



THE UNIVERSITY OF  
SYDNEY

# Building Standards for Learning Space

The University of Sydney

DVC (Education), ICT & CIS

## Document Control

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## Purpose

The Building Standards for Learning Space sets out the University's minimum requirements and principles for architects, consultants and contractors involved in planning, design, documentation, construction and management of learning spaces across the University of Sydney.

The purpose of these standards is to ensure new and refurbished building projects consistently meet the University's design and engineering objectives whilst being aesthetically creative, environmentally sustainable, flexible and cost-efficient to build, operate and maintain.

The University's vision of learning space for the 21<sup>st</sup> century is a student-centred, quality assured, seamless environment encompassing physical and virtual networks that promote collaborative, social and interactive learning and are inclusive of the needs of all staff and students. To achieve this, the Office of the DVC (Education), Campus Infrastructure Services (CIS) and Information Communication Technology (ICT) are leading a joint project on learning space standards. Standards for learning space (both physical and virtual) are shaped by evidence with data drawn through their use, student, staff and faculty evaluation and iterated through innovation. They are conceived from expectations of the educational function provided by the spaces and are based on best practice internationally.

The University Learning Space review and follow up investigations, subsequent annual feedback from faculties and international benchmarks with our international counterparts contribute to a student-centred and informed view of learning space at the University. Learning space will be developed and evaluated in response to the feedback we receive from students, staff and faculties with reference to the international sector.

These standards will continue to be updated through evaluation of existing facilities. These standards are based on the recently completed spaces in Charles Perkins Centre (CPC), the Australian Institute of Nanoscience (AIN) and the Abercrombie Business School Building.

## Scope

These design standards describe minimum requirements for design, construction and maintenance of new and refurbished learning spaces owned, operated and managed by The University of Sydney. It applies to:

- 1) New building construction;
- 2) Refurbishment projects for both General Teaching Space (GTS) in both University owned and leased buildings; and
- 3) Facilities maintenance services.

The standards cover the minimum requirements for learning spaces for a range of formal and informal teachings spaces. They do not cover:

- All typologies of laboratories;
- Faculty Studios; and
- Ancillary Spaces.
- Research spaces

These standards apply to planners, architects, project managers, consultants, contractors, sub-contractors, tenants, managing agents, University staff and others involved in the design, construction and maintenance of existing, new and proposed University buildings and facilities.

## Glossary of Terms

Acronym	Definition
ABS	Acrylnitril-Butadien-Styrol (protective edging to laminate tables)
AFFL	Above Finished Floor Level
AS	Australian Standards
AV	Audio Visual
CIS	Campus Infrastructure and Services
DALI	Digital Addressable Lighting Interface
DVC-E	Deputy Vice-Chancellor Education
EFTSL	Equivalent Full-Time Student Load
FFL	Finished Floor Level
FTE	Full-Time Equivalent
GFA	Gross Floor Areas
Go8	Group of Eight
GPO	General Power Outlet
GTS	General Teaching Space
HDR	Higher Degree by Research
ICT	Information Communication and Technology
NCC	National Construction Code
PC	Personal Computer
Rw	Weighted Sound Reduction Index
SoE	Standard Operating Environment (a standard implementation of an operating system and associated software)
STI	Speech Transmission Index
T&L	Teaching and Learning
TEFMA	Tertiary Education Facilities Management Association
UEM	University Economic Model
UFA	Useable Floor Area
USB	

## Authorities and Responsibilities

These building standards are owned by CIS. They are approved and signed-off by the Director of CIS. The CIS Planning Team are responsible for maintaining these standards and keeping them up-to-date. The Standards must be reviewed biannually or as required.

Deviations from these standards should be referred to the DVC-Education, CIS and ICT for review and endorsement. Innovation projects will be reviewed on a case by case basis and be assessed after implementation on a 6 and 12-month basis. If successful, these projects may be integrated into these standards moving forward. This process will be covered in a separate document.

## Technical Requirements

### 5.1 University Specific Planning Requirements

This document must be interpreted in conjunction with the following documents, including but not limited to:

- 1) University of Sydney Strategic Plan (2016-2020)
- 2) Learning and Teaching Policy and Procedures
- 3) Campus Improvement Plan (2014 – 2020)
- 4) Heritage Asset Management Strategy 2006 as amended
- 5) Faculty Management Strategy
- 6) Disability Action Plan (2013-2018)
- 7) All CIS Design Standards, including but not limited to:
  - a) CIS Accessibility Standard;
  - b) CIS Interior Fit out Standard
  - c) CIS Design Standard Heritage
  - d) The University of Sydney Sustainability Framework
  - e) Building Projects Approval and Management Policy
  - f) CIS Mechanical Services Standard
  - g) Building Management and Control Systems
  - h) CIS Electrical Services Standard
  - i) CIS Lighting Services Standard
  - j) CIS Security Services Standard
  - k) CIS Essential Fire Safety Measures Standard
  - l) CIS Hydraulic Services Standard
  - m) CIS Advanced Utilities Monitoring System Standard
- 8) All ICT Design Standards, including but not limited to:
  - a) Viewed Image Size for Audio Visual Installation Standard (Vis-à-vis)
  - b) AETM Audio Visual Guidelines – Tertiary Teaching Spaces, Edition 2
  - c) Audio Coverage Uniformity in Enclosed Listener Areas ANSI/INFOCOMM A102.01:2017
  - d) Audio Visual Structured Cabling Standard
  - e) ICT Communications Cabling Standard
  - f) Lighting Energy Sustainability Standard (LESS)



## 5.2 Functional Planning and Zoning

Learning spaces, in particular those used for large format teaching, are encouraged to be located on or near the ground floor. This is for ease of navigation and accessibility. Informal spaces and retail should be located near formal spaces, where possible, to encourage student use. See diagrams below.

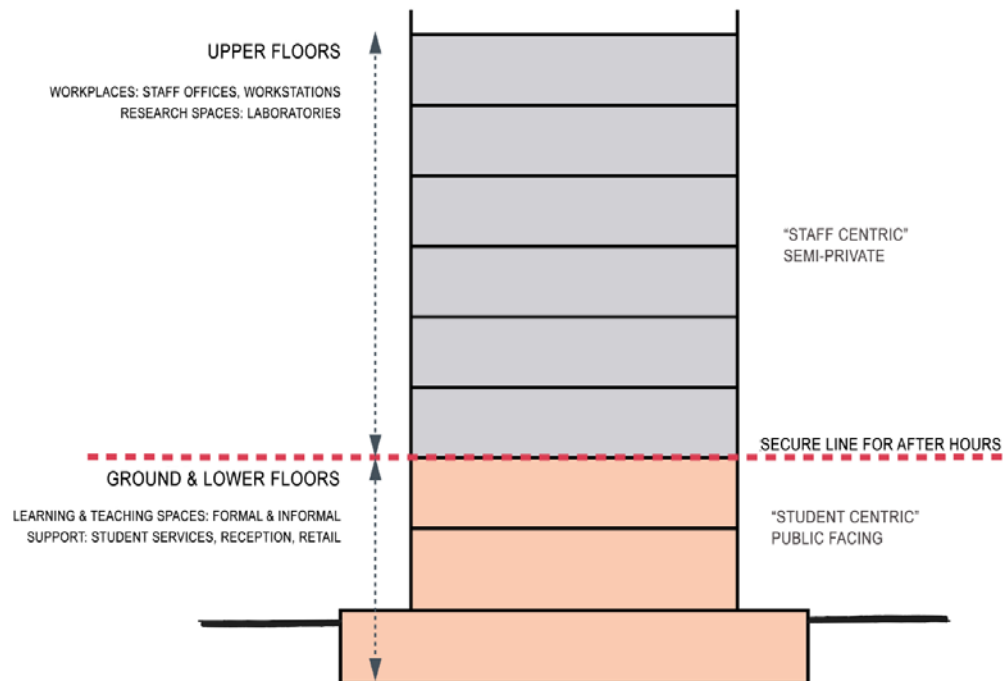


Figure 1: Section showing planning principles for buildings

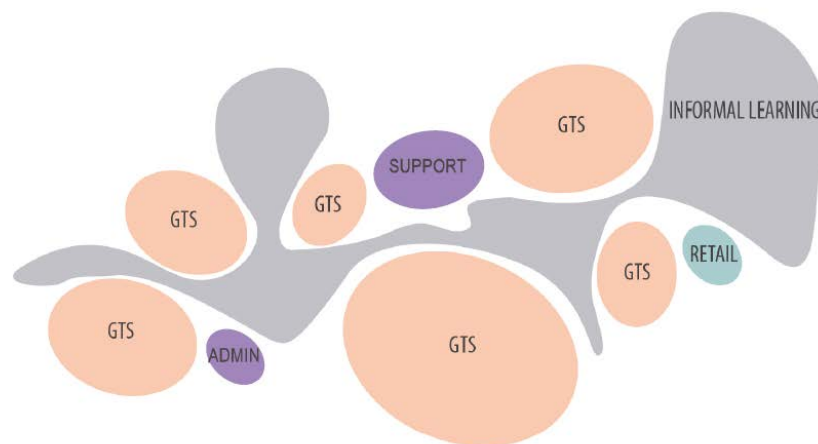


Figure 2 Indicative relationship between informal learning, formal space and ancillary support

## Nomenclature

The University of Sydney owns and operates many learning spaces. As such, the definition and categorisation of these spaces is critical for planning, improvement and management purposes. Moreover, the naming convention ensures consistency in information management systems, such as those use for space registry and timetabling, and in information reported both internally and externally (to bodies such as Go8 and TEFMA).

Below is a list of the defined teaching and learning (T&L) spaces across the institution. For more information on the naming conventions used in the University Economic Model (UEM) purposes, please refer to **Campus Assist Online: Space Planning & Management – Editing Space Data User Guide** (<https://campusassist.sydney.edu.au/archibus/schema/ab-core/views/process-navigator/navigator-details.axvw>).

### 6.1 Formal Learning Spaces

T&L Category	T&L Code	Description
Lecture theatre	LT	A large room typically over 100 seats, seating in rows, with a raked floor and teaching computing designed for lecturing large cohorts of students.
Case study Lecture theatre	CSLT	A room with 100 seats or less, seating in a horseshoe shaped, with a tiered floor and teacher computing and AV suitable for small group discussions during lectures.
Seminar room	SR	Rooms typically with 90 seats or less, with seating on a flat floor with teacher computing.
Learning studio	LS	Rooms with 90 seats or less, with configurations of seating and student usable technologies. These studios offer pods providing different configurations of furniture and student computing to promote enquiry, collaboration and problem solving. Student computing pods are typically shared.
Computer teaching laboratory	CL	Rooms with 90 seats or less, with a desktop computer to student ratio of 1:1 on a flat floor.
Teaching Laboratory (Dry)	T_D_LAB TR_D_LAB	Rooms with 240 seats or less, with specialist equipment required for specialist teaching purposes, flat floor, and teacher computing. This is typically computing teaching lab with specialist equipment such as microscopes.
Teaching Laboratory (Wet)	T_W_LAB TR_W_LAB	Rooms with 240 seats or less, with specialist equipment required for specialist teaching purposes, flat floor, teacher computing, characterised by a high use of chemical or biological consumables and the use of sinks, safety showers, and various types of gas lines

## 6.2 Informal Learning Spaces

T&L Category	T&L Code	Description
HDR desk seats	HDR	Desks, lab benches, individual design areas, and other seats designed for higher degree research students to engage in their studies.
Learning Hubs	LH	Informal learning spaces to support interaction, creativity and reflection. These spaces incorporate elements defined by a standards-based approach: informal pods, individual, pair and group seating with computing and BYOD, banquette seating. These are shared.
Library Seats	LIB	Informal learning spaces located in the library.
Student common rooms	SCR	Small room provided for students to study in between classes. Not used for formal teaching. These spaces are typically not shared.

## 6.3 Room Signage for Learning Spaces

Room signage should for learning spaces conform to the University of Sydney Guidelines, refer to <http://sydney.edu.au/about/working-with-us/contractors.shtml>

At a minimum, an ID9 should be located adjacent to the handle side of the door to identify the room and allow space for A4 notifications to appear on the pin board as required. The name should appear as per the naming convention “Room Type Room Name (Legacy Name)”.

If there is hearing augmentation appropriate signage should be located at the entry to the room, and additional signage with infra-red as per AS1428.5. See combined sign pictured right.

If electronic signage is provided, it is in addition to fixed signage and not in lieu of.



Figure 3 Example of Room ID9 sign

## Lecture Theatres

Lectures at the University are used to present research, ideas and course materials to students and the public. Modern lectures involve the presentation of various materials in various formats and may also include physical demonstrations and group or individual activities. Intelligibility of the lecturer's speech and legibility of the presentation materials is key to audience understanding of the topics presented. The audio and presentation of coursework lectures are captured for distribution and archiving.

Lecture theatres are large rooms with, typically, over 100 seats. They are designed for teaching large cohorts of students, with styles ranging from traditional teacher-led presentations to fully interactive discussion or activity-based sessions. The furniture in these rooms is usually fixed in a tiered arrangement to optimise sightlines. Bench furniture is often provided to offer more space for student notes and devices and optimise opportunities for collaboration. These venues are designed with consideration to sightlines, acoustics, lighting, and accessibility.

In addition, some facilities may need to be suitable for hosting public events. As such consideration needs to be given to the design of the adjacent spaces in terms of catering, securing zones and emergency planning.

### 7.1 General Provisions

Space Provision	Approximately 1.2 – 1.8 m <sup>2</sup> UFA per student.
<b>Furniture Provision – General</b>	Fixed seats with numbering row and seat numbering (for ease of use and for maintenance). Seats to be a combination of at least 3 colours in a randomised pattern to enable easy replacement. Seats to be 550-600 mm centre to centre. Central aisles are less favoured. Tablet to be provided for writing/laptop use. If side mounted tablet it must be A3 so it is suitable for both right-hand and left-handed use.
<b>Furniture Provision - Front of Room</b>	Height adjustable lectern. Hard-wired. Designed to meet AS1428 Adjustable lectern chair – 5-star base Six whiteboards – movable up and down for presentation min each 2400mm wide by 1200mm high, located 900 mm 1000mm from the ground. Internet Connected (IP) Clock, bin.
<b>Acoustics - Internal</b>	Refer to AS/NZS 2107:2000 – Acoustics – recommended design sound levels and reverberation times for building interiors. See “Lecture Theatre – with speech reinforcement”. Electro-acoustic systems shall achieve an average STI of no less than 0.75 across the audience area.
<b>Acoustic Separation</b>	Lecture Theatre to circulation: Rw 50, LT to LT: Rw 50 Lt to Plant Room: Rw 55
<b>Accessibility</b>	Physical functions to meet accessibility requirements Push button actuator for all entrance doors 2 - 3% of spaces (spread between the front and rear) should be wheelchair spaces with adjacent companion seating. Power point is to be within reach zone (0.5 m AFFL) Clearance of 1.5 m around furniture. Signage to comply with CIS and AS1428 standards
<b>FINISHES</b>	
<b>Floor</b>	Tiered Floor Floors – to be textured with at least 3 colours to hide wear and tear. broadloom carpet preferred, Stairs and circulation to be hardwearing.

<b>Walls</b>	Walls to be acoustically treated as required Walls behind white-board to be painted in contrasting colour
<b>Entry Door</b>	Entry door to lecture theatre should have a vision panel or side light to enable vision into the room. Entry door should ideally not be located in presentation wall so that latecomers or amenity users cause minimum disruption. There must be an airlock with sufficient clearance for all lecture theatres.
<b>Windows</b>	Windows to have motorised blinds (black out and brown out), preferably not in presentation wall as light causes projection issues.
<b>SERVICES</b>	
<b>Power</b>	1 single GPO mounted every 2 seats (i.e. 1 GPO: 2 Students) 15 Amp Cleaning outlets to each aisle Blinds to be motorised – controlled from AMX and wall panel. To AV lectern and all field AV equipment (e.g. motorised projection screens, data projectors etc.). All cleaning outlets and motorised equipment (projection screens, projector lifters etc.) to be electrically isolated from AV lectern and other field AV equipment.
<b>Security</b>	Card reader to provide access to room / zone.
<b>Data Provision</b>	Wi-Fi to meet capacity, no data points provided for students. Powered data point for clocks at front of the room. Powered data point at entry for external signage.
<b>Lighting</b>	DALI dimmable, Multiple scenes required (beam-shaping spotlights and low spill lighting) Motion Sensors required to interface Lighting, AV and Mechanical Systems. LED tread lighting to stairs All lighting including all other maintainable electrical/dry fire devices to be on electric winches to lower the services to 1mm AFFL. Lighting to be wall and AMX controlled, timer to comply with BCA requirements. Refer to AV/CIS LESS and CIS lighting Standards
<b>HVAC</b>	Temperature: 23 °C +/-3 °C The design of the HVAC system needs to be in accordance with the AV design. For example, Location of diffusers should not interfere with the screen, and sufficient ventilation should be provided for projectors. Refer to CIS Mechanical Standard.

## 7.2 AV Requirements for Lecture Theatre – Large

<b>Indicative Capacity</b>	201-500 +
<b>Lectern</b>	Equipment rack for lectern-based components with necessary connection plates and cables See below AV requirements, refer to Appendix for more information.
<b>AV SYSTEM</b>	
<b>Video System</b>	Primary Content Display – typically via projector and motorised projection screen (16:9); Secondary Content Display – typically via projector and motorised projection screen (16:9); Interactive Preview Monitor – mounted on lectern. Include details of digital whiteboard.
<b>Audio System</b>	Lectern Microphone; Wireless Lapel Microphone; Wireless Handheld Microphone; Additional Wireless Microphones (optional), 3.5 mm Aux Audio Input; Balanced Aux Audio In/Out Connection Plate; Hearing Augmentation.
<b>Program Sources</b>	Standard Teaching SoE PC with DVD Drive; HDMI Laptop Input; Network Presentation Gateway; Document Camera; DVD; High Definition Camera (optional).

<b>Control System</b>	Touch-Panel Control System; Hardware Lecture Capture; Software Lecture Capture; Lecture Capture Status Indicator.
<b>General</b>	Telephone; Lighting Integration with AV System, Bio-Box with Separate AV Rack (if required); Digital Signage for Scheduling; Staging / Conference Facilities (optional).



Figure 4 – A31 Sydney Nanoscience Hub



Figure 5 - H70 ABS Lecture Theatre

## 7.3 AV Requirements for Lecture Theatre – Medium

<b>Indicative Capacity</b>	101-200
<b>Lectern</b>	Equipment rack for lectern-based components with necessary connection plates and cables See below AV requirements, refer to Appendix for more information.
<b>AV SYSTEM</b>	
<b>Video System</b>	Primary Content Display – typically via data projector and motorised projection screen (16:9); Interactive Preview Monitor – mounted on lectern.
<b>Audio System</b>	Lectern Microphone; Wireless Lapel Microphone; Wireless Handheld Microphone; 3.5 mm Aux Audio Input; Balanced Aux Audio In/Out Connection Plate; Hearing Augmentation.
<b>Program Sources</b>	Standard Teaching SoE PC with DVD Drive; HDMI Laptop Input; Network Presentation Gateway; Document Camera; High Definition Camera (optional).

<b>Control System</b>	Touch-Panel Control System; Hardware Lecture Capture; Software Lecture Capture; Lecture Capture Status Indicator.
<b>General</b>	Telephone for Assistance; Lighting Integration with AV System; Digital Signage for Scheduling (optional).

## Case Study Lecture Theatre

Tiered teaching spaces that enable students to face each other, rather than just facing the lecturer. This promotes discussion-based interaction in a more intimate environment.

Suitable for lectures and group work. A room with typically 100 seats or less, seating in a horseshoe shape or cabaret style, with a raked floor and teaching computing suitable for small group discussions during lectures. Consideration must be given to the arc and geometry of the room.

### 8.1 General Provisions

<b>Space Provision</b>	<b>Approximately 1.8 m<sup>2</sup> UFA per student.</b>
<b>Furniture Provision – General</b>	Tables to be fixed with two rows per tier. Minimum 450mm deep. Tables to be curved to enable discussion. Seats to be 5-star swivel height adjustable on glides to enable students to work with table behind/in front of them. Central aisles are less favoured.
<b>Furniture Provision - Front of Room</b>	Height adjustable lectern Fixed lectern. Hard-wired. Designed to meet AS1428 Adjustable lectern chair – 5-star base with glides 4-6 whiteboards – movable up and down for presentation, located 1000 mm from the ground. Internet Connected (IP) Clock, bin.
<b>Acoustics - Internal</b>	Refer to AS/NZS 2107:2000 – Acoustics – recommended design sound levels and reverberation times for building interiors. See “Lecture Theatre – with speech reinforcement”. Electro-acoustic systems shall achieve an average STI of no less than 0.75 across the audience.
<b>Acoustic Separation</b>	Lecture Theatre to circulation: Rw 50, LT to LT: Rw 50; LT to Plant Room: Rw 55
<b>Accessibility</b>	Physical functions to meet accessibility requirements 2 - 3% of spaces should be wheelchair spaces with power within reach zone (0.5 m AFFL). Clearance of 1.5 m around furniture. Push button actuated entrance door for venues with more than 80 students. Signage to comply with CIS and AS1428 standards
<b>FINISHES</b>	
<b>Floor</b>	Floors – to be textured with at least 3 colours to hide wear and tear. Carpet tiles preferred. Stairs and circulation to be hardwearing.
<b>Walls</b>	Walls to be acoustically treated as required Walls behind white-board to be painted in contrasting colour Where appropriate whiteboards around the periphery of the room to foster group work.
<b>Entry Door</b>	Entry door to room should have a vision panel or side light to enable vision into the room.



	Entry door should ideally not be located in presentation wall so that latecomers or amenity users cause minimum disruption.
<b>Timetable Screen</b>	
<b>Windows</b>	Windows to have motorised blinds, preferably not in presentation wall.
<b>SERVICES</b>	
<b>Power</b>	1 single GPO mounted every 2 seats (i.e. 1 GPO: 2 Students) 15 Amp Cleaning outlets to each aisle Blinds to be motorised To AV lectern and all field AV equipment (e.g. motorised projection screens, data projectors etc.). All cleaning outlets and motorised equipment (projection screens, projector lifters etc.) to be electrically isolated from AV lectern and other field AV equipment.
<b>Security</b>	Card reader to provide access to room / zone.
<b>Data Provision</b>	Wi-Fi to meet capacity, no data points provided for students. Powered data point for clocks at front of the room. Powered data point at entry for external signage.
<b>Lighting</b>	DALI dimmable, Multiple scenes required (beam-shaping spotlights and low spill lighting) Motion Sensors required to interface Lighting, AV and Mechanical Systems. LED tread lighting to stairs. Refer to AV/CIS LESS and CIS lighting Standards Lighting to be wall and AMX controlled, timer to comply with BCA requirements.
<b>HVAC</b>	Temperature: 23 °C +/-3 °C, Refer to CIS Mechanical Standard

## 8.2 AV Requirements for Case Study Lecture Theatre

<b>Indicative Capacity</b>	Up to 100
<b>Lectern</b>	Equipment rack for lectern-based components with necessary connection plates and cables See below AV requirements, refer to Appendix for more information.
<b>AV SYSTEM</b>	
<b>Video System</b>	Primary Content Display – typically via data projector and motorised projection screen (16:9); Secondary Content Display (optional) – typically via data projector and motorised projection screen (16:9); Interactive Preview Monitor – mounted on lectern; Note: Typical room geometry for this type of space may require distributed video system to meet applicable standards.
<b>Audio System</b>	Lectern Microphone; Wireless Lapel Microphone; Wireless Handheld Microphone; Room Microphones (optional), 3.5 mm Aux Audio Input; Balanced Aux Audio In/Out Connection Plate; Hearing Augmentation.
<b>Program Sources</b>	Standard Teaching SoE PC with DVD Drive; HDMI Laptop Input; Network Presentation Gateway; Document Camera; High Definition Camera (optional).
<b>Control System</b>	Touch-Panel Control System; Hardware Lecture Capture; Software Lecture Capture; Lecture Capture Status Indicator.
<b>General</b>	Telephone for Assistance; Lighting Integration with AV System, Bio-Box with Separate AV Rack, Staging / Conference Facilities (optional); Digital Signage for Scheduling (optional).





*Figure 6 F10 Law School Case Study Lecture Theatre*

## Seminar Rooms

Flat floor teaching spaces with mobile desks and chairs. The room can be set up for lecture mode or interactive mode. These venues are designed with consideration to visual and accessibility.

Classes providing intensive instruction on course material often serving as re-enforcement of concepts introduced during lectures. Tutorials and seminars provide opportunities for students to ask specific questions of their tutors and for students to collaborate on exercises and group projects. Tutorials often involve presentations by tutors and student groups

Increasingly seminar rooms are requiring more whiteboards around the periphery of space to enable problem-based learning (PBL) and related pedagogies. PBL is a student-centred instructional strategy in which students collaborate solve problems and reflect on their experiences typically in groups of 5. Students may require access to physical and or digital resources and require a means to collate and present their results.

### 9.1 General Provisions

<b>Space Provision</b>	<b>Approximately 2.5-3.5 UFA per student.</b>
<b>Furniture Provision – Front of Room</b>	Height adjustable lectern. Hard-wired. Designed to meet AS1428 Adjustable lectern chair – 5-star base Whiteboards to be across the full extent of the front teaching wall 1000mm AFFL, 1200mm high Internet Connected (IP) Clock, bin.
<b>Furniture Provision – Student Chairs</b>	Performance requirements for seminar chairs: <ul style="list-style-type: none"> <li>Chair should be lightweight and Stackable to be used with a trolley.</li> <li>Need to be comfortable for sitting for 2-3 hours in class</li> <li>Chair should have Mesh or similar back</li> <li>Base to be sled or 4-legs with castors</li> <li>GECA certified or equivalent, 10-year warranty</li> </ul>
<b>Furniture Provision – Student Tables</b>	For approval of seminar rooms, the rooms must be shown laid out in group, lecture and exam mode. Minimum table sizes are as follows: <ul style="list-style-type: none"> <li>Tables for exams – 800 x 600</li> <li>Minimum tables for classrooms – 1200 x 600</li> <li>Preferred tables for classrooms – 1800 x 600 (can sit 3 in class or 2 for exams with a divider)</li> </ul> Table finishes are to laminate – white, charcoal, oyster grey or beech. ABS edging can vary. Note – 10-15% of tables to be accessible.
<b>Furniture Provision – Student whiteboards</b>	Whiteboards need to be provided around the periphery of the room to facilitate group work for students in a ratio of 1 whiteboard per 5 students. These should be vitreous porcelain or colour-back glass. Size should be 1.5 m <sup>2</sup> per whiteboard, these can be fixed to the walls, or on castors.
<b>Acoustics – Internal</b>	Refer to AS/NZS 2107:2000 – Acoustics – recommended design sound levels and reverberation times for building interiors. See “Lecture Room up to 50 seats” for seminar room small. See “Lecture Theatre – with speech reinforcement” for seminar room medium and large. Electro-acoustic systems shall achieve an average STI of no less than 0.75 across the audience area.

<b>Acoustic Separation</b>	Seminar Room to circulation: Rw 50, SR to SR: Rw 50
<b>Accessibility</b>	Physical functions to meet accessibility requirements Clearance of 1.5 m around fixed furniture.
<b>Signage</b>	Signage detailing category of space, room number, name (if relevant) and braille as per guidelines
<b>Storage</b>	To facilitate flexible use of the space, storage must be provided to rooms over 100 seats.
<b>FINISHES</b>	
<b>Floor</b>	Floors to be flat Floors – to be textured with at least 3 colours to hide wear and tear. Carpet tiles preferred
<b>Walls</b>	Walls to be acoustically treated as required Walls behind white-board to be painted in contrasting colour Whiteboards to be maximised around the periphery of the room to foster group work.
<b>Entry Door</b>	Entry door to room should have a vision panel or side light to enable vision into the room. Entry door should ideally not be located in presentation wall so that latecomers or amenity users cause minimum disruption.
<b>Windows</b>	Windows to have motorised blinds, preferably not in presentation wall as light causes projection issues.
<b>Timetable screen</b>	
<b>SERVICES</b>	
<b>Power</b>	GPOs to be mounted 700-900 AFFL (for accessibility) approximately every 3 lineal metres around the perimeter of the room under the whiteboards, To AV lectern and all field AV equipment (e.g. motorised projection screens, data projectors etc.). All cleaning outlets and motorised equipment (projection screens, projector lifters etc.) to be electrically isolated from AV lectern and other field AV equipment.
<b>Security</b>	Card reader to provide access to room / zone.
<b>Data Provision</b>	Wi-Fi to meet capacity, no data points provided for students. Powered data point for clocks at front of the room. Powered data point at entry for external signage.
<b>Lighting</b>	DALI dimmable, Multiple scenes required (beam-shaping spotlights and low spill lighting) Motion Sensors required to interface Lighting, AV and Mechanical Systems. Lighting to be wall and AMX controlled, timer to comply with BCA requirements. Refer to AV/CIS LESS and CIS lighting Standards
<b>HVAC</b>	Temperature: 23 °C +/- 3 °C Refer to CIS Mechanical Standard



Figure 7 Typical seminar room furniture



Figure 8 C13B Business School Seminar Room

## 9.2 AV Requirements for Seminar Room - Large

<b>Indicative Capacity</b>	Typically more than 61, will vary with the room geometry
<b>Lectern</b>	Equipment rack for lectern-based components with necessary connection plates and cables See below AV requirements, refer to Appendix for more information.
<b>AV SYSTEM</b>	
<b>Video System</b>	Primary Content Display – typically via data projector and motorised projection screen (16:9); Secondary Content Display – typically via data projector and motorised projection screen (16:9); Interactive Confidence Monitor – mounted on lectern.
<b>Audio System</b>	Lectern Microphone; Wireless Lapel Microphone; Wireless Handheld Microphone; Wireless Handheld Microphone (optional); Room Microphone (optional); 3.5 mm Aux Audio Input; Hearing Augmentation.
<b>Program Sources</b>	Standard Teaching SoE PC with DVD Drive; HDMI Laptop Input; Network Presentation Gateway; Document Camera; High Definition Camera (optional).
<b>Control System</b>	Touch-Panel Control System; Hardware Lecture Capture; Software Lecture Capture; Lecture Capture Status Indicator.
<b>General</b>	Telephone for Assistance; Lighting Integration with AV System; Digital Signage for Scheduling (optional). Blinds to be motorised

## 9.3 AV Requirements for Seminar Room – Medium

<b>Indicative Capacity</b>	Typically 21-60, will vary with the room geometry
<b>Lectern</b>	Equipment rack for lectern-based components with necessary connection plates and cables See below AV requirements, refer to Appendix for more information.
<b>AV SYSTEM</b>	
<b>Video System</b>	Primary Content Display – typically via data projector and motorised projection screen (16:9); Interactive Confidence Monitor – mounted on lectern.
<b>Audio System</b>	Lectern Microphone; Wireless Lapel Microphone; Wireless Handheld Microphone (optional); Room Microphone (optional); 3.5 mm Aux Audio Input Hearing Augmentation.
<b>Program Sources</b>	Standard Teaching SoE PC with DVD Drive; HDMI Laptop Input; Network Presentation Gateway; Document Camera; High Definition Camera (optional).

<b>Control System</b>	Touch-Panel Control System; Software Lecture Capture; Lecture Capture Status Indicator.
<b>General</b>	Telephone for Assistance; Lighting Integration with AV System; Digital Signage for Scheduling (optional). Blinds to be motorised (optional)

## 9.4 AV Requirements for Seminar Room – Small

<b>Indicative Capacity</b>	Up to 20, will vary with the room geometry
<b>AV SYSTEM</b>	
<b>Video System</b>	Primary Content Display – typically via interactive flat-panel display (16:9).
<b>Audio System</b>	Room Microphone, Hearing Augmentation (under review).
<b>Program Sources</b>	Standard Teaching SoE PC with DVD Drive; HDMI Laptop Input; Network Presentation Gateway; High Definition Camera (optional).
<b>Control System</b>	Push-Button Control System; Software Lecture Capture; Lecture Capture Status Indicator.
<b>General</b>	Telephone for Assistance; Credenza to House AV Equipment; Digital Signage for Scheduling (optional).

## Learning Studios

Flat floor learning spaces that are designed for interactive group work, enhanced with collaborative technologies. Furniture is set in groups. There are 'Bollard – interactive – Pods' centred around fixed computers. There are also 'Collaborative Pods' which centre around wall mounted flat panel displays. These studios offer pods providing different configurations of furniture and student computing to promote enquiry, collaboration and problem solving with the use of technology. There are several types of pods in learning studios where the design is being shaped by approaches to teaching.

A venue where students may gather independently or with an instructor for scheduled classes and activities. Work may take place individually or in groups using collaboration oriented computer assets such as 'Pods' provided for student use. These spaces provide systems to distribute the instructor's computer display in sufficient detail to all students and provide a means for student's computer displays to be shared with the instructor or the rest of the class. These spaces are designed to foster collaboration with consideration for sightlines, acoustics, lighting, VDU glare, equipment integration and accessibility.

Unlike computer labs which have a 1:1 ratio of computers, learning studios have a sharing ratio of 1 computer shared by 2-6 students, with the preferred size being 4-6 to enable problem based learning.

### 10.1 General Provisions – apply previous teaching space comments

<b>Space Provision</b>	<b>Approximately 3.5 UFA per student.</b>
<b>Furniture Provision - Front of Room</b>	Fixed lectern. Hard-wired. Designed to meet AS1428 Adjustable lectern chair – 5-star base 4-6 whiteboards – movable up and down for presentation, located 900 mm from the ground. Internet Connected (IP) Clock, bin.
<b>Furniture Provision – Student Chairs</b>	Chairs to be either 'seminar Room' type chairs or 'computer lab' type chairs
<b>Furniture Provision – Student Tables</b>	Table size and cabling to suit technology provision. Collaborative pods: - Each pod contains two flexible tables, one with power supply located under screen, Indicative minimum sizing – 1200 mm x 600 mm for 1:4 pods or 1800 mm x 600 mm for 1:3 pods. -Each pod has a custom-built structure for PC and screen. Interactive pods: Each pod contains two fixed tables, 1500 mm x 750 mm for four people and sled chairs. - Each pod has wall space or a custom-built structure for PC and screen. Bollard pods: round table designed and built. Approximate diameter 1600 mm for six people. Tablet pods: round table designed and built. Approximate diameter 1600 mm for six people. Table finishes are to laminate – white, charcoal, oyster grey or beech. ABS edging can vary. Note – 10-15% of tables to be accessible.
<b>Acoustics - Internal</b>	Refer to AS/NZS 2107:2000 – Acoustics – recommended design sound levels and reverberation times for building interiors. See "Lecture Theatre – with speech reinforcement". Electro-acoustic systems shall achieve an average STI of no less than 0.75 across the audience area.
<b>Acoustic Separation</b>	LS to LS: Rw 50

<b>Accessibility</b>	Physical functions to meet accessibility requirements Push button to entrance door for rooms >80 capacity Note power to be within reach zone (0.5 m AFFL). Clearance of 1.5 m around fixed furniture.
<b>Signage</b>	Signage detailing category of space, room number, name (if relevant) and braille as required.
<b>Storage</b>	To facilitate flexible use of the space, storage must be provided to rooms over 100 seats.
<b>FINISHES</b>	
<b>Floor</b>	Floors to be flat Floors – to be textured with at least 3 colours to hide wear and tear.
<b>Walls</b>	Walls to be acoustically treated as required Walls behind white-board to be painted in contrasting colour Whiteboards to be maximised around the periphery of the room to foster group work.
<b>Entry Door</b>	Entry door to room should have a vision panel or side light to enable vision into the room. Entry door should ideally not be located in presentation wall so that latecomers or amenity users cause minimum disruption.
<b>Windows</b>	Windows to have motorised blinds, preferably not in presentation wall as light causes projection issues.
<b>SERVICES</b>	
<b>Power</b>	Ratio of 1 GPO per 2 students, located under screen at 700-900 mm AFFL Blinds to be motorised To AV lectern and all field AV equipment (e.g. motorised projection screens, data projectors etc.). All cleaning outlets and motorised equipment (projection screens, projector lifters etc.) to be electrically isolated from AV lectern and other field AV equipment.
<b>Security</b>	Card reader to provide access to room / zone.
<b>Data Provision</b>	Wi-Fi to meet capacity, no data points provided for students. Powered data point for clocks at front of the room. Powered data point at entry for external signage.
<b>Lighting</b>	DALI dimmable, Multiple scenes required (beam-shaping spotlights and low spill lighting) Motion Sensors required to interface Lighting, AV and Mechanical Systems. Lighting to be wall and AMX controlled, timer to comply with BCA requirements. Refer to AV/CIS LESS and CIS lighting Standards.
<b>HVAC</b>	Temperature: 23 °C +/-3 °C. Refer to CIS Mechanical Standard

## 10.2 Collaborative pods

These pods support collaboration and engaged enquiry in slightly larger groups. Student to computer ratios are typically 4:1 or 6:1, with a large screen at the end of a table. The design of this solution is for groups of students to work to solve problems, work on cases and project-based tasks which involve research and discussion. Examples can be found on level 2, PNR building, Darlington campus.





Figure 9: J03 PNR Learning Studio



## 10.3 Bollard Pods

These pods support collaboration and engaged enquiry in pairs or trios with intensive computing. Student to computer ratios are typically 2:1 or 3:1. These spaces can be used in numerous approaches to teaching, particularly those that involve collaborative work on technology mediated objects. Examples can be found on level 2, PNR building, Darlington campus.

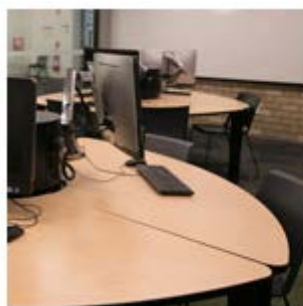


Figure 10 - J02 PNR - Learning Studio (Bollard Pods)

## 10.4 AV Requirements for Learning Studio

<b>Indicative Capacity</b>	Typically more than 60, will vary with the room geometry
<b>Lectern</b>	Equipment rack for lectern-based components with necessary connection plates and cables See below AV requirements, refer to Appendix for more information.
<b>AV SYSTEM</b>	
<b>Video System</b>	Primary Content Display – typically via data projector and motorised projection screen (16:9); Secondary Content Display – typically distributed via student displays; Interactive Preview Monitor – mounted on lectern.
<b>Audio System</b>	Lectern Microphone; Wireless Lapel Microphone; Wireless Handheld Microphone (optional); Room Microphone (optional), 3.5 mm Aux Audio Input; Balanced Aux Audio In/Out Connection Plate; Hearing Augmentation.
<b>Program Sources</b>	Standard Teaching SoE PC with DVD Drive; HDMI Laptop Input; Network Presentation Gateway; Document Camera; High Definition Camera (optional).
<b>Control System</b>	Touch-Panel Control System; Hardware Lecture Capture (optional); Software Lecture Capture; Lecture Capture Status Indicator.
<b>General</b>	Telephone for Assistance; Lighting Integration with AV System; Bio-Box with Separate AV Rack (if required); Digital Signage for Scheduling.

## Computer Laboratories

A venue for instruction in and working on computer systems and software. Computer teaching labs have some means of presenting an instructor's computer display to all students in sufficient detail. Computer installations typically require special furniture for security and safe cable management of the computer assets. These spaces are designed with consideration to sightlines, visual acuity, thermal regulation, data and electrical cabling, VDU glare reduction, security and accessibility.

Rooms with 90 seats or less, with a desktop computer to student ratio of 1:1 on a flat floor. When designing computer labs, key to their layout is considering the pedagogy. At the University, the goal is for collaborative peer learning. As such the preference is for tables to be arranged into clusters of 4-6 to encourage active conversation in teams.



Figure 11: H70 Abercrombie Business School Room 1090

### 11.1 General Requirements

<b>Space Provision</b>	<b>Approximately 3.5 UFA per student.</b>
<b>Furniture Provision - Front of Room</b>	<p>Height adjustable lectern. Hard-wired. Designed to meet AS1428</p> <p>Adjustable lectern chair – 5-star base</p> <p>Internet Connected (IP) Clock, bin.</p> <p>Whiteboards to be across the full extent of the front teaching wall 1000mm AFFL, 1200mm high</p>
<b>Furniture Provision – Student Chairs</b>	<p>Performance requirements for computer laboratories:</p> <ul style="list-style-type: none"> <li>Chair should be height adjustable, no arms</li> <li>Need to be comfortable for sitting for 2-3 hours in class</li> <li>Chair should have Mesh or similar back</li> <li>Base to be 5-star base on glides</li> <li>GECA certified or equivalent, 10-year warranty</li> </ul>
<b>Furniture Provision – Student Tables</b>	<p>Minimum table sizes are 750 x1500 for two students. This size would increase for dual screen.</p> <p>Cable management required.</p> <p>Table finishes are to laminate – white, charcoal, oyster grey or beech. ABS edging can vary.</p> <p>Note – 10-15% of tables to be accessible.</p>

<b>Acoustics - Internal</b>	Refer to AS/NZS 2107:2000 – Acoustics – recommended design sound levels and reverberation times for building interiors. See “Computer Rooms - Teaching”. Electro-acoustic systems shall achieve an average STI of no less than 0.75 across the audience area.
<b>Acoustic Separation</b>	LS to LS: Rw 50
<b>Accessibility</b>	Physical functions to meet accessibility requirements Push button to entrance door Note power to be within reach zone (0.5 m AFFL). Clearance of 1.5 m around furniture. Signage detailing category of space, room number, name (if relevant) and Braille equivalent for these.
<b>Signage</b>	To facilitate flexible use of the space, storage must be provided to rooms over 100 seats.
<b>FINISHES</b>	
<b>Floor</b>	Floors to be flat Floors – to be textured with at least 3 colours to hide wear and tear. Carpet tiles preferred.
<b>Walls</b>	Walls to be acoustically treated as required Walls behind white-board to be painted in contrasting colour Whiteboards to be maximised around the periphery of the room to foster group work.
<b>Entry Door</b>	Entry door to room should have a vision panel or side light to enable vision into the room. Entry door should ideally not be located in presentation wall so that latecomers or amenity users cause minimum disruption.
<b>Windows</b>	Windows to have motorised blinds (brown out and black out blinds), preferably not in presentation wall as light causes projection issues.
<b>SERVICES</b>	
<b>Power</b>	Ratio of 1 GPO per 2 students, located under screen at 700-900 mm AFFL To AV lectern and all field AV equipment (e.g. motorised projection screens, data projectors etc.). All cleaning outlets and motorised equipment (projection screens, projector lifters etc.) to be electrically isolated from AV lectern and other field AV equipment.
<b>Security</b>	Card reader to provide access to room / zone.
<b>Data Provision</b>	Wi-Fi to meet capacity, no data points provided for students. Powered data point for clocks at front of the room. Powered data point at entry for external signage.
<b>Lighting</b>	DALI dimmable, Multiple scenes required (beam-shaping spotlights and low spill lighting) Motion Sensors required to interface Lighting, AV and Mechanical Systems. Lighting to be wall and AMX controlled, timer to comply with BCA requirements. Refer to AV/CIS LESS and CIS lighting Standards
<b>HVAC</b>	Temperature: 23 °C +/-3 °C. The heat load of the computers must be factored into the HVAC design. Refer to CIS Mechanical Standard

## 11.2 AV Requirements for Computer Lab – Large

<b>Indicative Capacity</b>	Typically more than 61, will vary with the room geometry
<b>Lectern</b>	Equipment rack for lectern-based components with necessary connection plates and cables See below AV requirements, refer to Appendix for more information.
<b>AV SYSTEM</b>	
<b>Video System</b>	Primary Content Display – typically via data projector and motorised projection screen (16:9); Secondary Content Display – typically distributed via student displays; Interactive Confidence Monitor – mounted on lectern.
<b>Audio System</b>	Lectern Microphone; Wireless Lapel Microphone; Wireless Handheld Microphone; Hearing Augmentation.
<b>Program Sources</b>	Specialised Teaching SoE PC with DVD Drive; HDMI Laptop Input; Network Presentation Gateway; Document Camera (optional); Specialist Equipment Input (optional); High Definition Camera (optional).
<b>Control System</b>	Touch-Panel Control System; Hardware Lecture Capture (optional); Software Lecture Capture; Lecture Capture Status Indicator.
<b>General</b>	Telephone for Assistance; Lighting Integration with AV System; Digital Signage for Scheduling.

## 11.3 AV Requirements for Computer Lab – Medium

<b>Indicative Capacity</b>	Typically 20-60, will vary with the room geometry
<b>Lectern</b>	Equipment rack for lectern-based components with necessary connection plates and cables See below AV requirements, refer to Appendix for more information.
<b>AV SYSTEM</b>	
<b>Video System</b>	Primary Content Display – typically via data projector and motorised projection screen (16:9); Secondary Content Display (optional) – typically distributed via student displays; Interactive Confidence Monitor – mounted on lectern.
<b>Audio System</b>	Lectern Microphone; Wireless Lapel Microphone; Hearing Augmentation.
<b>Program Sources</b>	Specialised Teaching SoE PC with DVD Drive; HDMI Laptop Input; Network Presentation Gateway; Document Camera (optional); Specialist Equipment Input (optional); High Definition Camera (optional).
<b>Control System</b>	Touch-Panel Control System; Software Lecture Capture (ad-hoc); Lecture Capture Status Indicator.
<b>General</b>	Telephone for Assistance; Lighting Integration with AV System; Digital Signage for Scheduling.

## Teaching Laboratory (Wet)

Shared flat floor room, often with multiple teaching points and specialist equipment required for disciplinary purposes, characterised by a high use of consumables. Incorporates teacher and student computing. Management processes are aligned with the shared lab model.

The planning of these spaces needs to consider the level of physical containment required (PC1 or PC2); and if provision needs to be made for a later conversion.



Figure 12: D17 CPC PC2 Lab student bench (left), and teaching point (right)

### 12.1 General Requirements

<b>Space Provision</b>	<b>Approximately 4-6.5 UFA per student.</b>
<b>Furniture Provision - Front of Room</b>	Fixed lectern. Hard-wired. Designed to meet AS1428 Adjustable lectern chair – 5-star base 4-6 whiteboards – movable up and down for presentation, located 900 mm from the ground. Internet Connected (IP) Clock, bin.
<b>Furniture Provision – Student Chairs</b>	Performance requirements for laboratory chairs <ul style="list-style-type: none"> <li>Swivel Stool should be height adjustable, no arms consideration for PC1/PC2</li> <li>Base to be 5-star base on glides</li> <li>GECA certified or equivalent, 10 year warranty</li> </ul>
<b>Furniture Provision – Student Tables</b>	Approximate bench size 1500 mm x 750 mm bench space allocated per student. Table finishes are to be suitable for PC2 provisions Note – 10-15% of tables to be accessible.
<b>Storage</b>	Portable storage cupboards below student benches for lab equipment Student lockers 1:1 provision.
<b>Acoustics - Internal</b>	Refer to AS/NZS 2107:2000 – Acoustics – recommended design sound levels and reverberation times for building interiors. See “Computer Rooms - Teaching”. Electro-acoustic systems shall achieve an average STI of no less than 0.75 across the audience area.
<b>Acoustic Separation</b>	LS to LS: Rw 50
<b>Accessibility</b>	Physical functions to meet accessibility requirements Push button to entrance door Clearance of 1.5 m around furniture.

<b>Signage</b>	Signage detailing category of space, room number, name (if relevant) plus braille.
<b>FINISHES</b>	
<b>Floor</b>	Floors to be flat Floors – to be vinyl with at least 3 colours to hide wear and tear.
<b>Walls</b>	Walls to be acoustically treated as required Walls behind white-board to be painted in contrasting colour Whiteboards to be maximised around the periphery of the room to foster group work.
<b>Entry Door</b>	Entry door to room should have a vision panel or side-light to enable vision into the room. Entry door should ideally not be located in presentation wall so that latecomers or amenity users cause minimum disruption.
<b>Windows</b>	Windows to have motorised blinds, preferably not in presentation wall as light causes projection issues.
<b>SERVICES</b>	
<b>Power</b>	Ratio of 1 GPO per 2 students Blinds to be motorised To AV lectern and all field AV equipment (e.g. motorised projection screens, data projectors etc.). All cleaning outlets and motorised equipment (projection screens, projector lifters etc.) to be electrically isolated from AV lectern and other field AV equipment.
<b>Security</b>	Card reader to provide access to room / zone.
<b>Data Provision</b>	Wi-Fi to meet capacity, no data points provided for students. Powered data point for clocks at front of the room. Powered data point at entry for external signage.
<b>Lighting</b>	Dali dimmable, Multiple scenes required (beam-shaping spotlights and low spill lighting) Refer to CIS Lighting Standard
<b>HVAC</b>	Temperature: 23 °C +/-3 °C Refer to CIS Mechanical Standard
<b>Specialist Services as required</b>	Oxygen, nitrogen and other gases as required. Glove holders, paper towel holders, emergency shower and eye wash station, hand wash, sink with hot and cold water (approximately 1 per 60 students).
<b>Safety Provisions</b>	To comply with standards - Fire Blanket, Eye wash, Fire extinguisher, First Aid Kit as required.

## 12.2 AV Requirements for Wet Laboratory (Teaching)

To be assessed on case-by-case basis dependant on user requirements. The AV solution in this space type varies according to teaching modes, flexibility requirements, environment and specialist needs, hence a full needs-assessments is required. These spaces often require a separate, centralised AV rack with three-sided access, 800 mm clearance.

### Informal Learning Spaces

Informal learning spaces allow students to engage in self-guided study and coursework as individuals or collaborate in small groups. These spaces support interaction, creativity and reflection. Students make use of physical texts and resources and digital resources accessed via their own devices or University provided computer assets. Informal learning spaces can be located along a circulation path, or incorporated into a venue such as a learning hub, library or student common room.

Informal learning spaces incorporate elements defined by a standards-based approach: informal pods, individual, pair and group seating with computing and BYOD, banquette seating, express technology areas, help desks, kitchenette, printing facilities and back office provision. These are shared spaces.

A venue where students may gather independently in groups or individually to study and work on group assignments. These spaces provide a convenient, comfortable and sheltered space to access virtual learning resources. Student use computing may be provided in the form of individual computers or 'Pods' for group work. Wireless network and power outlets are provided for student owned devices. Custom furniture is often provided to support various modes of study or collaboration. Informal learning spaces are designed with consideration for comfort, acoustics, security and accessibility.

## 12.3 General Provisions

<b>Space Provision</b>	<b>Approximately 2.5-3.5 UFA per student.</b>
<b>Furniture Provision – Student Chairs</b>	Performance requirements for chairs: need to be comfortable for sitting for 2-3 hours; Base to be sled or on castors; GECA certified or equivalent, 10-year warranty
<b>Furniture Provision – Student Tables</b>	Table finishes are to laminate – white, charcoal, oyster grey or beech. ABS edging can vary. Note – 10-15% of tables to be accessible.
<b>Furniture Provision – Student whiteboards</b>	Whiteboards need to be provided around the room to facilitate group work for students in a ratio of 1 whiteboard per 10 students. These should be vitreous porcelain or colour-back glass. Size should be 1.5 m <sup>2</sup> per whiteboard, these can be fixed to the walls, or on castors.
<b>Accessibility</b>	Physical functions to meet accessibility requirements There should be 10 - 15% of desks allocated to accessibility, including height adjustable desks. Push button actuated entrance door for venues with more than 80 students Clearance of 1.5 m around fixed furniture.
<b>Signage</b>	Signage detailing category of space, room number, name (if relevant) and braille as per guidelines
<b>FINISHES</b>	
<b>Floor</b>	Floors to be flat Floors – to be textured with at least 3 colours to hide wear and tear.
<b>Walls</b>	Walls to be acoustically treated as required Walls behind white-board to be painted in contrasting colour
<b>Entry Door</b>	Entrance door should have a vision panel or side light to enable vision into the room.
<b>Windows</b>	Natural light is encouraged into this space.
<b>SERVICES</b>	
<b>Power</b>	GPOs to be provided to suit room layout, plus cleaning point.
<b>Security</b>	Card reader to provide access to room / zone.
<b>Data Provision</b>	Wi-Fi to meet capacity, no data points provided for students. Powered data point for clocks in room.



<b>Lighting</b>	Refer to AV/CIS LESS and CIS lighting Standards.
<b>HVAC</b>	Temperature: 23 °C +/-3 °C Refer to CIS Mechanical Standards.

## 12.4 Informal Open Meeting Space

<b>Detail</b>	This area provides power and networking in all areas. The purpose is for students to bring their own devices as technology provision is minimal or none. Flexible and fixed seating and tables are provided to support this. Some of these areas are intended for short-term use. Approximately 60% of a total learning hub is dedicated to BYOD.
<b>Indicative Capacity</b>	This space consists of various lengths of benches and banquettes. Students determine group size in these areas.
<b>ICT provision</b>	No computers provided in this area.
<b>Power</b>	Fixed tables provide power, flexible tables do not although various floor boxes are provided. Each fixed seat has one or two power points.
<b>Data Provision</b>	All spaces have access to wireless access points, the banquettes have data points as well.
<b>Space Provision</b>	Capacity is determined at 2 m <sup>2</sup> per person.
<b>Furniture Provision</b>	Tables are round, hexagonal, curved or slide up laptop tables. Chair and table options are flexible: portable stools, multi-purpose chairs, standard, banquette, high bar stool or portable stools. Banquettes are provided with power and upholstered with heavy duty vinyl. Banquettes must be designed to enable sectional replacement/ re-upholstery. Bean bags of commercial grade with heavy duty vinyl are provided. Tables that are joinery range in size: approximately 750 mm x 750 mm per student, 1000 mm x 1500 mm, or slide-up laptop tables 500 mm x 350 mm.

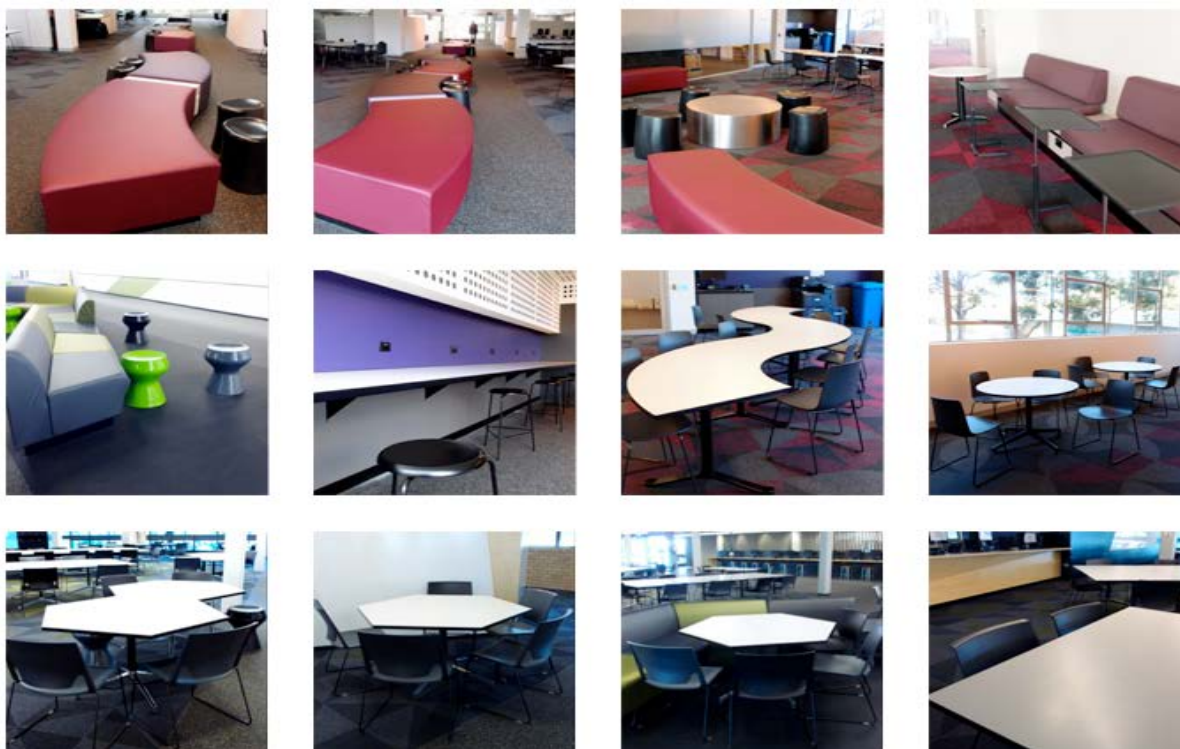


Figure 13 - F07 Carslaw Learning Hub



### 12.5 Informal Learning Lounge

<b>Detail</b>	Quiet reading, discussion and laptop work
<b>Indicative Capacity</b>	This space consists of various lengths of benches and banquettes. Students determine group size in these areas. Capacity is calculated at 2-3m <sup>2</sup> per student.
<b>ICT provision</b>	No computers provided in this area.
<b>Power</b>	Fixed tables provide power, flexible tables do not although various floor boxes are provided. Each fixed seat has one or two power points.
<b>Data Provision</b>	All spaces have access to wireless access points, the banquettes have data points as well.
<b>Space Provision</b>	Capacity is determined at 2 m <sup>2</sup> per person.
<b>Furniture Provision</b>	Lounges settings with side tables or coffee tables combined single ottomans or arm chairs Banquettes are provided with power and upholstered with heavy duty vinyl. Banquettes must be designed to enable sectional replacement/ re-upholstery. Tables that are joinery range in size: approximately 750 mm x 750 mm per student, 1000 ,mm x 1500 mm, or slide-up laptop tables 500 mm x 350 mm.

### 12.6 Informal Pod

<b>Detail</b>	Semi-enclosed meeting space.
<b>No. of People</b>	Number of people in each pod ranges from six to eight. Capacity is calculated at 2 m <sup>2</sup> per student.
<b>Power</b>	Each table has a floor box (for computer) and two double power points (integrated into the table). Alternately, this can be incorporated into the wall adjacent to the table.
<b>Data Provision</b>	Approximately 2.2% of the learning hub is dedicated to individual group study. Capacity is determined at 2m <sup>2</sup> per person. Each table has one data point.
<b>Space Provision</b>	≈15 m <sup>2</sup> per pod
<b>Furniture Provision</b>	Tables are preferred to sit 6 people, be trapezoidal typically 2.8 x 1.4 m; these tables can be movable and the power located in the wall and/or under the screen Chairs can be portable stools or multi-purpose chairs.
<b>AV SYSTEM</b>	
<b>Video System</b>	Primary Content Display – typically via interactive flat-panel display (16:9).
<b>Audio System</b>	Room Microphone (optional)
<b>Program Sources</b>	Specialised SoE PC with DVD Drive; HDMI Laptop Input; Network Presentation Gateway; High Definition Camera (optional).
<b>Control System</b>	Push-Button Control System
<b>General</b>	Credenza to House AV Equipment this should be located adjacent/under the screen and be fixed; Digital Signage for Scheduling (optional).



Figure 14 - Informal Pods at H70 ABS and A31 SNH

## 12.7 Student Meeting Room - Small to Medium

<b>Detail</b>	Bookable Group meeting room
<b>Indicative Capacity</b>	Small 2 – 6, Medium 7 - 14
<b>Entrance</b>	Viewing panel into room for safety; Room Signage
<b>Power</b>	Power in wall or below AV screen; additional power to peripheral walls
<b>Data Provision</b>	All spaces have access to wireless access points, the banquettes have data points as well.
<b>Space Provision</b>	Capacity is determined at 2m <sup>2</sup> per person.
<b>Furniture Provision</b>	Table and chairs to suit capacity.
<b>AV SYSTEM (if required)</b>	
<b>Video System</b>	Primary Content Display – typically via interactive flat-panel display (16:9).
<b>Audio System</b>	Room Microphone, Hearing Augmentation (under review).
<b>Program Sources</b>	Standard Teaching SoE PC with DVD Drive; HDMI Laptop Input; Network Presentation Gateway; High Definition Camera.
<b>Control System</b>	Push-Button Control System; Software Lecture Capture.
<b>General</b>	Telephone for Assistance; Credenza to House AV Equipment this should be located adjacent/under the screen and be fixed; Digital Signage for Scheduling.

## 12.8 Student Meeting Room - Large

<b>Detail</b>	Bookable Group meeting room
<b>Indicative Capacity</b>	More than 15
<b>Entrance</b>	Viewing panel into room for safety; Room Signage
<b>Power</b>	Power in wall or below AV screen; additional power to walls around room; floor box under table
<b>Data Provision</b>	All spaces have access to wireless access points, the banquettes have data points as well.
<b>Space Provision</b>	Capacity is determined at 2 m <sup>2</sup> per person.
<b>Furniture Provision</b>	Table and chairs to suit capacity
<b>AV SYSTEM</b>	
<b>Video System</b>	Primary Content Display – typically via flat-panel display (16:9);
<b>Audio System</b>	Room Microphone, Wireless Lapel Microphone (optional); Hearing Augmentation.

<b>Program Sources</b>	Standard Teaching SoE PC with DVD Drive; HDMI Laptop Input; Network Presentation Gateway; High Definition Camera.
<b>Control System</b>	Touch-Panel Control System; Software Lecture Capture.
<b>General</b>	Telephone for Assistance; Lighting Integration with AV System, Credenza to House AV Equipment; Digital Signage for Scheduling.

## 12.9 Informal Research Seating

<b>Detail</b>	These spaces consist of individual seats, pairs, groups of six, eight, 10 or 12, or various lengths of benches.
<b>Indicative Capacity</b>	These desks are designed for one or two people per space. Some are in rows, others are in tables seating six, eight, 10 or 12 people. Capacity is calculated at 2 m <sup>2</sup> per student.
<b>ICT provision</b>	Minimum of 50% ICT provision.
<b>Power</b>	Each seat has one double power point or two double power points.
<b>Data Provision</b>	All spaces have access to wireless access points. All of these spaces have one data point.
<b>Space Provision</b>	Approximately 32.6% of the learning hub is dedicated to individual/pair research. Capacity is determined at 2 m <sup>2</sup> per person.
<b>Furniture Provision</b>	Desks range in size (depending on number of students); each desk provides a minimum of 750 mm x 750 mm. Some desks have dividers, some are carrels. Chairs are multi-purpose chairs, a high bar stool or a bench chair. Chairs must be provided to suit capacity. Card reader to provide access to room.



Figure 15 - J02 PNR Learning Hub

## 12.10 Kitchenette

<b>Detail</b>	<b>Smaller kitchenette with facilities to make tea and reheat food for student amenity.</b>
<b>No. of People</b>	n/a
<b>ICT provision</b>	None
<b>Power</b>	Double GPO for microwave
<b>Data Provision</b>	All spaces have access to wireless access points
<b>Space Provision</b>	15 m <sup>2</sup>
<b>Furniture Provision</b>	One sink, one chilled water and boiling water tap with caravan sink under, two cupboards, two microwaves
<b>Accessibility</b>	Kitchenette must comply with AS1428
<b>Other</b>	Vending machine space and service provisions must be provided.



Figure 16 - J02 PNR Learning Hub

## 12.11 Print Areas

Detail	<b>This area is for printers and photocopiers.</b>
No. of People	N/A
ICT provision	Printers are provided - colour, duplex MFDs for A4 and A3 printing. Print release station beside each printer which supports "follow me" and wireless printing.
Power	None for student devices.
Data Provision	All spaces have access to wireless access points.
Space Provision	6.00 m <sup>2</sup> ; these should be integrated into the floorplate rather than a separate print rooms for safety and security.

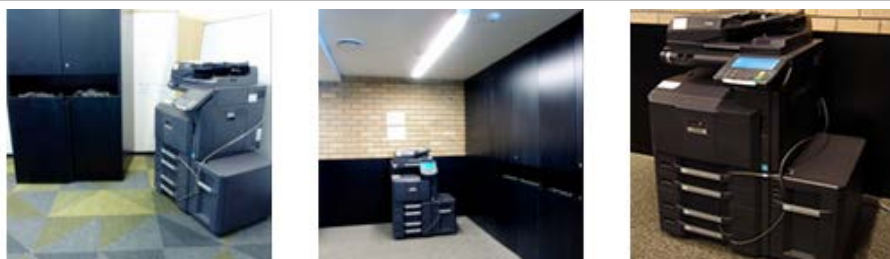


Figure 17 - J02 PNR Learning Hub

## 12.12 Staffed Help Point

Detail	In some informal learning spaces there is a requirement for staff to be stationed at help point.
No. of People	2-3 staff
ICT provision	100% computer provision. ALNIP signage above the desks is displayed on a 46" screen.
Power	The desk has six double power points altogether.
Data Provision	All spaces have access to wireless access points. The desk has six double data points altogether.
Space Provision	3.00 m <sup>2</sup>
Furniture Provision	Bench is joinery, height adjustable chairs
Accessibility	Must be designed to be met AS1428

## 12.13 Outdoor Areas

Detail	This area provides power and networking in some areas. The purpose is for students to bring their own devices as there is no technology provision. Flexible and fixed seating and tables are provided to support BYOD and collaboration.
ICT provision	No computers provided in this area.
Power	There is power provision at a ratio of approximately 1:6

<b>Data Provision</b>	All spaces have access to wireless access points.
<b>Space Provision</b>	Capacity is calculated at 4 m <sup>2</sup> per student.
<b>Furniture Provision</b>	Tables are round or hexagonal.
<b>Accessibility</b>	Chairs and tables are flexible, stools are portable, also fixed benches.

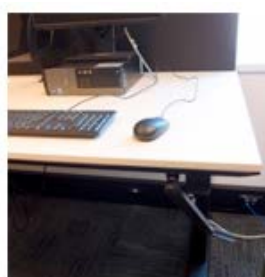
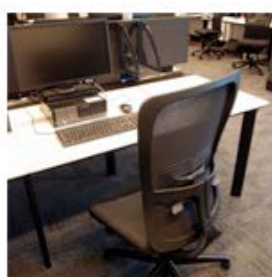


Figure 18- F07 Carslaw Courtyard

## 12.14 HDR Shared Desks

Desks, lab benches, individual design areas, and other seats designed for higher degree research students to engage in their studies. These desks are shared, at varying ratios based on Faculty allocation

<b>Detail</b>	This area provides power and networking in all areas. The space is designed for dedicated use by HDR students.
<b>No. of People</b>	This space consists of standard HDR benches.
<b>ICT provision</b>	One computer is provided per student/desk. One printer is provided per space.
<b>Power</b>	All tables have power – four power points for each desk.
<b>Data Provision</b>	All spaces have wireless access points and two data points at each desk.
<b>Space Provision</b>	Capacity is calculated at 4 m <sup>2</sup> per student; desks are not allocated.
<b>Furniture Provision</b>	Tables are 1200 mm x 750 mm and should be numbered. All chairs are height adjustable and ergonomically designed for long periods of use. Ancillary meeting space and kitchenette to in proximity to facilitate informal meetings.
<b>Storage</b>	Lockers provided - approximately 3 x capacity.
<b>Accessibility</b>	There should be 10 - 15% of desks allocated to accessibility, with height-adjustable desks. Signage to comply with CIS as AS1428 standards.
<b>Security</b>	Card reader to provide access to room.





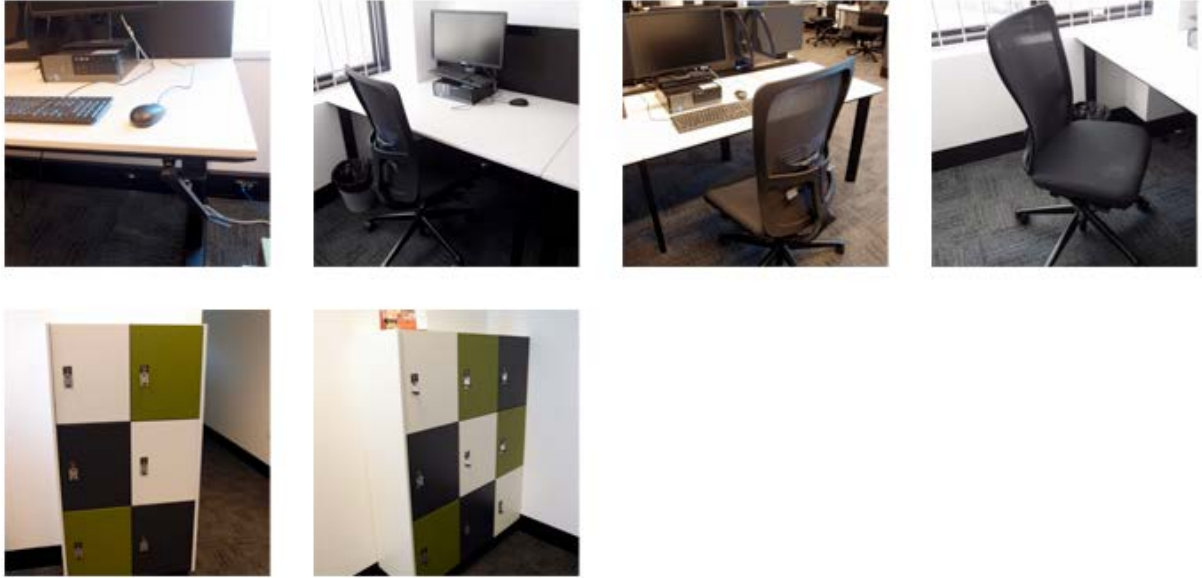
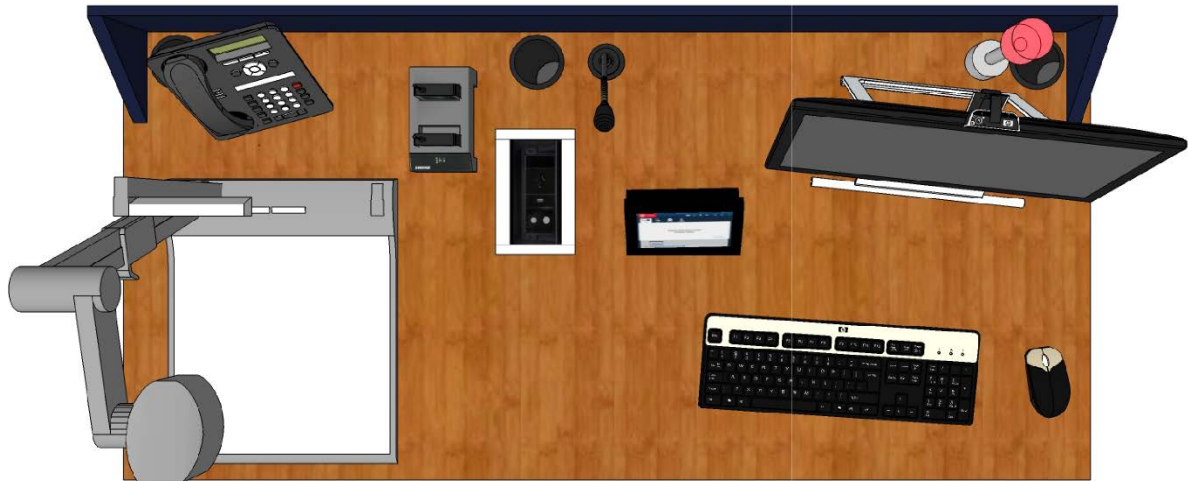


Figure 19 - A21 Wallace HDR Hub

## Appendices

### 13.1 Typical Lectern Equipment

For detailed design of lecterns, please contact AV.



Note – all lecterns to allow for accessible circulation to comply with AS1428 (minimum 1500 mm).  
Lecterns are available with equipment rack on either left or right side – where a lectern is fixed near a wall, the equipment rack shall be on the side of the lectern, closest to the wall.



## 13.2 AV Functionality Matrix

See below matrix for high-level AV technology briefing. Contact AV Engineering for more information.

	Small Seminar Room	Medium Seminar Room	Large Seminar Room	Medium Lecture Theatre	Large Lecture Theatre	Case Study Lecture Theatre	Learning Studio	Medium Computer Lab	Large Computer Lab	Small Meeting Room	Large Meeting Room	Informal Pod
<b>Program Sources</b>												
Standard Teaching SoE PC with DVD Drive	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	N
Specialised SoE PC with DVD Drive	N	N	N	N	N	N	Y	Y	N	N	Y	
HDMI Laptop Input	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Network Presentation Gateway	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Document Camera	N	Y	Y	Y	Y	Y	O	O	N	N	N	
Bluray	N	N	N	N	N	N	N	N	N	N	N	
Specialist Equipment Input	N	N	N	N	O	O	O	O	N	N	N	
High Definition Camera(s)	O	O	O	O	O	O	O	O	Y	Y	N	
<b>Video System</b>												
Primary Content Display	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Secondary Content Display	N	N	Y	N	Y	O	Y	O	Y	N	N	
Interactive Lectern Preview Monitor	N	N	N	Y	Y	Y	Y	N	N	N	N	
Interactive Lectern Confidence Monitor	N	Y	Y	N	N	N	Y	Y	N	N	N	
<b>Audio System</b>												
Lectern Microphone	N	Y	Y	Y	Y	Y	Y	Y	N	N	N	
Wireless Lapel Microphone	N	Y	Y	Y	Y	Y	Y	Y	N	O	N	
Wireless Handheld Microphone	N	O	O	Y	Y	Y	O	N	Y	N	N	
Additional Wireless Microphones	N	N	N	N	O	N	N	N	N	N	N	
Room Microphones	Y	O	O	N	N	O	O	N	N	Y	Y	
3.5mm Aux Audio Input	N	Y	Y	Y	Y	Y	Y	N	N	N	N	
Balanced Aux Audio In/Out Connection Plate	N	N	N	Y	Y	Y	Y	N	N	N	N	
Hearing Augmentation	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	
<b>Control System</b>												
Push Button Control System	Y	N	N	N	N	N	N	N	Y	N	Y	
Touch-Panel Control System	N	Y	Y	Y	Y	Y	Y	Y	N	Y	N	
Software Lecture Capture	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	N	
Hardware Lecture Capture	N	N	Y	Y	Y	Y	O	N	O	N	N	
<b>General</b>												
Telephone (For Assistance)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Lighting Integration With AV System	N	Y	Y	Y	Y	Y	Y	Y	N	Y	N	
Staging/Conference Facilities	N	N	N	N	O	N	N	N	N	N	N	
Lectern With Integrated AV Rack	N	Y	Y	Y	Y	Y	Y	Y	N	N	N	
Credenza To House Equipment	Y	N	N	N	N	N	N	N	N	Y	N	
Bio-Box With Separate AV Rack	N	N	N	N	O	N	O	N	N	N	N	
Digital Signage for Scheduling	O	O	O	O	Y	O	Y	Y	Y	Y	Y	O

## 13.3 AV Descriptions

### 13.3.1 Program Sources

#### **Standard Teaching SoE PC with DVD Drive**

Presentation computers are provided in teaching spaces to give access to and presentation of digital resources including prepared presentations, web sites, images, videos, software and other texts. The presentation computer shall provide a standard operating environment with access to internet and network resources, portable storage and an agreed standard catalogue of software. A DVD drive is provided to allow for playback of video material stored on optical disc formats (DVD).

#### **Specialised SoE PC with DVD Drive**

Presentation computers are provided in teaching spaces to give access to and presentation of digital resources including prepared presentations, web sites, images, videos, software and other texts. The presentation computer shall provide a standard operating environment with access to internet and network resources, portable storage and an agreed specific catalogue of software. A DVD drive is provided to allow for playback of video material stored on optical disc formats (DVD).

#### **HDMI Laptop Input**

Many presenters prefer to present from their own personal devices. A means to present audio and video from personal laptops, tablets and other devices shall be provided. An HDMI connection point is provided based on maximising compatibility and connection quality to the devices in use.

#### **Network Presentation Gateway**

A Network Presentation Gateway is a convenient tool to allow users to connect to the AV system wirelessly via their own devices, such as laptops, tablets, phones and student computers within a space. In this way, any users' digital media can be presented via the AV system for display, comparison, recording and streaming. These devices also typically support multiple user connections at the same time for improved collaboration.

#### **Document Camera**

Document Cameras (also referred to as Visualisers) are an improved replacement for obsolete overhead transparency projectors. Visualisers can present a variety of document formats and physical objects in full colour and high detail from a fixed position.

#### **DVD**

DVD players are provided to allow for the easy playback of video material.

#### **Specialist Equipment Input**

A variety of specialist equipment is used in a range of disciplines and it is sometimes necessary to incorporate interfaces for this equipment into teaching space presentation systems. Examples include microscopes, video cameras, medical imaging devices, signal generators and musical instruments.

#### **High Definition Camera**

As education and collaboration extend further into online forms of communication via lecture-capture, web and video conferencing, teaching and meeting venues must be equipped with appropriate cameras to allow video capture of people for display at the far-end or for ad-hoc recordings. A camera may be required for presenters, the audience, or both.

### 13.3.2 Video System

#### Primary Content Display

Primary content display refers to the ability to present a single video source to the audience. This may be achieved by a single display or via a distributed video method. Displays allow the effective presentation of visual materials to an individual or audience. The effectiveness of displays can depend on a number of factors including ambient light, contrast ratio, visual acuity, brightness, glare and reflection. Particular display technologies shall be selected based on the individual requirements of the spaces and use modes. 'VISA VIS' is the University of Sydney's viewing coverage standard that shall be used to determine appropriate display sizes, heights and locations when designing fit-for-purpose video systems.

#### Secondary Content Display

Secondary content display refers to the ability to present a second video source (in addition to the primary content display) to the audience (simultaneously). This may be achieved by a single display or via a distributed video method. Displays allow the effective presentation of visual materials to an individual or audience. The effectiveness of displays can depend on a number of factors including ambient light, contrast ratio, visual acuity, brightness, glare and reflection. Particular display technologies should be selected based on the individual requirements of the spaces and use modes. 'VISA VIS' is the University of Sydney's viewing coverage standard that shall be used to determine appropriate display sizes, heights and locations when designing fit-for-purpose video systems.

#### Interactive Preview Monitor

The interactive preview monitor is used to show and prepare all program video sources prior to presentation on the primary and/or secondary content display(s). The interactive component of the preview monitor allows an intuitive interface for control and 'mark-up' of digital resources (via the House PC only).

#### Interactive Confidence Monitor

The interactive confidence monitor is used to duplicate the program video presented on the primary content display(s). The interactive component of the preview monitor allows an intuitive interface for control and 'mark-up' of digital resources (via the House PC only).

### 13.3.3 Audio System

#### Lectern Microphone

A lectern microphone is provided as a basic input to a speech reinforcement system. Audio from the lectern microphone may be channelled to the local speech re-enforcement system, hearing assistance system, recording system or remote sites.

#### Wireless Lapel Microphone

A wireless lapel microphone is provided as a convenient and mobile input to a speech reinforcement system allowing a presenter to roam around the venue. Audio from the wireless lapel microphone may be channelled to the local speech re-enforcement system, hearing assistance system, recording system or remote sites.

#### Wireless Handheld Microphone

A wireless handheld microphone is provided as a convenient and mobile input to a speech reinforcement system allowing a presenter to roam around the venue. Wireless hand held microphones are also often the most convenient means of receiving audience questions and comments in large venues. Audio from the wireless handheld microphone may be channelled to the local speech re-enforcement system, hearing assistance system, recording system or remote sites.

#### Additional Wireless Microphones

Additional permanent wireless microphones (lapels or handhelds) can be provided in these venues on request. Applications that may demand additional wireless microphones may include frequent conference / discussion panels or similar.

#### Room Microphones

Whilst moving images need to be captured for the purposes of video, web and recording functionality, so to do the voices of participants in teaching and meeting spaces. Room microphones will vary depending on room shape and functionality and need to be fit-for-purpose to clearly capture all audience members for the purposes of free-flowing discussion and collaboration. An ability to mute the microphones shall be provided via hardware and/or software depending on the specific solution.

#### 3.5 mm Auxiliary Audio Input

A 3.5 mm auxiliary audio input is provided as a basic input to an audio play-back system. Audio from the 3.5 mm auxiliary audio input may be channelled to the local sound system, hearing assistance system, recording system or remote sites.

#### Balanced Auxiliary Audio In/Out Connection Plate

The balanced auxiliary audio in/out connection plate is a standard size single gang plate installed on the lectern. A balanced XLR input (switchable between mic/line level) to the audio system is provided, audio from this input may be channelled to the audio play-back system, hearing assistance system, recording system or remote sites. A balanced XLR output (line level) is provided also, this output contains a mix of all audio sources for connection to an external recording device (or similar).

#### Hearing Augmentation

Hearing augmentation systems allow the communication of audio information to users with hearing impairments. Typical systems at the University of Sydney use an infrared (IR) emitter that can be received via a belt-pack and headphones or neck-worn hearing induction loop. Other systems employ a hearing induction loop. IR receivers are centrally-managed and available via Disability Services.

### 13.3.4 Control System

#### **Touch-Panel Control System**

Touch panel control systems provide a simplified means of controlling otherwise complex technical systems. The touch panel systems provide a consistent and familiar interface across a range of different venues and systems. Touch panel systems also allow a means of remote assistance and troubleshooting by technical support staff.

#### **Push-Button Control System**

Push button control systems provide a standardised and economical means of controlling less complex AV systems. The push button control system provides a consistent and intuitive interface for small room systems and collaboration pods.

#### **Hardware Lecture Capture**

The University provides a centrally managed lecture capture and distribution system. Lectures are captured using a hardware captured device integrated into the AV system that provides high reliability and the ability to capture video and audio from a wide variety of sources. The captured material is automatically sent via the data network to the central system for distribution via the Learning Management System. Lectures captured via the hardware system are scheduled in advance.

#### **Software Lecture Capture**

The University provides a centrally managed lecture capture and distribution system. Lectures can be captured using software on the presentation PC. This software captures lecture audio and any material shown using the presentation PC. It cannot capture external video sources such as laptops or the visualiser. Lecture captures via the software can be scheduled or initiated ad-hoc.

### 13.3.5 General

#### **Telephone (For Assistance)**

Internal dialling telephone provide a simple and immediate means of accessing support and assistance. Telephones also provide a safety and security function in providing access to security and emergency services.

#### **Lighting Integration with AV System**

Lighting scenes can be recalled via simple wall panels at all entry points and via the AV system control panel. Occupancy sensors must be included for energy efficiency. Careful lighting design is crucial in teaching spaces. Students must have sufficient light to make notes and the presenter must be well light. Conversely excess ambient light can be significantly detrimental to the effective performance of many display technologies. Beam-shaping spotlights are required in many learning spaces to sufficiently illuminate the presenter at the lectern in a dimmed room without causing excess ambient light spill onto display surfaces. Dimmable 'stage area' lights are required in many learning spaces to sufficiently illuminate the presenter in a dimmed room as they walk around the stage area and preform demonstrations without causing excess ambient light spill onto display surfaces.

#### **Staging/Conference Facilities**

Staging and conference facilities encompass a wide variety of technology and design elements that may be included in a venue to enhance its value in for both internal and external commercial users. Enhancements for conferencing and staging can include but are not limited to: Control rooms, projection booths, control desk locations, lighting control interface, advanced system control interfaces, video/audio/data 'tie lines' and patch panels, three-phase power outlets, additional microphones, additional audio/video/data connection points, 'congress' microphone systems, additional confidence monitors, presenter preparation areas, venue overflow capability, broadcast truck and antennae cabling channels.

### **Lectern with Integrated AV Rack**

A lectern with integrated AV rack refers to a standardised fixed table with a dedicated cabinet to house audio-visual infrastructure. All installations of lecterns to allow for accessible circulation to comply with AS1428 (minimum 1500 mm). Lecterns are available with equipment rack on either left or right side – where a lectern is fixed near a wall, the equipment rack shall be on the side of the lectern, closest to the wall.

### **Credenza to House Equipment**

A credenza to house required audio-visual equipment is required in smaller spaces where there is no lectern. The credenza shall be low-profile, while still providing adequate accessibility and environmental conditions for the equipment to be installed within it.

### **Bio-Box with Separate AV Rack**

A bio-box is a dedicated area or room in a large venue, used to house audio-visual infrastructure and other hardware / equipment. The room must be fit-for-purpose, including adequate space for best practice installation and ongoing maintenance / servicing of equipment within the bio-box, as well as appropriate environmental conditions (e.g. best practice ventilation, air-conditioning etc.).

### **Digital Signage for Scheduling**

Digital signage for scheduling refers to either a dedicated display for venue time-tabling information (in teaching venues), or a meeting room manager with room availability information (for meeting rooms).

## References

Standard	Title
TEFMA Guidelines	<a href="http://www.tefma.com/uploads/content/26-TEFMA-SPACE-PLANNING-GUIDELINES-FINAL-ED3-28-AUGUST-09.pdf">http://www.tefma.com/uploads/content/26-TEFMA-SPACE-PLANNING-GUIDELINES-FINAL-ED3-28-AUGUST-09.pdf</a>
AETM Guidelines	<a href="https://www.aetm.org/wp-content/uploads/2014/10/AETM_Audio_Visual_Design_Guidelines_2nd_Edition_2015_protected.pdf">https://www.aetm.org/wp-content/uploads/2014/10/AETM_Audio_Visual_Design_Guidelines_2nd_Edition_2015_protected.pdf</a>
CIS Standards	<a href="http://sydney.edu.au/about/working-with-us/contractors.shtml">http://sydney.edu.au/about/working-with-us/contractors.shtml</a>

## Document Amendment History

Revision	Amendment	Commencing
A.1 – A.6	DRAFT - Issued for internal circulation to DVC-Education, ICT and CIS	24.03.2017
B	DRAFT - Issued for UE-Education review (7 August 2017).  APPROVED – UE-Education 7 August 2017	27.07.2017
C.2	PUBLISHED - CIS Design Standards	26.06.2018