Design requirements – University of Tasmania

Infrastructure Services and Development

www.utas.edu.au/isd

Document control

Revision	Date Released	Section	Comments
V2.0	06.03.2009		Draft Release (Design Guidelines title changed to Design Requirements)
V1.0	05/02/2010	All	Final – Design Requirements
V1.1	23/06/2010	8	Update to AV details
V1.2	26/07/2011	3 & 7	General Update
V3.0	27/09/2011	All	Reformatted
V3.1	08/08/2012	7, 8	Removal AV requirements
V3.2	05/08/2013	All	General Update
V3.3	03/10/2013	6, 7	Security Section Updates
V3.4	29/11/2013	6, 7	Access Toilet Update
V3.5	10/07/2014	6, 7	Access Control, GPOs, Generation, LED lighting, Node Cooling, Update
V3.6	25/11/2014	7	Security, Metering, LED lighting Update
V3.7	19/07/2019	All	Updates to ISD, removal of all services and other redundant briefing. Refer to Standard Brief Infrastructure Services document on website.

Contents

1. Introduction and protocols

The University of Tasmania (UTAS) design requirements have been largely superseded by engagement documentation (i.e. consultant commission briefs) and further supporting documentation.

This document still contains some relevancy for Architectural & Civil design considerations.

Consultants must refer to the ISD Consultants and Contractors website for all current and relevant design & documentation briefing information.

https://www.utas.edu.au/infrastructure-services-development/contractors-and-consultants

In particular;

- Standard Brief for Infrastructure (Engineering/Building) Services
- As-Installed Manual

The following abbreviations have been throughout this document:

AS	Australian Standard
AMIS	Asset Management Information Systems
BCA	Building Code of Australia (NCC Volume 1 and 2)
BED	Built Environment and Development (UTAS Unit)
DDA	Disability Discrimination Act
GLP	Governance Level Principle
IPC	Infrastructure Planning and Compliance (UTAS Unit)
NCC	National Construction Code
TEFMA	Tertiary Education Facilities Managers Association
TFS	Tasmanian Fire Service

2. Mandatory requirements for building access

2.1 General

The University requires that all new buildings and surroundings approaches comply with AS 1428 parts 1 and 2. Design for access and mobility.

Where possible, refurbishment work should also comply with AS1428 parts 1 and 2.

2.2 Building access requirements

Specific access references and requirements have implications for the following areas which have to be addressed:

- Doors, hatches and door hardware
- Floors
- Joinery
- Steps, stairs and ramps
- Car parking and kerb ramps
- Ramps and handrails
- Car parking
- Access parking bay design
- Accessible routes
- Ramps
- Pedestrian crossings and kerb ramps

3. Site

3.1 Cross reference

To be read in conjunction with:

- Signage
- Section 7

- Campus master plans
- Urban design frameworks

3.2 General

Each campus has unique architectural and exterior spatial design qualities which are identified in the relevant campus master plans and urban design framework documents. In addition, UTAS has some technical site requirements that have become accepted standards. The Project Manager will ensure that relevant stakeholders such as IPC and Campus Services are consulted during project design stages.

Site surveys or asset locating, if undertaken, must update the UTAS electronic record held by AMIS. The updating of the electronic record must be fully compatible and without alteration to structures or methods only the addition or alteration of geometry and graphical entities.

See Appendix A1 Site Design Checklist and Appendix A2 Plant Selection Checklist for more details of items to be considered.

3.3 Site works

3.3.1 *Service trenching*

Where existing drawings are provided, the data should be taken as ‘indicative only’. Consultants are required to take all steps to determine for themselves the location of underground services.

Contractors and consultants should confirm all dimensions and locations prior to any work. Hand digging is required in all ‘high-risk’ areas to locate services.

3.3.2 *Spare conduits*

Spare conduits are to be provided under concrete paths as nominated by the Project Manager. All locations and details are to be accurately marked on the ‘As Installed’ documentation.

3.3.3 *Service trenching reinstatement*

Where disturbed by service trenching or the like, the returned below ground materials (soil, sub-bases for example) must match or improve on the existing materials.

Where trenching must cross footpaths or roads, the preferred method is under-boring; however, if not possible, existing surfaces are to be re-instated to match the existing or adjacent materials/works.

3.4 Landscaping and external areas

External access is a precursor to any building access. These areas must be designed thoroughly and thoughtfully and ensure that access is available from drop off points, public transport points, car parks and other major destinations, to the building being altered or designed. The most common problem in any project is not checking or extending the works past the site boundary to include these connections, such as ensuring that paths meet correctly and surfaces are consistent.

When designing the external areas consideration must be given to the access and requirements of emergency services providers, e.g. vehicular access and maintenance providers (for example, cleaning windows and clearing roof gutters).

Exterior ground finishes (hard and soft) will be graded to give falls away from buildings, with minimum falls of 1:100.

3.4.1 *Path widths*

The minimum path width may often be wider than usual to meet specific needs, for example to accommodate passing by groups of people. The minimum clear path width is to be 1200mm.

3.4.2 *Ramps and handrails*

Handrails must be designed aesthetically to meet University standard designs and master plan details and the requirements set out in AS1428.2.

3.4.3 *Car parking*

The number of parking bays will be determined taking account of local authority requirements and other project needs e.g. for visitor parking. The University has specific signage requirements for car parks and may need to include the provision of voucher machines. These costs are to be included in the project budget.

3.4.3.1 Accessible parking bays

Accessible parking bays are required where directed by the UTAS Project Manager. The University has specific signage requirements for accessible bays.

3.4.3.2 Access parking bay directional signage

All car-parking areas should have signage at their entries clarifying whether or not the area includes access parking.

3.4.3.3 Access parking bay numbers

Access parking bays are to make up a minimum of 2% of any main car-park area, unless these parking spots are re-allocated to higher use access areas as directed by the UTAS Project Manager.

Flexibility in the design of parking bays is recommended. For example, provide several wider bays that can be adapted to access parking bays, if later required, by changing signage.

3.4.3.4 Access parking bay location

Access bays must be located as close as is practicable to accessible routes and likely destinations, including essential teaching and learning locations. A maximum of 120 metres' travel should be allowed between access bays and likely destinations.

3.4.3.5 Access parking bay design

At least one access-parking bay should be 4200mm wide for special-purpose cars. This bay can overlap with other use areas. The aim is to ensure parking is designed and sized to allow access to and around vehicles.

3.4.3.6 Access parking bay cross slopes

Cross slopes are potentially more hazardous than longitudinal slopes. Cross slopes are more likely to cause ankle injuries for pedestrians and problems for wheelchair users. Cross slopes in access parking bays are to be a maximum of 1 in 40.

3.4.3.7 Access parking bay surfaces

Irregular surfaces are trip hazards for all users and are difficult for wheelchair users to negotiate.

Access parking bays are to be sealed, even and free from irregular levels or tree roots. Maximum allowed level difference is 4mm.

3.4.3.8 Kerb ramps

Car-parking areas must be serviced with accessible kerb ramps with no more than 10m travel distance from car to ramp. Accessible kerb ramps should be clearly visible and should be located near access parking areas.

3.4.3.9 Wheel stops

Wheel stops or single 'raised' kerbs should be avoided. If unavoidable, wheel stops should be positioned so they are not hazardous. They should be clear from paths and kerb ramps. If possible, road islands should be used in preference to wheel stops. Only low profile wheel stops are to be used.

3.4.4 *Obstructions*

3.4.4.1 Car overhangs

Car noses or tow bars protruding onto pedestrian paths must not reduce the width of those paths below minimum allowable widths. Extend path widths so that car noses or tow bars do not compromise minimum allowable widths.

Consider the use of garden beds, lawn or changes in path texture to separate the accessible path from the car park. Wheel stops can be used as a last resort.

3.4.4.2 Overhead obstructions

Overhead obstructions including trees and branches are to be a minimum of 2500mm above ground level in parking areas. Stair landings or other built overhead obstructions must not be over a path or surface of the same material and texture as the path.

3.4.4.3 Doors and windows

Doors or awning windows must not open onto paths, ramps or landings unless they allow for minimum clear access widths to be maintained. They should not open onto any part of a path but must be over clearly delineated surface.

3.4.4.4 Protruding objects

Ensure paths and ramps are clear of objects that a cane can go underneath or that protrudes into a delineated pathway. If this cannot be achieved, then provide tactile pavers around base of the objects. Paths are to be clear of obstructions such as light poles.

3.4.4.5 Kerb ramps

Kerb ramps must not reduce the unobstructed path width. Kerb ramps are to be constructed to the local government standard details, and meet all requirements for tactile indicators.

Kerb ramps widths (not including feathering or curving to blend with kerbs) are to be the full width of the paths they associated with.

3.4.4.6 Free standing objects

Freestanding objects must not protrude more than 500mm into a walkway and must not reduce the clear width of the walkway.

3.4.4.7 Wall-mounted objects

Wall-mounted objects must not protrude more than 100mm into a walkway and must not reduce the clear width of the walkway.

3.4.4.8 Fire service equipment

Fire service equipment, such as fire extinguishers and hose reels, must be recessed into walls wherever possible or set clear of walkway clear space as noted elsewhere.

3.4.4.9 Vending machines

All vending machines are to be set back 900mm from clear circulation space.

3.4.4.10 Bollards

The top third of bollards must be in a colour that contrasts with the remaining bollard and the background paving.

3.4.4.11 Grate openings

Grate openings are to be no more than 10mm wide and 100mm long. Grate openings should be at right angles to the direction of travel. Proprietary heel-guard type grates are preferred.

3.4.4.12 Grate locations

Grates must not be located at the bottom of stairs.

3.4.4.13 Grate materials

Grates should be made of substantial materials with some slip resistance. Lightweight pressed metal grates are not permitted.

3.4.5 *Public transport*

3.4.5.1 Public transport pick-up points

Bus stops and taxis ranks are to be located on accessible paths. Public transport pick-up points should be accessible for all users.

3.4.5.2 Slopes at public transport pick-up points

Cross and longitudinal slopes in waiting and loading zones of public transport pick-up areas are to be a maximum of 1 in 40. Maximum slopes in waiting and loading areas are the same as those for paths.

3.4.5.3 Kerbs at public transport pick-up points

Tactile and contrasting colour indicators, 300mm wide, are to run the full-length 600mm back from the kerb, in public transport pick-up areas.

3.4.6 *Set down and pick up areas*

3.4.6.1 Road side set-down areas

Set-down areas or lay-by widths are to be located on the driver's side of the road and are to be a minimum of 3200mm wide, located where directed by UTAS Project Manager. Cross slopes are to be no more than 1 in 40.

Set-down areas should accommodate all users, including the users of access parking bays.

3.4.6.2 Other requirements in set down areas

Set-down areas are to be provided with kerb ramps and access footpaths.

They should also be provided with campus maps and seating as directed by the UTAS Project Manager.

3.4.7 *Destination clues*

3.4.7.1 Provide clear tactile clues

All users, particularly blind and visually impaired users, may become disorientated and lost if clear clues to destinations are not provided.

Give clear visual and tactile clues to major destinations along routes using texture, lighting, contrast or other design solutions.

3.4.7.2 Identify pedestrian crossings and kerb ramps

A defined pedestrian crossing must meet the Tasmanian statutory requirements. A crossing must include tactile markers either end, where the crossing meets a path.

3.5 Grassed areas and garden

3.5.1 *Irrigation systems*

The style of irrigation systems specified (including sprinkler heads, piping, filters, pressure reduction devices) is dependent on the intended site. It is preferred that irrigation systems are automatic with manual over-ride, the final installation will be as directed by the UTAS Project Manager, and is to be flexible and efficient in water management.

3.5.1.1 Irrigation controllers

Controllers are preferably to be electrically powered, or else battery powered. Systems are to be automatic with manual override.

3.5.1.2 Service pits and covers

Service covers for irrigation must be trafficable. Pits must be roomy enough to easily carry out adjustments and simple repairs. They must have a firm base, such as treated timber or compacted gravel. They must be firmly fixed to the ground, but easily removable to allow major repairs.

3.5.1.3 Backflow prevention devices

Complying backflow prevention devices for the class of hazard are to be fitted.

3.5.1.4 Outdoor taps

Taps must be firmly fixed to building structure, such as walls, or to stout, durable posts. Above ground piping must be of copper. Taps must be fitted with hose bib vacuum breakers. Taps shall be fitted with anti-vandal spindles unless otherwise directed by the UTAS Project Manager. Taps must be set at a height that allows easy fitting of garden hoses, typically 500mm to 700mm.

3.6 Paving and paved areas

Hard landscaped areas are to meet the requirements of the relevant campus landscape subject plan.

3.7 Steps and stairs

3.7.1 *Nosings*

Luminance contrast to all step nosings is required in accordance with statutory requirements. Integral nosings are preferred; confirm with the UTAS Project Manager if applied nosings are to be specified.

Slip resistance must be considered when specifying step nosings.

If stair nosings are not well illuminated or are in shadow they are difficult for some users to navigate. Lighting must be placed so that stair nosings are illuminated. The light levels must meet those specified in the UTAS design requirements.

3.8 Waste collection

Design, requirements and location of waste collection points shall be in liaison with Campus Services.

3.9 External furniture

Two standards of external furniture are in use at UTAS. High public use and central areas are to be furnished with the tier 1 items and tier 2 items are to be used everywhere else. Refer to the relevant campus master plan for advice on the delineation of these areas.

Standard fixing details are shown in Appendix A3 External Works

3.9.1 *Tier 1 furniture items for high profile locations*

3.9.1.1 Bins

- Town and Park Furniture LB2 55Litre
- Surface mount (SM)
- Latch (/L)
- Natural aluminium finish

Rims may be plain or incorporate an ashtray, as directed by the UTAS Project Manager. Bins are to be sited within UTAS smoke-free areas (typically, within 10m of doors, vents or windows) must not incorporate an ashtray.

3.9.1.2 Butt bins

Are to be provided in consultation with the UTAS Project Manager.

4. Building fabric

4.1 General

All structural works are to have the minimum workmanship warranty as required by current legislation unless higher standards are specified.

4.2 External wall materials

External walls shall be of materials selected to suit the location of the building and to conform with:

- the existing structure and
- surrounding buildings, or
- to create a specific design feature.

Further information on the requirements and principals is laid out in the relevant campus master plan document.

4.2.1 *Selection of materials*

Finishes are to be selected to minimise future maintenance. Paint finish to external walls will not be accepted unless approved by the UTAS Project Manager.

4.2.2 *Material selection*

All materials shall be selected for their likely availability and colour consistency over a 20-year period.

4.2.3 *Colours*

In certain areas it may be useful to introduce primary colours to highlight features of the buildings. Approval for colour schemes is required from the UTAS Project Manager.

4.2.4 *Construction*

Buildings with poured ‘in-situ’ concrete elements exposed to the weather shall be designed with particular care and consideration given to the possible future effects of shrinkage and cracking, leading to corrosion of reinforcement and eventual spalling of

concrete. Any such designs will be critically examined for specified coverage of reinforcement and structural guarantees will be required.

Consideration should be given to external walls and the likelihood of pattern staining. Water and weather marks down the wall face should be minimised.

4.3 Internal walls, partitions and finishes

4.3.1 *Flexibility*

Buildings shall be designed to be as flexible as possible. Internal load bearing walls shall be minimised and restricted to areas such as the building core for stairwells, lift shaft and toilets. All other internal walls and partitions shall be non-load bearing and fully demountable within the limits of economical design.

4.3.2 *Materials*

Partitions and internal walls may be of plasterboard on light steel or timber framing, painted or unpainted concrete masonry, or equivalent, as required by the application.

4.3.3 *Skirtings*

Black vinyl skirtings of a minimum 100mm height shall be provided to all internal partitions irrespective of type except:

- where metal skirting duct is used
- where walls are tiled, or
- where other floor finishes are turned up walls.

4.4 Acoustics

4.4.1 *General*

Acoustics: Particular attention shall be paid to acoustics and noise transmission. Partitions shall be filled with acoustic batts and/or double sheeted on one or both sides as necessary to achieve the necessary sound transmission loss between spaces.

A suitable mastic sealant shall be used at all surface junctions to maintain the sound transmission rating.

Details of intersection of partitions and external windows shall ensure the sound transmission coefficient is maintained at that intersection equivalent to the remainder of the partition.

To ensure adequate sound insulation, partitions shall extend from floor slab to underside of slab above if possible or acoustic ceiling insulation shall be used.

4.4.2 *Acoustic requirements*

4.4.2.1 Weighted sound reduction index

The applicable weighted sound reduction index (RW) shall be selected to suit the proper functions of the occupancy of the rooms.

4.4.2.2 Limit noise transference

The provision of airlocks to limit noise transference should be considered. Alternatively, the installation of solid core doors and acoustic rated frames and fittings, or where required, acoustic rated grilles, are to be installed.

4.4.2.3 Sound lagging

Internal waste water pipes are to be provided with sound lag material.

4.4.2.4 Acoustic requirements for non-plant equipment

Where non-plant equipment is to be installed within a project, consideration should be given to the noise generated by this equipment. Potential ambient and structural borne noise issues, and specific WHS requirements, may determine that acoustic attenuation is required on equipment.

Plant equipment is that which is required to run systems and services for the building's overall operation. Non-plant equipment is that which is specific (or a fixed or mobile tool) to aid an activity, function or research which takes place in a room/area.

On provision of this information to the UTAS Project Manager, direction will be provided.

Where required, post construction, some statutory workplace testing may be sought to ensure acoustic compliance of this equipment.

4.5 Roofing

4.5.1 *Roof mounted plant and equipment*

The University would prefer to have no roof mounted plant or equipment but if it is required, appropriate and compliant access is required.

4.5.2 *Roof finishes*

Roof finishes are to be selected and specified, appropriate to the architectural context of the campus locality. Unless refurbishing an existing tiled roof, tiled roofs are not acceptable. All new roofs and major roof refurbishment, including associated flashings and penetrations, shall have the minimum legislative warranty on workmanship of the installation and a minimum 20 year warranty on the roofing materials.

4.5.3 *Metal*

Use a proprietary system of pre-formed sheet and purpose made accessories in matching colours.

If roofs are to be trafficable for inspections and maintenance of roof and plant, the base metal thickness (BMT) of the material shall be specified in the heaviest gauge available in the product range.

Use only the manufacturer's standard colour range.

Standard profiles offered in a high-tensile variant are acceptable.

4.5.4 *Polycarbonate*

When used, the profile of the polycarbonate roof sheet will be identical in profile to the roof in which it is placed. The roof sheets will be installed in accordance with the manufacturer's specifications and fitted with the manufacturer's recommended accessories.

Safety mesh and signage is to be installed as required by legislation.

4.5.5 *Fibreglass*

Fibreglass roofs are not acceptable.

4.5.6 *Trafficable membrane*

Use only component parts from a single system.

4.6 Roof design

When upper level building occupants will have views over a new or refurbished roof, attention must be paid to glare and reflected heat loads into the occupied building(s).

Pitched roofs are preferable to flat deck roofs. Minimum pitch shall be not less than manufacturer's recommendations for materials adopted.

4.6.1 *Eaves*

Eaves linings shall be fibre cement adequately fixed and sealed against the ingress of moisture and vermin and vibration or movement due to wind.

4.6.2 *Roof penetrations*

All roof penetrations shall be flashed with two part flashings, consisting of a base flashing and a cover flashing, allow for independent movement between the roof and the projection.

4.7 Drainage and gutters

When using metal sheet roofing material, extend decking sheets a minimum of 50mm into gutters. Close off ribs on underside of sheets with purpose made fillers or end caps.

Use only prefabricated proprietary gutters and accessories.

Provide overflows and sumps in all rainwater catchment systems.

4.7.1 *Overflows*

Overflows are to be provided to all roofs and gutters as a safeguard against flooding caused by downpipe or drain blockages. Overflows are to discharge clear of building lines and pedestrian bridges or paths.

Sumps shall be designed at box gutter outlets.

4.7.2 *Gutter and downpipe sizing*

Flooding frequency shall be decided for each project after considering the damage flooding would cause. Provide all calculations showing capability and capacities for designed rainwater catchment systems.

4.7.3 *Falls*

All gutters shall have adequate falls to outlets.

4.7.4 *Gutter materials*

All box gutters shall be of type 316 stainless steel fabricated to ensure that joints are not subject to crevice corrosion.

4.7.5 *Gutter expansion joints*

Continuous lengths of gutter shall have expansion joints at 16m maximum centre line. Where flooding cannot be tolerated a special expansion joint is to be used.

Gutter grades shall be nominated on the plans.

4.7.6 *Downpipes*

All exposed downpipes shall be constructed of zincalume as a minimum. No downpipes shall be incorporated in structural elements of the building i.e. columns. Similarly internal downpipes are not to be designed/installed unless approval is given by IPC

Water noise must be considered and mitigated where issues anticipated.

4.7.7 *Parapets*

Where a parapet is designed, the gutter behind shall be pre-formed metal channel.

4.8 Cladding

4.8.1 *Brick*

Expansion joints are to be installed as required by legislation to accommodate brick growth.

Cavity ties are to be installed as required by legislation.

4.8.2 *Render*

In-situ or pre-cast concrete panels, bricks or masonry are not to be rendered.

4.8.3 *Timber*

When using timber sheet, manufactured or board product, the installation including fixings and details are to comply with the manufacturer's specifications.

All board products will be appropriately sealed on all six faces/edges.

4.8.4 *Metal cladding*

Where metal cladding is specified, future maintenance issues, such as access to the external wall cavity, are to be considered.

Systems applied directionally, that require 'peeling' the building from one end to the other, are to be avoided.

4.9 Concrete

4.9.1 *General*

Types, locations colours and finishes of exposed concrete shall be confirmed with the UTAS Project Manager.

Applied or painted finishes to pre-cast and tilt-up panels will not be accepted, panels may be colour treated during fabrication.

4.9.2 *Specific design parameters*

4.9.2.1 Admixtures

Moisture content in slab construction shall be measured prior to installation/application of finishes.

4.9.3 *Floor slabs*

4.9.3.1 Floor slab design

Floor slabs shall be designed for the most economical construction and flexibility of use with due consideration to long-term deflections and the need to provide for penetrations both initially and during the course of the building's life.

4.9.3.2 Floor slab provisions

Make provision for vertical duct penetrations for infrastructure. Appropriate fire isolation must be provided between building levels.

4.9.3.3 Floor loads

Floor loads for special areas, e.g. library stacks, shall be determined following appropriate consultation. Provision shall be made for the installation of compactus shelving in areas specifically nominated by the brief.

4.10 Masonry

4.10.1 *General*

Approval of concrete masonry units and brick exposed to view will be on the basis of compatibility in colour and texture with existing exterior building materials on campus.

The Consultant shall provide samples in order to obtain approval.

4.10.2 *Specific design parameters*

4.10.2.1 Internal walls

Internal load-bearing block or brick walls will be not be accepted, unless specifically required and approved by the UTAS Project Manager. Lift, service shafts, fire rated elements and the like are excluded from this general ruling.

4.10.2.2 Block masonry

Block masonry produced for an individual project shall be from the same production run.

4.10.2.3 Wall design

Careful consideration will be given by the Consultant to design of walls, with regard to cavity wall construction, flashing details, control joints, mortar joint details and wall materials.

4.10.2.4 Coatings and finishes

Because of their inherent maintenance and renewal problems, the use of protective waterproofing agents, applied coatings and painted finishes will not be accepted, unless approved by the UTAS Project Manager. If approved, the final paint coatings shall be verified with the use of admixtures in the mortar joints, and masonry shall be measured for moisture presence prior to installation of final paint coatings.

4.11 Light steel framing

4.11.1 *General*

A single proprietary system is to be used. Double timber studs are to be used around all doorways and openings. All wall framing members are to be installed in alignment, in order to ensure proper fit of finish material (such as plasterboard and subsequent fixed furniture and equipment). When timber book shelves are installed, timber studs are to be used, refer to 6.8 Joinery.

4.12 Timber framing and timber products

4.12.1 *Product sourcing*

All wood products, including pulp, are to be sourced from plantations or certified sustainably managed forests. Timber species from rainforests or rainforest buffer zones will not be used.

Any native (indigenous) timber will come from plantations or forests managed sustainably in accordance with the Australian Forestry Standard, AS4708 Forest Management – Economic, social, environmental and cultural criteria and requirements for wood production. Details including forest or log source, sawmill, importer or supplier, seasoning method, preservatives and other chemical treatments are to be submitted to the UTAS Project Manager prior to use.

4.12.2 *Composite wood products, laminates and veneers*

4.12.2.1 Formaldehyde emissions

All composite wood products, laminates and veneers shall conform to the formaldehyde emission desiccators value of equal to or less than 0.5mg/L.

4.12.2.2 Cut edges

Any cut edges are to be sealed with an appropriate clear/coloured water based sealant prior to fabrication.

4.12.3 *Specific design parameters*

Timber material must be fit for purpose and design, with consideration given to long-term maintenance and intended final finishes.

4.12.4 *Timber framing*

All wall framing timbers are to be installed in alignment, in order to ensure proper fit of finish material, such as plasterboard, and subsequent fixed furniture and equipment.

4.13 Steel

4.13.1 *Specific design parameters*

4.13.1.1 Galvanising

All exterior exposed ferrous material structural elements are to be hot-dipped galvanised after fabrication.

Applied cold-galvanised paint systems are not acceptable, unless approved by the UTAS Project Manager.

4.13.1.2 Primer

Steel shall have at least one shop applied primer coat.

4.13.1.3 Sheet roofing

Sheet roofing is to be installed and fixed as per the manufacturer's recommendations, refer to 5.5 Roofing and 5.5.3 Metal.

4.14 Steps, stairs and ramps

4.14.1 *General*

Contrasting coloured stair nosings are required to aid all stair users both ascending and descending. Illuminated contrasting strips are required in all new external stairs and must be installed to a flush fitting.

Open risers are not permitted.

Single steps are not permitted. The size of treads and risers must be consistent in any flight and in any area.

4.14.2 *Goings and riser sizes*

The BCA sets out goings and riser size ranges but AS1428.2 further restricts this range.

Steps with ramped treads between risers are to be avoided because they are a trip hazard as the risers are hard to see when going downhill. They are also dangerous for wheelchair users.

4.14.3 *Safe access to and from steps and stairs*

Users entering and/or leaving steps and stairs directly from or into adjacent circulation spaces can lead to collision problems. Adequate passing space is to be provided.

4.14.4 *Requirement to ensure safety under stairs*

Stairs that are not filled underneath are a collision hazard for all users, particularly cane users. Cane users following a wall edge get confused if their cane goes underneath a stair. Open under-crofts also cause cleaning and maintenance problems. They should generally be avoided but if that is not possible, mitigation strategies are to be considered.

4.14.5 *Hallway widths*

Hallways need to accessible in all cases and meet the clear width requirements set out below.

Location	Clear width	Maximum passing zone spacing and minimum depth
Major access ways	1800mm wide	This allows 2 wheelchairs to pass
Other student accessible hallways	1510mm wide	10m spacing, 300m deep 1600mm long
Staff only hallways	1350mm wide	6m spacing, 500mm deep, 1600mm long

4.14.6 *Protrusion of handrails and steps into circulation area*

The top and bottom treads of stairs, or handrails, must not protrude into circulation spaces. The first risers should be well set back from the clear circulation space.

4.14.7 *External stairs, stairwells and ramps.*

For all external handrail construction, fully welded stainless steel handrails are preferred. Other materials may be accepted with approval from the UTAS Project Manager.

Landscape steps are to be a minimum of 300 mm x 150 mm (tread x riser) and are to comply with BCA.

4.14.8 *Ramps*

Definitions to be applied to both internal and external walkways, ramps and other slopes.

Type	**Gradient**	**Maximum length**
Kerb ramp	Gradient maximum 1:8	maximum length 1520mm
Ramp	Gradient 1:14 → 1:19	maximum length 9.0M
(landings may be provided at these intervals)		
Walkway	Gradient 1:20→ 1:33	maximum length 15.0M >1:32 maximum length 25.0M = 1:33
(landings may be provided at these intervals)		
Other	Gradient less than 1:33	No maximum length

4.14.8.1 Handrails

For vertical level changes greater than 600mm, but less than 1000mm, seek direction from the UTAS Project Manager to determine the requirements for a fully compliant handrail/balustrade. In fire egress stairwells, hot-dip galvanised handrails will be installed, proprietary systems may be used.

- Handrail to wall clearance of greater than 50mm is required to avoid jamming hands or fingers.
- Handrails must be continuous if a landing is less than 4 metres long or the landing is not straight.
- Handrails must not encroach into a circulation space.
- Handrails are to have a minimum 100mm turndown at both ends.
- Handrails are to be continuous with no vertical sections.

4.14.8.2 Tactile ground surface indicators (TSGIs)

Drawings are to clearly indicate the location and contrast colour for all TSGIs.

5. Internal fixtures and fittings

5.1 Doors, hatches and door hardware

5.1.1 *Cross reference*

Doors and frames must meet all standards as follows:

- Building Code of Australia
- Disability Discrimination Act 1992

5.1.2 *Trafficable doors*

5.1.2.1 Door openings

A minimum clear opening of 900mm wide and 2100mm height is required. In the case of double swing doors one leaf must meet the requirements. In the case of auto doors the total opening must meet the requirements. In rooms accessed by loose equipment, trolleys and other items, install offset type hinges to increase the size of the opening, these doors are also to be fitted with a skirting plate to protect the door face.

5.1.2.2 Door construction

These doors must generally be of solid core construction, and of minimum thickness of 38mm, unless requested otherwise.

5.1.2.3 Door closers

Surface mounted door closers are required.

5.1.2.4 Door maintenance requirements

Recessed sliding doors require access panels for future maintenance where the door cannot be accessed through other means.

Mechanical door systems shall have sufficient room for future maintenance and for replacing worn out parts.

5.1.2.5 Aluminium doors in shopfront systems

These must be wide-stile type to suit standard backset door hardware; narrow stile doors will not be accepted; the bottom rail is to be specified as a deep section.

5.1.2.6 Exterior doors and jambs

Exterior doors

- aluminium and glass, or
- marine-grade ply

Jambs

- galvanised steel
- aluminium

5.1.2.7 Exterior door access operator switches

Must be weatherproof.

5.1.2.8 Locations for the installation of card readers

The number and locations of the readers are to be confirmed by the UTAS Project Manager and included in the design of the exterior doors.

5.1.2.9 Door finishes

Interior

Wood doors shall be finished in polyurethane non-water based product, tops and bottoms must be sealed.

Exterior

Paint is to be oil based.

The consultant shall include the following information in the door schedule and on the drawings:

- details of each frame type
- elevations of door designs
- details of construction
- location and installation requirements for finish hardware.

5.1.2.10 Visual definition to main building access

Give definition to main access doors by using contrasting glass or doorframes, approved glass markings or by differentiating the ground plane.

5.1.3 *Specific Design Parameters for Doors*

5.1.3.1 Door swing

Doors protruding into spaces and not opening flat to a wall are collision hazards, particularly when approached end on. If at all possible, doors should be designed to open against a wall or fixed furniture.

Doors that are designed to be latched open must open flat against a wall.

5.1.3.2 Clear space at sides

Wheelchair users, and many other users, have difficulty negotiating doorways unless clear space is provided around the door.

Ensure the opening clear-space provisions are met. Check the doorway assuming user is approaching in every possible direction, design for the most clearance in all cases.

5.1.3.3 Encroachments into doorway clear space

Encroachments into clear space are often overlooked or in-filled with items such as fire hose reels cupboards.

Ensure any fixture such as fire services, columns or plumbing fittings do not reduce the full clear space. Ensure the design allows for the placement of loose items such as bins, so they are not placed in the clear area.

5.1.3.4 Doorframes and frameless doors

All frameless doors must have the edges identified so that they can be located.

5.1.3.5 Double swing doors

Double swing doors are not permitted unless they are held open (such as a fire door) or one of the two doors is normally latched open. In the latter case, the opening leaf of a double door should comply with all other door requirements including minimum width.

5.1.3.6 Airlocks

Airlocks are to be as large as is practicable. If the door is of solid construction, viewing panels are required.

5.1.3.7 Fire-rated doors

Smoke doors shall be installed in the building as required by TasFire and the Building Code of Australia.

Generally sliding smoke doors and mechanisms will not be acceptable due to maintenance requirements and cost.

The following are required in addition to components required for regulatory compliance:

- hinges – minimum of 3
- smoke seals – double doors require a seal system
- door closers – to take into account extra weight of door
- magnetic door holders – including a door press to release switch.

5.1.3.8 Sound retardant doors

The requirements for sound retardant doors will be as detailed by the specific project brief.

5.1.3.9 Veneers

Face veneers shall be select premium-grade.

It is preferred that faces be ‘matched’ for grain direction and colour uniformity. When used in an external location, marine-grade veneers are to be specified.

5.1.3.10 Finish

Transparent finished wood doors shall have tops and bottoms sealed with enamel sealer appropriate for exterior application immediately after trimming.

It is preferred that clear or stained doors will be finished at the factory.

Wood doors scheduled for paint finish shall be paint-grade.

Door hinges are not to be painted.

5.1.3.11 Door stops

Provide a skirting-mounted cushion door stop or if inappropriate, an aluminium/rubber door stop to each door not fitted with a door closer and wherever else the door may strike a wall (alternatively refer to coat hooks below).

Do not install door stops at less than 50% of door width point if possible.

5.1.3.12 Threshold plates

Only proprietary threshold plates and seals are permitted and these must have a rise of no more than 5mm and be specifically designed as accessible plates.

5.1.3.13 Coat hooks

One coat hook is to be provided to every door to individual offices, at nom. 1800mm AFL.

Combined hat and coat hook with integral rubber door stop.

Material: zinc alloy cast

Finish: satin chrome

5.1.3.14 Hinges

All external doors are to be fitted with a minimum of three stainless steel fixed pin hinges.

5.1.3.15 Viewing holes

View holes present an WHS problem and are not to be used.

5.1.3.16 View panels

Where a solid door occurs in the following locations, these doors are to be fitted with a view panel (normal or fire rated door):

- in a major thoroughfare (fire doors included)
- corridor and corridor junctions
- meeting and seminar rooms
- all wet laboratories (including research facilities).

5.1.3.17 Revolving doors and turnstiles

These are not permitted.

5.1.3.18 Power actuated swing or sliding door finishes

Casing colour to be powder-coated aluminium, APO grey or black.

5.1.3.19 Security

Compatible with relevant campus electric locking systems as advised by ISD.

Internally a four-position mode switch to select the following functions, Auto/Exit/Open/Lock. Keyed mode and emergency exit switches are to be provided.

5.1.3.20 Automatic door exit controls

After-hours exit buttons are to be clearly placed at consistent accessible heights and locations. The button is to be mounted far enough away so wheel chair users can access without having to worry that the door will impede their travel. The button must be of a colour that contrasts with the background.

5.2 Door hardware and furniture

5.2.1 *General*

In refurbishment projects, styles of hardware shall be consistent with existing fittings within a building. Hardware should be selected from the ‘standard’ range offered by suppliers as nominated in these Design Requirements and replacement components should be available off the shelf.

5.2.2 *Handle type*

Lever handles are required in all situations.

5.2.3 *Handle positioning*

Lever handles must not be closer than 40mm to the door stop or jamb or any jamb moulding.

5.2.4 *Positioning of Locks and Hardware on Doors*

All locks and latches (electric or otherwise) shall be fitted/installed near or on the central height of the door to maximise stability and integrity against forced entry. Fitting of electromagnetic locks to the head region of a door assembly shall only be allowed if central height fitting cannot be achieved.

5.2.5 *Cupboards or Cabinets with expensive or attractive equipment*

Shall be constructed of a metal framework with covering panels that will not allow unauthorised entry. The metal framework is to be rigid in construction and be securely bolted to the floor of the room. All concealed hinges to equipment cupboard doors shall be bolted through the panel with smooth heads on the outer side and lock nuts on the inside. The second leaf of the hinge shall be welded or bolted to the metal framework of the cupboard.

5.3 Electric locking devices

5.3.1 *Closers*

All doors fitted with electric locking/latching devices must have door closers installed to provide an aid in the lock down process.

Doors with closers shall comply with AS 1428.1. For reference, the maximum opening force is to be 20N and the force required to operate the door shall not exceed the following:

(i) To initially open the door	20N
(ii) To swing the door	20N
(iii) To hold the door open between 60° and 90°	20N

5.4 Windows and glazing

5.4.1 *General*

Windows are to be designed in accordance with all relevant codes

The use of double-glazing or low-E glass coupled with thermally broken metal frames should be considered in all projects.

Particular attention should be given to construction, location and sizing of windows to minimise heat energy transfer to and from the building in conjunction with efficient use of day lighting.

Timber windows are not permitted unless to match existing (i.e. heritage). Aluminium window construction shall be specified. All workable and movable parts shall be

compatible non-ferrous metal. Specify standard powder-coat or anodise colours. A 15 to 25 year warranty is expected on anodised windows.

5.4.1.1 Minimum warranties

Against defects in material and workmanship expect a period of 1 year from date of installation. Frames are to be warranted against blistering, cracking, peeling or chipping for a minimum period of 15 years from the date of installation.

5.4.2 *Security of sliding windows*

All sliding windows accessible from ground level shall be factory fitted with keyed alike window locks to UTAS keying standards.

5.4.3 *Security of awning windows*

Where awning windows are located on the ground floor and adjacent to walkways, consideration will be given to the maximum opening of the sash. This will be considered for both security reasons and to ensure that there is no obstruction to the adjacent walkway. The sash will not protrude into adjacent walkways.

5.4.4 *Window cleaning*

All external surfaces of glass must be easily accessible for cleaning from the inside.

5.4.5 *Window furnishings*

Curtains and blinds. Curtains and blinds are generally required in offices and centrally managed learning spaces and are to be supplied and fitted under the project. Provision shall be made in the project for adequate battens, pelmets etc. to allow fixing.

Vertical venetian blinds are not permitted.

5.4.6 *Fly screens*

If fly screens are required by legislation the mesh must be stainless steel. The screens should form part of the window system and be easily removed from the inside for cleaning.

5.5 Ceilings

5.5.1 *General*

Ceilings are to be provided in all occupied and occupiable areas of a building.

Ceiling fixtures: Where fixtures or fittings such as light fittings, thermal alarms etc. are to be mounted on tiles, approved backing pieces shall be provided.

Light fittings and other fittings not capable of being supported by the suspension system shall be suspended from the structural frame.

System ceilings comprising exposed aluminium or timber slats are not to be used.

Ceiling spaces will have a minimum of 300mm clear within the ceiling soffit above.

5.5.1.1 Suspended ceilings

Ceiling systems shall generally be a two-way grid exposed T-bar of pre-painted aluminium with 1200 x 600mm module. Ceiling tiles shall only be mineral fibre or plasterboard.

Plasterboard ceilings on proprietary metal channels shall be provided with ceiling access hatches, where required.

5.5.1.2 Ceiling access hatches

Where a plasterboard ceiling is installed, ceiling access hatches are to be provided. Safe access to the hatch is to be accommodated in the design.

The minimum size is to be 600mm x 450mm.

All ceiling access hatches are to be non-hinged ‘drop-in’ type, designed to carry weights associated with accessing the ceiling space and trafficable ceiling spaces.

Every ceiling or separated ceiling compartment is to have a ceiling access panel. Generally, the location of these panels is to be in a public part of the building, placing the panels within individual offices should be avoided.

Placement of the panels should occur:

- adjacent to major ceiling mounted mechanical equipment, including fire dampers, other major ceiling plant, valves etc.
- adjacent to ceiling enclosed audio-visual equipment.

5.6 Floors

5.6.1 *General*

Traffic patterns, use of the space and maintenance requirements must be considered in the selection of floor coverings.

Trim, transition strips and floor mouldings shall have a bevelled-type design.

Adhesive used for flooring installation shall be compatible with the product and approved by the manufacturer.

Adhesives used shall be low in off-gassing.

5.6.2 *Floor finishes*

5.6.2.1 Carpet tiles

Consideration should be given to both recycling salvaged carpet tiles, and the use of recycled carpet tiles.

5.6.2.2 Vinyl

Vinyl shall only be used in areas specified in the brief. All joints shall be welded. Vinyl shall be fixed to floor using the manufacturers recommended adhesive.

Where required to be installed, seamless flooring shall be coved up all walls, plinths and service pipes to a height of 150mm.

Slip-resilient flooring is to be specified with the proposed material receiving approval from the UTAS Project Manager prior to installation.

The use of inconsistent materials or finishes for different zones or functional areas complicates navigation for all users. Introduce different floor textures to indicate particular areas or important changes of function.

5.6.2.3 Stock

Include in the specification an allowance for an additional spare supplies of each floor covering used, which the University will hold in stock. The amount is to be agreed in discussion with the Project Manager.

5.6.2.4 Joints

Between dissimilar floor finishes. Shape is to be specified in the brief.

5.6.3 *Foyers and service counters: visual indicators in foyers*

To assist visually impaired people, routes through foyers to reception desks are to be clearly defined using contrasting colour or differently textured floor finishes, such as resilient finishes against carpet.

5.6.4 *Colours*

Colour of all floor finishes shall form part of the overall colour scheme for the building and shall be selected in consultation with the UTAS Project Manager.

5.6.5 *Terrazzo*

5.6.5.1 General

Only a few buildings on UTAS Campus' have terrazzo floors. Renovation of these floors or of adjacent areas shall protect existing terrazzo from damage. Patching of existing terrazzo shall be carefully completed with matching aggregate and cement, or with the use of 'transition' strips between the existing and new installation.

5.6.5.2 Design requirement

Exterior terrazzo is not acceptable.

The Consultant shall consider expansion joint design and placement in coordination with structural movement of the building.

5.6.6 *Tiles*

5.6.6.1 General

Where a 'non-slip' finish is required, floor tiles are not acceptable, and an appropriate slip-resistant vinyl shall be installed.

Grouts shall be selected for long-term service and cleanability, as well as for flex and tensile strength.

Floor drain design shall be coordinated with tile installation, and the tile shall be cut neatly around the floor drain.

5.6.7 *Timber floors*

5.6.7.1 Use of timber floors

Due to its inherent high maintenance needs, timber flooring is not recommended for use in facilities, with the exception of gymnasium floors or special performing-arts areas.

Protection of timber floors

In renovation projects involving buildings with wood flooring, the floors shall be protected from damage during works.

5.6.7.2 Design requirement

Where a timber floor is required, the substructure and type of finish seal are to be appropriate for future intended use. Expansion and contraction of the wood in different temperatures and humidity must be allowed for.

The timber selected must yield long-term service and relatively low maintenance.

During construction, expansion and contraction, temperature and humidity must be controlled.

Moisture containment and vapour barriers must be provided if required in concrete slab substrate areas and over crawl spaces.

Pine is not acceptable.

5.6.8 *Carpet*

5.6.8.1 Broadloom carpet

Unless agreed to by the UTAS Project Manager, broadloom carpets are not acceptable.

5.6.8.2 Carpet tile

- ACCS grading: commercial heavy duty and stairs
- anti-static warranty: minimum 10 years
- wear warranty: minimum 10 years
- dimensional stability warranty: minimum 10 years
- to be selected from manufacturers standard range
- to be coloured from solution dyed nylon

- to be direct stuck to a suitably prepared substrate in accordance with the manufacturer's instructions.
- non-solvent based adhesives are to be used.

5.6.9 *Entrance mats (walk-off matting – where required)*

5.6.9.1 General

Generally entrance mats shall be purpose made matting, laid inside the entrance doors extending 6.0 metres from the threshold.

The use of entrance mats should be considered in the context of a transition zone.

Where a building has a (weather) protected lead-up path, the requirement for the matting may be reduced.

Where heavy soiling is probable e.g. entrances for trades or agricultural practical areas, the matting are may be extended.

Architectural entrance features may be provided with a contrasting colour. Luminance contrast of floor coverings is to be considered at all major building entry ways.

Slab recesses to accommodate entrance mats should be avoided where possible.

5.6.9.2 Design requirement

Entrance matting should not impede people with disabilities (wheelchair users) and be specified according to the following criteria:

- non-slip surface
- wearability and service life (no rotting or mildew)
- ability to clean foot traffic on textured nylon or polypropylene surfaces without 'tracking'
- replacement of parts
- colour fastness of 'coloured' mats
- drying capability of mats
- drainage of recessed area
- maintenance and cleaning of recessed areas and mat

- stability of the mat system (no ‘rattling’ of slats when walked upon)
- fire resistance.

Tripping hazards are not acceptable.

5.6.10 *Vinyl*

5.6.10.1 Design requirement

All vinyl is to be fit for purpose. In addition it must be:

- homogenous
- anti-static in areas subject to static electricity discharge and specialty areas
- fixed to the floor using adhesives in accordance with the manufacturer’s instructions
- welded as per the manufacturer’s instructions
- coved 100/150mm up wall (where integrated in wet areas), or 100/150mm black PVC skirting.

Note: pencil coving is not acceptable.

5.7 Joinery

5.7.1 *General notes*

Cabinets and countertops should be installed in such a way that they are easily disassembled and moved for re-use.

All joinery units are to have backs.

Particleboard is not permitted for use in any joinery application, including cabinets and countertops.

All joinery is to be installed with minimal joints and concealed nails and fasteners.

Where adjustable wall shelving is to be installed, confirm with the user the expected loads prior to specifying.

Refer to Door hardware and furniture for interior timber door and door finish hardware requirements.

5.7.1.1 Minimum requirements for kitchens/kitchenettes/tea rooms

- space for a refrigerator – size to be determined
- cupboard and benchtop space, including doors and drawer units
- space/shelf for a microwave
- stainless steel sink and at least one integral drainer
- sufficient bench space and power outlets for appliances, e.g. microwave, kettle, toasting ovens.

5.7.2 *Joinery minimum requirements*

5.7.2.1 Countertops

32mm nom. MDF, moisture resistant (MR) in wet areas.

Where any finish is applied to the outside face, the underside shall be sealed to prevent warping or distortion of the board product.

It is preferred that no laminate seams are located within nominally 600mm of sink edge.

Timber veneers in wet areas are not acceptable.

5.7.2.2 Edging

Countertops should not be melamine pre-finished material.

Doors and drawers are to have post-formed or ABS edging.

Open/exposed shelf edge is to have ABS edging, or timber where a veneer is specified.

Shelving with cupboards is to have melamine edging.

All edges are to be finished.

5.7.2.3 Carcass

Carcass ends and divisions 16mm melamine MDF

5.7.2.4 Drawer carcass

Minimum 12mm melamine MDF

5.7.2.5 Drawer front

To match remaining joinery installation (min. 16mm MDF).

5.7.2.6 Drawer bottoms

4mm ply

5.7.2.7 Drawer slide mechanisms

For all drawers, proprietary item ball bearing runners are to be specified, with the capability to carry the anticipated loading.

Proprietary items of a commercial grade or whole unit, shall be fabricated and installed so that in future renovations it can be disassembled in complete units and reinstalled. Drawer slide mechanism must have 30kg weight capacity.

5.7.2.8 Doors

18mm MDF nom. (to match remaining joinery installation)

Where any finish is applied to the outside face, the inside shall be sealed to prevent warping or distortion of the board product.

All doors are to be provided with handles.

All doors are to be fitted with nom. 165 deg. hinges.

5.7.2.9 Splashbacks

All wet area installations are to have a splashback; where integrated the junction is to be post formed, with an MR MDF substrate, extending to a height of at least 150mm vertically behind the source, and extend at least 900mm horizontally past the source.

5.7.2.10 Kickrails

All joinery is to have a kick rail, recessed at least 40mm.

5.7.2.11 Shelving, exposed and in cabinets

Generally 18mm MDF, 18mm MR.MDF to underneath sink areas; shelving where possible to be adjustable.

Where shelving is equal to or greater than 900mm in length, a stiffening member is to be applied to the underside of the shelf.

Where adjustable shelving is installed, only metal heavy-duty shelf plugs are to be supplied.

5.7.2.12 Hardware

Where practicable, all hardware for joinery and cabinets shall be installed at factory.

Plastic handles are not acceptable.

5.7.2.13 Timber veneers

Grain in adjacent panels shall be matched as to direction, density and hue.

5.7.2.14 Laminated finishes

Colours to the approval of UTAS Project Manager.

Gauge and surface finish to the approval of UTAS Project Manager.

5.7.2.15 Service counters

Service counters must provide an access section for wheelchair or seated users on both sides of the counter.

Wheelchair leg space is required at an access counter for both the staff member and the client.

5.8 Plumbing, kitchen and sanitary fittings

Numbers of toilet facilities required are to be generated from the Building Code of Australia (BCA). At least one toilet in each building must be an access toilet but final numbers are to be determined in consultation with the UTAS Project Manager.

5.8.1 *Standard public/staff/student toilets*

All single toilets and multiple toilet facilities are to include the below listed items and a shelf integral to or adjacent to the hand basin/mirror areas of the facility.

5.8.1.1 Pans

Concealed plumbing fittings may be wall mounted.

Stainless steel pans may be considered in appropriate areas, otherwise white in colour.

5.8.1.2 Cisterns

Dual flush of high WELS rating

Where an access panel is installed for in-wall cisterns, provide a panel sufficient for future removal and replacement.

5.8.1.3 Urinals

- fully welded grade 304 stainless steel proprietary item
- recessed gutter which is fitted with a hinged/loose stainless steel rod and bar grate
- removable sparge cover
- 32 mm diameter brushed stainless steel access handrail over, for full width with concealed cover plates
- capable of being coupled with an in wall cistern
- urinal flushing mechanisms
- automatic electronic flush
- passive infra-red sensor
- adjustable time selector for flush delay and cistern fill cycles
- power source 240V mains.

5.8.1.4 Partitions

Below are sizes and details for a standard toilet cubicle.

Ceiling suspended with frontals attached to a steel beam in the ceiling via steel rods and brackets concealed within the frontal blades. If floor mounting is required, stainless steel legs are acceptable to be installed, after the installation of the floor covering.

Divisions, doors, frontals and nibs to be manufactured from laminated H.D.3 18mm thick. Painting is not acceptable. Edge finished with 2mm high impact, solid colour high pressure laminate faces.

Support aluminium to be natural clear anodised finish.

Door hardware shall be hat/coat hook (incl. door stop), turn-bolt and indicator, satin chrome finish.

Hinges shall be safety lift off gravity hinges, clear anodised, set in hold open position.

Cubicle dimensions are to be a minimum 900mm wide and 1500mm deep if a concealed cistern is used or 1800mm deep for a wall mounted cistern, division panels 1500mm high, mounted 300mm above the floor.

The minimum dimension for the partition frontals is nominally 150mm wide. This then allows for a nominal door dimension of 750mm.

5.8.1.5 Basins

Easy to clean, both in and around.

Standard proprietary items should be specified.

Capable of mounting the specified tapware; alterations to standard unit are not acceptable.

Stainless steel basins may be considered, otherwise white in colour.

5.8.1.6 Tap sets

Chrome plated sink mixers with ceramic discs are preferable.

5.8.1.7 Hand towel dispensers

A dispenser capable of dispensing Bowscott Ultraline.

5.8.1.8 Toilet paper dispensers

A dispenser capable of dispensing Bowscott Jumbo.

5.8.1.9 Mirrors

A mirror with minimum dimensions of 400mm wide x 1000mm high is required to each hand basin location.

The mirror is to be a fixed item; however must be capable of being removed for replacement etc.

5.8.1.10 Soap dispensers

Soap dispensers are not required in standard toilet facilities.

5.8.1.11 Hand dryers

Where required, electric hand dryers are to supplement dispensed paper towel.

The specification of electric hand dryers should be in consultation with the UTAS Project Manager.

5.8.1.12 Floor wastes

Floor wastes are to be stainless steel proprietary items.

Floor wastes shall have a minimum 100mm diameter inlet with screw in gratings. Floor wastes complete with puddle flanges shall be epoxy grouted into the penetration.

5.8.1.13 Window mounted exhaust fans

Exhaust fans in windows are not acceptable.

5.9 Kitchens, kitchenettes and tea rooms

5.9.1 *Sinks*

Stainless steel, with at least one integral drainer

5.9.2 *Tap sets*

Chrome plated sink mixers with ceramic discs are preferable.

5.9.3 *Hot water units*

Where free standing units are provided, they may be located under the sink but there must be sufficient storage space provided for other items.

5.9.4 *Boiling water units*

The overflow pipe from boiling water units must run into the sink location. Boiling water unit spout must extend over sink to enable easy usage.

5.9.5 *Accessible kitchens and student common rooms*

Kitchens do not have to comply with AS1428.2 in its entirety but should have accessible components as directed by the UTAS Project Manager

5.9.6 *Benchtops*

Kitchen benchtops not to have timber edges.

5.9.7 *White goods*

Provision of white goods to be discussed and agreed with the UTAS Project Manager.

5.10 Cleaner's cupboards

All projects must make adequate provision for cleaner's cupboards.

5.10.1 *Sinks*

Purpose made proprietary item, either ceramic or stainless steel with integral hinged stainless steel grate

5.10.2 *Wastes*

Generally not required

5.11 Domestic bathrooms

If required the fittings are to be agreed with the UTAS Project Manager.

5.12 Fixed furniture and equipment

5.12.1 *Cross reference*

To be read in conjunction with Section 8 Typical Room Requirements.

5.12.2 *General*

Furniture and fittings of a fixed type and those of sliding, rotating or special nature which generally occur in large lecture theatres shall be installed under the project. Special requirements are set out in the brief or will be determined in conjunction with the UTAS Project Manager.

The cost of notice boards in common areas and directory boards for major building entry points are to be included in the project.

5.12.3 *Built-in furniture*

All built-in furniture, cupboards and laboratory benches shall be supplied as part of the project. Details to be determined in conjunction with the UTAS Project Manager.

Fixed furniture and equipment typically receives frequent use and shall be designed with this in mind. The Consultant should also consider mounting these items to walls and floors in order to achieve low maintenance.

All items to have a factory finish, with no painting required.

5.12.4 *Fasteners*

Should generally be concealed.

Exterior fasteners should be stainless steel ‘vandal-proof type’ or galvanised.

5.12.5 *Bookshelves*

Generally built-in bookshelves are not acceptable. Free standing bookcases are preferred.

5.12.6 *Directory boards and room names*

Directory boards and direction systems will generally be inclusive of room numbers and names. Room numbers and names are provided by the University in accordance with the signage manual. Provision shall be made in the design to allow space for directory boards in lobbies etc.

5.12.7 *Compactus*

When specified in the brief, a compactus shall be installed but the load capability of the floor is to be determined prior to installation. Tracking is to be epoxied in place. Fixing tracks with mortar is not allowed.

5.12.8 *Visual display boards*

5.12.8.1 Whiteboards

White porcelain-type boards, for use with felt-tipped markers.

To have a continuous aluminium trim frame, and have a full width aluminium pen trough.

5.12.8.2 Pinboards

The boards to have a continuous aluminium trim frame, or, where an entire wall is to be covered, the pin-board is to be stuck directly to the wall in place of the normal wall covering.

5.12.8.3 Blackboards

Blackboards are no longer to be specified or installed, unless authorised by the UTAS Project Manager.

5.12.8.4 Projection screens

Projection screens for slides, overhead projection or film are to be provided as part of the project. The requirements of size and location shall be determined in conjunction with the UTAS Project Manager.

5.13 Colour, signage and lighting

Signage and colours must comply with the University signage manual and protocols.

5.13.1.1 Colour

Contrasting colour refers to the visibility of one feature against its background. Contrast does not necessarily require the use of bright colours. For luminance contrast refer to AS1428.2. Refer to the UTAS signage manual for signage contrast.

5.13.1.2 Intensity

Do not use red and green to provide contrast. Red and green have the same intensity value and do not provide good contrast for the blind and visually impaired people or for general users when the light levels are reduced.

Where contrast is supplied as a visual clue for the non-sight impaired user, ensure colour selection takes into account the intensity value of each colour.

Consultants will be expected to demonstrate that appropriate contrast colours are specified.

5.13.1.3 Highlighting elements

Use contrasting colours on step nosings, and other elements that may pose a risk to blind and visually impaired uses.

5.13.2 *Signage on glass doors*

Refer to Appendix A4 Sample Glass decals to full height/extensive glass (under development).

5.13.3 *Placement of signs*

Signs must be placed so they are visible but clear of circulation spaces.

Sandwich boards on campus are not permitted.

5.13.4 *Natural lighting*

Do not locate viewing areas, such as teaching points, information counters or reception desks so that users need to look into glare induced by sun-facing windows.

6. Typical building and room requirements

6.1 Building requirements

Each new building is to include at least one automated external defibrillator which is to be located in a publically accessible space as agreed with the UTAS Project Manager.

6.2 Typical room requirements for staff workspaces

Workspaces may be open plan, shared enclosed offices or single occupancy offices. The basic furniture and service infrastructure requirements will be similar.

Furniture layouts should take account of the potential for light and glare to affect users, also the need for privacy, particularly in open plan or shared spaces.

6.2.1 *Furniture*

Each work space should be designed to accommodate the following furniture:

- a desk or workstation incorporating a return and mobile lockable drawer
- an ergonomic chair
- a visitor's chair
- either a pin board or white board (as specified in room data sheets) unless incorporated in workstation design
- space for two bins: one for rubbish and one for recycled paper

In addition, some staff may require:

- space for one or more 4-drawer filing cabinets, to be specified in the room data sheets and/or
- up to three standard width (nominally 1200mm wide x 2100mm high), free standing book cases with five shelves.

6.2.2 *Other items*

A coat hook/hanger is to be provided behind door or in another appropriate location.

Appropriately located sign with the room number to be included. In some instances provision may need to be made for other information to be included in or added to the sign.