Design Guidelines

Flinders University

Standards and requirements for the design of buildings and infrastructure projects

Version Control

Approver	Version	Date
Director PFD	1	10 October 2024

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Introduction

1.1. Purpose of the Design Guidelines

These guidelines specify Flinders University's standards and requirements for the design of building and infrastructure projects across the University. They are in addition to the minimum legislated requirements, technical standards and codes for associated projects.

The guidelines are a reference tool and aim to provide a consistent approach to Flinders' project design while allowing scope for innovation. The guidelines are to be used by consultants, contractors and staff involved in the planning, design and maintenance of Flinders University facilities.

The objectives of the guidelines are to ensure a consistent, safe, efficient, quality, fit for purpose and effective approach to the design of Flinders' spaces and infrastructure and underpin a uniquely Flinders campus experience for staff, students and visitors.

1.2. Compliance with the Design Guidelines

These guidelines apply to all works on and/or within Flinders University owned or leased land, buildings and facilities.

The guidelines are designed to be read in full, understood and all consultants are required to comply with all relevant sections of the guidelines. Contractors engaged for Design & Construct projects are also required to comply with the guidelines.

When a consultant is engaged the version of the design guideline that is provided by Flinders or displayed on the Flinders web page on that date, will be the version of the design guidelines that are applicable for the life of the project. If amendments or revisions are made throughout the course of a project, the consultant should review these amendments and provide advice as to what is required to meet these changes. The contract manager will review and advise which, if any, of these amendments will be incorporated.

These guidelines are not intended to replace the level of initiative, competence and care expected of consultants in the performance of their duties. If a consultant considers a requirement is not appropriate and/or that a more suitable solution is available, this should be raised with Flinders' Project Manager. Written approval must be obtained for a deviation from these guidelines. Consultants are not to assume that any deviations from the guidelines will be accepted.

1.3. Legislative Controls

The design, construction and operation (including during Defects Liability Period) of facilities or equipment undertaken on the University's property must fully comply with current legislation and regulations. Flinders University has also referred to a number of Australian Standards and other guidelines throughout this document.

1.4. Review process

The design guidelines are reviewed and amended as required, predominately on an annual basis.

2. University Background

2.1. General

Established in 1966, Flinders University is headquartered in Adelaide, with its largest campus at Bedford Park. Flinders also operates within the Adelaide CBD, the Tonsley innovation precinct and across many locations in regional and remote South Australia and through the Northern Territory.

2.2. Vision

Flinders University's vision is to become internationally recognised as a world leader in research, an innovator in contemporary education, and the source of Australia's most enterprising graduates. Our mission is to change lives and change the world. This is reflected in the University's Strategic Plan. *Making a Difference: The 2025 Agenda* which is based on four pillars:

- People and Culture
- Research
- Education
- Engagement and Impact

The Property, Facilities and Development Division (PFD) supports Flinders to achieve its strategic objectives and underscore an extraordinary campus experience through the best practice management of its places, spaces and physical infrastructure.

3. General Design Considerations

3.1. Fit for purpose

Spaces should meet the intended purpose and user requirements. Designs should consider how changes of use in a space impacts operations, services and infrastructure and can be accommodated within the building constraints.

Consideration should be given to value for money solutions while not compromising quality, particularly on elements considered important or essential to enable spaces to be fulfil fit for purpose outcomes.

3.2. Flexibility

Buildings and spaces are to be designed with maximum flexibility to facilitate future alteration, expansion or adaptation to new uses. They should be able to meet evolving demands of changing pedagogies, new research methods, disruption and the global marketplace. There should be consideration of the placement of partitions to enable rooms to be adaptable and repurposed for different functions.

Building services must be easy and safe to access and allow for future expansion or alteration.

Built-in furniture/fittings should be avoided unless associated with plumbing and/or mechanical services to enable spaces to be repurposed in future without excessive demolition.

The design of spaces should be modular with a regular planning grid.

3.3. Wellbeing

Flinders is committed to enhancing the wellbeing of its students, staff and its communities. There is extensive evidence connecting quality design and the mental health and wellbeing of building occupants. Creating inclusive spaces that offer comfort and security must be considered in all design activities from large scale campus planning to the detailed design of individual spaces.

Principles in wellbeing for spaces and facilities include:

- Inclusive and accessible.
- Promotion of incidental and intentional physical activity.
- Enhancing biodiversity and biophilic design to integrate the natural environment into the buildings.
- Connection to Country.
- Ergonomic workspaces.

3.4. Aesthetics

The aesthetics of building works must be carefully considered in the context of the surrounding physical, built and natural environments and topography. Materials and finishes should be sympathetic to surroundings, aesthetically pleasing, functional and consistent where practical.

The aesthetic language of the existing built form should be considered, respected and enhanced to respond to advances in design.

Every endeavour should be made to conceal plant, equipment and services infrastructure from public view (both visually and acoustically). This can be achieved by making use of dedicated plant spaces such as plant rooms or enclosures (including rooftop), installation of screening, concealing behind existing site features and building elements or burying (particular to infrastructure such as cabling/pipework). Consideration should be given to complementary materials and colours.

Where practical, the use of existing nominated plant spaces is preferred over the creation of new spaces with priority for consolidated plant spaces. Camouflage techniques such as the use of climbing plants, trellis and living walls, landscape berms, art projects and murals can be used to conceal utility structures.

Where services are located in primary public spaces, concealment and camouflage techniques should be given high priority.

3.5. Innovation

Innovation is one of Flinders University's values. By creating a campus environment which is a catalyst for collaboration and engagement, the infrastructure supports Flinders' strategic objectives and provides a foundation for innovation, enterprise and economic growth.

Design should explore opportunities to create transparency in the built environment and to showcase Flinders University's teaching and research innovation. This could be through display/exhibition areas, landmarks, graphics, art, AV technologies, or dynamic building form. Cutting-edge spaces should be designed to excite and attract students, staff and the community.

Consultants and contractors are expected to apply industry best practice, to strive for improvement and innovation in design and construction techniques, materials and products wherever possible, and to support the University in achieving its vision by:

- Integrating innovative, environmentally low-impact design, technologies or material selection
- Incorporating smart building design and technologies
- Using materials that enable building occupants to access 4G and 5G services
- Using space innovatively

3.6. Safety and Security

Flinders is committed to providing a safe and secure environment for students, staff, contractors and visitors. A safe design approach should consider the health and safety of those who build, operate, and maintain the building/asset, as well as those who occupy it.

Crime Prevention Through Environmental Design (CPTED) is the application of best design practice principles and processes to affect human decisions and behaviour, in order to reduce the incidence and fear of crime. All buildings, pathways, car parks and their immediate surroundings should be designed to incorporate CPTED principles, to create an environment that complements and enhances the safety and security of our University campuses.

Falls from heights should be considered in all design aspects.

3.7. Universal Design

Design gives consideration to how the environment will be accessed, understood and used by all people regardless of their age, size or ability. Projects should be designed with consideration of all people who may use the space and should be useful for people with diverse abilities.

Wherever practical, the guidelines support Flinders University's values and embrace diversity and promote equity, inclusion and social responsibility by providing physically and socially inclusive environments welcoming for all, regardless of diverse capabilities, physical abilities, cultural identities or backgrounds.

3.8. Infrastructure

Projects need to consider the surrounding environment and the impact on adjoining spaces, access, ageing infrastructure and building services. At the strategic planning stage, it is critical to understand and plan for upgrades to infrastructure triggered by a change of use or new space. This includes (but isn't limited to) the following:

- Improvement to and/or lowest impact on supporting services and equipment, HVAC equipment, and infrastructure so that projects either diminish the impact of service requirements through efficiency measures or incorporate increased system requirements in initial scope.
- Capacity and age of infrastructure that services the building or precinct.

- Design triggered building code requirements (e.g., disability access, compartmentation, emergency access).
- Capacity, condition and age of IT infrastructure (e.g., network switches, Wi-Fi Access Points, comms rooms) to ensure adequate connectivity for staff and students.

3.9. Campus Experience

The campus experience for students, staff and visitors should be consistent, accessible, safe and aesthetically pleasing.

Building facades and edges are to be treated as active pedestrian zones and should be given appropriate amenity, scale, and materiality. Areas that are publicly accessible should not be treated as "back of house" unless intentionally allocated as such by PFD.

At ground level, buildings should be transparent and porous to allow internal activities to be revealed, to facilitate pedestrian movement flows and provide a safe environment.

The edges of projects shall be designed to seamlessly integrate with existing edges and levels, or consideration to be given to this transition.

Building and landscape design should be aligned with the specific character of the campus or site and any specific placemaking objectives.

3.10. Maintenance

Building and infrastructure design should prioritise simplicity in order to make it easier and more cost-effective to maintain and repair over time while balancing the other general design considerations including aesthetics.

Designs should specify durable building materials and finishes that are resistant to wear and tear, require minimal maintenance over time and are easy to clean.

Building components should be designed as modular and easily replaceable to reduce the need for extensive repairs or replacements in the event of a malfunction.

Access should be easy to all building components that may require maintenance, such as HVAC systems, plumbing, electrical wiring and data cabling.

3.11. Country Centred Design

Cultural narratives and connection to Country are helping to shape Flinders' campus developments and infrastructure projects by respecting and recognising people and Country, honouring long-held knowledges and philosophies and embedding meaning through careful consideration of how buildings and landscapes respond to Country.

Development on Flinders' campuses has the potential to embed Country at the heart of design, sustaining and healing Country and supporting the wellbeing of all staff, students, community and visitors.

New builds and major refurbishments should consider how to incorporate connection to Country and consultants should be familiar with the Country Centred Design Principles document.

3.12. Sustainability

Flinders University embraces a holistic understanding of sustainability as outlined in Flinders 2030 Sustainability Strategy and we are addressing resource consumption, greenhouse gas emissions and to improve wellbeing and comfort levels for students and staff. Design should consider sustainable and new initiatives for the ongoing use

and management of materials, waste, energy, natural assets and water. Consideration, funding and resourcing to implement sustainable design principles will be incorporated into planning, design and project lifecycle.

Greenstar, and WELL rating tools will be applied to new buildings and major refurbishments (Flinders will provide guidance as to when this applies).

4. Sustainable Design

4.1. General Requirements

4.1.1. Whole of Life and Sustainable Design

Projects should be designed and delivered to integrate best practices in sustainable design, including:

- Resource efficiency (energy use, water consumption and reuse, demolition waste, construction materials).
- Minimising operational greenhouse gas emissions (including electrification of gas supply where possible and switch to low GWP refrigerants).
- Initiatives to reduce embodied carbon footprint through design, materials selection, manufacture, and on-site construction activities.
- Conservation of existing habitat, biodiversity, and recreation activities and opportunities to integrate projects with learning, research, and demonstration.
- Materials that are locally sourced and preferably manufactured in South Australia where possible
- Maximising products with low or no VOC emissions.
- A whole-of-lifecycle approach when considering cost and benefits of selections, including operational and maintenance considerations, adaptability, and end-of-use deconstruction.
- Consideration of design and material selection strategies that promote cost-effective, durable, and low maintenance buildings and public realm improvements.
- A higher up-front cost that minimises operational costs and maintenance, extends the life and provides other benefits, i.e. sustainability, should be considered.

4.1.2. Passive Design and Envelope

Passive design strategies can significantly decrease energy use in buildings and improve occupant comfort. An integrated design process is critical to ensure that the passive design strategies are considered appropriately and included where possible in all builds and refurbishments, including:

- Buildings are designed with a high-performance, airtight envelope, minimising thermal bridging and providing a high level of thermal comfort for inhabitants (minimising temperature difference between internal surfaces and space temperature settings).
- Buildings are designed to harness solar radiation and take advantage of internal heat loads. Buildings with a well-insulated envelope shall be oriented to maximise solar gain in winter and minimise solar gain in summer to benefit from passive heating and cooling strategies.
- Buildings are designed to use the naturally occurring surrounding airflow patterns to facilitate passive ventilation. Buildings shall be shaped and designed to maximise the effectiveness of these flows in providing fresh air to building occupants.
- Buildings are designed to maximise passive cooling strategies by preventing unwanted solar gain with shading, storing heat in thermal mass, and using passive outdoor cool air for passive ventilation.

4.1.3. Energy Management

Projects will incorporate renewable energy generation and storage, address energy use, and eliminate direct emissions where applicable:

- Maximise energy efficiency (especially HVAC, water heating and lighting) through the appropriate selection and programming of equipment and fixtures.
- Maximise insulation for thermal comfort and energy efficiency.
- Prohibit new natural gas heating infrastructure and implement electrification as part of any HVAC, kitchen, dryer or hot water renewal.
- Specify low-global warming potential (GWP) refrigerants compliant equipment (for example hydrocarbons, ammonia, carbon dioxide and hydrofluoro-olefins)
- Install energy monitoring for new buildings via submetering
- Incorporate sensors and monitoring for lighting, air quality and HVAC control renewals

- As required, develop rooftop solar and energy storage to support electrification within demand constraints

4.1.4. Durability, Resource Efficiency and Waste Management

Projects' durability, materials sourcing, and waste management shall be incorporated into project design to reduce the detrimental impacts of material used on the campus.

Projects are to use products and materials that have the lowest life cycle impact. Where feasible, priority shall be given to products and materials that have:

- Low embodied carbon
- Recycled content to reduce embodied energy
- Rapidly renewable materials to protect natural resources
- Responsibly produced and manufactured materials to reduce the environmental burden of new products
- Regional materials to reduce the adverse effects of transportation and to support local economies

4.1.5. Environmental Quality

Projects are to consider the impacts of their design on the campus community and connection to nature. Specifically, projects consider air quality, lighting, noise, and thermal comfort. Spaces are to have a healthy, steady, and adequate fresh airflow to enhance the occupant sense of comfort and wellbeing.

- Design principles aligning to the wellbeing intent of the WELL Rating tool should be applied to relevant spaces and their function where possible. Natural materials are preferred over synthetic variations or minimally processed materials from a real natural environment.
- Provide CO2 monitoring linked to air change rates, and mechanical ventilation as part of heating, ventilation, and cooling systems.
- Meet thresholds for air quality (this can be verified by on-site performance testing or by permanently installed sensors that record data on the BMS), based on agreed performance rating system where applicable.

4.2. New Building and Major Refurbishment Requirements

4.2.1. Rating Tools

The University is committed to achieving a minimum rating of 5 Star Green Star under the Green Building Council of Australia's (GBCA) building rating system, Gold WELL and / or Gold LEED for all new facilities (above $5m). Flinders expects the following items to form part of our rating assessment:

- New construction projects and significant refurbishments (valued at $5 million or above) are to include a Life Cycle Assessment (LCA) and embodied emissions report in line with the LEED Building
- Incorporate Life-Cycle Impact Reduction credit and EN 15804:2012, including assessment of Modules sections A-1 thru A-4, B-1 thru B-5, and C-1 thru C-4.

4.2.2. Site Orientation

When building new structures, appropriately responding to orientation is a fundamental and effective way to provide comfortable, low energy, resilient and healthy buildings.

- Position buildings with the long axis running east/west to maximise natural daylight from the north where possible.
- To reduce the site's solar reflectance and heat island effect, a minimum of 50% of the total project site should comprise landscaping elements, including vegetation, green roofs, and hard-scaping elements shaded by overhanging vegetation, water bodies and watercourses.

- Consider site configuration that encourages healthy habits, active travel and incidental activity, and prioritises pedestrian movement.
- Optimise design to take advantage of sites' natural and physical features, including views, orientation and edges. Maximise retention of existing vegetation on site.
- Provide covered areas for protection from sun, rain and wind.
- The Bedford Park campus poses unique challenges for safe and accessible design due to the siting, topography and surrounding environment. Consideration needs to be given to managing the impact of wind at entry and egress points so as not to add further funnelling issues on site.

4.2.3. Spatial Planning

Matching program requirements with appropriate orientation, massing, and other passive design strategies can reduce energy and increase or maintain thermal comfort. When siting and designing new buildings, consideration should be given to:

- Locating building functions and public realm and outdoor spaces where their thermal requirements can be met without active building systems.
- Locating spaces with wider comfort ranges or cooling dominant in the more difficult orientations such as north. Program areas with significant internal thermal gains shall be located on the north orientation to minimise heating.
- In challenging thermal comfort situations, incorporate buffer spaces to better match the space's thermal conditions to the building or site area. Projects can still incorporate passive design strategies even where the orientation is not optimal.
- Providing efficient heat recovery ventilation is critical, allowing for good indoor air quality and saving energy. At least 75% of the heat from the exhaust air should be transferred to the fresh air again using a heat exchanger.
- All new and substantially refurbished buildings must undergo energy efficiency assessment during the design phase using a tool that satisfies the Australian Building Code Board's Protocol for Building Energy Analysis Software and provide this documentation for review. The following minimum building performance standards apply to all new buildings:
    - Building façade performance: must be a minimum of 30% better than NCC deemed to satisfy minimum energy efficiency requirements.
    - Greenhouse gas emissions: There must be a minimum 30% improvement compared to the deemed to satisfy minimum energy efficiency requirements in the NCC, with a preference for 50% improvement.
    - Computer simulation modelling must achieve these performance requirements following the NCC JV3 methodology for energy efficiency and the Green Building Council Australia Green Star Guidelines for Greenhouse Gas Emissions modelling. Provide the performance assessments and appropriate supporting evidence for the concept design report.

4.2.4. Water Management

- Consideration to be given to the incorporation of dual reticulation when plumbing or irrigation is upgraded or installed, subject to feasibility of access to recycled water and/or stormwater now and in the future.
- New developments should connect to future or existing recycled water connections and/or incorporate rainwater collection for adequate irrigation or toilet flushing.
- Consideration to be given to management and control of non-potable water reuse and capture systems where opportunities arise, examples include rainwater gardens, bioswales, permeable pavement and nature-based waste water systems

- New buildings require a building water meter configured to the University building management system (BMS) platform, to provide the ability to record consumption specific to the building at any time.

4.2.5. Waste Management

- Reduce waste generation by using re-usable, modular, long-lasting, or recyclable materials.
- Project consultant must demonstrate that 50% of new buildings or refurbishment products are reused products, recycled and recyclable contents or have Environmental Product Declarations, Certification or Stewardship Programs.
- Use the Green Star — Design & As-Built: Sustainable Products Calculator, developed by the Green Building Council of Australia (GBCA), to determine the percentage of compliant products.

5. Specific Campus Considerations

5.1. Bedford Park

Bedford Park campus is located 14km south of Adelaide's CBD and is accessible from the southern suburbs via the Southern Expressway. The campus is bounded by Sturt Road to the north, Bellevue Drive to the east, the Sturt Gorge to the south and the expressway to the west. It adjoins residential neighbourhoods and a hospital precinct with purpose built connections to the Flinders Medical Centre. The North and South Ridge portion of the campus is separate from the Sturt precinct with a steep gully natural and a footbridge connecting the sites.

5.1.1. Bedford Park Campus Master Plan

Currently in development. Consideration should be given to the plan in its draft format.

5.1.2. Bushfire

Flinders' Bedford Park campus is located in a bushfire prone area. There are additional fire safety provisions that apply to development in this zone, as set out in the Ministerial Building Standard MBS 008.

5.1.3. Earthquake

Bedford Park is located on/adjacent to the Eden-Burnside fault. Consideration as to the associated risk and appropriate structural interventions requires attention during the design process for both new and major building refurbishments.

5.1.4. Hills Face Zone

This zone seeks to preserve, enhance and re-establish the natural character of Adelaide's landscape backdrop. The zone prevents urban areas from extending into the western slopes of Mount Lofty Ranges; seeks to preserve biodiversity and restore locally indigenous vegetation and fauna; and contribute to the provision of areas for open space and passive recreation.

5.2. Tonsley

Flinders' Tonsley campus is 12km south of Adelaide's CBD and is connected to the city campus and Bedford Park via the Flinders rail line and is serviced by South Road, a main arterial connecting southern and northern Adelaide. Tonsley campus is located within the State Government's urban renewal project known as the Tonsley Innovation District. The precinct is still growing and is home to a TAFE SA campus, other innovation and technology companies, an hotel and is adjacent to a new medium density housing development.

Flinders at Tonsley includes a 6 story building, two single storey pods and the Digital Transformation Lab, a temporary site known as Line Zero and a new building under construction to hold a Factory of the Future which will be co-located with the Department for Education's new Technical College. Flinders at Tonsley is an innovation hub for teaching, research and business in computer science, IT, engineering and mathematics and hosts three colleges, a small library and student study spaces. It's also home to the new Venture Institute start-up incubator and partnerships with industry in the Line Zero and new Factory of the Future sites.

5.2.1. Contamination

The Tonsley Innovation District is on the former Mitsubishi Motors site and has known site and ground water contamination. There are specific restrictions for handling of soil and dust management during construction works.

5.2.2. Encumbrance

Developments in the Tonsley Innovation District are subject to an Encumbrance over the land by Renewal SA. The encumbrance includes specific building features and design intent requirements.

5.3. Flinders City Campus

Flinders City Campus is located in the Adelaide Central Business District. The city campus is a vertical campus over 8 floors of One Festival Tower in Festival Plaza. To the north, it adjoins Festival Centre and the Riverbank, to the east is the site of a future mixed-use retail and office tower and King William Street, Parliament House and North Terrace are to the south and the Adelaide Railway Station is adjacent to the west connecting it to the Tonsley and Bedford Park campuses via train. The city campus comprises modern, flexible learning facilities for five of Flinders' colleges, staff workspaces and facilities for professional development education.

5.3.1. Lease Requirements

The city campus is located in a leased building. The building owner has specific approval requirements and processes for any modifications to the Flinders fit out that impact base building fabric and services.

5.4. Rural South Australia

Flinders has a presence across several facilities in rural South Australia to support learning, simulation activities and staff workspace for the Rural Health Doctor of Medicine program and Nursing and Allied Health programs. Flinders also owns student accommodation in the regions to support student placements. Students undertake clinical placements in hospitals and health services throughout the regions.

5.4.1. Riverland

Flinders presence in the Riverland extends to purpose-built facilities adjacent the Renmark and Berri Hospitals.

5.4.2. Barossa Valley

Flinders' campus is located in Nuriootpa and is co-located on the TAFE SA site in dedicated space fit out for learning, simulation and workspace.

5.4.3. Greater Green Triangle (Mount Gambier, Naracoorte and Hamilton)

Flinders' campus is located in purpose-built facilities adjoining the Mount Gambier and Districts Health Service. The campus comprises two buildings, one with learning facilities, breakout rooms and workspace whilst the other is dedicated to simulation.

5.4.4. Hills Mallee Fleurieu

Flinders has two campuses in this region. One is a purpose-built facility located behind the Murray Bridge Hospital. The other campus is located on the grounds of the South Coast District Hospital at Victor Harbor.

5.5. Northern Territory

Flinders has a large presence across the Northern Territory including Darwin, Nhulunbuy, Katherine, Tennant Creek and Alice Springs. Through its various locations, Flinders is strengthening the Northern Territory and remote health workforce through the provision of education for the Doctor of Medicine program and allied health programs, undertaking research and support for student placements.

5.5.1. Darwin

Flinders has two campuses in Darwin, with a purpose-built facility at Charles Darwin University and clinical study spaces at the Royal Darwin Hospital.

5.5.2. Nhulunbuy

Flinders at Nhulunbuy comprises a clinical education training facility located with the Gove District Hospital ground.

5.5.3. Katherine

Flinders Katherine campus is offices, teaching and meeting facilities at O'Keefe House on the Katherine District Hospital grounds.

5.5.4. Tennant Creek

Flinders NT have an office in the main street of Tennant Creek for local administrative staff and student support during remote clinical placements.

5.5.5. Alice Springs

Flinders at Alice Springs comprises campuses at the Centre for Remote Health and at the Rabuntja Building in the Alice Springs Hospital grounds.

6. Architectural

6.1. Teaching and learning spaces

General Considerations

Through considered design, Flinders aims to:

- Support student engagement, collaboration and provide a connection between students and facilitators.
- Support both on and off campus teaching ensuring students are taught synchronously.
- Create transparency ensuring teaching and learning activities are visible.
- Use as much natural light as possible.
- Ensure students are easily visible and have a clear line of sight to room technology.
- Enable facilitators to move freely throughout spaces to interact with students.
- Provide as many power outlets as practically possible, reflective of room occupancy.
- Provide appropriate and seamless Wi-Fi coverage to allow students to BYOD and interact with room technology and with other students.
- Provide multiple displays and work surfaces such as white (glass) boards and digital displays.
- Where possible create formal and informal breakout spaces adjacent to the main learning space.
- Consider accreditation requirements for specific courses where these deviate from typical class sizes and configurations.

6.1.1. Flat floor teaching spaces (e.g. collaborative, seminar, tutorial)

Flat floor teaching spaces should be:

- Flexible in their design to be quickly and easily adapted to various configurations and layouts.
- Designed to accommodate various pedagogies.
- Consider hybrid teaching models in teaching spaces:
  - Hybrid classes (tablet chairs or chairs and tables): synchronously delivering topic activities (tutorials/workshops/seminars) to students who are both in the room and to students who are attending via web conferencing, where all participants are interacting as a single group.
  - Hybrid group (chairs and tables): synchronously facilitating activities requiring students to work in groups comprising of students in the room and students who are attending via web conferencing. A session may be divided into periods where students are working as a class, and periods where students are working in groups, or the entire session could be devoted to group work.
- Designed on class sizes of capacity: 30 / 45 / 60 / 90 / 120 /150 students for collaborative teaching spaces and other seminar spaces.
- Chairs should be on castors and stackable for flexibility
- Provision power and data to tables and furniture as much as possible

6.1.2. Lecture theatres

Tiered lecture theatres are to be avoided, as larger collaborative flat floor spaces can better support a range of teaching pedagogies that encourages facilitators to move away from the traditional style of teaching. Auditorium spaces are to be considered based on need.

6.1.3. Specialised teaching spaces

Detailed engagement with technical and teaching staff is required regarding teaching methodologies within specialist teaching rooms. Student numbers should also be considered. These spaces are to be reviewed in line with best practice and consideration should be given to providing points of difference and innovative use of space.

6.1.4. Informal learning spaces (i.e. hub spaces, libraries)

A range of different settings are to be provided in an informal learning space to enable students to learn in a variety of ways and to cater for a diverse community of students and preferences. Consideration should be given to:

- Group study rooms, group study areas and private quiet study spaces/booths.
- Collaborative settings with soft seating and meeting style settings.
- Grouping of more collaborative areas, and quieter and more focused areas to cater to all needs.
- Providing white glass and AV for collaborative spaces.
- Providing power/USB charging option for BYO devices in the design and soft seating or other options.
- Using natural daylight where appropriate.
- The cognitive impact created by finishes, materials and colour on the users of the space.

6.2. Workspaces

6.2.1. General Considerations

Workspaces should be fit for purpose and should consider the type and nature of the work being undertaken. Open plan areas support collaborative ways of working. Natural light should be maximised in design, with enclosed rooms away from windows.

- Workspaces should maximise the use of transparent and semi-transparent wall materials in enclosed rooms (offices, quiet rooms, meeting rooms) in order to create a sense of openness, vibrancy, activity, safety and visual connections and support interaction and engagement.
- Conversely, workspaces should minimise the use of frosting, especially on doors to maximise light penetration and to ensure rooms aren't isolated.
- Workspaces should be zoned to manage the conflict created by supporting areas of intense activity alongside those requiring concentration and quiet work.
- Supporting spaces should be considered to accommodate the nature of the work area.
- Workspaces should have modular, movable furniture that allows for ease of reconfiguration.
- Workspaces should be standardised to allow for adaptability, reallocation and reuse over time.
- ICT must enable, support and encourage mobility within the workspace.
- In support of the wireless-first environment, workstations will have a laptop, docking station, dual monitors, keyboard/mouse and soft phone headset.
- Workspaces should have standard, modular work points and be located in open environments that fit the modular grid and storage should be located away from the work stations.

6.2.2. Offices

6.2.2.1. Single person offices (max 12m^2) should:

- Be enclosed private rooms of standard modular size.
- Accommodate one workstation.
- Have space for one-on-one/two meetings in addition to the workstation.
- Be located away from external windows to maximise natural light in the space.

6.2.2.2. Shared offices (min 12m^2, based on minimum 5-6m^2 per person) should:

- Be enclosed private rooms of standard modular sizes.
- Accommodate 2-4 workstations (2 person office 12m^2, 4 person office 24m^2)
- Have space for one-on-one/two meetings in addition to the workstations.
- Be located away from external windows to maximise natural light in the space.

- Offices should have glazing to the open plan work area or at a minimum a fully glazed door (also see doors section 6.1.6). Glazing is to be clear, and any request for film/frosting should be made to Property, Facilities and Development for assessment. This should be substantiated with reasons why. Any film must be applied between 500mm AFFL and 1800mm AFFL. No blinds should be installed to internal glazed partitions.

6.3. Meeting rooms

Meeting rooms should:

- Support a minimum of 4 people seated
- Include provision for a glass board
- Room booking panels should be installed on all meeting rooms
- Provide web conferencing for online collaboration
- Provide AV functionality

6.4. Quiet rooms

Quiet rooms are encouraged to provide a designated quiet work area, the rooms are not dedicated to an individual but are a shared work setting for ad-hoc use. Quiet rooms should:

- Support a minimum of 1- 2 people seated
- Support quiet concentrated work, private conversation, or work requiring acoustic privacy
- Furniture seating can vary, either work bench, small meeting table, with soft seats or meeting chairs
- Provision to enable a BYOD or for a standard computer to be installed
- 1 data, 2 double power points

6.5. Quiet booths / Pod (ad-hoc work space)

Quiets booths are encouraged to provide a designated quiet work area and should:

- Be designed as a modular unit using typical modules of 1600-1800mm, as a modular furniture solution
- Support quiet concentrated work, private conversation, or work requiring acoustic privacy
- Be a non-bookable space
- Support a variety of furniture seating either work bench, with soft seats or meeting chairs.
- Ensure user's ability to hear emergency warning systems despite any sound proofing treatment.
- Enable BYOD and consider provision for a fixed screen
- Provide 2 double power above bench height and use Wi-Fi for network connection.

6.6. HDR spaces

- Desks can be in an open plan setting or within shared office environments and provide appropriate storage ie mobile pedestal/caddie
- Are considered office environments and should not accommodate kitchen based facilities ie fridges, toasters, coffee making

6.7. Amenities

6.7.1. Kitchens and kitchenettes

- Accessible knee clearance is required below the sink and ensure taps, hot water boiler/chiller tap and paper towel dispenser are in the accessible reach zone (300mm from front edge).
- Suitable benchtop space is required for preparation for accessibility.
- Microwave should be provided in the accessible range and bench space beside for setting down items.
- Consider location of kitchen or tearoom to avoid noise to adjacent areas, particularly work areas.
- Support the 3-bin system; Organics, 10c Deposit Recycling and General in line with Flinders' waste management system.

- Tapware should have 5-star WELS rating and appliances with relevant energy and water ratings should be selected.
- Minimum items for inclusion: hot/cold water tap, sink and drainer, fridge, hot water boiler and chiller, microwave, two above bench double power point, drawer for cutlery, storage for cups/plates/napkins, paper towel and soap dispenser, in accordance with cleaning contractor's standards.
- Consideration for inclusion: dishwasher, dependent on size of kitchen area.

6.7.2. Toilet and shower areas

- Doorless entry/contactless bathrooms where space is available.
- Appropriate ventilation to spaces to prevent mould growth.

6.7.3. Wash basin areas

- All taps to have 5-star WELS rating.
- Sensor taps should be used in general toilet facilities.
- Hot water should not be provided for general toilet facility wash basins.
- Fixtures for cleaning consumables must be compatible with the University's cleaning contractor's refilling requirements. The design team should engage with the Project Manager to confirm the suitable fixtures.
- Paper towel dispenser
- Hand dryers
    - Preference is for hand towels only in wet areas. Where a hand dryer is installed the surrounding spaces must be taken into account when selecting which type of hand dryer is selected, due to potential for noise disturbances (eg air blade vs standard type).
    - Preference is for a low noise output of no greater than 70dB.
    - Hand dryers must be hardwired and mounted on a mould/moisture resistant substrate eg tile or plastic/glass splash back. This includes any areas underneath where moisture may create mould growth.

6.7.4. Toilet cubicles

- Lift off doors
- Consideration to be given to recycled water provision
- Minimum 4-star WELS rating
- Sanitary napkin disposal units should be located in female and all gender toilets.

6.7.5. Fully accessible, all gender toilets

- Designated facilities will be provided for all gender.
- All gender facilities to be incorporated within the accessible toilets.
- The facility should have "All Gender Toilet" signage and a toilet symbol (no male / female symbols).
- Hot water should not be provided for fully accessible, all gender toilet facility wash basins.
- A compliance report for the signage will be required as part of development approval.

6.7.6. Shower cubicle

- Existing buildings, including gym facilities, to have one shower per building that also is accessible, to be labelled 'Accessible All Gender Shower'
- Tapware and showers to have 5-star WELS rating.

6.7.7. Parenting rooms

Parenting rooms should be a separate room and not within sanitary facilities. They should be located adjacent to a suitable WC, or alternatively have a dedicated WC. They should include:

- Shade or curtain on external windows

- A basin with hot and cold water.
- A baby change table and nappy disposal bin.
- Provide open knee clearance under benchtops and sinks for parents with disabilities.
- Provision of appropriate feeding chair and curtains if more than one chair.
- Consideration given to provision of a microwave

6.7.8. Prayer rooms/Multifaith rooms

- Where space permits a male and female prayer room should be provided with separate foot wash facilities equipped with hot and cold water.
- Prayer rooms are not assigned to specific faiths and should be inclusive to all.
- Prayer rooms should have carpet, and foot wash areas should have resilient flooring.

6.7.9. Sick/aid rooms

- One aid room to be incorporated into 'low risk workplaces', or one room for areas with more than 200 employees
- A basin with hot and cold water.
- Cabinets and bench space for holding first aid materials and equipment
- Space for appropriate bins for waste

6.8. Service spaces

(Service spaces include cleaners' rooms; gardeners/building maintenance store; service and storage areas; plant rooms, comms rooms, print rooms)

6.8.1. Storage areas

- Storage is to be minimised where possible, and electronic record systems should be used for archival information.
- Suitable modular, storage cabinetry/racking system for items being stored should be specified. Suitable WHS assessment is required for any high or heavy storage.
- The top shelf is to be located at 1800mm AFFL.
- Storage is to be fit for purpose for the nominated use.

6.8.2. Communications rooms

- Provision should be made for one building communications room to interface between internal communications infrastructure and external infrastructure (such as the campus network).
- Redundant and diverse fibre connectivity is required from the building communications room out to the main University network (ie two different paths out of the building) for buildings in metropolitan Adelaide. In regional and remote locations one WAN connection to be provisioned by the current WAN service provider.
- Each floor of a building should have at least one communications room, sized to accommodate at least two of University's standard 42RU racks (full height and depth racks).
- The maximum data cable length from a communications room is 90 metres – this is to be factored into room location during design.
- Each floor communications room requires redundant fibre connectivity back to the main building communications room, via two different risers if available; otherwise spaced in the same riser as much as possible.
- Communications rooms require redundant power with captive sockets and be connected to protected power wherever possible (generators, UPS etc).
- Communications rooms must have adequate ventilation and/or cooling.
- Communications rooms must have swipe/proximity access control or be lockable with a Flinders University standard Master Key (CCMK).
- Wall mounted cabinets and open spaces are not acceptable.

6.8.3. Print rooms

- Photocopier location must be agreed with IDS as part of the University's service provider agreement.
- Copy areas should be located away from workstation areas if feasible or shielded by screen. Minimum 6m^2 allowance.
- Ensure location for photocopier is measured based on access to all paper loading drawers.
- Photocopier locations must be adjacent to appropriate ventilation and air extraction systems.
- Recycling and confidential waste bins should be provided adjacent to copy areas.

6.9. Building facades

Building facades significantly contribute to the overall appearance and visual character of a campus. They create a first impression for visitors, students, and staff. Building facades should enhance campus cohesiveness and be visually pleasing.

New and existing building facades should:

- Be sympathetic to the immediate environment, including the architectural style and character of the building(s). Any new development should retain, and where possible enhance, the visual amenity of the building and the area.
- Consider the character of the campus as a whole.
- Effectively conceal and camouflage mechanical services. Incorporate strategic screening elements, such as decorative grilles, trellises, or vegetation, to visually soften the appearance of plant equipment and blend it with the overall facade design.
- Respond to the functional requirements of the building, including providing adequate daylight, ventilation and thermal comfort within buildings.
- Original and innovative building façade design may be appropriate for some buildings on campus. This may be applicable when the design:
    - Is of exceptional quality, incorporating an appropriate variety of materials, colours, textures, and patterns to add visual interest and depth to the facades.
    - Considers the relationship of the building with the existing campus and any future planned strategic development.
    - Considers integration into the landscape.
- Internal views also need to be considered when mounting screen and mechanical equipment on the façade to maintain natural light, views and professional finishes.
- Fixtures mounted to facades should have professional finishes whether viewed from inside or outside.

Murals may be considered if:

- The proposed location is approved by PFD prior to committing to design a mural.
- The design of murals exhibits artistic excellence and is approved by PFD in collaboration with FUMA prior to installation. Detailed design guidance will be given before any mural is commissioned.
- Murals must respond to the context of the campus and have a size and scale appropriate to the architecture and context of the proposed location and immediate surroundings.
- The building elevation is not overly exposed to the elements, or it can be protected from harsh weather by the use of screening or other design solution.

6.10. Roofs

- Roof systems are to be designed to be watertight in a 100 year average recurrence interval of 5 minutes duration.
- Ensure the design allows for emergency overflow and relief systems to prevent flooding in the event of blockage or malfunction.
- The design must enable any water outflow to escape outside the building.
- Simple roof forms are required, with roof guttering outside the line of external walls.

- Large roofs facing north, northeast and northwest must be designed to structurally support current or future solar system installation.
- Bird proofing must be provided.
- Continuous tray flashing extending from the ridge of the roof must be provided for all roof penetrations.
- Where possible, roof plant should be designed so it is not visible. Consideration may be given to enclosures that shield plant from view.
- Roof cladding systems and fixings should minimise penetrations. Penetrations should be confined to plant and equipment to serve the needs of the building functionality.
- Where penetrations are required, a solution is needed over and above the use of sealants.
- Where a penetration blocks one or more of the sheet drainage channels, flashing around the high side of the penetration to divert run-off water is required.
- Using or designing internal box gutter systems should be avoided with stormwater disposal directed externally to the building where possible.
- The design of the roof should complement the overall aesthetic of the building and consider the impact on adjoining spaces.

6.10.1. Roof materials

- Materials should have a minimum warranty of 20 years.
- Materials must be light coloured to reduce summer overheating and be sympathetic to surrounds.
- Materials and products must not stain, contaminate, rust or cause visual or structural defects in adjacent materials.
- When selecting roof materials, considerations must be given to the ongoing availability of materials.
- The use of concealed clip-fixed decking is preferred to reduce roof penetrations.

6.10.2. Internal roof access

- The access points should be easily accessible for maintenance staff.
- All roof access points to achieve a self-closing/latching/locking outcomes, and the entry point shall have no hardware or mechanism to hold the door application in an open/unsecured position.
- Consider the size of the equipment that will need to be brought onto the roof and ensure that the access point is large enough to accommodate it.
- The use of retractable ladder systems should be avoided as part of the design.
- The access point should be well-lit.
- Signage should be installed to clearly indicate the location of the access point and provide any necessary instructions or warnings.

6.10.3. Roof safety

- Anchor points are to be avoided, walkways and balustrades are preferred.
- The balustrading should be designed to provide a continuous barrier around the perimeter of the rooftop, and any access points should be incorporated with appropriate gates and latches.
- Where practical, positioning of balustrades and walkways should be a minimum of 3 metres to a “live” edge. Where practical positioning of balustrades and walkways to a “live” edge is recommended to allow for safe access to gutter systems, if this is unable to be achieved 3 metres from the “live” edge is acceptable.
- The load capacity should be sufficient to support the weight of people and equipment.
- A minimum height of 1 metre is recommended for roof safety balustrading.
- The layout of the roof walkway system should be planned to provide safe and efficient access to all areas of the rooftop and consider the location of roof vents, equipment, and other obstructions.

- In the absence of balustrades, roof access points to the roof walkway system should be located at safe and convenient locations, not within 5 metres from a “live” edge where there is a risk of falling more than 3 metres.
- Consider providing multiple access points to allow workers to enter and exit the walkway system safely.

6.11. Walls

6.11.1. External walls

- All external cladding must be non-combustible. Aluminium composite cladding must not be used unless it can achieve compliance with relevant NCC/Building code requirements.
- Use materials that are pre-finished and durable, do not require additional coating and have minimal maintenance requirements.
- Materials should minimise heat loss.
- Façade should be vandal, pest and insect ingress resistant.
- Façade should prevent moisture ingress to minimise maintenance required due to sealant failures. Relying solely on sealant or silicon to prevent water ingress is to be avoided.
- Façade should incorporate lightning protection.

6.11.2. Internal Walls

- Light colours for wall finishes are preferred to maximise light reflectiveness and reduce reliance on artificial light.
- Consideration should be given for future flexibility and adaption of the space with the placement of partitions.

6.11.3. Operable Walls

The use of operable walls will only be considered in exceptional circumstances and requires approval. If approved, they must be a proprietary system and ideally able to be operated by one individual.

In situations where operable walls are specified, consideration must also be given to the additional structural support required to ensure the door does not sag or distort over time. Any operable wall must also meet the higher acoustic performance requirement for the adjoining rooms.

6.12. Ceilings

- The use of suspended modular acoustic tiles ceiling system is preferred but needs to consider the capacity to hold any technical structures ie projection equipment.
- Unless the brief states otherwise, the floor to ceiling height throughout office and teaching areas is to be a minimum of 2700 mm.
- Ceiling should be designed to allow easy access to services and equipment for maintenance.
- Ceiling tiles should be 600 x 1200 preferable and lightweight mineral fibre for ease of access.

6.13. Windows and glazing

6.13.1. External Windows

- Should maximise natural light.
- Should incorporate appropriate glazing and solar shading response according to the façade orientation. Buildings with extensive glazing on any given façade are to consider high-performance glazing, shading devices or buffer spaces to improve thermal comfort and reduce glare and energy use associated with glazing.
- Projects are to incorporate, whenever feasible, operable windows for natural ventilation.
    - Where openable windows are used in installations above 2 storeys or a risk of falling greater than 7 metres, window restrictors will need to be installed to reduce the opening to 150mm maximum.

- Any operable windows are required to have restrictors, insect mesh and security locking. Consideration of mechanical design with the design of openable window to ensure efficient energy use.
- Allow for easy cleaning and safe access for maintenance with glass selection.
- Projects to incorporate high thermal performance windows, such as double glazing (low conduction or U value) and consider how well the glass and frame transmit heat from direct sunlight (the solar heat gain coefficient)

6.13.2. Internal Windows

- Window systems must be heavy duty commercial grade aluminum frames with anodized finish or powder coat finish.

6.14. Floors

6.14.1. General Considerations

High Traffic Areas (e.g., Retail, Corridors, Student Hubs):

- Use durable and robust materials that can withstand heavy foot traffic without showing signs of wear.
- Prioritize slip-resistant surfaces to enhance safety.
- Select finishes that are easy to clean and maintain.

Teaching Spaces:

- Consider flooring that provides comfort for long periods (e.g., carpet tiles) and minimizes noise.
- Choose finishes that create a conducive learning environment and are visually appealing.
- Consider flooring that withstands heavy use and spills.

Offices:

- Select finishes that convey a professional and welcoming atmosphere.
- Select materials that are easy to clean and maintain.

Wet Areas (Bathrooms, Kitchens)

- Use waterproof or water-resistant materials to prevent damage.
- Prioritise finishes that are hygienic and resistant to mold or mildew.
- Ensure surfaces are slip resistant to prevent accidents.

Minimise Floor Finish Varieties:

- Limit the number of different floor finishes within a building to simplify cleaning and maintenance.
- Consistent finishes create a cohesive look and streamline upkeep.

Low Allergy Finishes:

- Consider materials that minimize allergens (eg., low-VOC, hypoallergenic, dust-resistant).
- Prioritise finishes that contribute to a healthy indoor environment.

6.14.2. Carpets

- Carpet flooring must have a minimum product warranty of 10 years.
- Carpet should be resistant to insect attack.
- Carpets are commercial grade.
- Carpet selection should be sourced from recycled/renewal sources and should have end of life recyclability where possible.
- Modular carpet tiles are preferred.
- Consideration should be given to double bonded (carpet tile with underlay) for increased comfort and acoustic performance.

6.14.3. Mats

- Entrance mats should have a minimum warranty of 10 years.
- Floor mats should be avoided unless recessed and flush with adjacent floor finish to avoid creating trip hazards.

- Entrance mats must be considered and sized appropriately in relation to abutting floor slip resistance requirements.

6.14.4. Resilient Flooring

Consideration should be given to:

- The wear of floor finishes to ensure slip resistance can be maintained for the life of the product, and where required a higher slip resistance is to be specified.
- Selecting flooring that has high resistance to staining and deterioration from chemicals.
- A 10 year warranty
- Consideration should be given to natural products like rubber, linoleum and marmoleum and those with high recycled content and end-of-life recyclability. Natural products should be sourced from renewable sources.
- Where natural products are installed in existing buildings appropriate review and consideration is required to ensure a moisture barrier is installed to avoid moisture ingress.
- Where heterogenous vinyl is selected it is to have a minimum wear layer thickness of 1.3mm.

6.15. Stairs

- Consideration for comfortable stairs with gradual slope is encouraged, rather than steep stairs. Preferred individual step width is 300-355mm.
- Circulation stairs (non-fire isolated) are encouraged within buildings to promote physical activity and connections through the building. The location of circulation stairs should be reviewed with future repurposing of floor plates to enable flexibility for future use.
- Staircases should be designed wider than the minimum code requirement, particularly in outdoor areas, and buildings hosting teaching and learning, to allow for ease of passage during high traffic periods.
- Open tread stairs are not permitted.
- Balustrade heights should be 1.5m minimum for any staircase that have drop greater than one storey.
- Tactiles should be either drop in concrete pavers for external areas and stainless-steel buttons for internal areas.
- External stairs to have glued and screwed “L” shaped non-slip nosings.

6.16. Doors

6.16.1. External Doors

- All points of access and egress must be clearly defined, identifiable and easily located.
- All door thresholds must permit wheelchair access and maneuvering, including doors to access outdoor learning areas.
- Automatic building entry doors are preferred.

6.16.2. Internal Doors

- Office, meeting room, teaching space and passageway doors shall be fully glazed to improve transparency and the transmission of natural light into central corridors.
- Frosting on internal doors can be considered for situations where there is a definitive need.
- Frosting shall only be provided as a band between 500mm AFFL and 1800mm AFFL mm.

6.17. Corridors

Designing pedestrian flow within buildings is crucial for ensuring safety, efficiency, and a positive experience, as large numbers of staff and students move throughout a building. Corridors:

- Should be clear, unobstructed and free from obstacles.
- And general circulation spaces are to be accessible to people with disabilities, including the provision of ramps and tactile warning strips.
- Width should be determined based on expected pedestrian traffic volume and other movement requirements in the space eg wider corridors are needed in high-traffic areas to prevent congestion.
- Should provide clear and intuitive wayfinding signage to help pedestrians navigate through the area.

- Should include areas for art displays such as corridors and foyers to create inviting and engaging spaces, however these should consider pedestrian flow to minimize congestion.

6.18. Acoustics

Consider suitable speech privacy and sound insulation to the adjacent areas depending on functional requirements of adjacent rooms. Minimum requirements for specific room types are listed on the table below.

Room Type	Privacy Rating Walls	Doors
• Lecture theatres/ tutorial rooms • Collaborative teaching rooms • Meeting rooms • Specialist teaching spaces • Offices • General consult	Private**	Moderate***
• Executive offices • Executive boardrooms • Clinical consult rooms	Confidential*	Private**
• Open plan workspace • Informal study spaces • Library	Moderate*** / Not private	Not private***
• Toilets • Mechanical Plant	Private** (Mechanical noise and flushing toilets should not be heard through walls)	Private**

*** Confidential** – raised speech would not be intelligible, normal speech would be inaudible.
**** Private** – normal speech would be audible but not intelligible.
***** Moderate/ Not private** – normal speech would audible and intelligible.

All new building and fit-outs shall achieve these acoustic requirements. Existing spaces may be upgraded dependant on feasibility.

Consideration should be given to:

- The detailing around floor, ceiling, external walls and penetrations to meet adequate acoustic privacy.
- The acoustics around toilets, rainwater pipes, air handling unit (AHU) rooms, server rooms, plant rooms, printer locations etc to ensure sound emitted is suitable to those activities of the adjacent areas. Additional acoustic treatment is required around these areas.
- Where large atriums or open transient spaces are designed, further consideration is required in relation to acoustic treatments that may need to be applied.

6.19. Furniture Fittings and Equipment

6.19.1. General Considerations

Furniture must be fit for purpose, suitable for high use public spaces requiring minimum maintenance. It should also:

- Allow for supply, delivery, and placement/installation.
- Be commercial quality with a minimum of 5-year warranty, or 10 years for task chairs.
- Prioritise furniture that is recyclable at the end of life.
- Have GECA Furniture and Fitting (Level B) FFv3.1i-2017 or
- AFRDI- Green Tick environmental certification (Level A (Platinum) or equivalent European/USA standard Green Tag or FSC
- Furniture selections should consider stackability and manual handling requirements for the space.

6.19.2. Workstations

- Must comply with AS/NZS 4443 to ensure furniture is of sufficient quality and dimensions.
- Desk size 1200 to 1500mm (w) x 800mm (d), rectangular with sit-stand function.
- Desks with electric sit-stand workstations are to have a height range of 620 -1230mm.
- Electric adjustment only and manual winding options will not be accepted. This style is suitable for accessible workstations.
- Privacy screen maximum height to be 1100mm AFFL.
- Workstations should have cable management tray/duct beneath the worktop.
- Soft wired power rail should be fixed above worktop with adjustable bracket, with 1 data and 4 power outlets below desk and 2 surface mounted power outlets with USB charging above desk.

6.19.3. Quiet rooms

To accommodate 1-2 people

- Minimum desk size 1200mm to 1500mm (w) x 800mm (d). Provision for 2 x monitors and docking station for BYOD.

6.19.4. Seating

6.19.4.1. Task chairs

- Height and seat adjustable swivel chair, no arms (unless specified).
- AFRDI Blue Tick durability certification levels 4, 5 or 6 (ASNZ4438) or equivalent European/USA standard.
- Must have minimum 100kg weight rating, consideration to be given to a higher rating depending on end user requirements.
- Upholstered seat and upholstered or mesh back. Mesh back is preferred.
- Heavy duty fabric (min 50,000 Martindale).
- Automatic lumbar support/back tension, synchro mechanism to minimise manual user adjustment.
- 5-star base on castors. Castor specification dependent of floor type.

6.19.4.2. High task chairs/stools

- Can have castors or glides, review based on safety (freewheeling or non-freewheeling).
- Height range must be suitable for adjacent table, ie to suit 900 or 1100mm desktop.
- Consider a rail/wheel for foot support
- Consider back support
- Consider inside use and comfort of sitting for studying/working (eg no wire seats)

6.19.4.3. Chairs – for rooms not to be reconfigured (including meeting and teaching)

- For rooms with fixed furniture and where room is not required to be reconfigured, chairs:
- Must have minimum 100kg weight rating.
- Have an upholstered seat with heavy duty fabric (min 50,000 Martindale).
- Be height adjustable, minimum other adjustments to chair preferred, ie no lumbar, no chair tilt etc
- Have no arms.
- Castor (spec dependent of floor type, pressure release for vinyl or freewheeling for carpet).

6.19.4.4. Chairs – for reconfigurable rooms (including meeting and teaching)

For reconfigurable rooms should:

- Be ergonomic, comfortable and have limited adjustability.
- Have no arms
- Have castors or sled base, suitable glides for floor finish

- Have a minimum 100kg weight rating
- Have an upholstered seat
- Use lightweight mesh preferable to enable chairs to be easily moved/stacked.
- Be stackable to 10-20 seats high.
- Have an option for trolley to increase height of stackability for large reconfigurable spaces.
- Preferably be lightweight for ease of moving, less than 6kg and fit for purpose for end users.

6.19.4.5. Tablet chairs for seminar rooms

Where room does not have tables but is teaching in seminar style.

- Fixed height.
- Minimum 100kg weight rating.
- Upholstered seat, heavy duty fabric (min 50,000 Martindale), or mesh seat and mesh back.
- Stackable to a minimum of 4 chairs high.
- Sled chair or castor base. Castors can be used where there are no changes in platform level, castor specification dependent of floor type, pressure release for vinyl or free-wheeling for carpet.
- Tablet to be A3 size, secure when in use and easily folded.

6.19.4.6. Café Furniture

- Minimum 100kg weight rating.
- Chairs to be either polypropylene, timber or other cleanable material.
- Stackable chairs are preferred.
- Incorporate power and charging points where possible.

6.19.5. Tables

6.19.5.1. Meeting tables

- Allow typical minimum spacing of 750-800mm per person.
- Flip tables should have easy locking/release mechanism and have lockable castors.
- Top to be durable, minimum 25mm thick board.
- Consideration should be given to surface mounted power/data rail system, provision for power and HDMI depending on the room use.

6.19.5.2. Collaborative teaching tables

- Allow typical minimum spacing of 750-800mm per person.
- Where table box is provided, surface mounted power/USB charging module to sit on top within table.
- Have lockable castors.

6.19.5.3. Computer room tables

- Allow typical minimum spacing of 750-800mm per person, increase to 1200mm if two monitors are required.
- Where table box is provided surface mounted power/USB charging module to sit in table.
- Under bench PC mount to suit specified PC tower.

6.19.6. Storage

6.19.6.1. At the workstations

- Either lockable 3 drawer pedestal (2 x box drawer, 1 x file drawer) on wheels, 450mm wide, or lockable caddie on wheels with tambour storage and 3 drawers (2 x box drawer, 1 x file drawer), 900mm wide.
- Powder coated steel cabinets are preferred.

6.19.6.2. Tall storage units

- Cabinets should be modular in size, 900mm or 1200mm wide. Top shelf to be maximum 1800 AFFL.
- Lockable powder coated steel cabinets with tambour doors are preferred.

6.19.6.3. Lockers

- Open lockers in some larger specialist teaching areas should be included for student bag storage.
- If determined as required in informal student spaces, lockers need to have a keypad with a designated maximum use time allocation.

6.19.6.4. Compactus

- Compactus should be avoided unless high storage requirement.
- If required consider structural load and location on floor and accessibility.

6.19.7. Whiteboards and pinboards

- Glass whiteboards are preferred due to cleanability.
- Pinboards should only be located in designated student common spaces for information sharing.

6.19.8. Directory boards, room names and signage

- Refer to Signage Guidelines

6.19.9. Coat hooks

- Coat hook with bumper stopper to be installed on back of solid office doors and toilet cubicle doors.

6.19.10. Built-in furniture

- Built in furniture should be avoided, if possible, to enable future flexibility.

6.19.11. Curtains and blinds

- Roller blind with sunscreen mesh, as recommended dependent on window direction.
- Blinds should be avoided to internal corridor areas and internal courtyard facing spaces.
- Blockout blinds integrated with AV system to be installed in teaching and AV enabled external facing meeting rooms.

6.19.12. External drinking fountains

When designing external water drinking fountains consider:

- Functionality to refill water bottles and containers
- Location on an accessible route
- No obstruction in the forward approach for wheelchair accessible units.
- Prioritise designs that accommodate people of varying abilities, including wheelchair users.
- Ensure sufficient clear floor space around the fountain for easy access.
- Consider hypoallergenic materials to promote a healthy environment.

6.20. Asbestos

Where asbestos is known to be in situ or discovered, it should be removed in full and not covered over.

7. Services

Design and installation of all services must be coordinated with other services to ensure adequate provisions are allowed for (eg electrical, data, water and sewer discharge connections) and to minimise conflict with other services (eg location of access hatches, ceiling space allowances). Consultants are expected to inspect University infrastructure as part of design.

Unless specifically directed otherwise, all equipment designed, specified and installed must be new and of the highest quality.

7.1. Hydraulic Services

7.1.1. Water Sources

Identify and assess appropriate water sources for the university facilities, considering local regulations, sustainability, and redundancy requirements. Preferred sources include public water supply, on-site wells, and rainwater harvesting systems where applicable.

The location of isolation valves must be accessible without triggering a permit to work system or requiring specialised access equipment for emergency management purposes.

7.1.2. Water Quality

Water quality standards and treatment methods shall comply with regulations. Consultants must ensure that water supplied to university facilities is suitable for the intended use, eg laboratory research.

7.1.3. Water Conservation

Incorporate water conservation measures in the design, such as low-flow fixtures, water-efficient landscaping, and leak detection systems configured to the University's building management system infrastructure. Water-saving technologies should be explored wherever feasible.

7.2. Drainage and Stormwater Management

7.2.1. Drainage Design

Design efficient and environmentally responsible drainage systems, ensuring proper slope, sizing, and placement of drainage infrastructure to prevent flooding and erosion. Where the risk of flooding to a building or critical infrastructure exists a primary and secondary disposal method or system is required to be implemented.

7.2.2. Stormwater Management

Stormwater management plans must be integrated into the design, including the use of sustainable practices like permeable pavements, retention ponds, and bio-swales to mitigate the impact of stormwater runoff.

Consistent with the roof drainage design, stormwater management generally should support 100-year Average Recurrence Interval (ARI) of 5 minutes duration.

7.2.3. Erosion Control

To protect the campus environment, consultants must implement erosion control measures, including erosion-resistant landscaping and sediment control systems. This consideration needs to also be captured for new underground networks/ supplies.

7.3. Wastewater Management

Consultants shall design and specify waste management systems to efficiently transport and treat waste in compliance with local regulations. Consideration should be given to capacity, pipe materials, and system maintenance.

7.3.1. Sewer Systems

Where the risk of flooding to a building or critical infrastructure exists a primary and secondary disposal method or system is required to be implemented. Sewer inspection points required to be identified and visible from the finished floor or ground surface.

7.3.2. Trade Waste

Where capture/storage installations are implemented, such as neutralizer pits and grease arrestors, access to location with a large waste collection vehicle (10,000 litre capacity) must be achieved and so the appropriate servicing can be undertaken.

7.3.3. Wastewater Treatment

Where feasible, consultants should explore opportunities for on-site wastewater treatment systems, such as septic systems or advanced treatment technologies, to reduce the environmental impact and increase sustainability.

7.3.4. Reuse and Recycling

Consultants are encouraged to incorporate wastewater reuse and recycling systems, where applicable, for non-potable purposes, such as irrigation.

7.4. Mechanical Services

The following functional requirements must be given special design consideration:

- Energy efficiency
- Connection to the University's BMS platform and configured to suit the project function
- Accessibility, ease of operation, simple maintenance with minimal frequency
- Adequate space for installation, maintenance and replacement of machinery in designated plant rooms, ceiling spaces or other areas, subject to space availability
- Preference to extend/augment central thermal plan over stand alone DX system where feasible.

7.5. Electrical Services

- Redundant cabling and equipment should be completely removed. If there are underground service that cannot be completely removed they must be made safe by means of junction boxes, termination connectors and permanent signage.
- All lighting is to be LED, or where circumstances warrant a high efficiency alternative may be proposed by the consultant or contractor for approval by the University.
- All luminaires selected must offer long term availability for replacement.
- Lighting should be fit for purpose i.e. task lighting vs general vs feature/decorative lighting, taking into account colour/ temperature and LUX values that suit the application.

7.6. Fire Services

All penetrations regardless of crossing a compartment line must be stopped up with an appropriately rated material in accordance with minimum Fire Resistance Level for that building/space. Changes to any compartments or penetrations must be recorded and provided to the Project Manager.

7.6.1. Hydrants interface

- Bedford Park campus new internal or external hydrant installations must be connected to the site hydrant network.
- All sites - new valves sets are to be accessible 24 hours/7 days without requiring a permit to work system for access and maintenance.
- Eliminate placement of internal hydrants adjacent or above high and low voltage switch rooms.

7.6.2. Emergency Warden Information System (EWIS) interface

- EWIS panels must be compatible and interfaced with the site network via IDS fibre optic infrastructure.
- Additional consideration required to install external broadcasting capabilities connected to the EWIS network covering emergency assembly areas and roof tops.
- Consideration to install internal building Warden Intercom Phones (WIP) on all building levels at the furthest point from the building EWIS panel adjacent a fire isolated stairwell or emergency egress point.
- Consider installing additional measures where spaces are impacted by noise levels such as plant rooms and sound booths.

7.6.3. Egress Points

- The installation of mag locks is not permitted.
- Where security or access control is required to pairs of doors, consultation with the University is required to determine the appropriate strategy for the space.
- Egress points shall be single action downward escape lever at all times unless codes or standards call for other applications.
- Locks must not be fitted to the internal side of fire exit doors.

7.6.4. Fire Panels

- In the absence of lightning protection., the installation of surge protection is required.
- Fire Indicator Panels are required to be compatible and interface with the EWIS networks for the relevant location.
- Building Fire Detection and Alarm system to have relay outputs for Alarm/Pre-Alarm/Isolate & Fault configured to the established Security Monitoring Network.
- Mandatory Alarm Signalling Equipment to be located at the main building fire indicator panel serving the building reporting direct to the SA Metropolitan Fire Service.
- Installing a single fire indicator panel serving multiple buildings is not permitted, where unique and special circumstances apply further consultation with the University is required.
- Mandatory fire detection block plans are required to be updated in alignment with the University's formatting and styles.

7.6.5. Sustainability and Resilience

- Consider incorporating sustainable fire safety measures, such as the use of environmentally friendly fire suppression agents or energy-efficient fire-rated materials.
- Building upgrades and fire safety systems are to be designed with resilience in mind, considering factors like earthquakes, severe weather events, lightning strikes, or power outages.

7.7. Security

7.7.1. CCTV

- All proposed changes relating to CCTV need to be identified to IDS to ensure sufficient network, storage and server capacity exists to accommodate the new services. Each CCTV camera requires a data outlet. Power is provided across the network cable from the switch.
- Cameras should be located to capture building / area entry points to a recognition / identification level.
- Larger common areas that require coverage (study spaces etc.) can be captured to an observation / recognition level.

7.7.2. Duress alarms

Duress alarms are not generally provided. They require a risk assessment to determine if they are a suitable option. These are generally reserved for consulting spaces and areas identified as high risk.

7.7.3. Security Call Points

Security call points should:

- Be easily visible and accessible to both pedestrians and vehicles.
- Be located in well-lit areas, free from obstructions such as shrubs or trees, and ideally near frequently traveled paths or gathering areas.
  - Be connected to an unobstructed power supply, where possible.
  - Be located near main entrances and exits of buildings.
  - Be clearly identified with signage
  - Take advantage of existing infrastructure, such as security kiosks, information booths, or emergency phones, if available.

Consultation should occur with Flinders Security staff familiar with the specific campus environment to conduct an assessment and provide tailored recommendations.

7.7.4. Access Control (including master key etc)

- Access control is managed on the Siemens SiPass system with a preference for electronic mortice locks or electronic striker furniture (rather than mag lock).
- The current master key system is Abloy Protec. Any new master key requirement to be interfaced with current Abloy Protec system.

7.8. Vertical Transport (Lifts)

The design of vertical transport services for the building should consider the expected pedestrian movements and traffic volume required.

- All multi storey buildings should include at least one lift.
- All buildings over two-storeys should include at least two lifts and lifts should be located to optimize accessibility and connectivity within and between buildings.
- Lift locations should consider both internal and external links to accessible paths.
- The number of lifts should be increased subject to an assessment of the building capacity and pedestrian flows.
- Digital mobility network to be included in all lifts.
- Vertical transportation systems should be integrated into the campus architecture and design and complement the aesthetic of the surroundings.
- Lifts should be functional and easy to use.
- Lifts should incorporate dual cellular gateway installation and be compatible to a secure 4G network as a minimum.
- There should be a minimum 2 hour battery back-up
- Lifts should be programmed to dial direct to the service providers after hours 24/7 emergency response line

7.9. Building Monitoring and Control Systems (BMS)

All BMS must use the IDS network and not create its own. IDS must be consulted when introducing any new technology, including IoT to ensure appropriate security, access and network capacity without impacting other critical university systems.

As a minimum requirement all proprietary VRV, VRF or HEAT-PUMP systems must:

- Be capable of interconnection to the University-wide BMS either via BACnet or Lonworks High-Level Interface (HLI).
- Control to a single temperature set-point with ±0.5°C differentials
- Include user adjustment of pendant temperature set-point limited between 20°C to 24°C, via BMS to HLI. Temperature set-point may be overridden under Flinders University load-shed strategy, via BMS to HLI.
- Provide a remotely mounted proprietary room temperature sensor in the conditioned space. This

sensor must be the temperature value transmitted to the BMS via the HLI for the purposes of historical trending.

- Include a hard-wired wall mounted pendant controller incorporating the following items:
  - Adjustable setpoint
  - Mode adjustment (Heat/Cool/Vent/Auto)
  - Mode status
  - Fan speed adjustment (Low/Med/High/Auto)
  - Fan speed status
  - Indoor unit command status (on/off)
  - Indoor unit fault status (Alarm/Normal)

All control equipment (including Variable Speed Drives, switchgear, relays, pendants etc.) must be in a serviceable location with easy access for routine maintenance.

8. Network, Communication and AV

Flinders University's Information and Digital Services (IDS) aim to deliver the technology required to make each space fit for purpose and provide the functionality required by the occupants. Generally, network, communication and AV services are designed and provisioned to achieve a rich, reliable, mobile and accessible end-user experience.

The University is moving to a wireless-first environment to provide flexibility for staff and students. The use of online meetings and teaching in online or hybrid environments has grown significantly due to COVID. Increased wireless capacity and hybrid functionality will be delivered progressively and facility related projects are required to consider this as part of design.

Some older buildings on campus have network cabling and communications rooms that do not meet current standards. It is important to understand the location and scope of all projects that will refurbish existing buildings. Depending on the scope of the project it may be necessary to replace cabling and/or increase the network infrastructure (e.g., network switches, Wi-Fi Access Points) to ensure adequate connectivity. In other cases, the project may need to refurbish, or build a new communications room to meet current standards. All buildings need to connect into the overall campus network via redundant fibre connections. Each floor will have an appropriate communications room that connects to the main building communications room by redundant fibre.

The University has developed broad standards for both the overall AV and Network environment (Structured Cabling standards, Audio Visual standards) which are required to be incorporated as part of tender documents. The responsibilities matrix for purchasing, configuring, and installing all technology equipment within the project will also need to be included as part of the tender documents.

8.1 Information & Digital Services (IDS) Design Authority for Governance

Flinders IDS Design Authority is a mandatory governance group to provide approval for the introduction or change of any capability that is associated with IDS. This includes the introduction of new infrastructure or software systems as part of a project. This group is looking to ensure that the proposed solution will fit, is supportable and there are appropriate resources in place to keep it working over the lifecycle of the system.

8.2 General process for all IDS-related projects

IDS will work with the consultants to help document the AV, electrical and communications scope, and identify the appropriate comms rooms and cable/termination types. Once IDS understands the full scope and have been able to discuss details with the end users, IDS will provide design information to the consultant. Consultants must ensure that all revisions of drawings are identified and reviewed by IDS to ensure that all changes are understood and approved before being enacted by the contractors.
A RACI matrix is issued with the tender documentation for each project. See table below.

- Network and computer equipment will always be purchased and configured by Flinders.
- Data cabling is installed and terminated at each end by the contractor. Test results are provided by contractor. Patching is usually by a contractor based on an agreed patching schedule but can be addressed by Flinders in some situations.

IDS services provisions	Supply/configure	Install	Commission
Wireless access points	Flinders University	*Contractor*	Flinders University
Active network equipment	Flinders University	*Contractor*	Flinders University
External inground conduits and pits	*Contractor*	*Contractor*	*Contractor*
ICT passive infrastructure (racks, patch panels, structured cabling, outlets, intra-building backbone cabling)	*Contractor*	*Contractor*	*Contractor*
Patch leads (copper and fibre within communications rooms)	*Contractor*	*Contractor*	*Contractor*

Patch leads (copper and fibre external to communications rooms, for equipment provided by *Contractor*, i.e. security systems, AV systems, metering)	*Contractor*	*Contractor*	*Contractor*
Copper and fibre patch leads for client supplied equipment (excluding WAPs)	*Contractor*	Flinders University	Flinders University
Inter-building campus cabling	Flinders University	Flinders University	Flinders University
Rack power supplies	*Contractor*	*Contractor*	*Contractor*
Rack power distribution units	*Contractor*	*Contractor*	*Contractor*
End user devices (PCs, laptops, printers)	Flinders University	Flinders University	Flinders University
Audio Visual equipment (OR)	Flinders University	Flinders University	Flinders University
Audio Visual equipment	*Contractor*	*Contractor*	*Contractor*

8.3 Wireless Network

- The University is adopting a "wireless first" approach, that will generally require additional wireless infrastructure to be installed as part of all future projects.
- Wi-Fi design is provided by IDS. The Wi-Fi design will consider the number of people expected to use the individual spaces, the floor plan and material used for walls, doors, ceilings etc. to ensure that adequate coverage and density is achieved.
- IDS will manage the design, procurement and configuration of active network and telephony infrastructure (routers, switches, wireless, phones etc.) as part of their engagement with the project.

8.4 AV

- AV design is provided by IDS who may opt to engage an external consultant. The AV design will consider the use of each individual space (teaching, meeting) and the materials used for walls etc. to ensure that the most appropriate technology and placement is achieved to suit the space purposes and user requirements.
- AV functionality can be provisioned into the project with Flinders managing the quotation and ordering process, then engaging the successful AV contractor, or as part of a tender process by the building contractor.

8.5 Network equipment

- Switches are provisioned based on occupancy and number of ports of the relevant area of the building. Adding staff and/or students will likely increase port requirements and may require additional network equipment.
- All network connected infrastructure must use the IDS managed campus network, not run specialised, independent networks. For example, BMS and CCTV all use the campus network.

8.6 Telephony

- Flinders University is transitioning away from traditional physical phones to the use of soft phones (software phones such as Cisco Jabber/Webex or MS Teams running on a desktop or laptop computer). As such soft phones are assumed the norm, with new spaces to include minimal physical handsets to cover specific requirements where soft phones are impractical.
- Consideration should be given to the use of audio headsets for people using soft-phones or MS Teams in open plan office spaces to limit noise disruption to others.

9. Landscaping and outdoor areas

9.1. Landscaping

9.1.1. Handrails

All external handrails and grabrails are to be manufactured of stainless steel and be of a consistent style and take into consideration surrounding area and adjoining/adjacent railings.

9.1.2. External communications pit requirements

New pits must be labelled as “Flinders University” and contain the pit ID for easy identification.

9.1.3. Bollards

- Bollards are to be used where required to meet accessible parking requirements and to protect valuable infrastructure, i.e. plant.
- Bollard type shall be marine grade 316 stainless steel “Securapost” product.
- When bollards are placed in parking areas, they should be of suitable height to be clearly visible from cars reversing.
- Bollards should be removable.

9.2. Siteworks and Landscape

Landscaping and natural green space should be integrated and complementary with the campus-built environment, provide opportunities for wellbeing, rest and relaxation, informal study spaces, biodiversity and positive environmental outcomes.

Landscaping serves three broad functions which can be considered in isolation or together on a case-by-case basis. Any landscaping scheme should consider these functions.

- Active landscaping – for campus activities and to contribute to campus vibrancy. These areas should draw people to spend time outdoors by creating a functional and aesthetic environment.
- Passive landscaping – for improving the visual appearance of the campus. These areas are routinely maintained for aesthetics and prioritise landscape design. Passive landscaping should also consider biodiversity, habitat and conservation.
- Conservation zones - external vegetation zones that are used for conservation, native plants, remnant vegetation and biodiversity. These zones are managed for invasive species control and fire management.

All plantings and landscaping on Bedford Park campus must consider Mitcham Council’s bushfire zone requirements.

9.2.1. Site design

Where earthworks are proposed, the design should include how the site is to be made good with consideration given to safe access for maintenance works and pedestrians.
As part of the design process, inground services are to be checked to minimise any hazards, risks and abortive work.

9.2.2. Drainage

- Where possible, surface water should drain into appropriate stormwater collection points.
- Stormwater system should be gravity fed
- Where unavoidable low points are present, plant selection should favour plants which will thrive in boggy/damp situations.
- Strip drains and drainage pits should be of adequate size for the situation, accessible and can be easily cleaned.
- Grated pits are not to be included in pedestrian paths or routes.

9.2.3. Water sensitive urban design

Plants should be selected to minimise reliance on irrigation. Water sensitive urban design principles are to be incorporated into landscape design.

9.2.4. Irrigation

- Except for natural areas, automatic irrigation systems shall be provided to properly manage and control any future non-potable water reuse and capture systems and connect to current or future recycled water supply through an isolation switch to turn from mains to recycled water.
- Subsurface irrigation in garden beds is preferred.
- Pop-up sprinklers with easily changeable heads are preferable for irrigated lawns.
- Irrigation of lawn areas is not required where low use is anticipated.
- Mains-powered irrigation control with ability for remote access (LAN or WiFi connection) should be used when possible.
- Bluetooth enabled controllers should be used for in-ground irrigation control.

9.2.5. Landscape furniture

Landscape furniture selection should be low maintenance, corrosion resistant, vandal resistant and rot resistant. Avoid timber furniture in exposed locations to reduce requirement for regular re-sealing of timber.

9.2.6. Outdoor Furniture

- Ensure the material is UV stable and water does not pool on the chair, however wire chairs are not preferred.
- Table material to be suitable exterior grade timber, compact laminate or other UV stable material.
- Should take into consideration the impact of wind and wind tunnels
- Incorporate power and charging points where possible

9.3. Grounds and Gardens

9.3.1. Trees (including regulated and significant trees)

- Before works to any tree on campus, there must be an assessment to check if it is statutorily defined as regulated or significant, and follow any necessary regulatory approval processes.
- Our preference is to retain as many trees as possible
- Trees that cannot be preserved due to health or structural condition should be replaced with an ecologically sensitive and native tree, within 100m of the original tree site.
- Every effort should be given to provide an equivalent replacement, and where this is not practical, additional tree planting must be provided to maintain an environmental net gain. Trees that are in good condition may be relocated.

9.3.2. Plant Selection

- Maintain existing vegetation where possible.
- Select plant palettes that reflect the broad range of woody and herbaceous plants that can be grown in our existing and future climate.
- Factor site sun exposure and shade into plant selection and layout.
- Incorporate native plants as appropriate to achieve aesthetic, environmental and social objectives.
- Base siting and spacing decisions on mature height and form of shrubs and trees (e.g. spreading plants will grow over adjacent sidewalks and require regular trimming).
- Avoid mass plantings of a single tree or plant species.
- Avoid selecting plants which drop fruit or other debris that may pose a trip hazard, or are prone to sudden branch failure, around pedestrian areas.

- Preference is for long-lived perennials, avoid plants which have an annual or short lifecycle, unless the situation calls for it (eg in an edible garden)
- Comply with South Australian plant and weed legislation and best practice

9.3.3. Grass

Avoid designing lawn areas of less than 2 metres wide.

9.3.4. Establishment and maintenance period

Contractors are required to undertake manual watering of non-irrigated plantings during establishment period (generally first spring-summer period).

9.3.5. Covered learning and shade structures

Covered shade structures are to be provided in suitable locations across campus to be used as active social/event spaces or external classrooms. Framing and material of external structures should be consistent or complementary with adjacent building forms.

Opportunities for solar lighting within structures may be present. External structures should use appropriate materials that are corrosive resistant, robust and vandal resistant. Structures should include power and USB for charging.

9.3.6. Fencing

- Purpose and functionality
  - Fences can be used to provide demarcation, safety, privacy, security and aesthetics
  - Soft landscaping solutions should also be considered as an alternative to fences
  - Ensure materials are durable and have a low maintenance schedule.
  - Timber should only be used in exceptional circumstances. In cases where timber is required it should be durable and meet sustainability criteria.
  - Razor wire solutions should be avoided. When there is an exceptional need for additional security, softer measures should be considered first (for example, anti-climb mesh, paint, CCTV).
- Safety and Accessibility
  - Fencing can be used to help prevent falling from heights, in this regard the university will exceed regulatory standards for balustrade and fence heights.
  - Security and privacy may be required for areas such as residential accommodation on campus or sensitive research areas.
  - Design and siting of fences and gates should consider universal accessibility and DDA requirements.
- Consistency in appearance
  - Fences will integrate/blend with the landscape design for the precinct, should consider local aesthetics, character and repeatability.
  - Fences should be subordinate to soft landscaping and consider maintaining the openness of surrounding views. This is of particular importance in areas near entrances to maintain a safe and welcoming environment.
  - Fence height should be consistent for similar functions and maximise transparency.

9.3.7. Sporting Fields

Any remediation of sporting fields should utilise Kikuyu turf to maintain uniformity with existing sports turf, and any soil used for top dressing or back filling should be sandy loam (80/20 mix).

9.4. Primary Pedestrian Pathways

9.4.1. Pathways

- Pathways will be divided into primary, secondary, tracks and trails as identified and described by Properties, Facilities and Development.

- Primary pathways should be made of high-quality materials to provide a distinct and connected feature throughout the site.
- Secondary pathways should appear subordinate to primary, however still be made from high quality materials. This can be achieved through design elements such as path width, materials, lighting, and signage.
- Tracks and trails are primarily for leisure use can be made from a variety of materials that integrate with the environment and are permeable.
- Primary and Secondary pathways should be accessible for people with a range of disabilities and link to dedicated accessible ramps and elevators where required.
- Dedicated accessibility pathways should be intuitive and connect to other paths.
- Include benches, seating areas, and shaded spots along pathways to offer pedestrians opportunities to rest and socialize. Place seating near key gathering points.
- Preference for dedicated bike lanes or pathways that are separated from vehicular traffic whenever feasible.
- Shared paths for walking and cycling need to be of suitable width to provide appropriate separation for pedestrian safety and comfort.
- Avoid overplanting or placing vegetation or obstacles too close to pathways.

9.5. Roads and Car Parks

- Comply with relevant Austroads and other State Road Authorities' Guidelines and/or Standards.
- Ensure all pathways, roads, and car parks are designed to be accessible for people with disabilities, following relevant accessibility standards
- Implement clear signage, road and pathway markings to guide users.
- Provide safe, efficient thoroughfare and access to all road users, being motor vehicles, cyclists and pedestrians.
- Car parks and roads should be designed with traffic measures that prioritise pedestrian safety.

9.5.1. Roads

- All new road infrastructure will integrate landscaping elements, such as trees, shrubs, and green buffers, along roads and pathways to improve aesthetics, provide shade, and enhance the environment.
- Landscaping should be appropriately designed to not impede street lighting, overhead cables, driver sight lines, and underground infrastructure.
- All university roads need to include a pedestrian pathway.
- All university roads over 20km speed limits need to include a dedicated bike lane or design solution that provides alternative bike path connectivity. Separate bike pathways are preferred (see Pathways).

9.5.2. Car parks

- Car parks should be located on the periphery of campus.
- Consideration should be given to multideck car parking to reduce the footprint of car parks.
- The external appearance of a multideck parks should enhance the character and aesthetics of the campus.
- Pedestrian pathways should be included in large car park facilities.
- Long pedestrian pathways with limited cover should include solutions to protect from extreme weather conditions.

9.5.2.1. Types of car park bays

- Car parks should include accessibility bays at a ratio of 1 bay per 50 car parks across our campus carparks and will be located based on operational needs and in consultation with Disability Services.

- A range of bays will be provided in line with operational needs, this includes short- and long-term bays, blue bays, motorcycle bays, reserved bays, EV charging bays, loading zones and security parking.

9.5.3. Landscaping in car parks

- Low soft landscaping to be included where possible to reduce heat impact of bitumen and provide separation from bays. The use of bitumen is discouraged for pedestrian pathways within car parks, to provide clear demarcation of pedestrian space and reduce environmental impact.
- As a minimum, car parks should include perimeter planting.
- Car park tiers should include soft landscaping.
- Landscaping should not obscure lighting, CCTV or driver sight lines.
- Water sensitive design (including native plant selection for biofiltration, and consideration for stormwater and sustainable urban drainage systems).
- Integrated soft and hard landscaping design should be compatible and should not be considered in isolation.
- Where existing trees are present in car parks, these should be retained where possible (following condition assessment). Appropriate root zone should be allocated to avoid future impact on parking spaces, and to mitigate damage to vehicles from falling limbs.
- Additional landscaping options should be included to soften the appearance of large hardscaped surfaces.

9.6. Bike storage

- Bike storage facilities should include lockable space with swipe card access for bikes, electric bikes, electric scooters.
- Facility should be well lit and include security camera. Preferably the storage area should be a perforated mesh enclosure to allow for enhanced visibility of the space.
- Bike repair kit should be provided for more enhanced facilities.
- Bike parking facilities with capacity for 30 bicycles or more shall provide dedicated electrical outlets appropriate for charging electric assist bikes and scooters.

9.7. End of trip facilities

- End of trip shower facilities to be provided in new buildings.
- Include male, female, and accessible shower facilities, changing facilities, half height lockers.
- All gender facilities to be combined with accessible facilities with additional signage saying “All Gender”
- Secure bike parking should be provided.
- Additional items to be included: hair dryer, iron and ironing board
- Privacy to be considered when accessing end of trip facilities

10. Proprietary systems

The University has several proprietary systems and services contracts in place which dictate specific systems and preferred equipment to be specified in any design.

10.1. Security

- Sipass for access control
- Mobotix for CCTV
- Abloy Protec

10.2. BMS

- The Niagara platform should be used as the corporate Business Management System.
- Specialised BMS systems may be required for highly specialised facilities.

11. Related Documents

These guidelines are to be read in conjunction with the following University documents (listed in Appendix 1) which will be provided**.**

- Making a Difference: The 2025 Agenda
- Flinders' Sustainability Strategy to 2030
- Country Centred Design Principles
- Key Directions Paper (Bedford Park Campus)
- Wayfinding/Signage guidelines
- Audio-visual installation and cabling standards
- Space policy and standards
- O&M and project closure guidelines
- Laboratory guidelines
- Asbestos Register

Glossary of Acronyms

- AFFL – above fixed floor level
- AV - audio visual
- EWIS – emergency warning information system
- PFD – Flinders University's Property, Facilities and Development Division
- PM – Flinders University's Project Manager

Flinders University

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