
2.00 Planning & Design Controls

All the requirements of this Section are Mandatory.

2.01 Site Planning Controls

The University has approved Master Plans for all of its Campuses.

Potential building development is an essential element of these Plans, and they indicate where buildings may be built and where buildings should not be built on all Campuses. Departures from these Plans will only be allowed in exceptional circumstances with University Council approval.

Copies of these Plans are available upon request from PD&C.

2.02 Whole of Life Considerations

It is imperative to ensure that all facilities constructed incorporate sustainability, life-cycle costs and maintainability in their design.

Designs and installations must embrace and make adequate provision for:

- Servicing and maintenance
- Removal and replacement of plant equipment
- Access for people with disabilities
- Durability
- Energy and water minimisation
- Flexibility of use/ re-use

Designs which opt for minimising capital cost at the expense of on-going maintenance, energy and operating costs, will be rejected by GU. Such designs will be rectified at the expense of the Consultant or Contractor as the case may be.

2.03 Crime Prevention Through Environmental Design (CPTED)

All buildings, car parks, walkways, bicycle paths and their immediate environs shall be designed to incorporate Crime Prevention Through Environmental Design (CPTED) concepts and strategies to achieve a positive working and learning environment whilst reducing the opportunity for crimes against University property, staff and students.

In general terms, CPTED is a process which reduces the incidence and fear of crime through the effective design and use of the built environment. The application of CPTED concepts and strategies in the design of buildings and landscaping has direct benefit to the University by reducing losses through theft and vandalism, and enhancing the personal safety of staff and students.

Designers shall familiarise themselves with the application of CPTED concepts and strategies or engage the services of a specialist consultant to ensure that their designs meet the intent of these Guidelines. It is essential that designers clearly define the behavioural objectives for a given space and ensure that the design and use of that space supports those objectives. The following design factors shall be given specific attention.

Lighting - Refer to [Section 20.00](#) for performance guidelines.

Sightlines - The inability to see what is ahead because of sharp corners, walls, topographical features, landscaping, shrubs or columns is a serious impediment to feeling and being safe. These same features provide concealment for crimes such as assault, robbery, burglary, vandalism and graffiti. Designers shall maximise 'visual permeability' and opportunities for 'natural surveillance' and avoid 'blind' corners, especially on stairs, in corridors, and in the location of toilets.

Entrapment Spots - Entrapment spots are small, confined areas, adjacent or near frequently used routes. They are typically shielded on three sides by opaque barriers such as walls or vegetation. For example, dark recessed entrances, loading docks, gaps in vegetation along paths, toilet airlocks, small courtyards or certain architectural features may create entrapment spots. Entrapment spots are to be avoided either through design, such as providing maze entry systems in toilets, or by restricting access to the space by using hardware such as grilles. Where an entrapment spot is unavoidable, it shall be lit to a minimum of 30 lux and brought to the attention of the Superintendent at an early stage of the design.

Isolation - Isolated placement of facilities such as toilets, public telephones, car parks, bus stops, pedestrian paths and tunnels, after-hours computer and science laboratories, libraries, etc. can increase fear on the part of the users and the opportunities for crime. Designers shall give careful consideration to mitigating the sense of isolation by using techniques such as incorporating windows to overlook pedestrian routes and locating the abovementioned facilities in high circulation areas where opportunities for '*natural surveillance*' are enhanced. Toilets shall not be located within isolated corridors nor adjacent to a fire exit.

Loitering - Designers shall avoid locating toilets or bathrooms adjacent to public telephones, external seating, vending machines, notice-boards, or any other item which may legitimise loitering in the vicinity of the toilet.

Transitional Space and Signage - The ability to easily navigate the Campus reduces confusion and enhances confidence on the part of students, staff and particularly visitors. Designers shall incorporate techniques such as landscaping, changes in texture and/or colour, placement of furniture, etc. to aid with '*legibility*' of the site and clearly define the transition from public to semi-public to semi-private to private space. Where signs are used, their meaning shall be clear and unambiguous, and they shall be strategically located at entrances and near the intersections of corridors and paths.

2.04 Design for Bushfire-prone Areas

The design of buildings on all bushland campuses must take the possibility of bushfire into account and incorporate the necessary provisions to minimise the possibility of loss or damage by bushfire. In particular, the principles set down in AS 3959 - 2009, 'Construction of Buildings in Bushfire-prone Areas', and in SAA HB 36, 'Buildings in Bushfire-prone Areas', shall be considered and incorporated into building design where deemed necessary by GU.

2.05 Design for People with Disabilities

Buildings and external walkways shall be designed to provide access and use by people with disabilities in accordance with the requirements of AS 1428, Disability (Access to Premises – Buildings) Standards 2010, and the BCA.

For all new buildings and major campus works involving modifications to pedestrian travel and access through the campus, the services of a DDA Consultant shall be utilised to review and comment on the design solution for compliance with the foregoing Standards and Codes. GU may elect to appoint this consultant direct, or may instruct a design consultant to include this service as part their consultancy, or instruct a Contractor to include a DDA consultant in their design team.

Each new building shall incorporate at least one unisex toilet for people with disabilities (PWD) on each level. For major refurbishment projects comprising whole floors, consideration shall be given this requirement subject to available space and access to services. Subject to confirmation from the Superintendent, the door to the PWD toilet located on the main building entry level shall be fitted with an electrically operated DORMA ED100 Swing Door Operator system with push buttons, indicator lights and electromagnetic locking. This toilet shall also be fitted with a 'Tiltlock Safe-Assist' 850mm automatic locking folding grab rail adjacent to the pan. **Note:** A PWD toilet fitted with a door operating system is not to include a shower or baby change table as described in Clause 2.13.

The provision of car parking for people with disabilities is assessed on a campus wide basis taking into account the location of car parking areas and access roadways. The GU Traffic &

Security Manager shall be consulted on the most suitable location for disabled car parks with compliant access for each building to meet the relevant Standards.

Tactile ground surface indicators (TGSIs) for sight impaired persons shall be incorporated into the design. Refer to Clause 6.06 of **Section 6.00** for full details of approved materials and manufacturers/suppliers of TGSIs.

Requirements for Braille and tactile signage are nominated in **Section 25.00**.

Lifts within and external to buildings shall conform to the requirements for people with disabilities.

2.06 Building Height

Building heights shall reflect the requirements of the Master Plan for the particular Campus, and the specific requirements/constraints of the proposed facility and its designated site.

2.07 Wind around Buildings

The design of an individual building or a group of buildings, shall be such as to avoid problems of wind turbulence.

2.08 Fire Engineering Design Brief

A Fire Engineering Design Brief (FEDB) shall be established by the Architect and other Consultants at the 'Sketch Design' stage of a project to investigate and evaluate all Fire Safety measures and systems proposed for the building to ensure that all the required criteria are met. For the requirements of the Brief refer to the current edition of the 'Fire Engineering Guidelines' as issued by the Australian Building Codes Board.

2.09 Daylighting

Daylighting is the use of light from the sun and sky to compliment and replace artificial light. Daylighting summarises all building design measures (fenestration and lighting controls) that strive to optimise the availability of glare free natural lighting and meet the occupants lighting quality and quantity requirements.

An integrated approach to daylighting shall be taken that includes the potential for significant energy savings through appropriate building design, space design, shading, lighting and glazing measures.

2.10 Space Guidelines

GU has developed space guidelines to provide a method by which rational planning and management decisions can be made. The space allocations reflect the functions for which a space can be used. These space guidelines only reflect the quantity of space, not the quality. In each case, the functional requirements of the occupant have a bearing on the actual allocation of space.

Unless noted otherwise on the Space Description Forms contained in the Project Design Brief, the following space guidelines shall apply.

Office Space

Occupant	GU Standard m2 UFA#
Vice-Chancellor	20 - 28
Senior Executive Staff (DVC, PVC)	16 - 20
Dean, Director	14 - 16

Head of School	12 - 14
Academic Staff Levels B to E (Professor, Associate Professor, Principal or Snr. Lecturer, Principal or Senior Research Fellow, Lecturer Level B)	10 - 12
Academic Staff Level A	2 per 12m ² Office or 8m ² in open plan
Research Assistants, Research Fellows 1 & 2	2 per 12m ² Office or 8m ² in open plan
Administrative Senior Staff (Deputy Deans, Deputy Directors, Associate Directors, Senior Managers)	10 - 12
Administrative Staff (All Levels)	8 – 10m ² Office (only if required for confidentiality) 6 – 8m ² in open plan
Post Graduate, Research Higher Degree student	4m ² in open plan
Coursework Higher Degree Student ** refer to Notes at the end of this table	4m ² per student in open plan (time shared workstation)
Academic Visitors	To use offices of staff on OSPRO or a bookable hot desk
Adjuncts, Honorary or Emeritus status	Nil. To be accommodated within Group Space Portfolio

Notes:

- Staff on a fractional appointment, a sessional or a adjunct appointment, are not entitled to an individual office.
- The Vice-Chancellor has stated that no staff member is to be allocated the use of two designated individual offices. Staff who have responsibilities on several campuses must nominate their 'base campus'. An office will be allocated for their use only on that campus. At any other campus, these staff may use a 'hot desk' or shared facility in an area designated by their school for that purpose.
- Staff on research, study or extended leave must release their office for use by others while they are absent from the University. The School must make arrangements for the storage off-site of any personal effects if required.
- Space for RHDs is managed by the Groups in accordance with the policy approved by Executive Group. RHD students who are placed in and are sharing staff office-type accommodation, must be prepared to be relocated if offices are required for new academic or general staff.

** Defined space is not generally provided for honours or coursework higher degree students, however exceptions may arise from time to time e.g. access to specialised computer facilities set up by Schools, Business masters, IT masters etc. They are expected to perform their experimental work in laboratories managed by either Groups or ITS.

Common Teaching & Learning Space

Space Type	GU Standard m ² UFA
Flat / sloping floor lecture theatre	1.30 m ² per person + 5m ² <i>See Notes (i) and (ii)</i>
Tiered floor lecture theatre	1.10 m ² per person + 5m ² <i>See Notes (i) and (ii)</i>
Interactive tiered floor lecture theatre	1.50 m ² per person + 5m ²
Seminar/Tutorial rooms	2.00 m ² per person + 5m ²
Student Collaborative Learning & Study Centres	3.00 m ² per person

Notes

- (i) *The following guidelines should be used for the design of lecture theatres:*
- | | | |
|--------------------|---------------|----------------|
| <i>Aisle width</i> | <i>Side</i> | <i>1,350mm</i> |
| | <i>Centre</i> | <i>1,200mm</i> |
| | <i>Rear</i> | <i>1,500mm</i> |
- Seat spacing (minimum step depth per seat row) 1,050mm*
- (ii) *Allowance must be made in all fixed-bench seating areas to provide one space per 40 seats for people with disabilities.*
- (iii) *A breakdown of this space is provided elsewhere in this Section.*

Laboratories and Other Spaces

Space Type	GU Standard m ² UFA
Research Laboratory (incl. fume cupboard space, instrument rooms, storage, write-up space etc)	7.50 m ² per workstation
Teaching Laboratory (incl. fume cupboard space, preparation, utility & instrument rooms, stores)	6.80 m ² per workstation
Computer Teaching laboratories	3.50 m ² per workstation
Building foyers	80 m ²
Book stacks	2.20 m ² per double-sided shelving unit; 2.00 m ² per 1,000 volumes

2.11 Cleaner's Store

Provide one 6m² room in each building to be used as a Cleaners' Store. This space is required to store consumables and equipment including mop and broom racks, and shall contain a cleaners' sink with a cold water supply only.

Unless otherwise determined by CLF, other cleaners' rooms each 2m² will be required on each floor to store cleaning equipment only. A cleaners sink is not required for these rooms. CLF should be consulted at the Preliminary Design stage to discuss locations and requirements.

2.12 Toilets

Toilets shall be provided to meet the expected occupancy of the building after consultation with the users and the Building Surveyor. All toilets, particularly in student areas, shall have 'maze' entries except for PWD toilets or in situations where noise may impact on adjacent spaces e.g. open plan offices, reception and waiting spaces.

2.13 Shower & Baby Change Facilities

Provide in each building at Ground Floor level, a shower in the toilet for people with disabilities in accordance with AS1428 Part 1. Also provide a folding baby change table fixed on the wall in the same room. If the PWD at Ground Floor level is to be fitted with an electrically operated swing door opening system as per Clause 2.05, then the shower and baby change table shall be relocated to a PWD toilet on another level in the building.

2.14 Facilities Room

A room of 6m² in area must be provided unless otherwise advised by CLF.

2.15 Valve Room

A valve room accessible from outside the building shall be provided at Ground Level in which all main services isolation valves, metres, irrigation controls, RPZD etc. shall be located. This valve room may be incorporated into a service duct.

2.16 Telecommunications Equipment Rooms

All new buildings require Telecommunication Equipment rooms (TER) to comply with the requirements laid down in [Section 21.00 Communication & Data Services](#).

2.17 Plant Rooms

Adequate space for Plant Rooms shall be allocated in the design of the building, and these shall be shown in the Preliminary Design drawings. Plant Rooms shall not be used as air plenums forming part of the air-side system, or as store rooms.

Walls, floor and ceiling of all plant rooms shall be painted unless otherwise directed by CLF.

Plant Rooms shall be sized and the location of plant, ductwork etc. shall be designed to allow for clear and safe access around plant for maintenance requirements. Plant rooms containing electrical or mechanical services switchboards shall maintain a minimum of 600mm clearance with the doors open in accordance with AS/NZS 3000.

2.18 Electrical Riser Cupboard

A dedicated electrical services riser shall be provided for the reticulation of electrical services throughout the building. The minimum size of the electrical riser shall be 1500mm x 500mm.

2.19 Collaborative Learning & Study Centres

Collaborative Learning & Study Centres shall be located at ground level with good visibility and direct access from the main pedestrian circulation pathways past the building. Access to the Centre must be available outside normal hours without compromising the security of the building, therefore it should have its own entry separate from the main building foyer and which is capable of closure should it be required. If a separate entry is not possible, then it should be located as close as possible to the building's main entry to avoid students having to penetrate too deeply into the building to access the Centre. There shall be sufficient windows in the external walls to provide an adequate level of natural light and visibility to passing pedestrian traffic. The natural light levels provided should consider that large TV monitors will be present in some zones.

The Centre shall contain a number of distinct activity components, which are generally to be screened from but not totally segregated from the other components by solid walls or doors. Careful consideration shall be given to the acoustics within the Centre such that noise from one component does not become a problem to those using other components. The number of each component type will depend on the size and location of the Centre. The activity components are as follows.

Collaboration Zone (technology enabled) – a space where students can collaborate on the preparation and presentation of group projects and assignments. Each zone shall comprise fixed banquet seating in a 'U' form facing a wall on which large TV monitors are mounted to display individual project work for group discussion. The floor should be raised to facilitate data cable connections from the seating to the wall mounted monitors. There shall be ramped wheelchair access to the raised floor area.

Collaboration Booth (technology free) - a space where students are able to collaborate in a casual manner without a need to display information to all members of the group simultaneously. Each booth shall have lounge style seating with high backs and small loose tables. These spaces can also be utilised for quiet study.

Team Study Booth – booths shall be capable of accommodating four (4) to six (6) students. The end wall shall be a solid wall with a mounting panel for a large TV monitor. Screens between booths should contain a minimum of 50% glass for visual surveillance and transmission of natural light.

Individual Study Zone – this zone shall be located on the perimeter of the Centre and will comprise fixed computer wall benching to suit a minimum of twenty (20) desk top computers for casual use by students. The number of computers shall be determined by ITS.

Chill/Quiet Zone – a space for students to relax or socialise in a quiet space where group activity does not occur.

Lounge - a centrally located open area with a mix of fixed and loose furniture where students can work individually or in pairs using their own personal devices, and where they can wait to gain access to a collaboration zone, a booth or a common use computer.

Resource area – printing stations with control/pay unit and a lockable stationery store.

Examples of typical Collaborative Learning & Study Centres are located on Level 0 of the Patience Thoms (N06) building at the Nathan campus, and on Level 2 of the Learning Commons (G11) building at the Gold Coast campus.

2.20 Lecture Theatres, Auditoria & Other Teaching Spaces

The design of lecture theatres, auditoria and other teaching spaces shall incorporate the principles outlined in the current edition of the 'AETM Audio Visual Design Guidelines for Tertiary Teaching Spaces'.

The acoustic performance of lecture theatres and auditoria are fundamental to successful teaching and so special consideration shall be given to the design of these spaces with respect to acoustical performance. The requirements of Sections 6 & 7 of the AETM Design Guidelines shall apply.

The front wall of the theatre is used for projection and must accommodate a main picture size not less than 4m wide unless approved otherwise by ITS. The form of projection to be used in the space must be confirmed with ITS.

Lecture theatres with more than 250 seats may require a Projection Room/Bio Box. This must be confirmed with ITS

The design of the seating layout in lecture theatres and auditoria shall be governed by the requirements of Section 4 of the AETM Design Guidelines.

Refer to Sections 12, 13 & 14 of the AETM Design Guidelines for the technology requirements, including lighting, for large, medium and small teaching spaces and for meeting rooms.

2.21 Video Conferencing Rooms

Video Conferencing rooms shall ideally be spaces without windows to allow optimum light control through artificial means. Where windows are present and it is not practical to remove or block them out, then the video screen shall be located as far away as possible from the windows (e.g. opposite wall), and blinds shall be provided to reduce the level of natural light in the room to a level acceptable to ITS.

The room requires 24 x 7 access control for security of equipment.

2.22 Laboratories

A Laboratory is classified as any building or part of a building used or intended to be used for scientific or technical work which may be hazardous, including research, quality control, testing, teaching or analysis.

Such work may involve the use of chemicals including dangerous goods, pathogens and harmful radiation, quarantine materials, or processes including electrical or mechanical work which could also be hazardous.

The laboratory includes such support areas as instrument and preparation areas, laboratory stores and any offices ancillary to the laboratory.

All laboratories must comply with the Building Code of Australia, AS 2982, AS 2243 Parts 1-10 inclusive, AS 1940, AS 4332, AS 2430, AS/NZ 2982.1 and referenced and related documents including the Workplace Health and Safety Act and regulations. The design of all laboratories shall be reviewed with OTS to ensure compliance with all standards and regulations.

When preparing designs for laboratories, the consultants must confirm with the Users the likely use and storage of flammable liquids within the space, to ensure that electrical exclusion zones can be determined and that the quantities of flammable liquids to be stored do not exceed to maximum allowable by the relevant Standard.

In the determining the exclusion zones required, GU's preference is that these are established in accordance with the Australian Standard, rather than by a 'risk assessment' methodology.

Consultants are required to present adequate documentation to the Users to acquaint them fully with the impact on the laboratory design from storing flammable liquids in the space. In the event that this impact severely compromises the functional operation of the laboratory, then alternative storage locations should be investigated, or approval may be sought from CLF to undertake a risk assessment to minimise the zones required. Any such assessment shall only be undertaken by firms or persons approved by CLF.

For Physical Containment (PC) spaces, the consultants shall prepare documentation which clearly identifies the extent and boundaries of the space. Penetrations through the boundaries (floor, wall or ceiling) of the PC space shall be specifically detailed to prevent the entry of vermin. The ceiling space or roof void above the space shall be sealed to the underside of slab or roof decking to minimise air leakage.

2.23 Vending Machines

Consideration shall be given in the design of public external spaces adjoining 24 hour access facilities, learning centres, commercial or general type buildings on the campuses, for the installation by others of vending machines. The vending machines should be housed in an alcove or isolated structure designed to accommodate the varying machine sizes, and to minimise their visual impact. Allowance should be made for lighting, power, water outlets and drainage to sewer. Vending machines shall be located in areas approved by CLF away from building entries, and not adjacent to foyers of Lecture Theatres, teaching type buildings or library facilities.

2.24 Waste Collection and Gas Bottle Storage

Each building shall be provided with a combined general and recyclable waste collection station at each level. The stations shall be easily accessible to the occupants and preferably be located in a recess to a corridor wall. The number of general and recyclable waste bins at each station shall reflect the volume and type of waste generated by the activities on that level.

Where the provision of industrial waste containers and wheelie bin storage is associated with a project, particular care is to be taken in the design of these areas to ensure unrestricted access for waste collection vehicles while at the same time providing suitable visual screening from the campus generally.

Adequate provision shall be made for the secure and ventilated storage of gas bottles whether located internally or externally of a building.

2.25 Links to Adjacent Buildings

The design of new buildings shall address linkages to adjacent buildings by pathways, covered links or bridges, depending on the building function, location of the building relevant to those adjacent, the topography of the site or other considerations, which will be outlined in the Strategic

or Technical Briefs. The design of covered links or bridges should utilise open and lightweight structural principles to minimise their visual impact.

2.26 Building Areas & Definitions

Building Areas for GU projects shall be measured in accordance with principles established by the Tertiary Education Facilities Management Association (TEFMA), which are set out as follows. All areas are measured in square metres.

Fully Enclosed Covered Area (FECA) – is the sum of all fully enclosed covered areas at all building levels, including basements (except unexcavated portions), floored roof spaces and attics, garages, penthouses, enclosed porches and attached enclosed covered ways alongside buildings, equipment rooms, lift shafts, vertical ducts, staircases and any other fully enclosed spaces and useable areas of the building, computed by measuring from the normal inside face of external walls but ignoring any projections such as plinths, columns, piers and the like which project from the normal inside face of exterior walls.

It shall not include open courts, light wells, connecting or isolated covered ways and net open areas of upper portions of rooms, lobbies, halls, interstitial spaces and the like, which extend through the storey being computed.

Note: Atriums and light wells are only measured at the base level. Do not include the area of the non-existent floor slab at upper levels.

Unenclosed Covered Area (UCA) – is the sum of all unenclosed covered areas at all building floor levels including roofed balconies, open verandas, porches and porticos, attached open covered ways alongside the building(s), useable space under the building(s), unenclosed access galleries (including ground floor) and any other trafficable covered areas of the building which are not totally enclosed by full height walls. The UCA is computed by measuring from the inside face of any enclosing walls, balustrades or supports, but excludes connecting or isolated covered ways and eaves, overhangs, sun shading, or awnings unless they relate to clearly defined trafficable covered areas.

Gross Floor Area (GFA) - is the sum of the Fully Enclosed Covered Area (FECA) and the Unenclosed Covered Area (UCA). $GFA = FECA + UCA$ (m²)

Usable floor Area (UFA) – is the sum of the floor areas measured at floor level from the general *inside* face of the walls of all spaces related to the primary function of the building. This will normally be computed by calculating the FECA and deducting common use areas, service areas and non-habitable areas.

If an area which may be deemed as 'common use' or 'service area' e.g. entry foyer, tea room, or store room, is included in the briefed Schedule of Areas, then those areas shall be included in the calculation of UFA. Foyers to large Lecture Theatres should be treated as UFA.

In some cases, the UFA may include some external covered areas which relate to the primary function of the building but are not part of the FECA e.g. covered play area for a Child Care Centre, open roofed civil engineering hydraulics-modelling laboratory.

'Common use area' includes corridors which are defined by partitions, but do not include passages and secondary circulation areas associated with 'open plan' spaces.

'Non-habitable area' is the area occupied by internal columns and other internal supports, internal walls and permanent partitions, service ducts and the like.

2.27 Building Efficiency

Building efficiency for GU projects is to be computed by dividing the Usable Floor Area (UFA) by the Gross Floor Area (GFA) and expressing the result as a percentage.

The efficiency required by building type shall not be less than the following;

- Science – 60%

- Humanities – 65%
- Administration – 65%
- Library – 70 to 75%
- Arts – 70%
- Learning Centre – 70%

2.28 Acoustic Requirements for Internal Spaces

Regulatory Requirements – Authority and code requirements relevant to acoustic considerations with respect to University developments include:

- EPA Environmental Protection Policy (Noise) 1997
- EPA Environmental Protection Amendment Regulation No 2 1999
- BCC Planning Policies
- Current Australian Standards including AS 1035, AS 1045, AS 1296, AS 2021, AS2822, AS 2436, AS 3671, AS/NZS 2107
- WH&S Act & relevant regulations

Scope of Acoustic Considerations – In the design of new buildings, or in the refurbishment of existing facilities, acoustic considerations may include:

- External noise intrusion
- Noise generated within the building due to building services
- Noise emissions from the building as they affect adjoining buildings or residents
- Noise interactions between spaces and consequent privacy considerations
- Acoustic quality of spaces such as speech intelligibility
- Special acoustic requirements such as sound or video recording.

External Noise Intrusion – Typical noise from external sources to be dealt with in the design include:

- Traffic noise (road, rail and/or aircraft sources)
- Equipment associated with adjacent buildings and industrial activities

These types of intrusive noise can be classified as either:

- Steady or pseudo-steady
- Transient (eg aircraft fly over).

These types of noise can be quantified as:

- Steady: Equivalent continuous measurement: L_{Aeq}
- Transient: Noise level exceeded for 1 percent of the time: L_{A01}
- Criteria apply over any one hour period during applicable hours (for University activities: 8am to 10pm).

Limits of acceptable noise intrusion are listed below in Table 2.1

Table 2.1

Room Type	L_{Aeq}	L_{A01}
Faculty Offices and all other individual offices	37dBA	45dBA
Administrative/clerical office (open space), post graduate student areas	37dBA	50dBA
Counselling Office	37dBA	45dBA
Teaching Room	37dBA	45dBA
Lecture Theatre	32dBA	40dBA

Library	40dBA	50dBA
Video-conferencing Room	32dBA	40dBA
Corridors, Lobbies	45dBA	55dBA

Noise Emissions – Noise emissions can arise from building services or the functional activities of the space. This category includes noise generated by activity associated with the functioning of the space (eg delivery vehicles to a loading dock).

Noises of this type may impact on buildings on or off campus.

The acoustic characteristics of potentially-affected adjoining buildings will need to be taken into account to determine acceptable noise emissions from the proposed new building and its associated noise source(s).

Criteria for campus buildings: refer Table 2.1

Criteria for adjoining (off-site) buildings and facilities: refer applicable statutory requirements.

Building Services – These noise sources include fans, motors and pumps etc. The noise can be transferred to other spaces by two mechanisms:

- Air-borne noise transmission
- Structure-borne noise transmission.

Both mechanisms of transmission must be considered in the design, by the provision of appropriate sound insulation and structural isolation.

Noise from building services shall not exceed the following values:

Table 2.2

Room Type	L _{Aeq} Adj
Faculty Offices and all other individual and shared staff offices	37dBA
Administrative/clerical office (open space), post graduate student areas	37dBA
Counselling Office	37dBA
Teaching Room	37dBA
Lecture Theatre	32dBA
Library	40dBA
Video-conferencing Room	32dBA
Corridors Lobbies	45dBA

Plant noise can commonly consist of pronounced tonal components which add to their annoyance. Wherever such tones exist, the measured noise level shall be penalised by a 5 dBA upward adjustment such that the adjusted levels do not exceed the values in Table 2.2.

Noise Interaction Between Spaces – The privacy achieved between two adjoining spaces depends on a number of parameters, as described in AS 2822. For University buildings, the requirements can be simplified to two parameters:

- The sound reduction between the spaces (D_{ntw}), and
- The background noise of the receiving space (dBA)

The sound reduction is quantified by the weighted standardised level difference (D_{ntw}). The background noise is quantified as the A-weighted sound pressure level (dBA).

The summation of the parameters gives the privacy rating:

- $PR = D_{ntw} + dBA$

Table 2.3 below sets out, in matrix form, privacy rating requirements for a range of spaces.

Table 2.3

Room Type	Offices	Open Plan Offices RHD	Counsel -ling	Seminar Room	Lecture Theatre	Library	Video Conf Room	Corridor
Individual & shared staff offices	85	85	90	90	90	90	90	70
Open Plan Offices / RHD student areas	80	-	90	90	90	90	90	-
Counselling Office	90	90	90	90	90	90	90	80
Seminar Room	90	90	90	90	90	90	90	75
Lecture Theatre	90	90	90	90	90	90	90	80
Library	90	90	90	90	90	90	90	-
Video Conf Room	90	90	90	90	90	90	90	80
Corridor	70	-	80	75	80	-	80	-

Acoustic Qualities of a Space – There are a large number of acoustical parameters used to define and describe the acoustical qualities of a space. The most universally common is the measurement of reverberation time: R_T , measured in seconds (sec).

R_T for various spaces shall be defined by Table 2.4 below:

Table 2.4

Room Type	R_T
Individual and shared staff offices	0.6 to 0.8 sec
Open Plan Offices / RHD Student areas	0.6 to 0.8 sec
Counselling Office	0.6 to 0.8 sec
Teaching Room	0.6 to 0.8 sec
Lecture Theatre	0.6 to 1.0 sec
Library	0.4 to 0.6 sec
Video-conferencing Room	0.3 to 0.7 sec
Corridors & Lobbies	0.6 to 0.8 sec

Other considerations include:

- Rear wall echoes in lecture theatres
- Standing wave or room modes in recording or practice studios
- Flutter echo in performance spaces.

These acoustical issues must be evaluated and addressed on a project-specific basis using a specialist acoustic consultant as required.

Construction Noise – Construction activities inherently produce noise. The levels of noise and their intrusiveness are generally most significant during the early stages of a new project (e.g. excavation and rock breaking) and diminish as the project advances.

Given the intensive nature of campus development, construction noise can be a significant impact on adjoining university buildings. Designers must consider the potential noise impacts of design options (eg extra basements extend the excavation period and the likely duration of noise impacts).

As a minimum, compliance with AS 2436 is required. Particular considerations include:

- Timing/programming of noisy activities to avoid student teaching hours
- Choice of excavation technologies
- Logical and sensitive site layout and sequence
- Choice of construction equipment.

2.29 Corridors

Wherever possible, corridors shall terminate at the external wall of the building to enable natural light to be admitted into the corridor space through windows in the building facade.

The design of corridors, foyer spaces and the like shall ensure that there are no unnecessary recesses, alcoves, dead areas and the like which could be used for depositing rubbish or as unapproved storage spaces by building users.

2.30 Asbestos & PCBs

The University maintains Registers and Management Plans for asbestos materials and equipment/fittings containing PCBs occurring in its existing buildings. Contractors and Consultants involved in the refurbishment or alteration of any building constructed or approved prior to 1 January 1990, must obtain copies of these documents from CLF for inclusion in all documentation for tender and construction purposes.

2.31 Design for Safety in Maintenance & Use

All buildings, structures and associated services shall be designed to meet the legal obligations of designers imposed by the Qld WH&S Act.

When that building or structure is being used for the purpose(s) for which it was designed, users shall not be exposed to safety or health risks arising from the design of that building, structure or services.

Designers shall consider as a minimum, the following to facilitate normal maintenance and other foreseeable work tasks when developing the design;

- Normal cleaning operations and waste disposal
- Maintenance of plant and services through ease of access, provision of sufficient lighting and adequate space to carry out necessary tasks
- The height above f.f.l. of valves, VAV units, cable trays and the like which require regular servicing or will be subject to future cable installation to kept to a minimum.
- Storage of materials and equipment within expected requirements
- Clear space and access around the building perimeter for machinery and equipment necessary to maintain and clean the building façade

The design of buildings and services shall eliminate the following;

- Unnecessary need to access hazardous areas such as roof surfaces or confined spaces for maintaining plant or services
- Generation of mould and other indoor air quality issues affecting the health of users

Electrical exclusion zones and disabled access clearances shall be marked and identified on the architectural floor plans.

2.32 End of Trip Facilities

Each new building project shall consider the requirements of the Queensland Development Code with respect to the provision of 'End of Trip' (EoT) facilities.

Rather than provide a EoT facility in each building, GU has adopted the principle of providing a facility which will service a number of buildings in close proximity. This shared facility may be 'stand-alone' or be incorporated into a building. A number of these shared facilities currently exist on GU campuses, and the CLF Principal Architect shall be consulted to establish if an existing facility is capable of servicing a new project, or whether a new EoT facility shall be provided to service the new building plus other existing and future buildings.