THE UNIVERSITY of ADELAIDE

LEARNING AND TEACHING SPACE TRANSFORMATION VISION 2030

V2 - 2021

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CONTENTS

SUPPORTING DOCUMENTS

This report was directly guided and informed by the following strategic documents and consultant reports. Please follow the links to refer to the documents in detail.

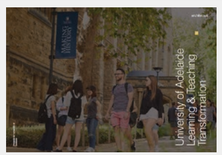
Future Making
University of Adelaide
University of Adelaide Strategic Plan

Pillar Plan: A 21st Century Education for a Growing Community of Learners
University of Adelaide
Pillar plan supporting one of the key pillars of Future Making

Digital Futures
University of Adelaide
Strategic directions for future technology use across the University's operations

New Curriculum Futures
University of Adelaide
Green paper looking at the design of the University's curriculum

Future Directions for Learning, Teaching and Assessment
University of Adelaide
Future directions for the University informed by sector trends and consultation with staff and students



University of Adelaide: Learning and Teaching Transformation
Architectus
Consultant report commissioned to inform the design direction for the University's future learning and teaching spaces

Existing Classrooms
Collaborative Classrooms
Computer Suites
Space Counts
Consultant reports commissioned to inform the University's understanding of its future space requirements and strategies to optimise utilisation and efficiency of existing assets

Teaching Laboratory Study
Arina
Consultant report commissioned to inform University planning for future super labs

EXECUTIVE SUMMARY

The *Learning and Teaching Spaces Transformation Vision 2030* (LTSTV) provides the University of Adelaide with a roadmap for the coming decade to create the spaces it needs to deliver the engaging, innovative and future-facing educational experience it aspires to for its students. Importantly, it will also put the University in a strong competitive position with regards to its future ability to attract and retain students and the highest quality staff.

The LTSTV program commenced in December 2019, before the COVID-19 pandemic had begun to dramatically impact the higher education landscape for all universities and to significantly impact the capacity of institutions to undertake planning based on reliable forward projections. Since the advent of the pandemic, COVID-19 has changed the outlook for student enrolments, necessitated the more widespread adoption of online teaching, and caused the University to re-evaluate its development plans for the North Terrace campus.

An interim LTSTV report was released in September 2020 with the recommendation that a review of student projections and space modelling should take place in 2021 to account for continuing impacts of COVID-19 upon the higher education sector. The review has now taken place and this document has been updated to reflect the current state of the higher education environment.

Importantly, while the University's student projections have altered since the release of the interim LTSTV report, the Learning and Teaching Transformation Vision itself remains keenly relevant, with the pedagogic, space, and design principles underlying the strategy remaining as important in a growth-constrained environment as they were before the COVID-19 pandemic forced a revision of the new space required for growth.

While the LTSTV's emphasis on space requirements is now centred on making our existing spaces work harder and smarter, the need to optimise space usage and improve space quality through the creation of active learning spaces, a digital uplift, and support for mixed cohort learning is as critical as ever in terms of the University's competitive advantage and its ability to deliver on its existing strategic commitment to transform the student learning experience.

The University's Strategic Plan, *Future Making*, outlines an ambitious agenda of educational transformation, with excellence in all aspects of the student experience to be the measure of success.

This agenda is further articulated in the Pillar Plan: *A 21st Century Education for a Growing Community of Learning*, which outlines the transformation required in the University's curriculum and pedagogy in order to make the educational experience more engaging, accessible and relevant to a broader and more diverse range of students.

The transformation in pedagogical practice will see the University move to a continuous process of enhancement and diffusion of active learning pedagogies across the curriculum; a significant change with important implications for space provision and design, as well as for educational practice.

Well-designed physical learning spaces are critical to fostering active, student-centred approaches, with academic staff and students supported by user friendly systems to make active learning a reality. As active learners, students engage in tasks that generate rich, purposeful interactions with relevant academic content, expert educators, student peers, and external stakeholders such as community and industry professionals.

"TEACHING PRACTICE NEEDS TO DRIVE THE SPACE TYPES, NOT THE REVERSE"

Design Sprint Insight

Active learning pedagogies emphasise opportunities for dialogue, feedback, reflection, and learning community; they include project-based, design-based and case-based learning, inquiry learning, collaborative learning, and work-integrated approaches.

Active learning for our on-campus students is blended, with rich face-to-face interactions supported by digital content and online activity; for our remote students it takes place fully online. Our goal is to embed active learning as default both for our campus-based and remote students. Increasingly, we will provide flexibility for local students to choose between face-to-face and online participation in classes, where both modes can be provided with the same quality of student learning experience and the class does not require practical, hands-on activity. At the same time, we increasingly will enable campus-based and remote students to learn together in the same classes.

Active learning pedagogies typically require more space per student than didactic modes of teaching as well as different space configurations, because of the need to accommodate varied activity-sequences and participatory, collaborative learning. Design standards for best practice active learning spaces include flat floor facilities with flexible furniture configurations, state of the art digital technology (both for on-campus students participating in person and remote students participating online, where there is mixed-cohort learning), and ancillary spaces for informal learning and social connection.

The University's existing stock of learning and teaching space is overwhelmingly designed to accommodate (and encourage) didactic pedagogies, with room size, seating design, and tiered flooring all geared to support less active approaches to learning. While the University will continue to require some spaces of this type, e.g. for some large format lectures, in general its future requirements are for very different types of spaces.

Therefore, evolution in pedagogical practice at the University must be matched by a similar evolution in the quantity, quality and design of its learning and teaching spaces to appropriately accommodate the new modes of teaching, and to achieve improved outcomes in the student educational experience.

This experience can be further positively influenced through consideration of the campus layout and configuration of the University's learning and teaching spaces. Integration of these spaces into a purpose-designed learning and teaching precinct, with a mix of formal, informal and ancillary spaces, has been shown at other universities (such as Monash) to boost students' sense of social connection and belonging, delivering improved student attraction and retention, and stronger satisfaction with the learning experience, particularly for first year students.

The LTSTV program conducted extensive consultation, data-modelling and sector environment scanning to inform an assessment of the best practice design standards required to support accelerated transition to active learning in the University's physical, on-campus spaces. It also conducted a review of its forecast future learning and teaching space needs (quantity as well as type) and assessed its current stock of teaching spaces.

The program is sponsored by the DVC&VP (Academic) with a governance structure consisting of a Steering Committee (SC) with strong academic representation and two advisory groups: the Academic Working Group (AWG) and the Data Modelling Group (DMG).

This report outlines the program's findings and highlights other considerations and next steps that will assist the University to implement the vision for the future of its learning and teaching spaces.

Summary of findings and recommendations

The principal findings of the *Learning and Teaching Spaces Transformation Vision 2030* are that the following will be required to accommodate the University's curriculum-wide transition to active learning:

1. Refurbishment of existing spaces

- Active learning pedagogies require significantly different space configurations and allowances per student than the traditional modes of teaching that the University's existing spaces are principally designed to support.
- In order to enable the pedagogical shift to active learning across the curriculum, the University will require fewer of its didactic teaching spaces and have a corresponding need for more spaces suitable for active, collaborative learning.
- The University's existing stock of learning and teaching space will require refurbishment and digital uplift in order to foster and accommodate the curriculum-wide transition to active learning pedagogies already underway.
- A program of refurbishment works will deliver purpose-designed spaces informed by the best-practice principles of learning space design and enable the University to transition to active learning across the entire curriculum.
- This program will be required regardless of the impact that COVID-19 has on the University's student growth projections, as it will be necessary to ensure the high-quality of the existing student cohort experience and outcomes.
- The refurbishment schedule will need to take the timeline for educational change and available funding into account, enabling the conversion of spaces to match the learning and teaching shift as closely as possible.

2. Operational changes to improve space utilisation

- In forecasting the University's future space requirements during 2020, a number of different operational scenarios were modelled to understand the impact that current operating practices have for future space projections.
- The 2020 modelling showed that the University can optimise the efficient usage of its existing learning and teaching spaces, and reduce its overall future space needs by implementing improvements to its timetabling process and, longer-term, adopting an extension of its core teaching hours.
- These operational changes would significantly improve space efficiency and reduce the future requirement for new space by maximising the utilisation of the University's existing assets and minimising the overall footprint of built space, with its attendant operational and capital costs.

3. Opportunity to create a learning and teaching precinct

- The need to undertake a refurbishment program for its existing spaces presents the University with an opportunity to enhance the existing learning and teaching precinct on the North Terrace campus.
- This would assist the University to advance a strongly competitive position in an already highly contested higher education environment.
- Longer term, a precinct specifically designed to cater to the needs of the University's first year cohort would deliver the most beneficial outcomes in terms of the student experience and provide a focal point for the University's renewed campus activation programs, re-energising the on-campus educational experience, and playing a leading role in improving students' sense of engagement and belonging.
- It would also provide a setting for advanced pedagogical research and deliver a variety of shared spaces capable of supporting cultural change at the nexus between learning, teaching, research, industry and the community.

4. Future requirement for new space

- Based on the current student load, the University has an adequate space footprint, however, to meet the ongoing transition to active learning its existing didactic spaces will need to be converted to active learning spaces. Those rated as being in poor or adequate condition will require digital uplift and refurbishment.
- The University's support for Mixed Cohort Learning (MCL) has emerged in response to the COVID-19 pandemic and enables the simultaneous delivery of classes to face-to-face and online students. It reflects the need to adapt modes of teaching to support students regardless of their physical location. A pilot is currently underway and will inform future planning.
- The increase in live-streaming of online lectures will require the development of 'presentation studios', which require significantly less space than live-streaming from a large lecture theatre.
- The amount of new space required will need ongoing assessment and review as it will be influenced by the efficiency gains resulting from operational changes, timetabling improvements and updated student growth projections — currently in a state of flux owing to COVID-19.

Future review

In outlining a vision for the University's learning and teaching space needs over the next nine years, this report should be viewed as a living document that must remain agile and responsive to future needs, opportunities, and constraints as they emerge and be updated annually.

As noted above, the University has already encountered a major game-changer during the drafting of this report in the form of the COVID-19 pandemic and its dramatic impacts for the higher education sector, the implications of which will continue to unfold over the forthcoming period.

Whilst by no means over, this particular event has highlighted the importance of agility and responsiveness in University planning and operations, and has emphasised the vital role of flexibility in enabling active learning in fluid circumstances.

The major findings and recommendations of this report therefore should be read in the context of a changing and uncertain higher education environment. Their broad directions, however, provide the University with a roadmap towards achieving its desired goals of improving competitiveness, and student experience and outcomes through the evolution of its learning and teaching practices, and the spaces designed to support these.

LTSTV Timeline

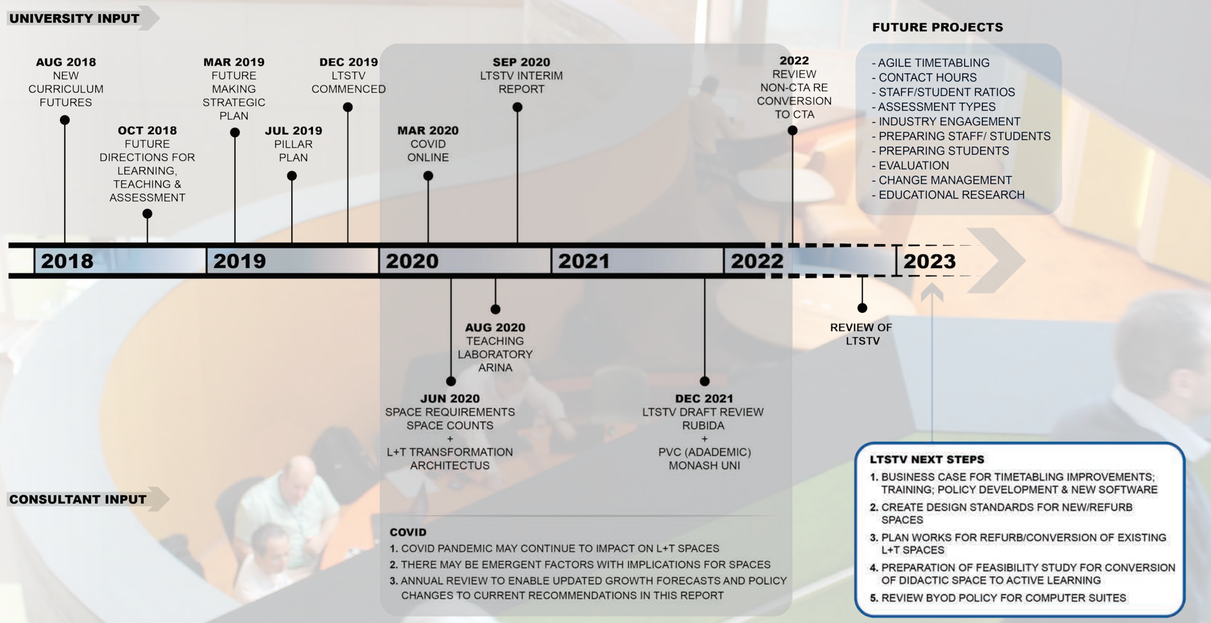


Photo of Informal space at Monash University, visited during the Study Tour.

1. LEARNING AND TEACHING STRATEGY

The University's learning and teaching strategy is guided by its institutional strategy, *Future Making*, and its Pillar Plan: *A 21st Century Education for a Growing Community of Learners*.

Future Making commits the University to an ambitious agenda of educational transformation, with excellence in all aspects of the student learning experience to be the measure of success.

The Pillar Plan aims to deliver a truly great future-facing education and establishes relevance, inclusion, flexibility, employability and quality as the University's guiding principles for curriculum and pedagogy.

The strategic objectives articulated in the Pillar Plan, with adjustments made for the post-COVID-19 environment, will inform the design of the University's new and refurbished learning and teaching spaces. Those with direct implications for space design are summarised below.

1. Re-profiled Coursework and Continuing Professional Education offer

- The University's education portfolio will include more postgraduate coursework programs and an extensive new Continuing Professional Education offer including micro-credentials and short courses. Increasingly, stackable micro-credentials will provide flexible pathways through short courses and award programs alike.
- While a substantial, fully online offering tailored to these cohorts is planned, on-campus blended mode delivery including increased intensive or 'block' mode teaching will also grow for these cohorts as well as for undergraduates. The University also will use its campuses to offer more educational opportunities in collaboration with external partners.

2. Increased industry engagement

- The close nexus between education and research will remain fundamental to a 21st century Adelaide education. At the same time, the University will strengthen the nexus between education and industry.
- The curriculum across all programs and courses will be richly industry-engaged, paying special attention to alignments with the University's Industry Engagement Priorities.
- The University will create many more work-integrated, experiential learning opportunities to engage students with real-world projects and assessments from the outset of their studies, and will involve industry and community routinely as partners in curriculum design and delivery.

3. Accelerated transition to active and collaborative learning

- The University will prioritise high-engagement, active and collaborative face-to-face learning experiences for its campus-based students, supported by digital content and online activities. Digital approaches to content delivery will use best-practices in multimedia content design and online interactive lecturing. Where lecturing continues to be face-to-face, we will encourage and support active learning methods.
- Well-designed physical learning spaces are critical to fostering active, student-centred approaches. As active learners, students engage in tasks that generate rich, purposeful interactions with relevant academic content, expert educators, student peers, and external stakeholders such as community and industry professionals. Active learning pedagogies emphasise opportunities for dialogue, feedback, reflection and learning community; they include project-based, design-based and case-based learning, inquiry learning, collaborative learning, and work-integrated approaches. Our goal is to embed active learning as default both for our campus-based and remote students. Increasingly, our campus-based students will be offered flexible choice between face-to-face or online participation in specific classes, enabled by 'mixed-cohort' learning classrooms and approaches that also enable real-time interaction between remote and local students.
- The University will continue to progressively embed active learning across the curriculum, with a particular emphasis on digitally-enabled, collaborative, work-integrated and inquiry-based approaches.
- New or refurbished learning and teaching spaces will be required to support a range of active learning models for different cohort sizes and cohort profiles. There will be a substantial requirement for flat-floor, digitally-enabled collaborative classrooms that allow for a flexible flow of activity around a sequence of learning tasks within the same session. Spaces for informal learning activity will also be required.
- The need for traditional, fixed-seat, tiered lecture theatres will be greatly diminished as educators increasingly adopt digital approaches to content delivery such as interactive livestreaming or pre-recorded online content. Longer-form lectures will be superseded in the main by shorter-form presentations, reimagined as interactive learning experiences designed according to active learning principles.
- Beyond these considerations, a strong push towards an active learning strategy will require much more space per student than the current square metre allowance in existing classrooms. Implemented properly, an active learning strategy will require break-out and other ancillary spaces associated with, but not part of, classrooms. There will be the requirement for a reconsideration of other resources, staffing levels, and equipment provision to support the new modes of learning.

4. Greater flexibility for students

- The Pillar Plan envisages that the University will see a more diverse cohort of on-campus learners in the future, with requirements for greatly enhanced flexibility for study.
- The Plan will encourage and accommodate greater campus activation throughout the day and into the evenings, weekends and across the full academic year.
- Learning and teaching spread more evenly across the year will enable operating efficiencies including optimisation of teaching spaces.
- Greater flexibility for students may in some cases include enabling students to construct their own mix of face-to-face and online delivery including the option of full online delivery for selected courses.

5. Enhanced role for digital technology in learning

- Digital technology plays a key role in the design and usability of the University's physical spaces and their capacity to support blended and online learning and teaching effectively.
- Increased embedding of digital technologies in learning and teaching will complement and support — but not replace — rich face-to-face interactions, which are highly valued by students who are able to attend on-campus. New approaches to digital technologies in learning and teaching will contribute substantially to transforming the learning and teaching experience.
- Online content provision will enable students to access content outside of face-to-face contact hours. Contact hours in turn will be devoted to direct, interactive engagement between academic staff and students, and students and external experts, and to collaborative learning among student peers, as well as more personalised, individual learning.
- Technology will also support 'mixed cohort' classrooms, where some students attend in person and others join online.
- Better systems for data and analytics will enable a robust, evidence-based approach to strategic educational enhancement and decision-making. Smart-campus data sources will contribute to this approach.
- Advances in digitally-enabled, adaptive learning will allow students to navigate personalised pathways through courses; for example, offering the opportunity to select from a range of topics and modes of assessment.
- Learning analytics will be used to provide students with richly personalised feedback alongside worked examples and formative scaffolding where needed or, as appropriate, to move a student on to the next level or direct to summative assessment.
- In these scenarios, we can expect learning and teaching spaces increasingly to be required to accommodate individual students, or groups of students, working concurrently on different learning tasks and assessments during the same class.

6. Enhanced support for social connection

- A world-class 21st century learning experience requires formal and informal spaces to provide a richly social environment for learning.
- New and refurbished spaces must be designed to enable learning activity that builds students' sense of connection to their academic cohort and community, including through pedagogies that embrace a student-staff partnership philosophy and incorporate student-led learning methods.
- The University will take an integrated, ecosystem approach to the student experience. This will include: connecting the formal curriculum with the co-curriculum and extra-curricular opportunities; a strong focus on high-quality, student-focused academic and pastoral support; and, enhancing students' sense of belonging to their academic community. Supporting social interactions through appropriately designed spaces will be a key aspect of this.

2. LEARNING AND TEACHING SPACE DESIGN

The quality and design of the University's learning and teaching spaces will be critical factors in determining whether or not it can deliver curriculum-wide full transition to active learning pedagogies and achieve the related strategic objectives outlined above.

Learning and teaching spaces play a vital role in shaping and enabling development and innovation in learning and teaching, and heavily influence learner experience and engagement.

Many of the University's existing spaces are not suitable for active learning which requires more space per student and with different space configurations. In general, active learning environments are flat floored with flexible furniture layouts, have good lines of sight and auditory conditions, and organic connections to adjacent break-out spaces and the outside world.

The University's existing stock of teaching spaces was designed to support more didactic modes of teaching and is typically characterised by inflexible furniture configurations, insufficient space allocations per student, a lack of adequate technology, and space layouts that discourage non-didactic pedagogies. The North Terrace campus has the best supply of contemporary learning and teaching facilities, while spaces at the Waite and Roseworthy campuses are generally aged, outdated and (with the exception of the Vet Science Building at Roseworthy) in average to poor condition.

Refurbished spaces on the North Terrace campus are required both to enable the full transition to active learning across the curriculum, and to inspire and equip staff to embrace experimentation with new approaches. Learning and teaching spaces at Waite and Roseworthy also should be refurbished to achieve greater equity with the spaces at North Terrace.

2.1. Learning space design principles

The University engaged architecture and design studio Architectus to explore the relationship between pedagogy, space and culture at the University of Adelaide. They undertook a thorough needs analysis and review of best practice in learning and teaching design to develop a blueprint for the University's future learning spaces.

Architectus worked closely with University stakeholders including academics, professional staff, students and other specialist consultants, to achieve a thorough understanding of the University's learning and teaching aspirations, and to develop a framework and set of principles that describe the physical elements of the learning environment that influence and support the learning experience.

The implications of learning as an active, situated and social process were thoroughly explored, with full consideration given to the role of connection and community.

In conjunction with the Academic Working Group (AWG), a set of learning space principles was developed to capture the essence of and ambition for new learning environments at the University of Adelaide. These principles highlight the importance of contextual elements in shaping the success of student learning activity.

A further set of design principles was developed with specific reference to the practical elements and atmospheric qualities the University should seek to incorporate in the design of its future learning and teaching spaces. Refer to Diagrams 1 and 2.

Learning Space Principles

Created by the working group to capture the essence and ambition of learning environments at UoA.

Activity-Centred

- Spaces should inspire and support activity-centred educational design.
- The learning spaces should enable users to move seamlessly through a sequence of different learning activities, often digitally-enabled.
- Tools, objects and resources should be readily accessible to support students in the construction of their knowledge.
- Spaces should support students' individual reflection as an important element, providing the link between activity and learning.

Healthy

- Learning environments bring together space and materials to promote balance between physical, emotional, cognitive and, potentially, spiritual wellbeing.
- Design and construction should be grounded in sustainable practices.
- Inclusivity, comfort and movement should be key design considerations that will impact air, acoustic, light, materiality, views and spatial allocations.
- The design should seek to connect occupants closer to nature. 'Active edges' should be designed into new spaces, increasing the exterior visibility of learning and teaching activities, providing a sense of connection to the outside and placing learning on show.

Social

- Students' sense of connection to their academic cohort and community enhances the learning experience and outcomes.
- Spaces should help students 'feel known' and build a sense of engagement with peers and academic leaders.
- Design should intentionally support engagement through rich activity and social structures.
- Spaces should support a social experience including interaction between students on and off campus, as well as a vibrant on-campus life, in a safe and secure environment.

Creative

- The spaces should be designed to inspire creativity. Adaptability and affordance go hand in hand providing cues for possibility and learner agency.
- Students should have the flexibility to work in a variety of ways and take ownership of their environment. The messy process and final products of learning should be visible to spark inspiration, connect ideas and share within the learning community.
- Spaces are designed to support personalised learning journeys.

Diagram 1. Learning Space Principles.

Design Principles

Biophilic Design
Access or views to natural amenities and the inclusion of natural elements within the interior greatly benefits comfort and wellness.

Acoustics
Noted as an item of utmost importance, perforated ceilings and soft finishes contribute to good acoustic performance for learning and teaching spaces.

Flexibility
Flexible furniture allows students and teachers to adapt rooms to suit a variety of learning tasks, activities and needs.

Natural Sunlight
Spaces should aim to achieve full hight glazing on at least one face of the room. This increases wellness and reduces the fish-bowl effect on some classrooms.

Materials + Finishes
Natural materials such as timber should be incorporated for its warmth. High quality finishes contribute to a greater sense of pride and care for space.

Touch down points
Touch down points within classrooms removes the need for a traditional lectern, allowing teachers the flexibility to move throughout the space.

Volume
Greater volumes and ceiling heights within teaching spaces contribute to a sense of comfort and openness.

Active Edges
Creation of active edges through increased visibility of Learning and Teaching spaces. Learning on show.

Teaching floors close to ground
Teaching floors should be no more than three levels above ground to maintian accessibility.

Diagram 2. Design Principles.

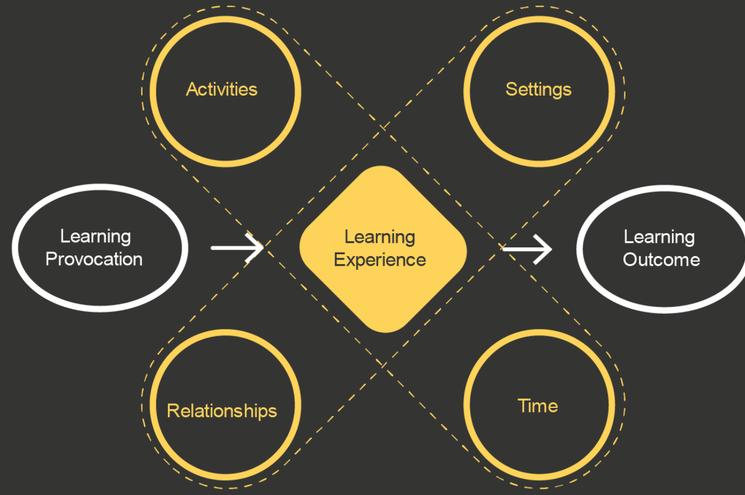


Diagram 3. Learning Experience.

2.2 Learning space configurations

In collaboration with the Academic Working Group, Architectus undertook an investigation into the various learning space configurations that the University might adopt in the refurbishment of its existing spaces and in the development of any new purpose-built spaces.

It identified a range of learning activity types consistent with active learning, which were used to inform the kinds of learning settings the University would require.

Further details of this work can be read in the Architectus report. Diagram 3 illustrates the relationships between the key elements that contribute to the creation of effective active learning experiences.

"IT'S THE ACTIVITY IN THE ROOM THAT REALLY MATTERS FOR STUDENT ENGAGEMENT"

Design Sprint Insight

These investigations were used to inform consideration of the optimal group sizes the University might factor into its future space design and planning. The impact of different group sizes on the effectiveness of different learning activities was acknowledged, as group size will directly influence classroom design.

In consultation with the Academic Working Group and with reference to data modelling prepared by Space Counts, it was agreed that a base group size of six students (in practice, six students per classroom table) and a base class module of 30 students will be the optimal working units to inform future space design and timetabling. This will provide consistency across the University's teaching portfolio and assist in planning class activities and sizes.

With this as a baseline, Architectus developed a series of 'learning modalities' for class sizes of 30, 60, 90, 120, 180 and 300 students.

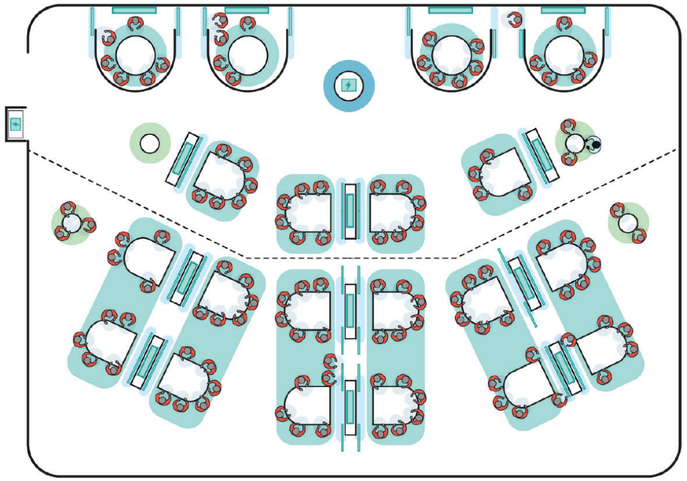
The learning modalities articulate the learning experiences that are attainable in a learning setting, with reference to the learning activity types and relationships that can be best supported within the modality.

An example of a 120-person modality is included at Diagrams 4 and 5.

For more detailed illustrations of the possibilities presented by each modality, refer to the Architectus report.

120 PERSON MODALITY

Setting Plan Diagram



Setting Types

Planning Options

Operation Modes

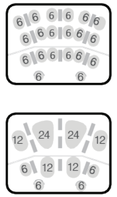
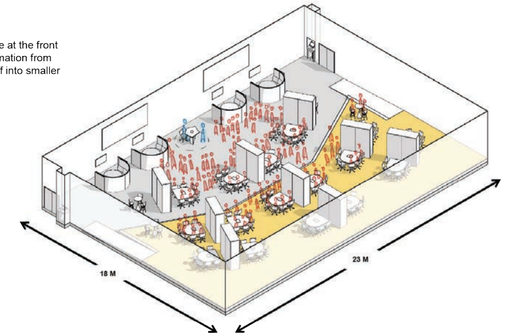


Diagram 4. 120 person modality diagram.

120 PERSON MODALITY

Gather Mode

In this mode students gather and orientate at the front of the room to receive instruction or information from the teaching academic before breaking off into smaller learning groups.



Working Mode

This mode demonstrates how students can work in smaller groups of 6.
Each booth is equipped with a digital screen and writable whiteboards which contribute to an interactive and engaging project space

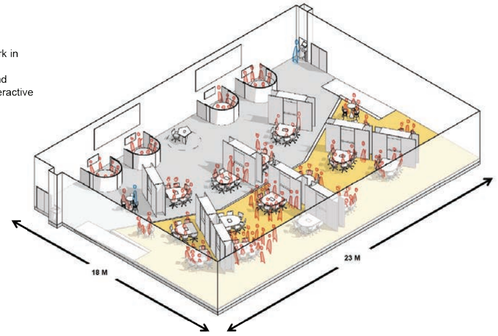


Diagram 5. 120 person modality diagram.

2.3 Technology in space design

The use of effective and innovative digital technologies is a key enabler of the University's strategic goals and objectives. The *Digital Future Technology Strategy* outlines the key future directions for technology use; two of the eight technology enablers outlined in the Strategy are of particular relevance to space design for learning and teaching.

1. Learning, teaching and assessment

- Student needs, preferences and expectations are rapidly evolving, creating shifts in the way learning, teaching and assessment are conceptualised. In the future, the University needs to be supported by a balance of on-campus and off-campus learning environments that are digitally enhanced.
- Immersive and interactive learning will be provided through technology-enabled assessments and materials such as high-resolution video streams, augmented and virtual reality content, and interactive simulation activities.

2. Smart Campus

- The focus of the Smart Campus technology enabler is to use innovative technology so our physical spaces embody and showcase our mission and values. The Internet of Things (IOT) and Smart City technologies will be leveraged to open up our campus sites, enable greater connection with our communities, and optimise the use of our physical spaces.
- Smart campus technologies are a growing component in the technology landscape of most leading universities, enabling them to realise significant operational efficiencies in the delivery of services and enhanced experiences, and also to addressing key areas of university life — learning, living, and safety and security.

3. LEARNING & TEACHING SPACE REQUIREMENTS

In 2020, the University engaged data analysts 'Space Counts' to develop a model of its future learning and teaching space requirements for the next decade at the North Terrace campus.

A number of different operational scenarios were simulated to understand the impact that current operating practices have for future space projections. This modelling demonstrated that we could minimise the amount of additional teaching space required to accommodate forecast student growth if we improved our timetabling processes, optimised our management of existing space, and extended the teaching day. The modelling outlined the University's annual space requirements at the course level and compared the pre-COVID projections of yearly growth in student numbers with the amount of new space that could come on stream in each given year of the modelling period.

In August 2021, Space Counts reviewed the modelling of teaching space requirements for 2022 to 2026 at the North Terrace campus based on the 2019 student load. This round of revised modelling, summarised in the *Collaborative Classrooms* report, allowed for an increased transition to active learning, maintained the current teaching load at 50 hours per week (8am – 6pm), and assumed space utilisation would be optimised through changes to timetabling processes and improved space management.

This modelling was used to assess the gap between the University's existing space capacity and space type and the amount required to accommodate its transition to active learning pedagogies. The results indicate that the University has sufficient learning and teaching space available, but that to align this space with its pedagogical aspirations, existing didactic classrooms will need to be converted to spaces capable of supporting active learning.

It is also noted that when the University's student load grows beyond the level modelled in 2021, a further strategy of extending the teaching day to 60 hours per week (7am – 7pm) could be pursued to mitigate the requirement for additional learning and teaching space.

The results of this modelling are summarised at Appendix 2 and translated into a space type forecast at Appendix 6.

3.1 Strategies to optimise space utilisation

3.1.1 Improve timetabling practices

Current timetabling practice within the University tends to overestimate student enrolments and produce more room bookings than are required. The overestimate of student enrolments is referred to as the planning error.

In 2019, the planning error averaged 34% across all timetabled course offerings. While the University's timetabling teams have made incremental improvements in this planning error (which was 38% in 2018), the student cohort growth over the 2018 –2019 period meant that the there was no reduction in the total number of hours of excess bookings.

Modelling indicated that using the previous year's actual course enrolment figures and applying an informed adjustment for growth would reduce the planning error by 10%. This would halve the number of excess bookings in the timetable.

A review of the data reveals that 95% of the excess bookings from planning error are in classrooms with a capacity of less than 60.

It is also the case that 70% of the candidate spaces for release and redevelopment for active learning have a capacity of less than 60. Reducing the planning error would therefore have the dual advantage of reducing demand for new collaborative spaces, and accelerating the release of surplus space by reducing the demand for traditional classrooms and lecture theatres.

This would enable the University to make a start on providing adequate space to support its full transition to active learning.

The nature of the planning error produced by the University's current timetabling practices is such that the error will continue to amplify as student enrolments grow, resulting in a progressive deterioration in space utilisation.

3.1.2 Return non-Common Teaching Area (CTA) space to CTA

Returning Faculty-controlled teaching spaces (that is, non-CTA) to central control (CTA) will increase University-wide access to all teaching spaces and optimise their utilisation.

Faculty-controlled spaces historically record low utilisation during teaching space audits.

3.1.3 Extend core teaching hours

The modelling performed by Space Counts in 2020 indicated that the University will achieve its lowest future space requirements and its best space utilisation efficiencies if it combines its full transition to active learning with timetabling improvements and an extension to its core teaching hours.

This highlights that there are operational changes as well as infrastructure strategies that must be considered in planning to meet the University's future space challenges.

The 2020 modelling found that an extension to the University's core teaching hours from 50 hours per week to 60 hours per week could achieve a reduction in its space shortfall similar to that achieved by limiting the timetabling planning error.

In the scenario where core teaching hours are extended but there is no accompanying improvement in the timetable planning error, the additional hours alone would provide sufficient space in the larger traditional classrooms and lecture theatres to accommodate the required bookings.

Any future extension to the University's core teaching hours will require broad-based consultation and communication with staff and is not factored into Space Counts' 2021 modelling, which reflects the downgraded space requirements due to COVID-19's impact on student growth.

3.1.4 Increase online delivery of teaching

Where the online delivery of teaching activities such as lectures can be demonstrated to produce acceptable learning outcomes, the University could increase the number of classes it delivers online to free up on-campus teaching space. This would assist in easing the overall space requirements, and would be a useful ancillary strategy to pursue alongside other measures.

The restrictions imposed by the COVID-19 pandemic have already required the University to adopt this option in order to observe social distancing measures. The University is planning to continue to have a combination of live-streaming lectures (with real-time digital interaction) in addition to face-to-face lectures.

Increased online delivery may require new presentation studios, allowing live-streaming from a small, well-equipped purpose-built room, versus a large lecture theatre, subject to demand.

Physical versus online attendance will need to be monitored and the data analysed to inform space planning and timetabling practices in order to optimise space utilisation.

3.2 Refurbishment and maintenance of existing space

Over the coming nine years, the University will need to embark on a program of works to refurbish collaborative classrooms and transform existing traditional teaching spaces across all its campuses to new spaces purpose-designed to support active learning.

The unfolding COVID-19 pandemic has highlighted the need to improve technology provision in classrooms to enable mixed cohort teaching of students, with some attending in-person and others participating online.

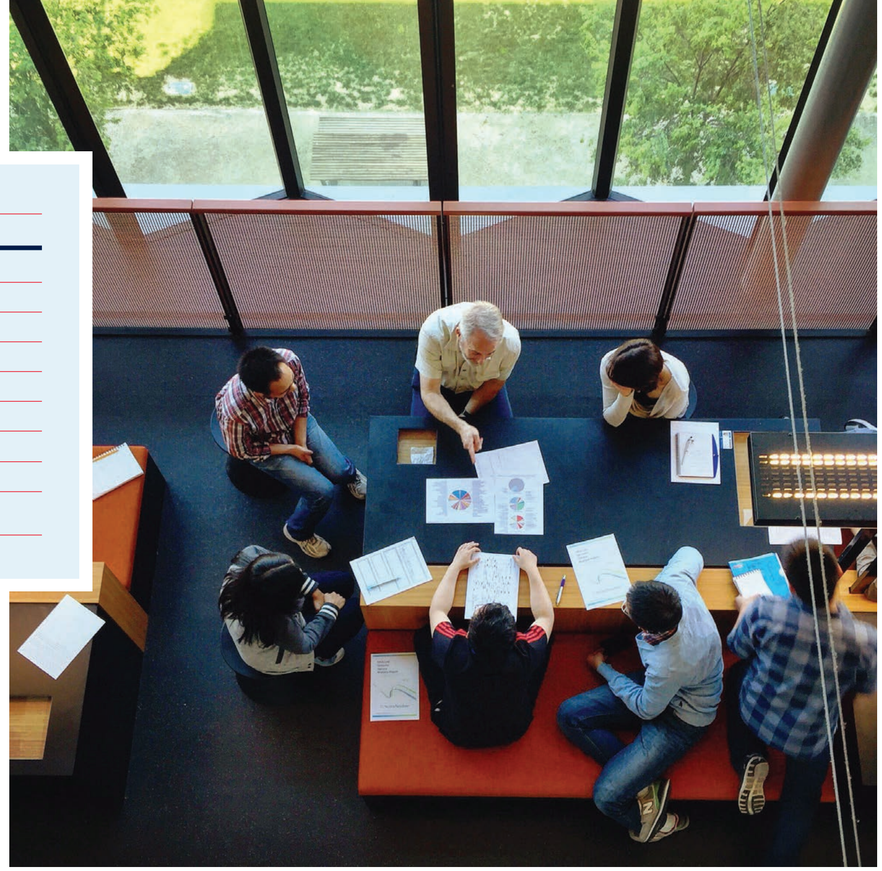
A program of works will be developed to identify which spaces should be refurbished or transformed on an annual basis, including an analysis of the digital uplift required. Planning should commence to convert existing tiered lecture theatres into either flat floor or large capacity (90-150), semi-tiered collaborative classrooms that support active learning.

	% AREA			
SPACE TYPE	**Excellent**	**Good**	**Average**	**Poor**
Computer Suite	24%	34%	34%	8%
Flat Floor	42%	22%	32%	4%
Informal Learning	32%	45%	22%	0%
Intensives	28%	66%	6%	0%
Laboratory	31%	12%	31%	26%
Lecture	27%	31%	36%	6%
Other	29%	49%	22%	0%
Specialists	**63%**	**5%**	**33%**	**0%**
Total	**35%**	**29%**	**29%**	**6%**

Table 1. Condition rating of Learning and Teaching Spaces, all campuses, as at July 2021.

"I THINK WE ARE MOVING TOWARDS LARGER SPACES BUT MAKING THEM FEEL MORE INTIMATE"

Design Sprint Insight



Other existing non-teaching spaces on the North Terrace campus that are within the area earmarked for a new learning and teaching precinct, will also be highlighted for potential development as future learning and teaching space. These spaces will ideally be within three levels of the ground floor and be column free to allow for the greatest flexibility of future use and remain in line with best practice design principles.

One space that has already been identified for potential conversion to a large collaborative classroom is the Barr Smith South Level 4 student courtyard.

In addition to the refurbishment works, the University will need to improve its maintenance program for existing and new spaces. During the investigations undertaken for this report, discussions with other universities highlighted the critical role of a high quality maintenance program in securing the ongoing competitiveness of a university's facilities offering, and in enhancing the student experience, including annual painting.

The University currently has around 57,000m² Net Lettable Area (NLA) of formal teaching space and 24,000 m² NLA[1] of informal learning space across all campuses. Table 1 indicates the condition rating of these facilities (as outlined in the Facilities Investment Plan: 2022 – 2028) as at July 2021. To maximise the user experience, the University should aim to achieve excellent condition ratings for as many of its facilities as possible.

1 Source data: Unispace July 2021.

3.3 Development of new space

The University's Facilities Investment Plan 2022–2028 includes a number of proposed major projects that could contribute new learning and teaching space in the long term. Major projects identified in the plan were to be debt-funded. As we advance consideration of these projects, funding sources and models will need to be identified, and they will therefore proceed on a project by project basis. Accordingly, they are not included in the annual funding provision advised by finance. Whilst being deferred they will remain as relevant future options for the development of new space.

These include:

1. Union House

- The vision is for the Union House precinct to become the 24/7 social heart of the University community, a place where staff, students, post graduates, alumni and professional cohorts can come to relax, socialise, learn and immerse themselves in the academic, social and cultural activities of the University.
- The proposed development includes spaces for PACE and other intensive teaching, event space, and student support space.

2. Lot Fourteen

- The Lot Fourteen project, planned as a major presence in the Innovation Centre, will deliver a facility of international standing for the University. It will enable delivery of the University's strategic Information Advantage agenda, incorporating the disruptive disciplines of artificial intelligence, machine learning and photonics and supporting emerging and allied disciplines such as cyber security, electronic warfare and social media analytics (big data).
- The facility includes space for discipline-related teaching for Masters and postgraduate students.

3. STEM Precinct

- The STEM Precinct Uplift project will commence with the upgrade of a number of Engineering, Computer and Mathematical Sciences buildings to activate the ground floor plane of key buildings, creating research labs and teaching spaces to meet new and expanded research and teaching programs, developing active learning hubs and industry engagement spaces, and establishing a pathway through to the proposed Lot Fourteen development.
- There is an opportunity to create new active learning spaces in these existing buildings.

4. Creative Technologies Building

- The new Creative Technologies Building, to replace the Napier Building, is proposed to be a purpose-designed destination space for University events and cultural occasions, exhibitions, and learning and teaching, with a focus on the first year cohort. As a shared and collaborative space for the University, industry and cultural partners, the focus of this development will be to showcase technologies across multiple disciplines.
- The identified focus on the first year cohort would make this new building an ideal location for a new learning and teaching precinct incorporating collaborative classrooms and super labs. The large floorplate would enable the creation of column free, large scale, active learning spaces.
- In addition to the formal teaching space required for the first year cohort, consisting of large, medium and small collaborative classrooms and super labs, informal learning and retail space will also be required. The Creative Technologies building could accommodate the bulk of this requirement.
- There is also the potential to locate an Executive Hub in this building as well as space to accommodate new Arts programs that require large column free spaces with high ceilings, e.g. TV studios and VR labs.

The Cube, informal learning and interactive space at UQ.

4. LEARNING AND TEACHING PRECINCTS

The necessity to undertake a major refurbishment of the University's existing learning and teaching spaces presents it with the opportunity to build on and strengthen the campus activation programs already planned or underway.

The University's investigation of best practice approaches to learning and teaching has highlighted the benefits of developing concentrated on-campus clusters of learning and teaching space, combined with informal zones for social connection and other ancillary areas.

Experience at other Australian universities has shown that the development of learning and teaching precincts can deliver improved outcomes in terms of student learning, satisfaction, and growth.

It can also aid in the advancement of other strategic goals, such as the development of collaborative industry partnerships.

In 2019, members of the LTSTV Steering Committee attended the national Future Campus Development conference and heard data-driven evidence of these benefits at key sites, including the Melbourne Connect Innovation Precinct and the Monash Precinct. The members also undertook site visits to Monash University, RMIT, Sydney University, and the University of Technology Sydney, to review best practice in learning and teaching environments and precincts.

Ideas generated by this review were overlaid against the University of Adelaide Campus Masterplan 2016 – 2035 to explore ways in which the University might capitalise on its future learning and teaching space developments by incorporating a proposed learning and teaching precinct for the North Terrace campus.

Such a precinct would provide a focal point for the University's renewed campus activation programs, re-energise the on-campus educational experience and improve students' engagement and sense of belonging, particularly for first year students. It would also deliver a variety of shared spaces capable of supporting cultural change at the nexus between learning, teaching, research, industry and the community.

4.1 Benefits of the precinct model

Learning and teaching precincts are purpose-designed, on-campus spaces that embody a university's vision for student-centred education.

They can be contained within a single building or they may be spread through a spatially concentrated network of buildings that houses a significant proportion of all teaching spaces. They may contain classrooms only, or incorporate laboratories, computer suites, studio spaces, and informal learning spaces.

When well designed, learning and teaching precincts can be instrumental in providing students with an exceptional learning experience, and make a significant contribution to the engagement and retention of students.

In developing a roadmap for its future learning and teaching spaces, the University of Adelaide has the opportunity to embrace a precinct approach and ground the design of its new and refurbished spaces around this type of central destination.

Major benefits associated with a precinct strategy include the following.

1. Sense of belonging

- Learning and teaching precincts are student-centric in design, intentionally promoting learning as a highly social and interactive activity.
- For specific cohorts, such as undergraduates and international students, they can play a special role in nurturing a sense of connection and belonging, and provide the foundation for a deeply engaging learning experience.

2. Cultural change

- Learning and teaching precincts foster multi- and inter-disciplinary student interactions and can provide an on-campus focal point for the education-industry nexus.
- Flexible, multi-modal spaces that can be used for events and meetings, as well as for formal and informal learning, can help drive cultural change and strengthen connectivity between learning, research, and industry.
- Shared spaces set the scene for the cross-pollination that leads to co-creation and innovation in pedagogy, learning, research, and industry engagement.

3. Campus activation

- Learning and teaching precincts lie at the heart of campus activation, particularly when they are co-located with blended spaces for informal learning, social interaction, and food and beverage offerings. Co-location of mixed space types increases the visibility and accessibility of core learning and teaching activities, connecting the learning experience with other on-campus activities.
- They become destination spaces for staff and industry visitors as well as for students, and encourage all users to spend more time on campus.
- The precincts can also provide spaces for casual/sessional staff who may not have offices on campus to work and interact between teaching commitments.

4. Consistent learning experience

- Precinct development can simplify the provision of a large amount of new teaching space by leveraging consistent design and purpose-built construction.
- The student and staff experience across all classrooms in the precinct will be designed to a single high standard in terms of acoustics, lighting, sightlines, ambiance, furniture and facilities, Wi-Fi, power provision, audio-visual and so on.
- Classrooms built in precincts are more cost-efficient to construct and maintain than those in the distributed approach.

5. Flexible delivery

- The co-location of teaching spaces within precincts maximizes the flexibility and efficiency of timetabling, particularly for teaching on weekends and in intensive or block modes.
- By decoupling the ownership connection between faculties and dedicated teaching spaces, the approach encourages more efficient and flexible use of available teaching space.

4.2 North Terrace learning and teaching precinct

The necessity to undertake an extensive refurbishment of the University's learning and teaching spaces presents a major opportunity to move to a precinct model of space organisation. This proposal is grounded in the principles of blended active learning and acknowledges the fundamental importance of creating an engaging and socially-connected experience for all students and staff.

Adoption of the precinct model would represent a departure from the University's current mode of operating. While there are individual buildings on campus that house a disproportionate number of teaching spaces (e.g. Napier), on the whole teaching is currently undertaken across the entirety of the North Terrace campus (see Diagram 6, Current Learning and Teaching Space Distribution).

A cornerstone of the vision for a North Terrace precinct is that it would be a central spine of world-class learning and teaching spaces connected throughout a network of key buildings, rather than be housed in one single building. It would connect directly with Hub Central, the Barr Smith Library and Union House in recognition of the vital role these spaces play in the life of the University, and in order to minimise the need for the development of additional ancillary spaces within any new build space.

LEARNING + TEACHING PRECINCT 2019

Diagram 7 provides a preliminary view of what a learning and teaching precinct for the North Terrace campus could look like, and highlights the role that the possible redevelopment of the Napier building into a new Creative Technologies building could play in the precinct.

It would be designed with a particular emphasis on the first year student experience in recognition of the fact that a sense of belonging is a critical determinant of student retention and success, and that the student experience during the first year is critical for fostering ongoing engagement. It would also assist the University with the attraction of potential future students, by enabling high school students to come on campus and directly observe and participate in a concentrated organisation of first year learning activities. Spaces for more specialist and later-year classes would remain distributed across the campus, helping to further develop close relationships between students and their schools and faculties as they progress through their studies.

Teaching and learning spaces located within the precinct would, however, continue to be utilised by students throughout their learning journey. The precinct would continue to play a core role in the on-campus experience of every student by helping to foster strong connections between the formal curriculum and co- and extra-curricular activities.

LEGEND

- PRIMARY PEDESTRIAN CONNECTIONS
- SECONDARY PEDESTRIAN CONNECTIONS
- PRIMARY LEARNING AND TEACHING PRECINCT
- SOCIAL AND COMMUNITY
- COMMON TEACHING AREA

Diagram 6. Current Learning and Teaching Space Distribution (2019).

Diagram 7. Proposed Learning and Teaching Space Distribution.

LEARNING + TEACHING PRECINCT TOWARDS 2030

An underlying principle of the precinct's development would be a strong focus on supporting social and informal interactions between students and with academic staff. The design principles used to inform development of the precinct would emphasise active and engaging destinations for students, staff and visitors, combining accessible and highly visible learning and teaching spaces with social spaces designed to create a sense of belonging, encourage social connection, and access to academic and pastoral support.

Complementary spaces would activate the spine and extend the amount of time students, staff and visitors spend in the precinct. These spaces would include areas such as break-out spaces for small group learning, quiet work spaces for students and staff waiting between classes, managed spaces for the self-preparation of food, and food and beverage retail outlets.

The inclusion of break out spaces and micro-kitchens, while resulting in more floor space per student, would deliver a much-improved student experience and support more fully the University's move to an active learning strategy. The 'student experience benefit: floor space cost' ratio would therefore require careful consideration as the University firms up its future learning and teaching space strategy.

Other spaces that might be included in the precinct include outposts for student services, particularly those targeted at first years, and spaces designed for non-standard teaching delivery (such as intensive-mode), which may enhance space efficiency.

5. OTHER CONSIDERATIONS

This report on the University's vision for its future learning and teaching spaces focuses on the physical facilities required on campus over the medium term to enable the curriculum-wide transition to active learning, improve the student learning experience and outcomes, and strengthen the University's competitive position in a highly competitive higher education environment.

The proposed refurbishment and upgrading of existing facilities, combined with the potential future development of new space outlined in this vision will not achieve these outcomes without concurrent changes in the University's curriculum design and alterations to key operational processes, such as timetabling.

Some of the parallel streams of work that have been highlighted by the LTSTV AWG and which will need to be undertaken alongside further development of this vision are detailed below.

These streams of work are outside the scope of this program, but are nevertheless critical to its overall success.

- Agile timetabling
- Contact hours
- Staff/student ratios
- Assessment types
- Industry engagement
- Preparing staff
- Preparing students
- Evaluation
- Change management
- Educational research.

"THIS IS THE FIRST TWO – DAY WORKSHOP THAT I ACTUALLY ENJOYED!"

Design Sprint Insight

6. RECOMMENDATIONS

The University of Adelaide is committed to strengthening its competitive position through the delivery of a world class student learning experience.

The Pillar Plan: *A 21st Century Education for a Growing Community of Learners* identifies a curriculum-wide full transition to active learning as a major strategy for achieving this outcome. As outlined in this report and described in detail in the supporting documents, the University's learning and teaching spaces will require significant refurbishment and extension in order to facilitate and support this change.

The principal recommendations of this report are that the University should:

1. Undertake a program of refurbishment to transform its existing learning and teaching spaces and purpose design them to support active learning and enhance the existing learning and teaching precincts.
2. Optimise the utilisation efficiency of its existing assets and minimise its requirement for new developments (with their attendant capital and operational costs) by:
   - Improving timetabling practices and procedures.
   - Reviewing non-CTA spaces and returning those with poor utilisation to the CTA pool, where they can be accessed University-wide.
   - Longer term, extending its core teaching hours from 50 hours per week to 60 hours per week.
3. Plan for the long-term, future development of additional learning and teaching space and reinforce the North Terrace campus learning and teaching precinct with a focus on first year students, including new super labs for multidisciplinary use (refer to Appendix 2).

Steps to move forward with this program of work include:

- A review of this report in 2022 to update the future space requirements based on changes to student growth projections and course delivery.
- Development of a business case to support the required timetabling improvements, including training, policy development, and new software.
- A review of non-CTA / non-specialist teaching spaces with an aim to convert these to CTA spaces.
- The creation of a set of design standards (architectural and technological) for the future development of all refurbished or new learning and teaching spaces.
- Planning works for the refurbishment, or conversion, of existing learning and teaching spaces.
- Preparation of a feasibility study to convert didactic spaces into active learning spaces.
- Review of the 'Bring Your Own Device' policy for computer suites (refer to Appendix 2).
- Preparation of a plan to further investigate other considerations or parallel streams of work outside the scope of this project.
- Preparation of a design brief for the development of a world class learning and teaching precinct.
- Planning for a consultation program with regards to extending core teaching hours.

The University should also plan to regularly review the findings of this report in the context of the evolving COVID-19 pandemic and other changes in the higher education and global environment.

This report should be read as a living document, intended to be updated as changing circumstances require it.

The COVID-19 pandemic is likely to continue to impact the University's future learning and teaching space requirements and there may be other emergent factors with significant implications for space planning.

An annual review will enable updated student load forecasts and changes to University policies and procedures to be factored into this report's recommendations.

APPENDIX 1. ABOUT THE LTSTV PROGRAMME

The LTSTV program commenced in December 2019 with the aim of investigating the infrastructure and facilities implications of the University's learning and teaching aspirations outlined in the Pillar Plan, *A 21st Century Education for a Growing Community of Learning*.

The founding principles of the program were that it would be student-centred and pedagogy-led in optimising the design of upgraded and new on-campus learning spaces that are capable of delivering the competitive, innovative and world-class education experience to which the University aspires for its students.

1.1 Aims, objectives and benefits

The program aim was to deliver a roadmap for the future planning of upgraded, repurposed and new-build learning and teaching spaces between 2021 and 2030 and to inform the 10-year Capital Investment Plan.

The programme establishes a framework that:

- Identifies a potential learning and teaching precinct.
- Defines learning settings and modalities.
- Relates class size to new and innovative pedagogy.
- Identifies a ratio of formal to informal spaces.
- Increases central teaching areas, including super labs and computer suites.
- Identifies timetable improvements to increase utilisation.
- Identifies opportunities to adapt and repurpose existing spaces.
- Accommodates the University's student growth goals as projected in 2019.

The expected benefits are:

- Optimised student experience and outcomes through the provision of world-class facilities
- Support for new and innovative active learning pedagogies through learning space design
- Success through collaboration and integration including with external stakeholders.
- The University's reputation is enhanced as a great place to learn and educate, with a consistent and positive experience for students and educators.
- Maximised space utilisation with minimised building footprint.

1.2 Scope

The following are included in the scope of the framework delivered through the LTSTV programme:

- The identification of proposed Learning and Teaching Precincts, common teaching areas, super-labs, and computer suites at North Terrace, Waite and Roseworthy campuses.
- Proposed learning settings and modalities for the new and refurbished learning and teaching spaces.
- Strategies to optimise utilisation whilst minimising building footprints, including optimal class sizes, duration and timetabling changes.

The scope of the LTSTV programme excludes development of the timetabling processes required to deliver improved timetable flexibility and utilisation.

1.3 Inputs and consultation

Extensive consultation, data-modelling and sector-level environment scanning were built into the program.

The program was sponsored by the DVC&VP (Academic) with a governance structure consisting of a Steering Committee (SC) with strong academic representation and two advisory groups: the Academic Working Group (AWG) and the Data Modelling Group (DMG). Refer to Diagram 8. Governance Structure and overleaf to the Terms of Reference.

A summary of the consultation and data gathering steps taken to inform the report is below.

- Review of strategic University documents (see list at 'i. Supporting Documents').
- Sydney study tour of innovative learning and teaching spaces: University of Sydney and University of Technology Sydney (SC).
- Tour of and meeting with Monash University DVCA to discuss the positive outcomes of the Learning and Teaching Building (SC).
- Melbourne study tour of innovative learning and teaching spaces: Monash University, Melbourne University and RMIT (AWG).
- Design workshops with the AWG to discuss:
  - Barriers and risks, and measuring success.
  - The future of learning and teaching at the University of Adelaide.
  - Translating key University visions for future learning and teaching spaces.
  - What students want.
  - Agreeing the principles.
  - Activity centred learning.
  - Learning settings.
  - Developing modalities.
  - Class sizes.
  - Executive learning, superlabs and computer labs.
  - Town Hall Playback to DVC & VP(A), members of the Adelaide Education Academy and students.

In addition, space design and planning consultants Architectus, Arina and Space Counts were engaged by the University to undertake a thorough needs analysis and develop solutions for consideration.

Refer to supporting documents.

LTSTV – GOVERNANCE STRUCTURE

Sponsor	
Deputy Vice-Chancellor & Vice President (Academic)	
Steering Committee	
Pro Vice-Chancellor Student Learning (Chair)	
University Architect	
Chair Adelaide Education Academy	
Manager Space Allocation and Planning, Infrastructure	
Advisory Groups	
Academic Working Group	**Data Modelling Group**
Steering Committee members	Data Analytics Manager, Infrastructure
Dep. Dean L+T (or nominee) all Faculties	Director of Student Administration, DASE
ED Education Transformation	University Timetable co-ordinator, DASE
Director Learning Enhancement + Innovation	Manager Learning Analytics, DASE LEI
ITDS – Director IT Strategy, Planning & Governance	Manager of Performance Reporting, Planning and Analytics
Student	Infrastructure Manager Space allocation and Planning

Diagram 8. Governance Structure.

University Operations | Infrastructure

L&T Space Transformation Vision 2028 (LTSTV) Steering Committee

Terms of Reference

Establishment	
When:	December 2019
By what authority:	Executive Director, Infrastructure
For what period:	December 2019 to December 2020 Review Terms of Reference in December 2020
Role/Terms of Reference	
Nature:	Decision making in the development of the Learning and Teaching Space Transformation Vision 2028 (LTSTV)
Terms of Reference:	The L&T Space Transformation Vision 2028 (LTSTV) Steering Committee is established to consider and recommend future L&T teaching space typology, quantum, and class size to inform L&T space investment decisions to 2028, aligned with 'Future Making' and building upon the L&T Facilities Strategy. Its focus is on common teaching areas, including super labs and computer suites. The Steering Committee will include in its consideration: 1. L&T Principles 2. L&T Strategic Objectives: support active learning, accommodate growth, course delivery. 3. Proposed establishment of a L&T Precinct on NT Campus 4. Implications of the shift to active learning and the impact of online and blended learning as regards: spaces typology (taking into consideration expected lecture theatre use/growth/reduction) specific design modalities, class size, class duration. 5. The modelling of future space requirements taking into account: a. Improved timetable functionality and efficiency b. Extending the teaching day 6. High-level requirements for informal learning spaces associated with active learning pedagogies
Reporting line:	Campus Development Committee
Quorum:	There is no formal requirement for a quorum
Frequency of meetings:	Steering Committee to meet monthly Sub-committee reports (verbal or written) are required at steering committee meetings
List of any sub-committees:	The following Streams support the Steering Committee including: • LTSTV Academic Advisory Group • LTSTV Data Modelling Group
Membership	
Membership	PVC Student learning (Chair) University Masterplanner Chair of Adelaide Education Academy Infrastructure representative
Contact person and phone/email	Mary White 36350, mary.white@adelaide.edu.au
RMO File Number	TBD'd

University Operations | Infrastructure

L&T Space Transformation Vision 2028 (LTSTV) Academic Working Group

Terms of Reference

Establishment	
When:	December 2019
By what authority:	Executive Director, Infrastructure
For what period:	December 2019 to December 2020 Review Terms of Reference in December 2020
Role/Terms of Reference	
Nature:	Advisory
Terms of Reference:	The L&T Space Transformation Vision 2028, or LTSTV Academic Working Group provides advice to the LTSTV Steering Committee to consider future L&T teaching space typology, quantum, class size to inform L&T space investment decisions to 2028, aligned with 'Future Making' and building upon the L&T Facilities Strategy. 1. Discuss, advise and disseminate information related to L&T (formal and informal) space typology 2. Consider diverse and innovative approaches to teaching activities 3. Relate new and innovative pedagogy to class size and duration 4. Identify opportunities for and suggest approaches to transition to active Learning 5. Consider L&T across a range of physical types such as flat floor, lecture theatre, computer suites, superlabs and intensives/ short courses (CPE)
Reporting line:	LTSTV Steering Committee
Quorum:	There is no formal requirement for a quorum
Frequency of meetings:	Monthly at minimum. More frequent meetings may be required when necessary to complete pieces of work Monthly Sub-committee reports (verbal or written) are required for the steering committee meetings
List of any sub-committees:	The following streams support the Academic Working Group including: • Adelaide Education Academy • Faculty Teaching Committee • Timetable Committee • Student Reference Group (Infrastructure)
Membership	
Membership	Chair of Adelaide Education Academy (Chair) PVC Student learning University Masterplanner DD L&T for each faculty (or nominee) Director Learning Enhancement + Innovation (or nominee) Infrastructure representative ITDS representative Student
Contact person and phone/email	Mary White 36350, mary.white@adelaide.edu.au
RMO File Number	TBD'd

APPENDIX 2. LEARNING & TEACHING SPACE REQUIREMENTS

In 2020, the University engaged data analysts Space Counts to develop a model of its future learning and teaching space requirements for the next decade at the North Terrace campus. This modelling was reviewed in August 2021, and outlines the University's annual space requirements for collaborative classrooms from 2022 to 2026.

The modelling period was limited to 2026 in the review due to the ongoing impact of the COVID-19 pandemic, as well as other emergent factors, on the University's future learning and teaching space requirements.

The modelling sought to:

- Quantify the existing learning and teaching space use at the University.
- Model a full transition of all on-campus activities delivered in flat floor classrooms and lecture theatres to active learning.
- Simulate possible adjustments to operating practices including timetabling improvements and centralisation of flat floor classrooms.
- Predict the size and number of collaborative classrooms required on the campus for each year of the forecast period (2022-2026) to support the transition to active learning, and;
- Predict the rate at which traditional classrooms and lecture theatres would become surplus with the transition to active learning, and estimate the released Usable Floor Area (UFA) that would be available each year of the forecast period for redevelopment.

The following assumptions form the basis of the 2021 revised modelling of flat floor classrooms and lecture theatres:

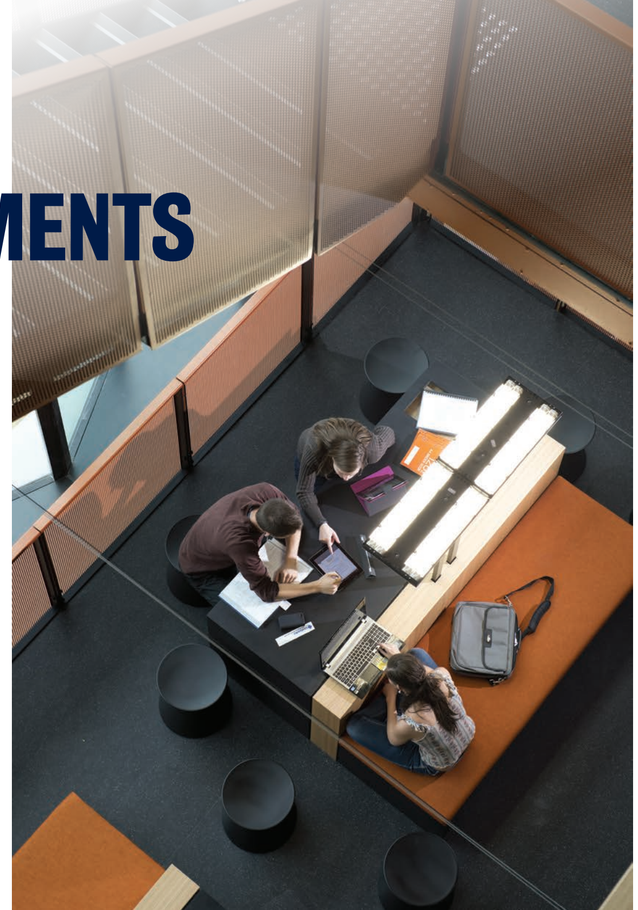
- Student enrolments and course data from 2019 were used to forecast the five years from 2022 to 2026 with no growth.
- Assumes a base class module of 30 students.
- Assumes a transition rate of 20% of total courses per year from the didactic mode to the active learning mode, with the largest cohorts (first year students) transitioning first.
- Assumes improved timetabling practices are implemented to limit the planning error.
- Assumes access to selected non-Common Teaching Area spaces.
- Allows for the retention of current teaching hours at 50 core hours per week, 8am – 6pm.
- Allows for the overbooking of lectures by 20%.
- Caps the new collaborative class size at 120 seats, as the result of existing asset constraints.
- Assumes that existing collaborative activities retain current activity size.
- Assumes that lectures for cohorts greater than 90 students do not use collaborative classrooms. They remain as either:

A: Live to students in the room and online;

B: Live to students online; or

C. Pre-recorded.

- Addresses flat floor classrooms and lecture theatres but excludes computer suites, laboratories and specialist teaching spaces.
- Excludes new programs not yet identified.



For full details of the modelling conducted, please refer to Space Counts' *Collaborative Classrooms (August 2021)* report.

Other space modelling to forecast the University's future laboratory space requirements was conducted by Arina in 2020. This is discussed in more detail at 2.3 below.

1.0 Collaborative classrooms

The 2021 modelling forecast the collaborative classroom space that would be required on the North Terrace campus between 2022 and 2026 to accommodate the University's shift to active learning pedagogies across the curriculum.

Major findings were:

- Over the five year modelling period, there will be a shortfall of between 5 and 7 collaborative classrooms (30 capacity).
- Much of this shortfall should be able to be met by transforming existing didactic classrooms, and may only require new technology and furniture solutions.
- By 2023, one to two existing didactic lecture theatres will need to be converted to 120 capacity collaborative semi-tiered classrooms.
- By 2026, the number of didactic lecture theatres can be reduced by 10 -13. This reduction may be higher if lecturers adopt a format that does not require a scheduled space.
- An increase in the online delivery of courses will require new presentation studios, allowing live-streaming from a small, well-equipped room, versus a large lecture theatre. Presentation studios would deliver operational savings by reducing energy usage and cleaning costs.

Plans for the possible development of new build space are outlined in more detail in Section 3.4 of this report. These major projects are deferred and will be assessed on a project by project basis.

2.0 Other spaces

In addition to space for collaborative classrooms, the University requires space for other space types in order to properly support the transition to active learning. These are discussed below.

2.1 Informal learning spaces

The provision of informal learning space on campus directly supports the University's aspiration of a student learning experience that is grounded in social connection, interaction, and a sense of belonging.

Informal learning spaces provide students and staff with the opportunity to engage in unstructured interaction before and after class, and creates room for spontaneous, organic and collegial exchanges that greatly enrich the on-campus experience.

The provision of welcoming and engaging informal learning spaces will strengthen the campus culture and play a critical role in reinvigorating campus life.

Through a process of site visits, benchmarking, and alignment with the University's vision, the Academic Working Group agreed that the University should target an informal to formal teaching space ratio of 1:3 with respect to informal space immediately adjacent to formal teaching space. This ratio should apply to both refurbished and newly built learning and teaching spaces.

While the University already achieves a ratio of 1:3 on the North Terrace campus, the majority of the existing informal learning space is located in Hub Central. To optimise the student experience, informal learning space should ideally be dispersed across campus to encourage lingering and interaction immediately adjacent with formal teaching spaces wherever they are located.

Due to the large amount of informal learning space located in Hub Central, it is likely that the University's ultimate ratio of informal to formal learning space will vary across campus. An overall campus ratio of 1:2 may be the ultimate target, with a ratio of 1:4 in newly built space.

2.2 Executive hubs

The spatial offer for students participating in intensives and short courses as part of the University's Professional and Continuing Education program was also explored. The learning experience for these students would be enriched through the development of a dedicated Executive Hub incorporating facilities such as a study lounge, kitchenette, and meeting rooms.

Currently Executive Education programmes are delivered in the Nexus10 building and English Language Centre programs are delivered in leased space at 115 Grenfell Street. Ideally these programs would be delivered in a centralised Executive Hub, within a setting that is safe and easy to access outside of normal business hours.

2.3 Superlabs

Specialist higher education architectural practice Arina was engaged by the University in 2019 to assess the existing teaching laboratories on the North Terrace campus and prepare future projections focusing on superlabs for undergraduate students.

A superlab is a multidisciplinary practical lab with high levels of AV support and space for 200 to 300 students. Superlabs support a more flexible approach to the commencement and completion of experiments and are designed to allow students to work alone or in teams.

Arina worked collaboratively with the Faculty of Engineering, Computer and Mathematical Sciences, the Faculty of Health and Medical Sciences, and the Faculty of Sciences, to understand current and projected teaching laboratory demand. They also participated in the LTSTV Academic Working Group design sprint to present and discuss national and global examples, and the benefits of superlabs. The LTSTV AWG also visited the Monash University Biomedical Learning and Teaching Building during the study tour. For full details of the investigations, please refer to Arina's *Teaching Laboratory Study* report.

An assessment of the facilities on the North Terrace campus and a comparison to labs at other settings revealed that the majority of the teaching laboratories are aged, small in size, and in only adequate to poor condition. They are spread across campus and faculties, with the only shared laboratories located in The Braggs where they are predominantly utilised by the Faculty of Sciences.

The benefits of developing a new superlab for the University include:

- Increased attraction and retention of students through the delivery of state-of-the-art, best practice STEM learning facilities.
- An improved student learning experience through the availability of ancillary spaces that facilitate pre- and post-lab learning.
- Support for the delivery of contemporary science learning and teaching pedagogies.
- Space efficiency and cross-pollination resulting from multi-disciplinary utilisation of the same space.

- Improved utilisation due to the high throughput design and the ability to host multiple units in one lab at the same time, with multiple sessions throughout the day.
- Reduced need for class repetitions due to the large capacity of the space.
- Maximised sharing of ancillary, preparation and equipment spaces.

In addition to these benefits, the development of a new superlab would be less capital intensive than the refurbishment of the University's existing teaching labs, and would improve the student learning experience through the delivery of the following design benefits:

- Unobstructed views across the laboratory.
- Access to natural light and external views.
- High ceilings to improve sightlines and acoustics.
- Audio visual technology to break the room into groups of 30.
- Adjacent breakout spaces.

A new superlab would accommodate the first year cohort and would be best configured as two 240-seat laboratories: one wet lab and one semi-wet lab, each accommodating groups of 30 to 240 (in modules of 30).

The Arina *Teaching Laboratory Study* was based on pre COVID-19 student growth forecasts and concluded that the University would require around 450 new laboratory seats by 2030. This forecast assumed that the University would adopt improved timetabling practices and extend its core teaching offering to 60 hours per week. Due to the impact of COVID-19 on student growth forecasts and the necessity of a new development to house a superlab, this space requirement has been deferred.

2.4 Computer suites

From the investigations undertaken, it is evident that the University will have a persistent requirement for computer suites for the foreseeable future. They should, however, be designed in a flexible manner so they can easily transition to general teaching space if or when a Bring Your Own Device policy is adopted and computers are no longer supplied by the University. For future design reference, the computer suite at the University of Melbourne's School of Engineering was considered a good example of a flexible and adaptable computer suite.

Currently the majority of computer suites at the University of Adelaide are faculty-controlled. The recommended optimal future scenario is for computer suites to be centralised and shared across the Faculties to improve access for the varying class sizes and maximize utilisation. Centralising the funding would also see an improvement in the timeliness of technology upgrades, ensuring students have equitable access to appropriate equipment.

While the University's existing overall computer suite capacity is sufficient, the limitations of faculty control mean that some faculties have computer suites that are too small or too large to suit their courses and programs.

For further details, please refer to Space Counts' *Computer Suite* report.

3.0 Summary of space requirements

The Interim LTSTV report, prepared in 2020, modelled the requirement for additional learning and teaching space on the assumption that the University would experience significant student growth over the coming decade. This student load forecast has been adjusted as a result of the impacts of COVID-19.

Using the 2019 student load data to model space requirements over the next five years, it appears that the University has sufficient learning and teaching space to meet its requirements out to 2026. However, the existing strategic commitment to a transformation of the student learning experience will continue to drive necessary changes to the quality and design of its existing learning and teaching infrastructure, including converting didactic space to active learning space, implementing a digital uplift, and enabling mixed cohort learning.

The English Language Centre (ELC) teaching will remain in leased space (115 Grenfell) until additional floor space can be identified on North Terrace campus, at which point consideration should be given to joint use by the ELC and Professional and Continuing Education (PACE). Subject to forecast student demand, the lease may be reviewed.

Modelling of the future space requirements at the Waite and Roseworthy campuses has been deferred due to the impacts of the COVID-19 pandemic.

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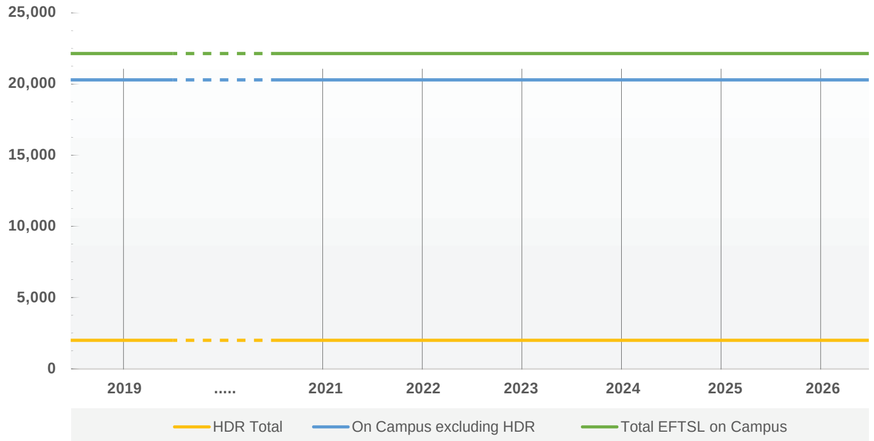
APPENDIX 4. FORECAST STUDENT LOAD



- Space assessments for this report have been based on modelling the 2019 student load, without growth, for 2022 – 2026.
- Source data: 2019 EFTSL load, 2020 Pocket Statistics, Planning and Analytics, August 2020.

APPENDIX 5. LEARNING & TEACHING INFRASTRUCTURE STRATEGY

The Infrastructure Learning and Teaching Facilities strategy, consistent with the Learning and Teaching Space Transformation Vision 2030, will enable the University to fulfil the ambitions outlined in its Strategic Plan: to provide world class learning and teaching facilities for students and academics, deliver courses that actively engage learners, and offer a 21st century education for a growing community of learners.

To achieve these goals, the University's infrastructure must evolve to respond to the challenges posed by a diverse student cohort, changing pedagogies, and contemporary student expectations. High quality, flexible, multi-modal spaces will be required, along with improved utilisation of facilities throughout the year and around the clock.

Contemporary pedagogies shift the focus from didactic instruction to active learning and hands-on, group-based work. Digital enhancement of learning will enable much access to content to move online, freeing more time and space for the interactive modalities to occur face-to-face. Students are also expected to spend more time working collaboratively together outside of formal contact hours.

In response, students expect the University to support extended hours for learning and teaching, offer intensive course options, and provide safe access to campus learning spaces outside of current core teaching hours.

The spaces and facilities required to support this way of operating are different from the legacy spaces that were suitable in the past.

Principle differences include:

- The provision of flat-floored or semi-tiered spaces.
- A higher minimum floor area per seat.
- Consistent technological provisions in space design.
- Technology to support mixed cohort learning.
- Access across the extended day to informal learning zones, flexible labs.

Alongside the transformation of existing spaces, the development of new space may be required to accommodate large collaborative classrooms.

Key objectives

Support changing pedagogies

- Create high quality, contemporary spaces that engage learners, support active teaching and learning modalities and deliver informal areas for self-directed and group project work or informal study.

Optimise teaching spaces

- Ensure spaces and facilities are designed flexibly to optimise utilisation, improve timetable system functionality and efficiency, re-examine the structure of the teaching day/year, and explore options for the intensive delivery of courses.

Respond to student demand

- Change how we deliver courses to engage and inspire learners, enable change and innovation, accommodate student demand for flexible and extended teaching schedules, and meet their expectations around the use of digital technologies.

Key principles

Flexible, multi-modal spaces

- Active learning modalities are supported through the delivery of flexible flat-floor or semi- tiered spaces that enable interactive, hands-on and group-based learning.
- A standard minimum provision for space and technology design is defined to enable flexible use of teaching spaces and consistent size banding (increments of 30) aligns space design with timetabling methodologies.
- Bookable space is accommodated within the timetable to enable student collaboration and groupwork sessions outside of formal contact hours.
- There is a provision of flexible specialist spaces such as laboratories, maker- spaces and computer labs, designed to support multi-disciplinary use.
- Lecture theatres are limited in their number, encouraging the adoption of active learning as the preferred modality.

Change how we deliver courses

- An extended teaching day, restructured teaching periods and the increased use of intensives helps balance life and study.
- Teaching spaces are safe and accessible during periods of low activity on campus.
- Informal social spaces adjacent to learning and teaching facilities encourage students to feel welcome and linger on campus outside of designated lesson times.
- Spaces suitable for 'block' use by intensives, short courses and Continuing Professional Development courses have access to informal break-out areas, amenities and refreshments outside of core hours.
- Efficient campus operations are supported by creating active zones outside of core hours instead of activating the whole campus.
- More teaching is transitioned from traditional lecture theatres into large scale flat-floor or semi-tiered spaces that support active learning and lecture theatre growth is restrained.

Improved utilisation

- Flexible spaces available for multi-modal use across the extended day, ranging from formal teaching to industry and community engagement, including events and social activities.
- Alternative timetabling models are explored (with the Division of Academic and Student Engagement) to improve timetable functionality and practices, and maximise the delivery of teaching over the whole year.
- Room booking control is reviewed and the level of centrally controlled space is increased.

Digitally enhanced learning

- Space design and technology provision enables students to participate in learning and teaching activities from off-campus locations and support global partnership initiatives.
- The long-term requirement for formal computer laboratories is easedthrough University support for Bring Your Own Device.
- Augmented and Virtual Reality technologies support the integration of blended learning modalities.
- Online content creation is supported by video recording and production spaces.[2]

2 Excerpt from the Facilities Investment Plan 2022-2028.

APPENDIX 6. NT CAMPUS EXISTING & FORECAST SPACE

SPACE TYPE & CAPACITY	EXISTING	FORECAST REQUIRED ROOMS					FORECAST ADDITIONAL ROOMS				
	2021	2022	2023	2024	2025	2026	2022	2023	2024	2025	2026
Collaborative classroom											
30	21	28	28	29	33	36	7	7	8	12	15
60	26	15	16	22	22	22	-11	-10	-4	-4	-4
90	10	6	7	7	7	7	-4	-3	-3	-3	-3
120	3	1	5	5	5	5	-2	2	2	2	2
150	1	1	1	1	1	1	0	0	0	0	0
Total	61	48	55	61	65	68	-13	-6	0	4	7
Didactic classroom											
30	25	11	6	4	2	0	-14	-19	-21	-23	-25
60	10	5	4	2	1	0	-5	-6	-8	-9	-10
90	2	1	1	0	0	0	-1	-1	-2	-2	-2
Total	37	16	10	6	3	0	-22	-28	-32	-34	-37
Didactic lecture theatre											
60	1	1	1	1	1	0	0	0	0	0	-1
90	5	3	2	1	1	0	-2	-3	-4	-4	-5
120	3	3	2	1	1	1	0	-1	-2	-2	-2
150	4	3	2	2	2	2	-1	-2	-2	-2	-2
180	1	3	2	2	2	2	2	1	1	1	1
300	11	8	7	7	7	7	-3	-4	-4	-4	-4
Total	24	22	16	13	12	11	-2	-8	-11	-12	-13

SPACE TYPE & CAPACITY	EXISTING	FORECAST REQUIRED ROOMS				
	2021	2022	2023	2024	2025	2026
Computer suite						
30	10	Detailed modelling required.				
60	15					
90	4					
120	0					
150	1					
Total	30					
Teaching Laboratory						
30	14	Detailed modelling required.				
60	10					
90	3					
120	3					
150	1					
240 superlab	0					
Specialist Teaching						
30	11	Detailed modelling required.				
60	6					
90	1					

NOTES

- Refer Space Counts '*Collaborative Classrooms*' report August 2021 (Large lecture split is 120 students).
- Each size band is up to the maximum. i.e. size band 60 capacity range is 31 - 60.
- 30 seat didactic lecture transferred to didactic classroom.
- Large scale collaborative classrooms may be in a semi-tiered collaborative theatre format.
- Some small cohort activities will be scheduled into larger capacity rooms to meet the room quantity demand, i.e. 30 capacity class will be scheduled into a 60 capacity class.
- Demand for didactic lecture theatres may reduce over the 5 years, subject to extent of students choosing to view on-line, in lieu of attending on campus. Review annually.

APPENDIX 7. EXISTING SPACES

ROSEWORTHY

SPACE TYPE & CAPACITY	EXISTING ROOMS 2021
Flat floor classroom	
30	7
60	3
90	2
210	1
Total	13
Tiered lecture theatre	
120	1
Total	1
Computer suite	
60	1
90	1
Total	2
Teaching Laboratory	
60	1
Total	1
Specialist Teaching	
90	3
Total	3

WAITE

SPACE TYPE & CAPACITY	EXISTING ROOMS 2021
Flat floor classroom	
30	3
60	3
90	1
Total	7
Tiered lecture theatre	
60	1
180	1
Total	2
Computer suite	
30	1
60	1
Total	2
Teaching Laboratory	
30	1
60	3
Total	4

WEST END

SPACE TYPE & CAPACITY	EXISTING ROOMS 2021
Flat floor classroom	
30	15
90	1
Total	16
Tiered lecture theatre	
90	1
120	2
Total	3
Specialist Teaching	
30	1
60	2
Total	3

NOTES

- Each size band is up to the maximum. i.e. size band 60 capacity range is 31 - 60.
- Year 2021 indicates existing spaces as per 2021. Source data: Unispace Archibus July 2021.

APPENDIX 8. MIXED COHORT LEARNING

Mixed Cohort Learning (MCL) has been created in response to the pandemic; the need to adapt modes of teaching to support students regardless of their physical location.

It aligns with our strategic commitment to increasing the flexibility of our education delivery as part of our Education Pillar Plan under *Future Making* and is informed by the LTSTV. The MCL Steering Group, chaired by the PVC Student Learning, includes the Director Learning Enhancement and Innovation (LEI), academics, ITDS and Infrastructure staff.

MCL enables delivery of classes in which some students attend face-to-face, and others online, simultaneously. The intention is to enable the on-line students to be integral to the class and actively engage with the educator and students in the physical classroom. A student-centred and 'pedagogy first' approach was applied to the creation of MCL teaching and spaces.

Two types of MCL space have been established at the University.

Mixed Cohort Learning version 1 (MCL v1)

In an MCL v1 class, teaching staff engage with students in a tutorial format with active discussion, with either the tutor or individual students taking turns as the primary speaker in the class. Students in both the physical and online environments can see the primary physical presentation space, and hear one another during the class discussion through ceiling-mounted microphones and speakers.

Owing to the single presenter format the class capacity can be scaled up to relatively large class sizes and initially has been applied to flat floor teaching spaces with class sizes that vary from 30 – 120 capacity. Example spaces include Nexus10 704 and Engineering Maths G06.

During 2021 the planned digital refresh to classrooms has included additional audio enhancements to enable MCL. By semester 1, 2022, 30 classrooms at North Terrace campus and 4 classrooms at each of the Waite and Roseworthy campuses will enable MCL v1 activities. Refer *Table 2+3*.

Infrastructure will continue to coordinate the digital uplift with ITDS and LEI to create more MCL v1 rooms into the future.

Mixed Cohort Learning version 2 (MCL v2)

During 2021 a Mixed Cohort Learning v2 pilot was established to facilitate active learning in mixed-cohorts of face-to-face and online learners, using group-based and collaborative approaches. A tailored digital uplift was applied to two existing collaborative classrooms, Hughes 322[3] and 323[4], for up to 30 students. The pilot will allow us to apply lessons learned to the design of future learning spaces at the University.

The MCL v2 classrooms have been set up in pods (group of 5 at each pod), so that remote students are effectively sitting at the table with face-to-face peers; their faces displayed as normal size on the screen at the end of the pod. Technology includes primary room camera and microphones; plus multiple group 'pods' with separate cameras and microphones.

Training, support and guidance is being provided during the pilot by the LEI team for teaching staff to become comfortable in engaging the remote students in the normal tutorial and for tutors to become skilled in these processes, so they can be embedded into normal practice.

The pilot went live for semester 2, 2021 and the evaluation is due in January 2022, to inform future potential MCL v2 spaces. Subject to evaluation, the current rooms may require technology or furniture adjustments and be reassessed. Demand for this specialist space will also be tested to inform the development of further MCL v2 spaces.

Owing to physical spacing of acoustic pods larger floor area is required per seat to create an MCL v2 space, compared to MCL v1, or a standard collaborative classroom. The area per seat for an MCL v2 is approx. 4m2, compared to 2-3 m2 for other collaborative classrooms.

In preparation for further MCL v2 spaces, a list of appropriate existing collaborative classrooms that already have group-based monitors is included at *Table 4*.

3 https://www.youtube.com/watch?v=w8mhcbYLOCg
4 https://www.youtube.com/watch?v=zhn-7mbI-VE

CAMPUS	BUILDING	ROOM	SPACE TYPE	DEPT CONTROL	ROOM CAPACITY	FLOOR AREA
Existing MCL v1 rooms (August 2021)						
NT	Badger	LG17	flat floor	CTA	48	70
NT	Braggs	425	collab class	CTA	20	28
NT	Braggs	427	collab class	CTA	16	21
NT	Eng Maths	G06	collab class	CTA	42	65
NT	Eng Maths	G07	collab class	CTA	42	65
NT	Hughes	322	collab class	CTA	25	98
NT	Hughes	323	collab class	CTA	25	104
NT	Ligertwood	504	collab class	Prof	36	81
NT	Ligertwood	505	collab class	Prof	33	80
NT	Ligertwood	515	collab class	Prof	18	53
NT	Marjoribanks	126	collab theatre	CTA	60	154
NT	Marjoribanks	128	collab class	CTA	35	73
NT	Napier	LG23	collab class	CTA	32	62
NT	Napier	LG24	collab class	CTA	50	82
NT	Nexus10	704	collab class	Prof	24	68
NT	Nexus11	705	collab class	Prof	24	67
NT	Nexus12	706	collab class	Prof	36	93
NT	Schulz	308	collab class	CTA	25	64
RW	Williams	G31a	flat floor	CTA	27	64
RW	Williams	G31b	flat floor	CTA	27	74
RW	Williams	G31a & b	flat floor	CTA	54	138

Table 2. Mixed Cohort Learning version 1 (MCL v1)

CAMPUS	BUILDING	ROOM	SPACE TYPE	DEPT CONTROL	ROOM CAPACITY	FLOOR AREA
MCL v1 Rooms committed to complete by Dec 2021						
NT	Eng maths	205	collab class	CTA	150	278
NT	Eng maths	212	collab class	CTA	20	56
NT	Eng maths	213	collab class	CTA	20	53
NT	Eng maths	218	collab class	CTA	30	63
NT	Nexus10	102	collab class	CTA	36	62
NT	Nexus10	601	collab class	Prof	24	60
NT	Nexus10	701	collab class	Prof	30	81
NT	Nexus10	703	collab class	Prof	30	82
MCL v1 Committed for delivery S1, 2022						
NT	Helen Mayo South	SG20	collab class	CTA	120	360
WT	Charles Hawker	G22	collab class	CTA	60	135
WT	Charles Hawker	101	collab class	CTA	60	122
WT	Charles Hawker	102	collab class	CTA	30	68
WT	Charles Hawker	109	collab class	CTA	18	41
WT	Charles Hawker	101/102	collab class	CTA	90	190
RW	Callaghan	G18a	collab class	CTA	50	90
RW	Callaghan	G18b	collab class	CTA	50	90
RW	Callaghan	G18a/b	collab class	CTA	100	180

Table 3. Spaces committed for Mixed Cohort Learning spaces

CAMPUS	BUILDING	ROOM	SPACE TYPE	DEPT CONTROL	MCL ROOM CAPACITY*	CURRENT CAPACITY	FLOOR AREA
Existing MCL v2 rooms (August 2021)							
NT	Hughes	322	collab class	CTA	25		98
NT	Hughes	323	collab class	CTA	25		104
Potential future MCL v2: existing high quality collaborative class with group based monitors. Demand to be confirmed. *Note MCLC mode capacity to be reviewed (min 25 in class).							
NT	Barr Smith South	2052	collab class	CTA	25	42	96
NT	Barr Smith South	2051	collab class	CTA	25	56	144
NT	Barr Smith South	1062	collab class	CTA	25	70	168
NT	Barr Smith South	1063	collab class	CTA	25	70	187
NT	Ingkarni Wardli	B17	collab class	CTA	25	56	136
NT	Nexus10	UB36	collab class	CTA	25	48	92
NT	Nexus10	UB40	collab class	CTA	25	48	86
NT	Nexus10	UB34	collab class	CTA	25	54	105
NT	Nexus10	UB35	collab class	CTA	25	54	103

Table 4. Mixed Cohort Learning version 2 (MCL v2)

APPENDIX 9. DIDACTIC SPACE CONVERSIONS

The existing strategic commitment to a transformation of the student learning experience will continue to drive necessary changes to the quality and design of our learning and teaching infrastructure. There is an opportunity to convert existing didactic flat floor classrooms and tiered lecture theatres, to collaborative classrooms.

Tiered lecture theatres present our best opportunity to create large scale active learning spaces within our existing assets, prior to the development of a new building. An existing successful example of conversion at the University of Adelaide is Ligertwood 231. This format has more recently been implemented in the AHMS 1059 collaborative theatre.

Consideration will be given to maintaining lecture theatres for public symposia and performances, primarily The Braggs and Scott Theatre.

Table 5 indicates existing didactic space at North Terrace Campus that should be considered for conversion to active learning. This is a desktop study and a further feasibility study will be required.

AHMS - 1059 Collaborative Theatre

BUILDING	ROOM	LECTURE THEATRE NAME	DEPT CONTROL	SIZE BAND	CURRENT CAPACITY	FLOOR AREA	FLOOR	FLOOR TYPE	PLAN 2023	PLAN 2026+	POTENTIAL CONVERSION [5]
Engineering North	N132	Lecture Theatre	CTA	60	62	61	Flat	Concrete	Retain	Convert	Research, or collab class 24 seats
Barr Smith South	3022	"Polygon Lecture Theatre"	CTA	90	77	66	Tiered	Timber	Close		Review surrounds, adjacent hub
Engineering South	S111	Lecture Theatre	CTA	90	90	109	Flat	Concrete	Retain	Convert	Collaborative classroom 30 seats
Napier	LG28	Lecture Theatre	CTA	90	95	103	Tiered		Retain	Demo	
Benham	G10	"Benham Lecture Theatre"	CTA	120	102	129	Tiered	Timber	Retain	Retain or Convert	Research, or collab theatre 60 seats
Napier	G03	Lecture Theatre	CTA	120	119	118	Tiered		Retain	Demo	
Badger	G31	"Macbeth Lecture Theatre"	CTA	120	121	123	Tiered	Timber	Retain	Retain or Convert	Research, or collab theatre 60 seats
Engineering South	S112	Lecture Theatre	CTA	150	136	132	Tiered	Concrete	Retain	Retain or Convert	Collaborative theatre 60 seats
Napier	LG29	Lecture Theatre	CTA	150	143	148	Tiered		Retain	Demo	
Hughes	309	Lecture Theatre	CTA	150	149	147	Tiered	Concrete	Retain	Retain or Convert	Collaborative theatre 90 seats
Napier	G04	Lecture Theatre	CTA	150	166	143	Tiered		Retain	Demo	
Engineering North	N158	"Chapman Lecture Theatre"	CTA	300	190	154	Tiered	Timber	Retain	Retain or Convert	Collaborative classroom 60 seats
Physics	103	"Kerr Grant Lecture Theatre"	CTA	300	200	183	Tiered	Concrete	Retain	Retain or Convert	Research, or collab theatre 90 seats
Ligertwood	333	Lecture Theatre	CTA	300	217	176	Tiered	Concrete	Convert		Collaborative theatre 100 - 120 seats
Mawson	G19	"Mawson Lecture Theatre"	CTA	300	232	207	Tiered	Concrete	Retain	Retain or Convert	Collaborative theatre 100 - 120 seats
Darling West	G14	"Darling West Lecture Theatre"	CTA	300	233	183	Tiered	Concrete	Retain	Retain	
Horace Lamb	1022	"Horace Lamb Lecture Theatre"	CTA	300	258	187	Tiered	Concrete	Convert		Collaborative theatre 100 - 120 seats
Napier	102	Lecture Theatre	CTA	300	289	265	Tiered		Retain	Demo	
Helen Mayo North	N103	"Florey Lecture Theatre"	CTA	300	291	217	Tiered	Concrete	Retain	Retain	
Barr Smith South	3029	"Flentje Lecture Theatre"	CTA	300	305	227	Tiered	Concrete	Retain	Retain	
The Braggs	G.60	"The Braggs Lecture Theatre"	CTA	300	420	508	Tiered	Concrete	Retain	Retain	
Scott Theatre	001	Scott Theatre	CTA	300	569	586	Tiered	Concrete	Retain	Retain	

[5] Review demand and potential conversion of space and prepare feasibility study

Table 5. Existing didactic space - lecture theatre

BUILDING	ROOM	CLASSROOM NAME OR SCHOOL NAME	DEPT CONTROL	SIZE BAND	CURRENT CAPACITY	FLOOR AREA	PLAN 2023	PLAN 2026+	POTENTIAL CONVERSION [5]
Mawson	122	"Madigan room"	CTA	90	72	186	Review		Coordinate with STEM MP.
Elder Hall	LG13	Elder Con	Arts	60	50	112	Review		
Badger	LG17		CTA	60	48	70	Review		
Benham	G25		CTA	60	42	62	Review		Coordinate with STEM MP
Santos	108		CTA	60	40	49	Review		Coordinate with STEM MP
Napier	210		CTA	60	35	64	Retain	Demo	
Napier	LG14		CTA	60	32	63	Retain	Demo	
Engineering North	N218		CTA	30	30	58	Review		
Hartley	108A	Elder Con	Arts	30	30	67	Review		
Ligertwood	214		CTA	30	30	49	Review		
Ligertwood	216		CTA	30	30	48	Review		
Ligertwood	314		CTA	30	30	48	Review		
Ligertwood	316		CTA	30	30	49	Review		
Napier	108		CTA	30	30	53	Retain	Demo	
Napier	205		CTA	30	30	46	Retain	Demo	
Napier	LG15		CTA	30	28	54	Retain	Demo	
Hartley	G28		CTA	30	25	53	Review		
Hartley	108B	Elder Con	Arts	30	25	48	Review		
Napier	144		CTA	30	25	37	Retain	Demo	
Napier	LG21		CTA	30	24	50	Retain	Demo	
Ligertwood	228		CTA	30	22	44	Review		
Napier	LG12		CTA	30	22	42	Retain	Demo	
Schulz	215		CTA	30	22	45	Review		
Hartley	122a	Wirltu Yarlu	DASE	30	20	56	Review		
Napier	LG09		CTA	30	20	38	Retain	Demo	
Napier	LG11		CTA	30	20	38	Retain	Demo	
Napier	LG18		CTA	30	20	38	Retain	Demo	
Napier	LG19		CTA	30	20	38	Retain	Demo	
Elder Hall	LG06	Elder Con	Arts	30	18	44	Review		
Helen Mayo South	SG04		CTA	30	18	38	Review		
Santos	210	Petroleum Engineering	ECMS	30	18	40	Review		Coordinate with STEM MP
Schulz	217	Elder Con	Arts	30	15	31	Review		
Napier	LG07		CTA	30	14	26	Retain	Demo	
Schulz	415		CTA	30	14	40	Review		

[5] Review demand and potential conversion of space and prepare feasibility study

Table 5. Continued - existing didactic space - flat floor

FOR FURTHER ENQUIRIES

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