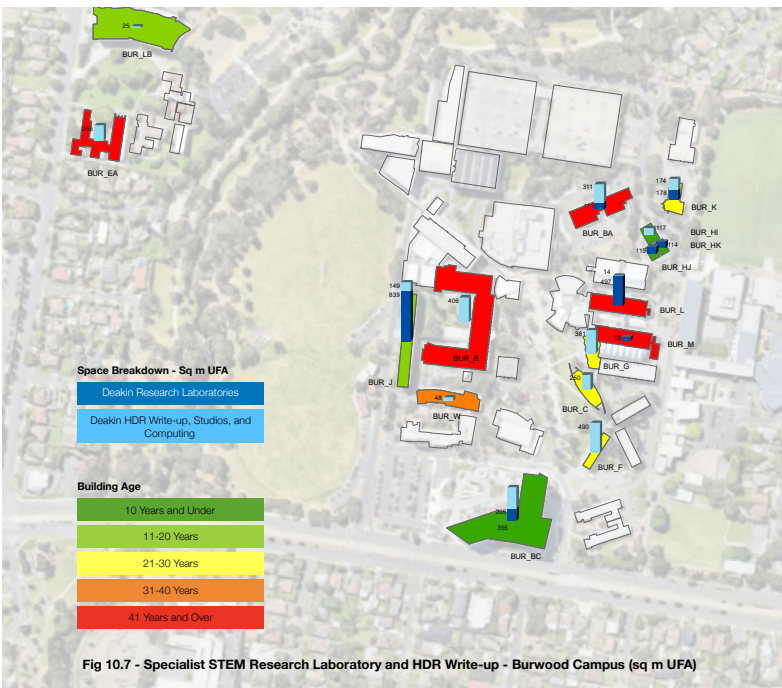
ARINA's space model for the Southern Campuses has been developed over several iterations and through a thorough understanding of UTas Teaching, Learning and Research practices. It embodies several adjustable parameters such as:

- On-campus projections for student and staff population per faculty and school expressed as EFTSL and FTE, split by type.
- likely contact hours across a series of teaching space types from lecturing to laboratory teaching.
- best practice library space and learning seat targets.
- likely rates for the requirements of research infrastructure based on research HDR numbers.
- Staff office needs based on UTas office accommodation standards.

The structure of ARINA's space model for Hobart allows us to predict the space required down to a set of functions and user groups. This allows us to undertake detailed space mapping across various sites, for example by taking office components from one faculty but excluding teaching and learning space demand in estimating the size of buildings required for an office accommodation building.



# DEAKIN UNIVERSITY: RESEARCH SPACE STUDY



*Research space needs projection, Science research condition and functionality review*

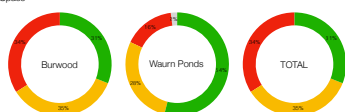
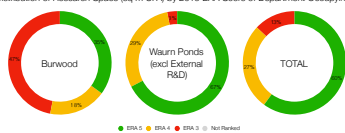
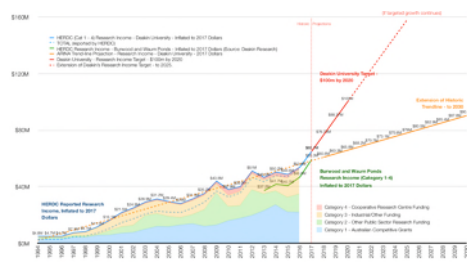
Location:  
**Burwood and Waurn Ponds,  
Victoria**

Project Period:  
**2018 - 2019**

Client:  
**Deakin University**

*ARINA reviewed all research laboratory spaces in the Burwood and Waurn Ponds Campus and assessed its capacity to deliver continued fitness for purpose for laboratory based research over the planning horizon.*

The study entailed a room by room review for all research related spaces including accommodation for HDR and desktop review to correlate various data sources from the university. Relationships between the condition and allocation of space and the ERA rankings of the discipline were produced to highlight investment priorities and potential risks to high impact research activities.





# UNIVERSITY OF WOLLONGONG: CAMPUSES REVIEW



## Campus Space Benchmarking, Identification of Projects and Action Plans

Location:  
**Keiraville and North Wollongong,  
New South Wales**

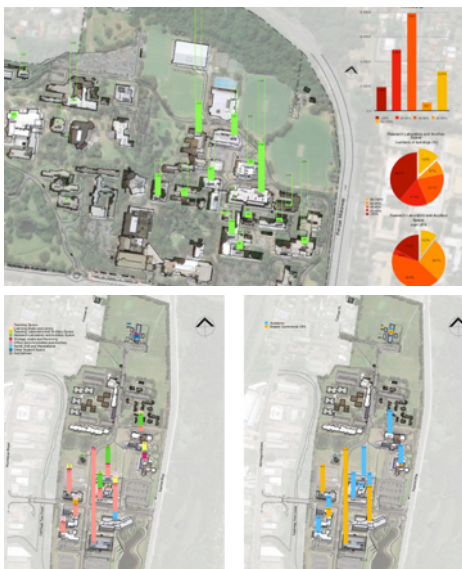
Project Period:  
**2018**

Client:  
**University of Wollongong**

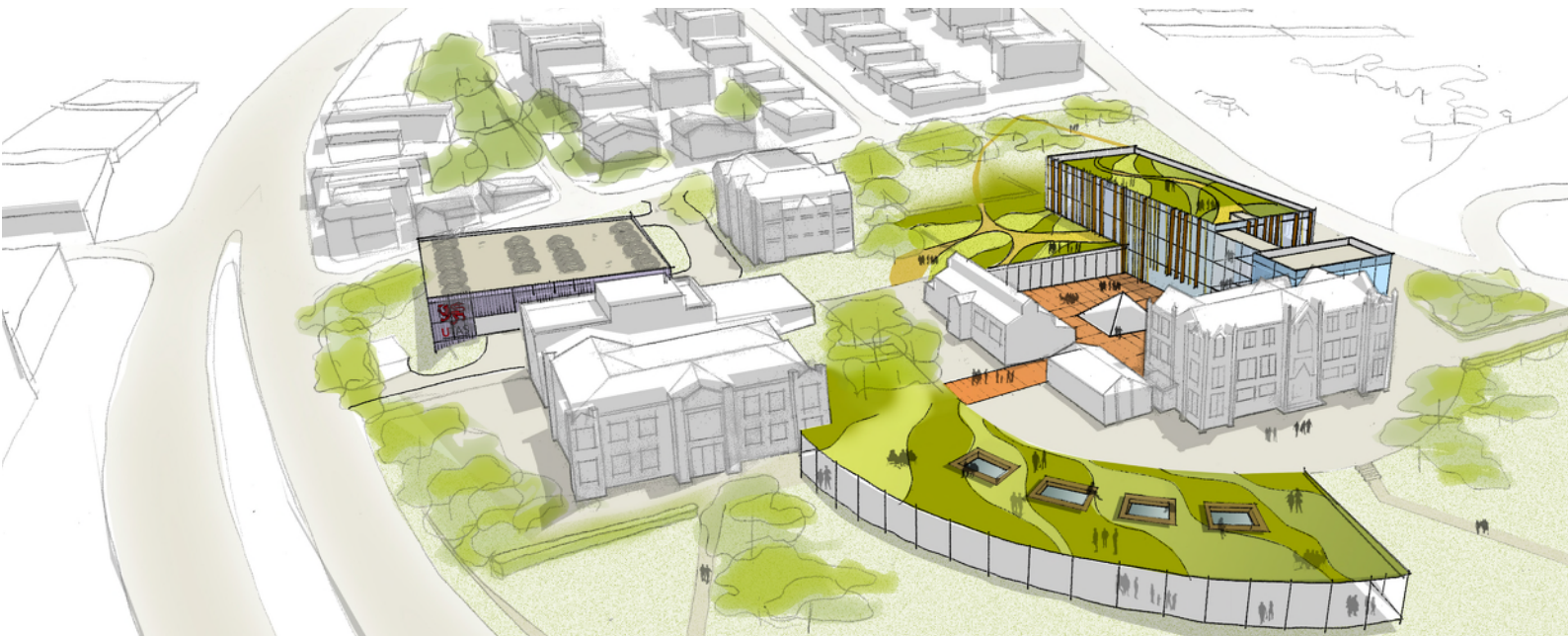
*ARINA carried out a high level campus benchmarking on the Wollongong and Innovation Campuses. ARINA identified current spatial strengths and shortfalls and led to a series of project propositions to improve campus planning efficiency.*

The brief and high level desktop review draws on ARINA's ability to link comparisons between space data and student and staff numbers, and benchmark spatial allocations across different categories of campus space.

ARINA delivered a strong evidence based assessment surrounding the functional allocation of space between the two campuses. The project draws references to ARINA's in-house database of benchmarks, comparing the University's performance in selected space types against other Australian Universities. By identifying broad strengths and shortfalls across different campus space categories, ARINA was able to devise a series of action priorities for the University to plan and manage space use, and improve operational outcomes.



# UNIVERSITY OF TASMANIA: DOMAIN CAMPUS FEASIBILITY STUDY



*EFTSL/FTE review and projections, Space demand projections, Urban Design and Vision Study, Options and Staging Delivery Analysis.*

Location:  
**Hobart, Tasmania**

Project Period:  
**2018**

Client:  
**University of Tasmania**



*ARINA undertook a full scenario analysis where Arts, Law and Education EFTSL are relocated to the Domain Campus.*

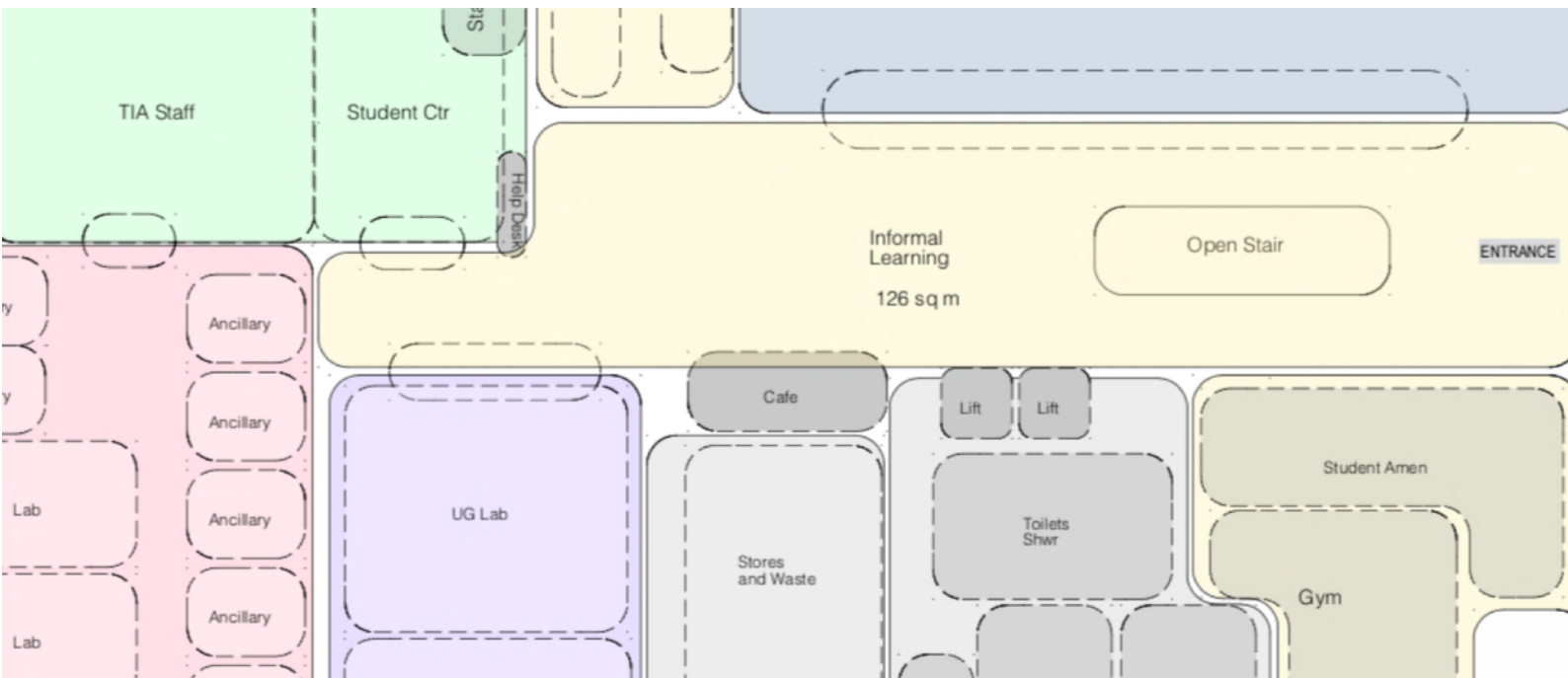
Underpinning this physical planning of this scenario was a review of the University's growth targets against historic performance and demographic trends. A series of staged urban design options were developed to manage the delivery of spaces as student population grew.

All available buildings were utilised and ARINA provided a functional split between buildings based on the suitability of the building.

The physical planning also introduced new buildings and extensions in ways that complemented the historic fabric of the site. It also addresses car-parking, accessibility, staging, additional space demand, and requirements for university open space.



# UNIVERSITY OF TASMANIA: WEST PARK CAMPUS ACADEMIC BUILDING



## *Functional Brief Review, Space Modelling*

Location:  
**Launceston, Tasmania**

Project Period:  
**2018**

Client:  
**University of Tasmania**

*ARINA provided assistance to the review of the West Park masterplanning scheme in 2018 and documented functional requirements for the commissioning of design consultants.*

ARINA worked within a compressed timeframe of six weeks for an outcome which would normally take six to eight months.

ARINA assembled the functional requirements brief for the teaching and research building so that it is fit for purpose, can support the target number of students and staff over the planning horizon, and is capable of being delivered within the allocated budget.

ARINA developed an accommodation schedule and functional blocking and stacking diagrams for the building.

A series of models were developed to inform and verify the quantity and type of spaces required. Models included contact hours, library and learning space needs, research laboratory needs (based on research FTE and EFTSL), and the application of the University's space standards for office allocation.

Further requests and substantiation for research laboratory spaces were collected from the user groups. These requests were consolidated as a package for the commissioning design consultant team.

# AUSTRALIAN NATIONAL UNIVERSITY: MASTERPLAN SCOPING STUDY



*Campus Space and Population Modelling, Teaching Space Review, Research Space Benchmarking, Space Gap-Analysis, Database Review.*

Location:  
**Acton, ACT**

Project Period:  
**2017**

Client:  
**Australian National University**

*ARINA was engaged to provide an analysis of the existing campus and ANU physical requirements preparatory to the masterplan.*

This project draws on ARINA's highly developed capacity to download and interpret data from various university sources, including Archibus and Syllabus Plus and our capacity to analyse and process space and student/staff load data.

ARINA undertook a rigorous interrogation of existing space which was verified and adjusted by site inspections ( data including site verification and realignment). At an early stage, ARINA has been able to identify missing components in the ANU dataset and take effective steps to overcome them.

ARINA then carried out a detailed gap analysis of actual existing space versus protected needs. Space was analysed by the benchmarking of space subcategories with other Australian Universities as well as providing a detailed space model derived from the breakdown of EFTSL and FTE.

ARINA prepared a space report consisting of a detailed gap analysis in existing space needs, student projection modelling and future space needs, and a high level action plan for the disposal or renewal of current building assets.





# MURDOCH UNIVERSITY:

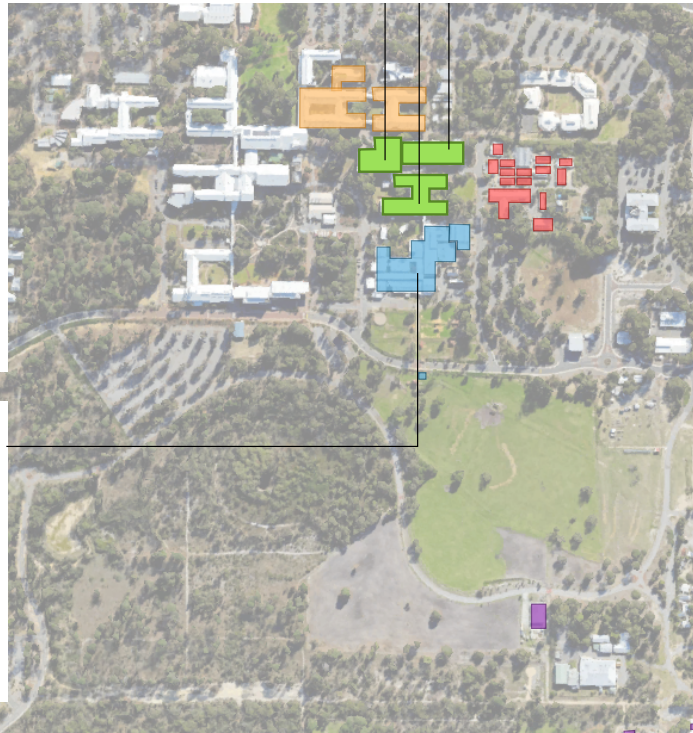
## VETERINARY LIFE SCIENCE DEVELOPMENT PLAN

### Agricultural Biotechnology Centre (WABC/SABC)

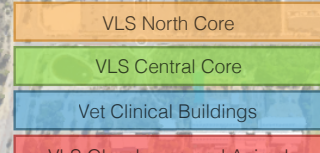
- Location of core, fire stairs and services not suitable for large capacity teaching rooms or superlabs.
- Current teaching labs are at maximum feasible sizes due to column spacing.
- Not recommended for large scale adaptation due to location of existing research institute and location of vertical circulation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



# UNIVERSITY OF TASMANIA: INVERESK SPACE MASTERPLAN AND CONCEPT DESIGN



*Spatial Planning and Development Scenario Modelling (10 Years), Masterplan, Concept Design, Architectural Vision and Visualisation, City Deal Assistance*

Location:  
**Launceston, Tasmania**

Project Period:  
**2016**

Client:  
**The University of Tasmania**

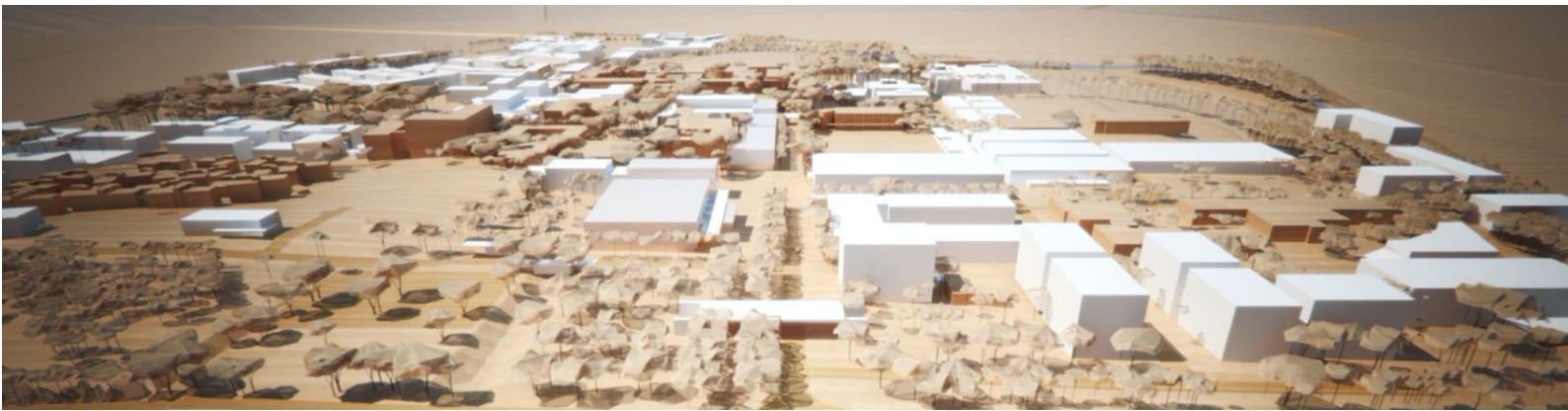
*ARINA was commissioned to provide a concept masterplan and business case assistance for a city deal proposition between the University of Tasmania, Launceston City Council and the State Government. ARINA carried out briefing, feasibility modelling, documentation and visualisation for submission to the Tasmanian Government.*



Fitting in the forecasted student load within the budgetary constraints was crucial for the success of the project. A series of accommodation models and benchmarking comparisons were conducted by ARINA to validate a reduction in current footprint so that relocation of STEM functions into the site can be envisaged. The project was carried out within a short inception to completion timeframe of two months, which included delivery briefing, concept design, and presentation. This was possible by drawing on ARINA's breath of experience to develop higher level conclusions and suggest outcomes in an accelerated timeframe.



# UNIVERSITY OF CANBERRA: URBAN PLAN



*Spatial Analysis, Student Projections, Space Projections, Car Parking Study, Accommodation Review*

Location:  
**Bruce, ACT**

Project Period:  
**2016**

Client:  
**University of Canberra**

*ARINA's Urban Plan has been developed to depict a scenario for the development of the University Campus over the 10 years to 2024.*

The plan covers an approximate overall campus area of 120 ha.

The plan aims to accommodate all known current and future proposals, both academic and non-academic. Briefings and consultations have taken place with representatives of all key proponents of various development proposals on the campus. The planning process also included consultation with representative stakeholder groups from the University Community.

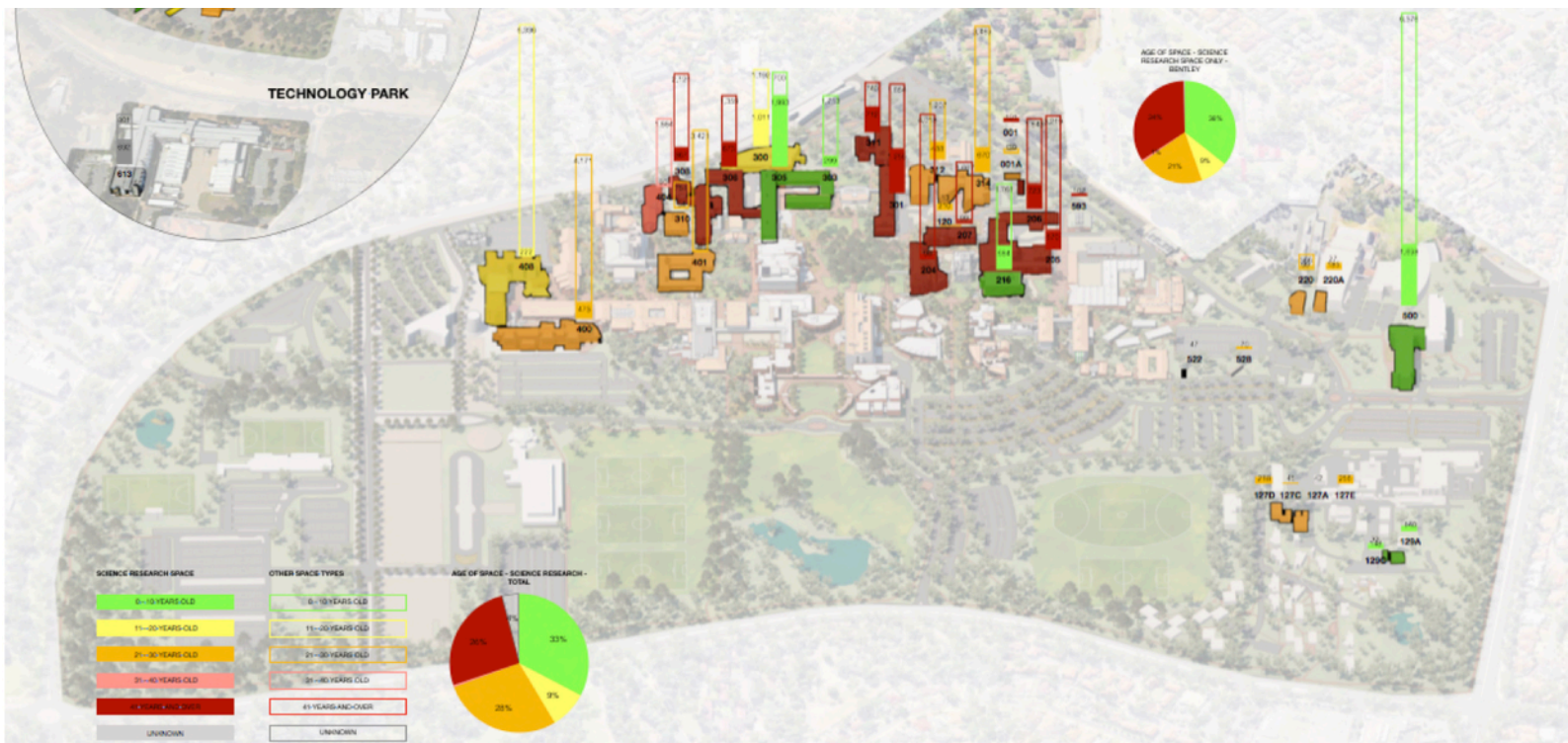
Overall circulation accommodation distribution and spatial networks were explored and defined. Significant ecological and environmental objectives to protect and enhance the landscape character of the campus were articulated.

The academic heartland of the campus is depicted in a future scenario including proposals for key (spatial compositions) accommodation arrangement. A series of new building projects to effectively serve academic expansion needs into the foreseeable future. ARINA has carried out a significant and detailed exploration of future needs which has underpinned the proposals at all stages.

The conceptual approach explores a 'compact' and efficient academic heartland which retains both the existing valuable landscape character and provides a series of exciting new buildings and spaces as a valued setting for future University life.



# 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.





# UNIVERSITY OF TASMANIA: SOUTHERN CAMPUSES REVITALISATION AND ACTIVATION PROJECT



## *Campus Masterplanning, Campus Consolidation*

Location:  
**Sandy Bay, Tasmania**

Project Period:  
**2014 - 2015**

Client:  
**University of Tasmania**

*ARINA was commissioned to provide a comprehensive review of existing spatial requirements for the Hobart and Sandy Bay campuses of the University of Tasmania (UTAS) and to develop a space Masterplan for consolidating the university.*

The project includes five interrelated sub-projects across a wide range of spaces, including libraries, laboratories, teaching space, learning spaces and offices.

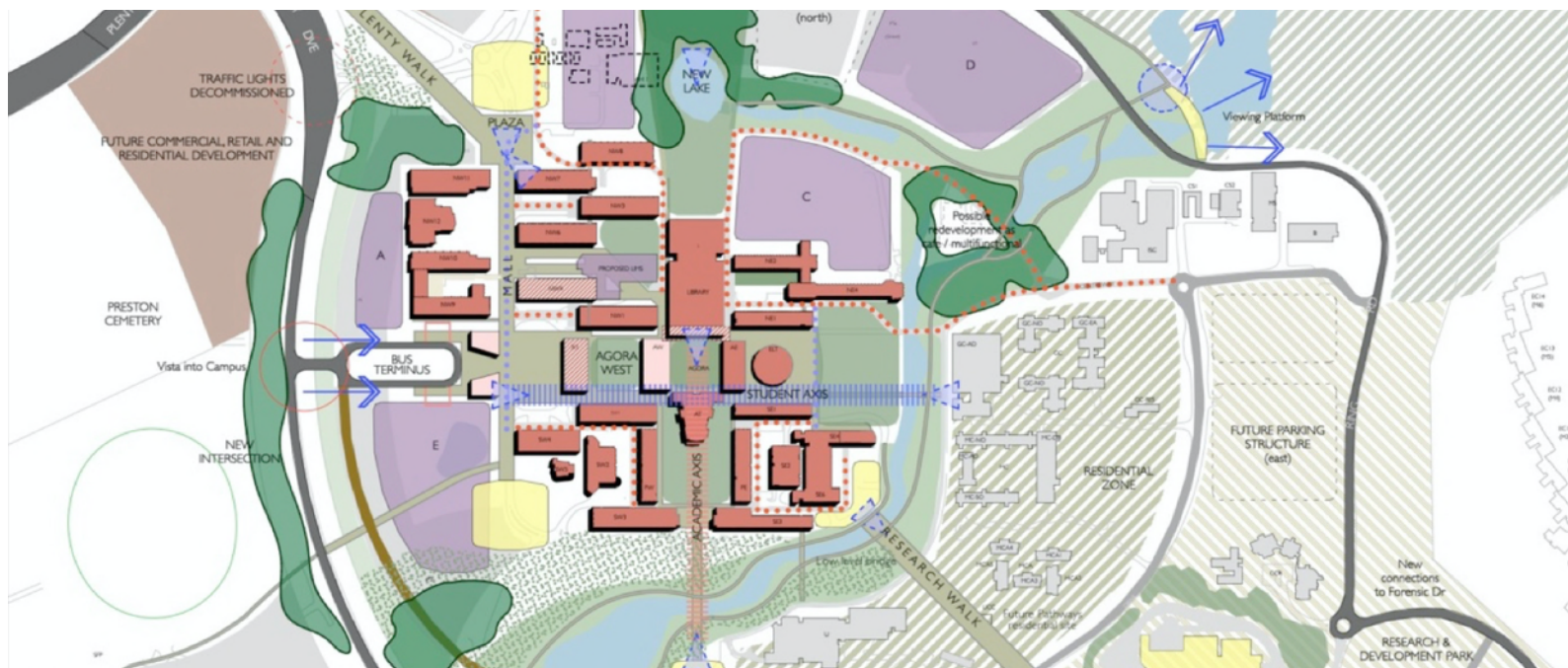
The objective of the projects in unison was to densify the campus core by over 1,000 EFTSL. This consolidation allowed for the decommissioning of some of the most aged academic buildings in the campus. The decommissioned stock of building were difficult to access from the campus core because of the topography of the site.

ARINA advised on space targets, pedagogical requirements and master planning options, as well as providing guidance on sound space management principles such as accommodation and intensification of teaching space usage.

ARINA designed and delivered on the first phase of the project which included the Tasmania School of Business and Economic as well as two additional projects to rationalise library storage and increase the amount of learning space in the library.



# LA TROBE UNIVERSITY: MASTERPLAN



*Masterplan Framework Document (LTUBMP) for its Bundoora and Bendigo Campuses*

Location:  
**Bundoora and Bendigo, Victoria**

Project Period:  
**2009**

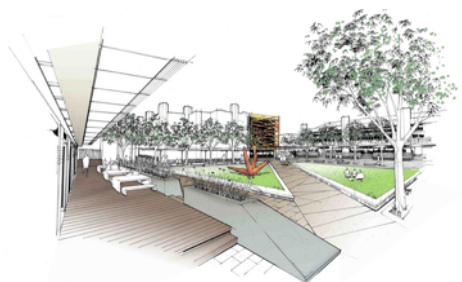
Client:  
**La Trobe University**

*La Trobe University commissioned ARINA to prepare a Masterplan Framework Document for its Bundoora Campus to integrate existing studies and advice and to interpret and transform its strategic plan into a physical plan.*

The aim was to allow La Trobe to use the existing strengths of the campus to leverage capital expenditure and develop non-core land in a sustainable way to provide amenity and a financial return.

Using a triple bottom line assessment of outcomes: financial, social and environmental, ARINA worked with the University to develop medium to long-term (10 plus years) capital development strategies, space master plans and a program of rolling refurbishment.

ARINA envisioned: a new public transport hub at the western end of the student axis; the transformation of Science Drive into a continuous pedestrian link to the tram stop; and, the creation of a new gateway to the campus on Plenty Road. The informal student space in the Agora at the heart of the campus was expanded west into the Thomas Cherry courtyard and provided a 'hawker' style food court.





# UNSW ASIA: GREENFIELD CAMPUS



*Campus Masterplanning, Consultant Selection, Competition Management, and Design Management: (Architect: KHA)*

Location:  
**Singapore**

Project Period:  
**2006 - 2008**

Client:  
**University of New South Wales**

*University of New South Wales Asia was to be the first wholly-owned tertiary teaching institution to be established overseas by an Australian University.*

On a green field site of approximately 22.0 hectares, the Changi Campus was designed to occupy only half the space of an average Australian university with 14.8 hectares of the site identified for academic functions. Of the 15,000 students, 70% were to be from overseas and up to 3,700 people were to live on campus.

The essence of University of New South Wales is 'Diversity, Creativity and Community' and, in response to this, the Changi Campus framework masterplan was designed to encourage and facilitate interaction, and not be architecturally deterministic or monolithic. Freedom of movement and action were to be encouraged across the campus for students, staff and the surrounding community.







PROJECTS  
SCIENCE AND TECHNOLOGY



**O**ne 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.

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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

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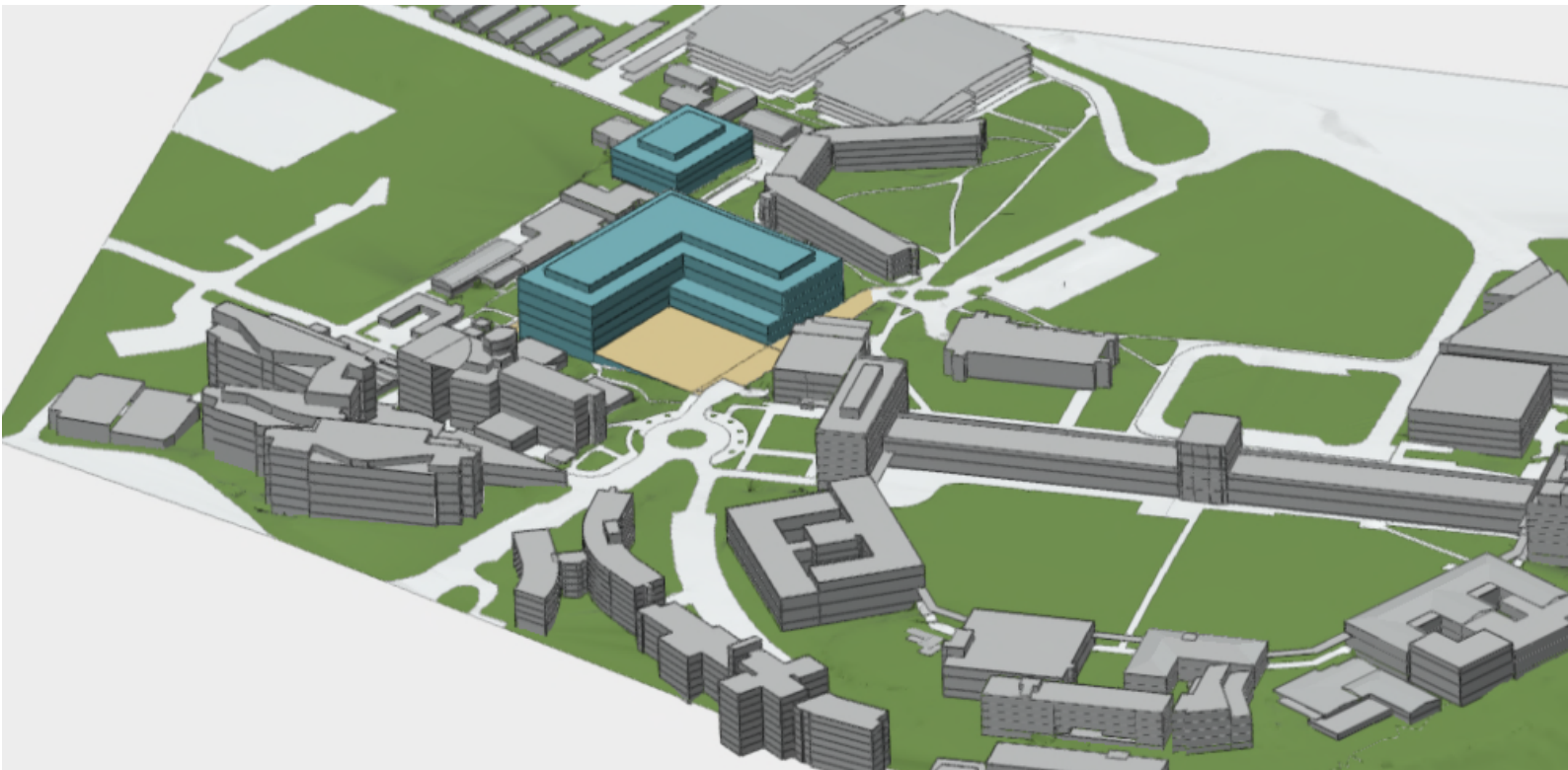
Benchmarking and Exemplar  
Reporting

## **PROJECTS:**

### **SCIENCE AND TECHNOLOGY**

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UNSW Wallace Wurth:	32
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# UQ: SCIENCE PRECINCT BUILDING: GROW ACCOMMODATION BRIEFING AND SPACE PLANNING



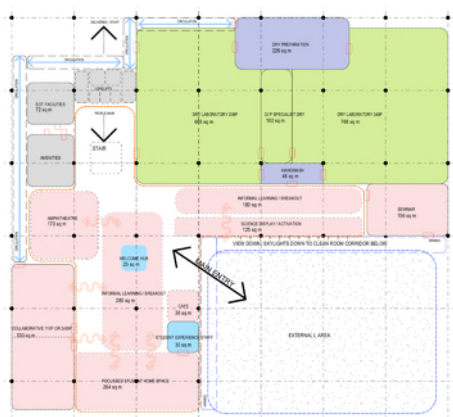
*Project Briefing, Space Planning, Benchmarking, Stakeholder Consultation, Specialist Laboratory Advice, Design Competition Briefing and Management*

Location:  
**St Lucia, Queensland**

Project Period:  
**2019**

Client:  
**University of Queensland**

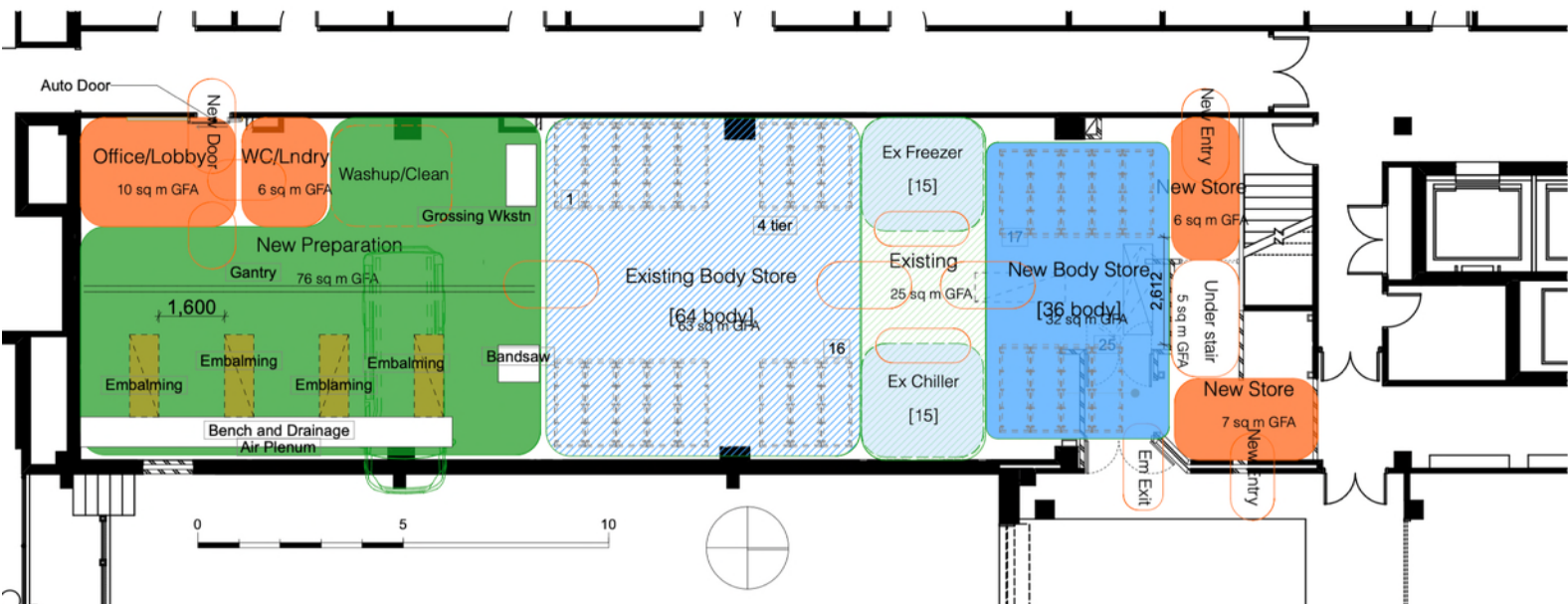
*ARINA was : to provide the project briefing and definition for a discipline blind science teaching and research laboratory facility, comprising; an analytical facility, teaching superlabs, learning spaces areas for industry engagement, and PC2/PC3 research laboratories.*



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**

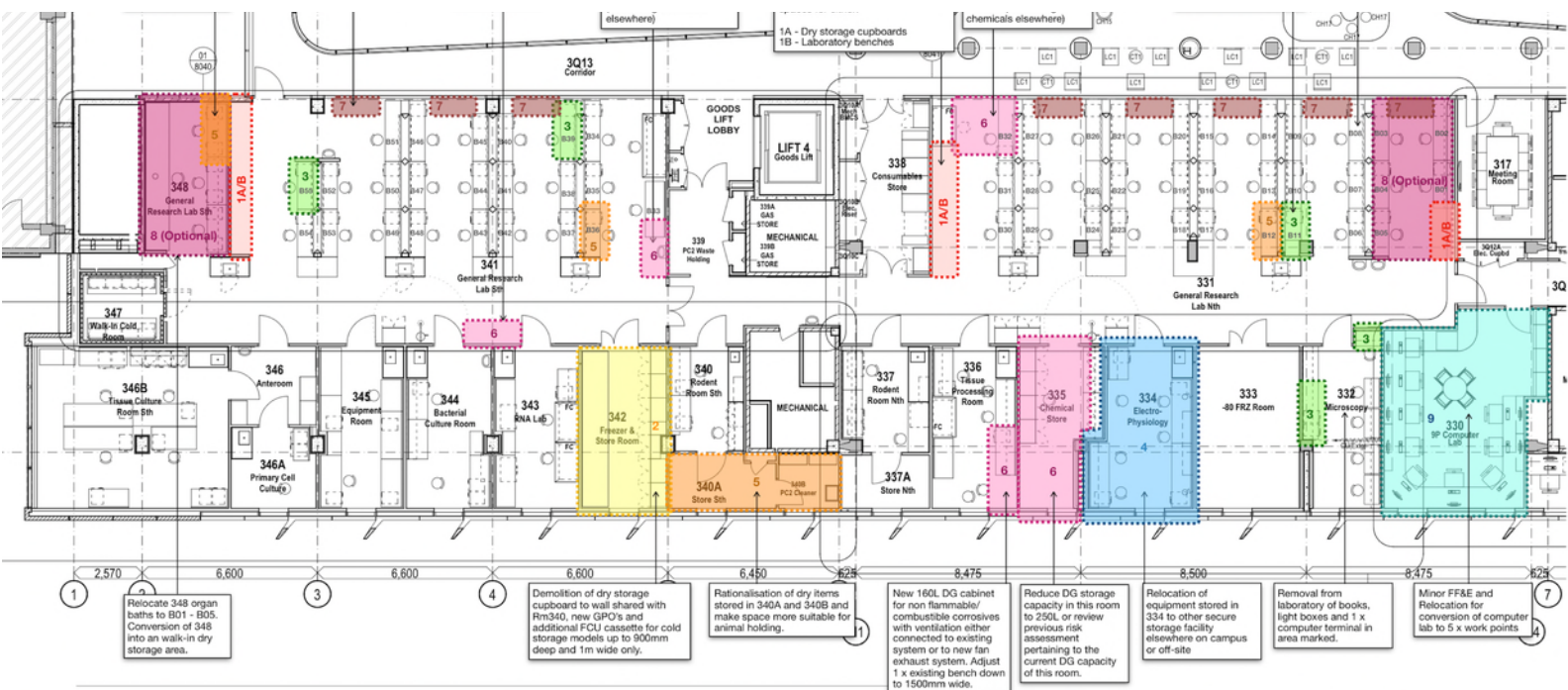
Client:  
**University of New South Wales**

*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 BUILDING



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

Location:  
**Hobart, Tasmania**

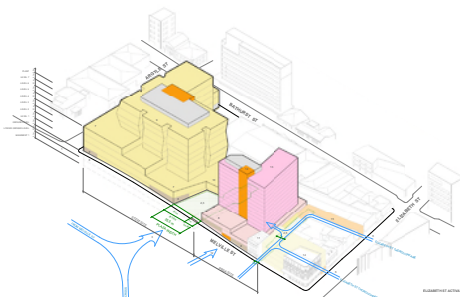
Project Period:  
**2016 - 2019**

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.



PROJECTS  
ACADEMIC FACILITIES





**A**cademic pedagogy is constantly evolving to accommodate new technologies and increasing expectations of staff and students. Understanding contemporary methods via benchmark and exemplar studies gives ARINA a head start during consultation with key academic personnel.

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Consultation

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Concept Planning

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Libraries

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Teaching Suites

---

Laboratory Teaching

---

Harvard Theatres

---

Active Learning Spaces

---

Informal Learning Environments

---

Social Spaces

---

Audio Visual Advice and Specification

---

Design, Documentation and Delivery Projects

---

Benchmarking

---

Exemplar Studies and Research

## PROJECTS

### ACADEMIC FACILITIES

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Murdoch University:

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Australian Catholic University:

North Sydney Library  
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University of Western Australia:

School of Indigenous Studies  
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City of Perth:

Library  
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University of Tasmania:

Tasmanian School of Business and Economics (TSBE)  
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Charles Darwin University:

Australian Centre for Indigenous Knowledges  
47

and Education (ACIKE)  
47

University of Wollongong:

Hope Theatre Refurbishment  
48



# 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.



# CITY OF FREMANTLE:

## LIBRARY



*Briefing and Library planning (Architects: Kerry Hill Architects)*

*Location:*  
**Fremantle, Western Australia**

*Project Period:*  
**2017**

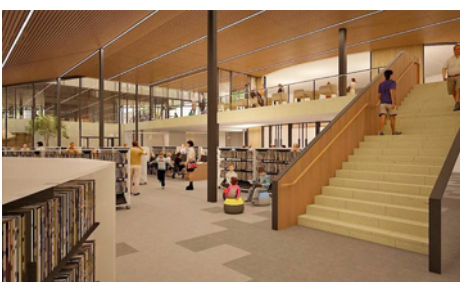
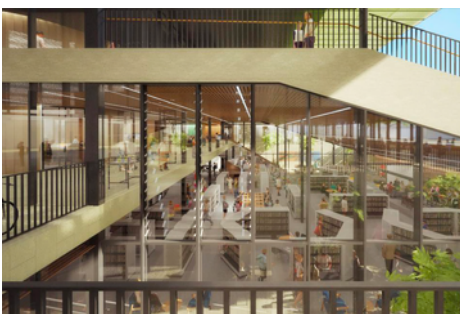
*Client:*  
**City of Fremantle**

*ARINA provided briefing for a public library that is a new civic heart for Fremantle.*

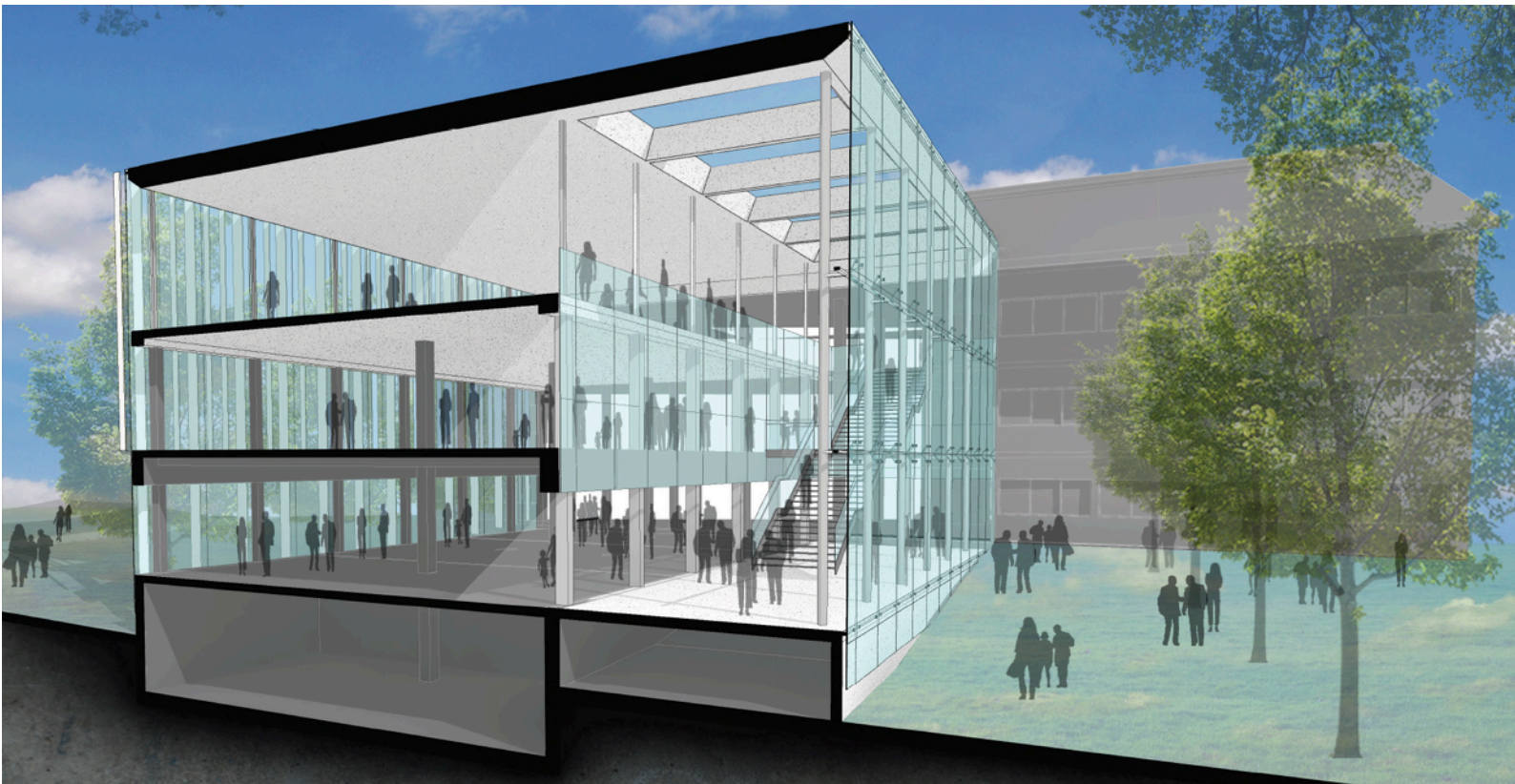
ARINA also worked constructively with the design team to review the concept and schematic design, and formulate planning solutions to meet the requirements of the brief.

The new City of Fremantle Library is double the size of the old one with a huge range of books, computers, a state of the art history centre, a library lounge and outdoor courtyards.

The building will replace the current International-style council administration facilities, public library and the Fremantle Visitor Centre.



# MURDOCH UNIVERSITY: LIBRARY



## *Library Masterplanning*

Location:  
**Murdoch, Western Australia**

Project Period:  
**2017**

Client:  
**Murdoch University**

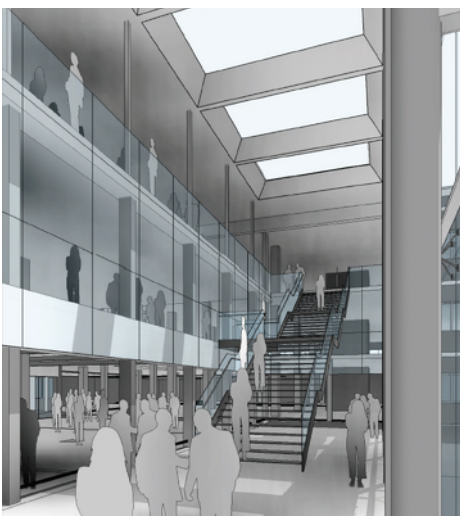
*ARINA's brief was to attract and retain students through a revitalisation of the Murdoch University library.*

This was achieved through a Masterplan which focused on modernising the library's learning facilities and creating spaces within the library responsive to the digital age.

Improving the library's function as a knowledge hub and making allowances for future growth was to be achieved through the revitalisation and upgrade of an ageing building fabric. In addition to this ARINA was engaged to rationalise the library collections, improve the condition of the book storage, design a re-location of staff amenities and reduce the library's energy consumption.

The implementation of a full services upgrade involved:

- Implementing a structural review
- Review of lift services
- Improvement of acoustic absorption
- Improvement of circulation and way-finding
- Improved cafe location
- Increased space to support group learning.





# AUSTRALIAN CATHOLIC UNIVERSITY: NORTH SYDNEY LIBRARY



*Library Masterplanning, Stakeholder Consultation, Library Space Benchmarking, Learning Seat Target, Space Needs Modelling*

Location:  
**North Sydney, New South Wales**

Project Period:  
**2017**

Client:  
**Australian Catholic University**



*ARINA provided briefing and project definition for a library to accommodate the projected number of students at ACU's North Sydney Campus up to 2030.*

Following on from a spatial masterplanning exercise to accommodate growth at ACU's North Sydney Campus, Together with ACU library staff, ARINA carried out masterplanning and project definition for the relocation and enlargement of the library.

The project drew on ARINA's ability to benchmark other Australian Academic Libraries, and reference the CAUL database which is commonly understood by Academic Librarians.

ARINA advised on learning seat targets and undertook a rigorous examination of the library's shelving needs. A series of iterations of blocking and stacking diagrams were produced throughout, to promote effective consultation with library staff and stakeholder.

ARINA provided an outline on design requirements covering facade aesthetics, main frontages, circulation, shelving system, returns methodology, staff size, separation of 24hr access from general access, and requirements for special collections.



# UNIVERSITY OF WESTERN AUSTRALIA: SCHOOL OF INDIGENOUS STUDIES



*Engagement with Indigenous user groups. Understanding of design and planning principles surrounding buildings and sites of indigenous importance, including connection and relationship to the ground plane. (Architect Kerry Hill Architects)*

## **Location:**

Crawley Campus, Western Australia

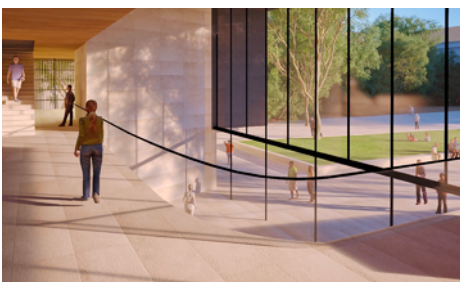
Project Period:

**2017**

Client:

**University of Western Australia**

*ARINA was commissioned to assist the design team on consultation and room data sheet on a new home base for the School of Indigenous Studies at UWA, and demonstrates our collaboration history with KHA.*





# CITY OF PERTH: LIBRARY



*Briefing, Library Planning in conjunction with Kerry Hill Architects*

Location:  
**Perth, Western Australia**

Project Period:  
**2016**

Client:  
**City of Perth**

*ARINA briefed the new City of Perth Central Library, and worked with Kerry Hill Architects on Library Planning for the building.*

Libraries are currently transitioning through a generational change and ARINA's experience assisted the stakeholders conceptualise a new paradigm of library suitable for the 21st Century.

The former Perth City circulating library with a vast collection of books was re-conceptualised into to a four level, 2,800 sqm UFA library which focused on interpretation of knowledge and learning. The volume collection was more than halved and designed to accommodate a further decrease over time.

Other facilities included an auditorium, AV information wall, ground floor cafe and quick access terminals, history library (in process of being digitised), children's library with capacity for storytelling, young adult library with study space, group study areas and gaming facilities.

Awards:

- Australian Institute of Architects (WA), George Temple Poole Award, 2016.
- Australian Institute of Architects (WA), Jeffrey Howlett Award for Public Architecture, 2016.
- Australian Library and Information Association (ALIA), Australian Library Design Awards, 2017.



# UNIVERSITY OF TASMANIA: TASMANIAN SCHOOL OF BUSINESS AND ECONOMICS (TSBE)



*Briefing, Design and Delivery, Superintendent Services*

Location:  
**Sandy Bay, Tasmania**

Project Period:  
**2014 - 2015**

Client:  
**University of Tasmania**

*Architectural design and delivery of staff offices and new teaching and learning spaces including TEAL and Harvard Lecture Theatres.*

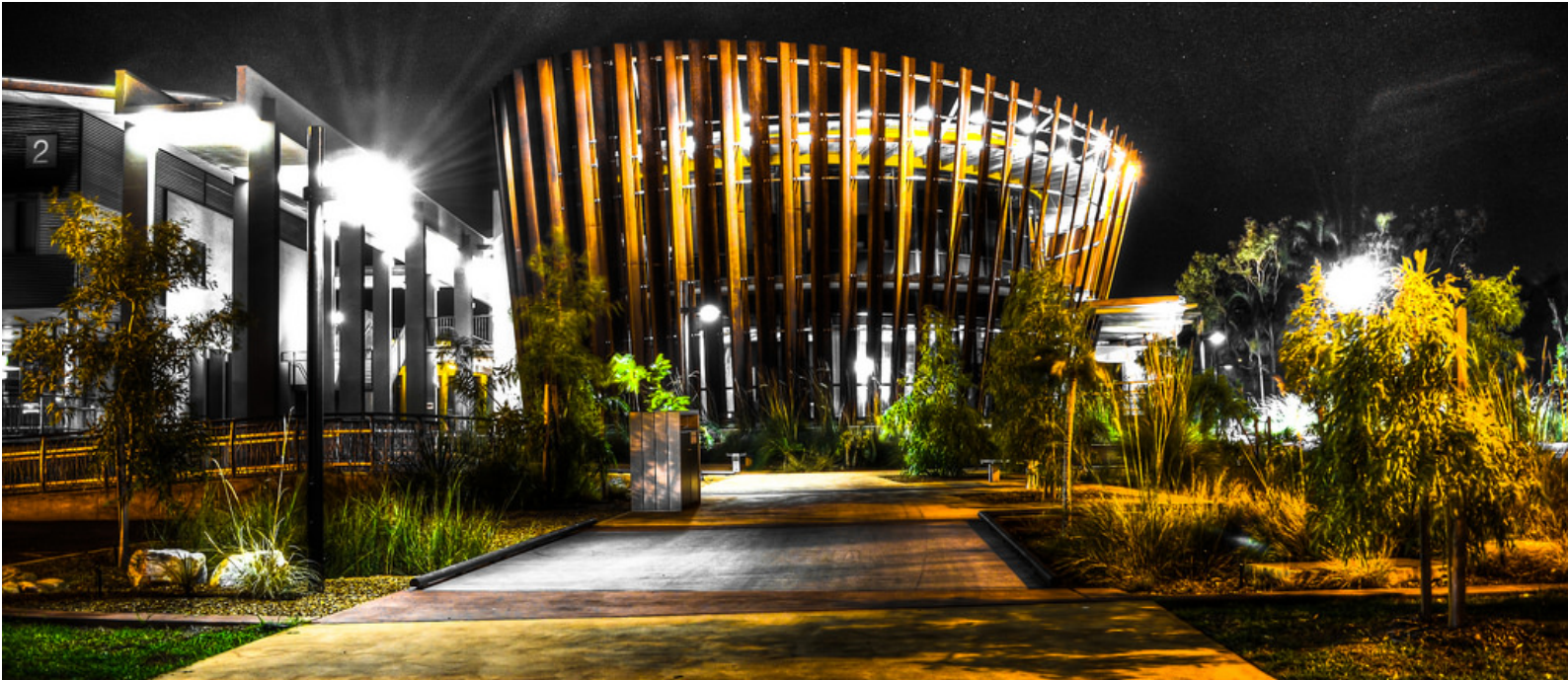
A refurbishment project to relocate TSBE into a building approximately 6,700 sq m GFA. Through increased utilisation of teaching seats and adopting our recommended office space standards, ARINA was able to consolidate the TSBE along with Centrally Managed Learning Spaces into 2,185 sqm UFA and concentrate refurbishment into one wing of the building – approximately 53% of total GFA.

The refurbishment included a new Teal lab, two new Harvard style lecture theatres, a new postgraduate study hub, and a new informal learning commons.





# CHARLES DARWIN UNIVERSITY: AUSTRALIAN CENTRE FOR INDIGENOUS KNOWLEDGES AND EDUCATION (ACIKE)



*Technology Space Briefing and a plan for the outreach program, space needs for indigenous students, staff and education, engagement with stakeholders (Architect in Association: DKJ Projects)*

Location:  
**Casuarina, Northern Territory**

Project Period:  
**2010 - 2012**

Client:  
**Charles Darwin University**



*Together with stakeholders, ARINA wrote the brief for ACIKE. Through meeting with teachers and staff at Bachelor College as well as relevant communities (both local and remote) and their Elders, ARINA worked to provide a plan for outreach programs.*

Two teaching rooms fitted out with appropriate internet facilities were designed to facilitate long distance learning for children in remote communities.

Through combining sensitive landscape and cool outdoor spaces ARINAs aim, together with ACIKE was to engage youth and children into the program through inviting spaces and a welcoming entry building.

# UNIVERSITY OF WOLLONGONG: HOPE THEATRE REFURBISHMENT



*Theatre enlargement and upgrade, Briefing, Design and Delivery*

Location:

**Wollongong, New South Wales**

Project Period:

**2010**

Client:

**University of Wollongong**

*The 464 seat Hope Theatre is Wollongong Universities' largest stepped theatre, accommodating a full range of activities including lectures, distinguished speakers, university forums, graduations and music performances.*



ARINA was commissioned to enlarge the theatre, upgrade its appearance and AV provisions, as well as removing the fly-tower. By utilising a redundant projection booth and mechanical rooms, ARINA was able to add nearly 200 seats at an economical cost. The project was carried out within a tight budget and time limits; all work was completed in less than 3 months, on budget and one week ahead of schedule.

A key component of the refurbishment was the provision of a new stretched fabric ceiling chosen for its economy, the capacity for it to be substantially fabricated off site, its dramatic appearance and acoustic reflectivity while preserving the volume of the existing theatre.

Proof of the success of the acoustic concept is the excellent natural sound and performance of the theatre. The AV and theatrical lighting installation were documented by ARINA in association with the University AV department, and have delivered a venue which is suitable for media events requiring high quality video and sound. Providing large scale video conferencing and also to support a range of cutting edge AV services, including 16:9 projection.



# 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**

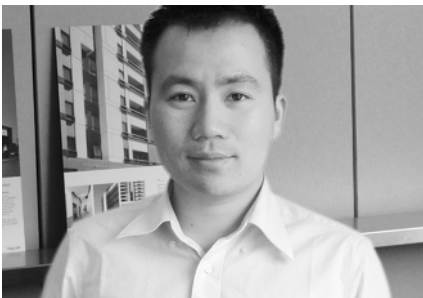
**QUALIFICATION**  
Bachelor of Architecture, The University of Adelaide

**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.



**Jessica Watson**

**TITLE**  
**ARCHITECTURAL GRADUATE**

**QUALIFICATION**  
Bachelor of Architecture, (Dist.) The University of New South Wales  
Master of Fine Arts and Applied Crafts, Majoring in Textile Art, Gothenburg University, Sweden

- RECENT RELEVANT PROJECTS**
- Griffith University Spatial Analysis and Preliminary Design
  - University of Queensland St Lucia Space Management Plan
  - University of Tasmania STEM Building

Jessica has contributed to a broad range of Higher Education and Institutional projects utilising skills in community engagement, research and documentation, working on indigenous housing, project reviews and preliminary design analysis.

Jessica sits on the board of Barrenjoey Montessori School and was instrumental in the schools' attainment of premises accreditation.

Between 1996 and 2011 Jessica lived in Gothenburg, Sweden where she worked in the arts, exhibition and education sectors. She co-coordinated and designed exhibition spaces for the Swedish Road and Traffic Authority in both Trollhatten and Gothenburg for their 'Noll Vision' program.



