Section 3 – Sustainable Design

CONTENTS

3.1 GENERAL

Sustainability is a fundamental principle to the University of Melbourne. The University's Sustainability Plan 2030 states:

Challenges like global warming require knowledge and practical solutions that engage with the social, environmental, and economic dimensions of sustainability. As a public-spirited, globally connected research and teaching institution, the University of Melbourne has an opportunity to contribute to the growth of sustainability knowledge and practice, to lead and engage in public debate, and to lead by example through our campus operations and stewardship of our campus landscapes.

The purpose of this section of the Design Standards is to help project teams understand how building and public realm projects can align with the University's targets in the Sustainability Plan 2030. In summary, the sections are as follows:

3.2 Sustainability requirements by project type – sets out how the requirements stated in this section apply to projects of different type and scale.

3.3 Quality assurance – sets requirements for how the University will verify that projects comply with these standards and are aligned with Sustainability Plan 2030.

3.4 Informed design – sets requirements for the design process to help the design team, contractors and University make informed decisions.

3.5 Reduce construction impacts – sets requirements for the construction phase.

3.6 Operational outcomes – defines specific operational outcomes that projects must deliver.

See **Error! Reference source not found.** for an illustration of how design can impact construction and operational outcomes.

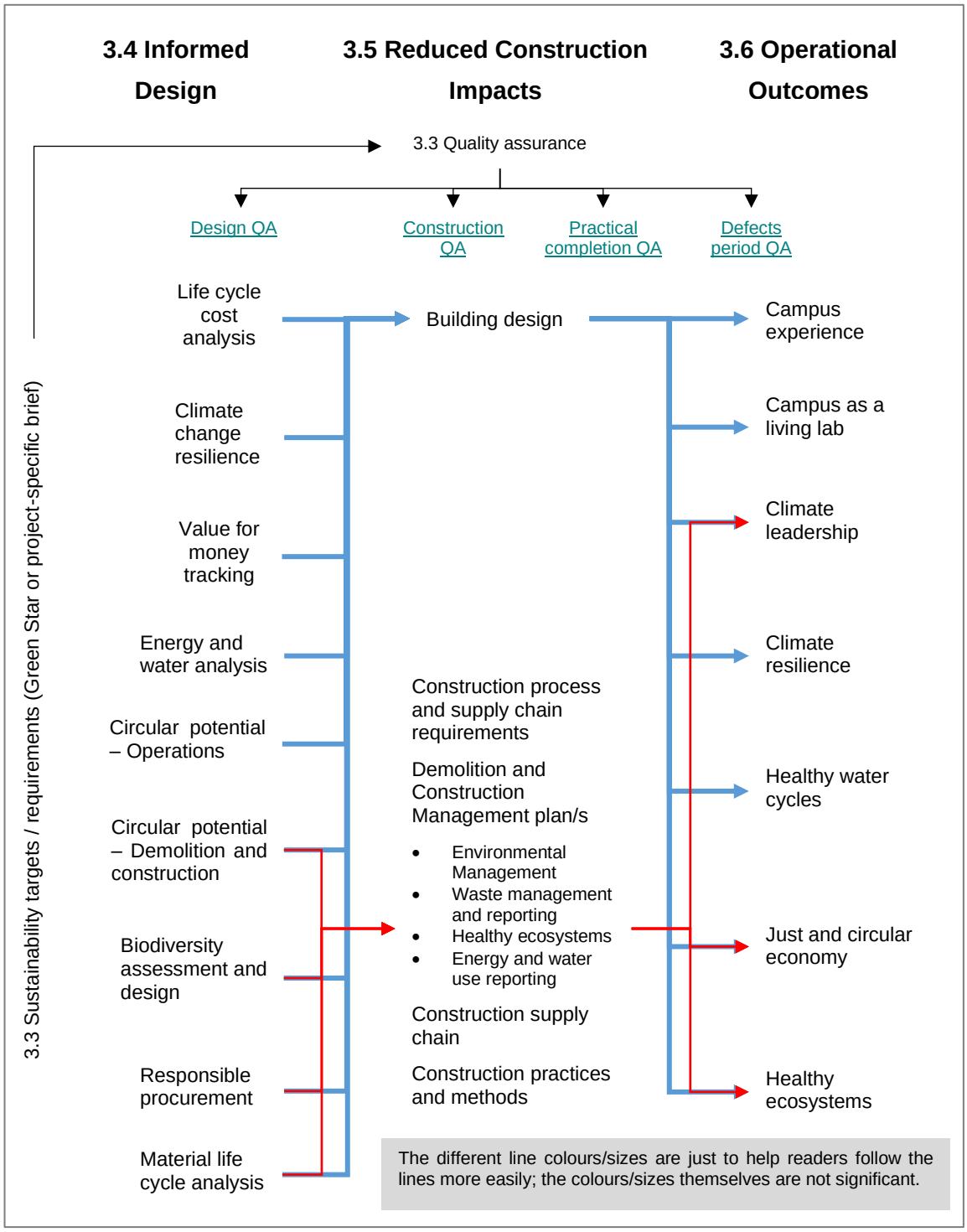


Figure 1 - Relationship between design and construction activities and outcomes

3.2 SUSTAINABILITY REQUIREMENTS BY PROJECT TYPE

Table 1 summarises how the University's sustainability requirements typically apply to projects based on type and scale. The four project types are:

- ***New building / major refurbishment***
  - These projects are typically more prominent on campus and in university communications, have larger budgets, longer programs and involve specialist consultants (e.g. ESD consultants)
  - 'Major' refurbishment is defined as where more than 50% of a building is refurbished over a period of up to 3 years, which is aligned with the trigger in Victorian Building Regulation 608 for the building having to be brought into conformity with current day building regulations.
- ***Minor refurbishment***[1]
  - A minor refurbishment is work on less than 50% of an existing building over a 3 year period.
  - These projects are typically less prominent than new builds / major refurbishments, have lower budgets and shorter programs and may not involve ESD consultants. They typically involve some works to the base building (i.e. building services plant and equipment and/or facades), in contrast to fitouts.
- ***Fitout***
  - These projects are within the tenancy space (or equivalent for non-leased buildings) of a building, involving floor, wall and ceiling finishes, layout of HVAC and lighting in the occupied spaces, partition walls (e.g. for private offices and meeting rooms) and furniture.
- ***Public realm***
  - These projects are outside buildings and involve some combination of landscaping, external / in-ground services and civil works.

Each requirement is explained further in the remainder of this section. There may be instances where a particular project should comply with greater or fewer requirements – in these instances project consultants must consult the University Project Manager.

[1] Note that the Capital Planning process defines "minor works" as those $25,000 - $250,000 in value. These "minor works" would typically be a minor refurbishment or fitout under the project categorisation used here.

Table 1 – Sustainability requirements for different types of projects (see Section 0 for descriptions of each project type)

Requirements (refer to subsequent sections in this section for details)		**New building or "major" refurbishment**	**Minor refurbishment of an existing building**	**Fitout**	**Public realm**
Quality assurance	External certification (e.g. Green Star)	✓		For fitouts >$10m	
	Project specific Sustainability Brief	In exceptional circumstances only	✓	For fitouts <$10m	✓
Informed design	Value for money	✓	For projects that impact HVAC, building fabric and/or flooring	For projects that impact HVAC, building fabric and/or flooring	✓
	Climate change resilience	✓	For projects that have high-value contents or are critical to business continuity (e.g. research freezers, data centres, cultural collections etc)	For projects that have high-value contents or are critical to business continuity (e.g. research freezers, data centres, cultural collections etc)	✓
	Responsible procurement	✓	✓	✓	✓
	Circularity	✓	✓	✓	✓
	Energy analysis	✓		For fitouts >$10m	For projects that have external lighting and other energy uses
	Water analysis	✓		For fitouts >$10m	For projects that have irrigation requirements
	Material Life Cycle Analysis	✓	Projects >$5M	Projects >$5M	Projects >$5M
	Healthy ecosystems	✓	Where the project will modify landscape Minimising light pollution	Minimising light pollution	✓

Requirements (refer to subsequent sections in this section for details)		**New building or "major" refurbishment**	**Minor refurbishment of an existing building**	**Fitout**	**Public realm**
Reduce construction impacts	Construction Environmental Management Plan	✓	✓	✓	✓
	Healthy ecosystems during construction	✓	✓	✓	✓
	Healthy water cycles during construction	✓	✓	✓	✓
	Construction and Demolition Waste Management Plan	✓	✓	✓	✓
	Construction energy and water use	✓	✓	✓	✓
Outcomes	Campus experience	✓	✓	✓	✓
	Campus as a living lab	✓	For projects incorporating something unique or notable	For fitouts >$10m	✓
	Climate Leadership	✓	Where projects impact the University's energy consumption (e.g. lighting, HVAC, building fabric, large electrical equipment, potential for onsite generation)		
	Healthy Water Cycles	✓	✓	For projects that will increase water consumption	For projects that have irrigation requirements and/or contribute to stormwater run-off or management
	Circular Economy	✓	✓	✓	✓
	Healthy Ecosystems	✓	Where the project will modify or impact the landscape	Minimising light pollution	✓

Requirements (refer to subsequent sections in this section for details)		New building or "major" refurbishment	Minor refurbishment of an existing building	Fitout	Public realm
			Minimising light pollution		
	Green Star Buildings	✓			

3.3 QUALITY ASSURANCE

The University's approach to sustainability quality assurance is proportional to the scale and importance of a project:

- New buildings and major refurbishments, and large fitouts, must achieve certified Green Star ratings. In some exceptional circumstances, such as the project not meeting the eligibility criteria for a Green Star rating, a project-specific sustainability brief may be acceptable.
- Minor refurbishments, fitouts and public realm projects must demonstrate that they have complied with a project-specific sustainability brief.

Formal certifications provide the University with increased credibility for sustainability-related reporting to the University community and others (e.g. Debt funding providers).

3.3.1 Green Star Certification

Projects required to achieve a certified Green Star Buildings rating must achieve the following:

- Minimum rating = 5 Star
- Stretch rating = 6 Star

By the end of Schematic Design, the design team must present a pathway confirming that the 5 star minimum rating will be achieved, along with a pathway to a 6 star rating for consideration by the appropriate project governance body.

Section 3.6.7 provides guidance on Green Star Buildings credits and alignment to the University's drivers.

Projects required to achieve a Green Star Interiors v1.3 rating must achieve the following:

- Minimum rating = 6 Star

Note that the Green Star Interiors rating framework dates from 2015, with minor updates in 2017 and 2019. It has not yet been updated as part of the Green Building Council of Australia's Future Focus program and therefore is easier to achieve than 6 Star is under Green Star Buildings.

3.3.2 Project-specific sustainability brief

Projects required to prepare a project-specific sustainability brief must set requirements aligned to Sustainability Plan 2030 and project-specific drivers (e.g. user experience). The sustainability brief can selectively use credits from Green Star Buildings, Green Star Interiors and other rating tools, standards and guides as appropriate to create project-specific targets that support the organisational sustainability plan. The sustainability brief must be informed by the University's relevant subject matter experts and signed-off by the University's Sustainability Managers (Manager, Sustainability and Manger, Estate Performance and Sustainability) as being aligned with Sustainability Plan 2030 and relevant operational practices. The project must provide evidence at practical completion that the brief has been met to the satisfaction of the Sustainability Managers and subject matter experts.

3.4 INFORMED DESIGN

3.4.1 Value-for-money

Life cycle cost analysis

The design team is required to undertake life cycle cost analysis (LCCA) to help the University appropriately balance the upfront and ongoing costs of its built and natural assets (refer to **Error! Not a valid bookmark self-reference.**). The purpose of this analysis is to understand the *relative* life-cycle costs between available options, not to predict the *actual* life-cycle costs.

The University recognises that detailed LCCA may not be appropriate for smaller projects, in these projects, advice should be sought from relevant University staff – including client users, Campus Management and the University's Project Manager – regarding how the design can decrease operating costs.

Life Cycle Cost Analysis must be undertaken in accordance with a relevant and recognised standard, such as:

- AS/NZS 4536:1999 Life cycle costing—An application guide
- BSRIA Guide 67/2016 *Life Cycle Costing*
- RICS 2016 *Life Cycle Costing*

Advice must be sought from the University regarding key inputs, such as discount rates and operating costs for similar buildings / building components within the University's portfolio. The analysis must include sensitivity testing of key input assumptions.

Where the design options under consideration are not significantly different (e.g. the maintenance requirements of both options are the same), this may be omitted from the LCCA analysis.

Table 2 – Life cycle cost analysis

Building components	**Key operating costs to consider**		**Life Cycling Cost Analysis approach to be used**
		Major refurbishment / new building	**Minor refurbishment / fitout**
Façade and HVAC	Façade cleaning costs (including different access methods) Energy costs related to façade and HVAC options Maintenance costs associated with HVAC options	Life Cycle Cost Analysis, informed by: Whole project energy model Estimated façade cleaning requirements and costs Estimated maintenance and end-of-life / recycling requirements and costs	Based on experience, with input from relevant University Staff
Flooring	Cleaning costs (e.g. carpet vs vinyl vs resilient surface treatments)	Life cycle cost Analysis, informed by: Likely cleaning frequency of floor finish options Likely replacement frequency of floor finish options Cleaning and replacement costs End-of-life / recycling costs	Based on experience, with input from relevant University Staff
Onsite generation (particularly PV)	Energy costs related to onsite PV (or other) generation Maintenance costs associated	Life cycle cost Analysis, informed by: Estimated generation potential Estimated energy cost reduction and other potential income (e.g.	Based on experience, with input from relevant University Staff

	with onsite generation	renewable energy certificates) Estimated maintenance costs End-of-life / recycling costs	

Value-for-money tracking

Design teams must track and report on the value-for-money of the sustainability initiatives proposed. Examples of how this can be done are provided in the Value-for-money tracking Guidance Note located in the Associated Documents section of the Design Standards web page.

On projects targeting formal Green Star ratings, this activity should contribute to the project achieving the financial transparency requirements (Credit 1 Industry Development for Buildings and Innovation Challenge for Interiors v1.3).

Regardless of the approach used, estimates of value should be holistic and consider desirable outcomes for the University in terms of strategic goals and operational needs. The following value categories are recommended as a starting point for individual projects because they align with the University's approach to investment benefits:

- *Quality and Experience* – The experience of our staff, students, partners, industry or alumni when interacting with the University and its facilities. Relevant examples include the availability of facilities (e.g. active transport end-of-trip facilities, access to external views or indoor plants), the indoor environment quality (thermal comfort, indoor air quality, lighting, acoustics etc) and outdoor environment quality (e.g. access to nature, microclimates etc).
- *Efficiency and Productivity* – The work/project has impacts on financial sustainability or operations (e.g. energy, waste and water efficiency), or when the work/project can improve decision-making (e.g. metering and monitoring providing actionable information).
- *Governance, Risk and Compliance* - This encompasses work that needs doing because it poses a risk to the University if it isn't completed (e.g. quality assurance activities such as Green Star certification, commissioning and building tuning, designing for flexibility / adaptability, climate and operational resilience) or because the University must comply with regulations, laws or contract requirements (e.g. sustainability requirements of planning permits, National Construction Code, or project funders / partners).
- *Brand and Reputation* – This encompasses any work that may impact how the University is regarded by key stakeholders. This could be measured through rankings (teaching, research, sustainability / impact), student outcomes, or via opinions of key stakeholders in direct discussions, student protests, media and social media etc.

3.4.2 Climate change resilience

Design teams for major refurbishment and new building projects, refurbishments that house business critical activities or high-value contents, and significant public realm projects must:

- Undertake a project specific climate change resilience review in accordance with AS 5334:2013 *Climate Change Adaptation for Settlements and Infrastructure*
- Identify significant climate change risks and develop appropriate mitigation measures
- Identify opportunities for the project to increase the ability of future building occupants and asset managers to cope with the impacts of climate change (referred to in climate change risk management literature as "adaptive capacity").
- Ensure any residual risk is clearly documented and provided to the University project manager in a format compatible with the University's Enterprise Risk Management System.

The resilience review should be undertaken by an appropriately experienced external consultant.

Subject matter experts from the University on health & safety, business continuity, and emergency management and sustainability must be consulted.

Further information is provided in the Climate Resilience Guidance Note located in the Associated Documents section of the Design Standards web page.

3.4.3 Responsible procurement

Design teams must undertake a risk and opportunities assessment in accordance with Sections 7.2 and 7.3 of AS ISO 20400 *Sustainable Procurement* of the main items (key materials, equipment, trades / labour) with regards to social and environmental impact in the supply chain (See also Green Star Buildings Credit 5). The assessment must be supply chain-specific (where the supplier is known) or based on typical supply chain practices for that material / item / trade.

The level of detail required is proportional to the scale of the project.

Examples of risk and opportunity areas are shown below (the assessment should not be limited to these examples).

	Potential risk area	**Potential opportunity area**
Social	Modern slavery Human rights violations Unfair or unsafe labour practices	Social procurement Certified products (e.g. Fair Trade, "Just" etc)
Environmental	Impacts to nature in raw material extraction Chemical pollution during manufacturing or end-of-life Linear use of resources	Certified products and services (e.g. Greentag, GECA, Climate Active, Responsible Wood / FSC etc) Circular use of resources (reuse, recycling etc)

The assessment is to inform design specifications and contract requirements e.g. 2 – 4% of contract spend generates employment opportunities for disadvantaged or under-represented groups (Green Star Buildings Credit 33).

3.4.4 Circularity

Sustainability Plan 2030 signals the University's shift from siloed approaches to procurement and waste towards a more holistic circular approach. The University recognizes that effective resource recovery requires stable markets for products made from recycled materials. In some instances, waste processing facilities will only take the University's operational waste if the University commits to purchasing products made of that recycled material. As such, projects must explore opportunities in demolition and construction, as well as plan for circularity in operation.

Circular potential - Demolition and construction Phase

Design teams for all building projects must:

- Use the Furniture and Equipment Reuse Service (FERS) for the decant of existing buildings (furniture, electrical and IT equipment) and the furnishing of new projects.
- Identify and report on opportunities for the University to support a more circular economy through demolition and construction activity. These opportunities will feed into the head contractor's construction phase activities (See Section 3.5.3) through a *Circular Potential – Demolition and Construction* report. Potential opportunities to be considered include:
    - Avoiding the use of materials e.g. through reusing existing buildings and building components, from the building site in question or other University projects.
    - Supporting markets for reused / recycled materials by purchasing reused and / or recycled materials and products rather than virgin materials and products
    - Diverting those aspects that are demolished from landfill
    - Using reused and / or recycled materials and products
    - Avoiding and reducing future construction waste through, for example (but not limited to):
        - Cold shell tenancies

- Flexibility and adaptability
- Designing for disassembly
- Modular design
- Reusabilty and recyclability of materials

Circular potential – Operations Phase

Design teams for all projects must be informed by a Waste & Circular Economy Operational Plan (WCEOP) (or plans) for circularity developed in collaboration with Campus Management and end users. The scope of the plan/s includes:

- Deliveries and logistics (e.g. vehicle deliveries, loading / unloading and movement of goods within the building and public realm as applicable)
- Facilities that reduce waste generation e.g.
    - Energy efficient hand dryers rather than paper towel dispensers
    - Choose to reuse programs
    - Adequate space for a commercial dishwasher and space for storage of crockery and cutlery
    - Adequate back of house provision
- Identification of likely waste streams
- Waste and recycling management equipment and infrastructure within the building, including space and services (e.g. power, water, drainage, ventilation)
- Collection of waste, recycling (co-mingled and other such as paper/cardboard, e-waste and polystyrene) and organics by the University's waste contractors.

The plan must also provide estimates for the University in terms of future waste volumes/practices depending on building usage, consumption/reduction practices and market changes.

Design teams for fitouts and minor refurbishments of existing buildings must:

- Provide space for all facilities to help avoid operational waste, appropriate waste and recycling bins within the building / fitout in accordance with University Standards. Refer to 3.6.6 Circular Economy for details.
- If the refurbishment involves a change in use (e.g. from office to food & beverage, or to a use that involves hazardous materials), engage a suitably experienced consultant to prepare the plan. If there is no change in use, the plan may be produced in consultation with the relevant staff in the Sustainability team, Campus Management.

Design teams for new buildings and major refurbishments of an existing building must:

- Develop a project specific plan that identifies all the potential material streams into / out of the building, facilities to help avoid operational waste, the proposed volume of waste, the type, size and number of bins required, storage requirements, the need for loading docks or other material handling equipment. The plan must co-ordinate with any applicable precinct or campus plans or strategies regarding waste, reuse recycling and materials handling.
- Engage a suitably experienced consultant to prepare the plan, and have the plan approved by the University Project Manager and Sustainability Manager in Campus Management.
- Provide the facilities and space for bins and material handling equipment recommended by the Waste & Circular Economy Operational Plan (WCEOP). Refer to 0 The operational outcome that the University seeks to achieve is to reduce the flow and improve the circularity of materials passing through the University, with the aspiration of zero waste to landfill by 2030.

This operational outcome must be enabled and supported by the design of the project, as identified via the studies undertaken for Section 3.4.4 Circularity.

All buildings and public realm need appropriate waste storage infrastructure and space:

1. Cleaners' cupboards
2. Bins and signage
3. Waste storage – building and precinct hub

Waste chutes are not permitted.

- for details of University standard bins.

Design teams for public realm projects that will change the waste profile (amount, streams) or which have outdated waste handling infrastructure (e.g. single bin when bin pairs or triples are used elsewhere on campus) must develop an operational waste management plan in in consultation with the relevant staff in the Sustainability team, Campus Management.

3.4.5 Energy analysis

Design teams for applicable projects, as defined by Section 3.2, are to produce a whole-project energy model to inform the design, provide input to life cycle cost analysis, and provide estimates for the University in terms of future energy consumption. Key energy use metrics that will be required by the University include (but are not limited to): change in electricity consumption (kWh p.a.) and change in gas consumption (GJ p.a.).

Where the internal equipment loads are likely to be a significant proportion of whole building load (e.g. large energy-intensive research equipment), seek guidance from the University's Project Manager.

It is noted that some projects may be required to undertake energy models for the following benchmarking purposes:

- Performance-based compliance with the National Construction Code Section J
- Green Star Buildings Credit 22 *Energy Use*

For further information refer to Section 7 - Electrical Services and Section 9 - Mechanical Services for requirements regarding equipment efficiencies.

Furthermore, additional support and input may be required to enable the University to create carbon certificates for projects. This may include provision of energy use metrics (kWh and GJ) as well as scoping equipment that is eligible for certificate rebates.

For public realm projects, design teams must consider and report on the feasibility and appropriateness of energy efficiency and renewable energy opportunities.

3.4.6 Water analysis

Design teams for applicable projects, as defined by Section 3.2, are to produce a whole-project water model to inform the design and provide estimates for the University in terms of future potable and non-potable water consumption.

The water model is to guide the project in achieving the healthy water cycle outcomes stated in Section 3.6.5.

It is expected that projects targeting Green Star ratings will use the appropriate Green Star Water Calculator, with supplementary calculations if needed. Projects not targeting Green Star ratings may still use the Green Star Water Calculator, or their own calculations.

The water model is expected to consider the following end-uses and sources:

- Fixtures and fittings
- Whitegoods
- Heat rejection (e.g. cooling towers, evaporative coolers)
- Wash-down
- Fire system testing
- Irrigation (refer to Section 15 : Grounds and Landscaping clause 15.7.12.F)
- Any other significant consumer of water
- Opportunities for water harvesting and reuse
- Non-potable water usage

For further information refer to Section 6 – Hydraulic Services

Design teams for projects that have a stormwater discharge or have the ability to impact stormwater discharge (e.g. public realm project on near a legal point of discharge) are to undertake modelling using appropriate software (e.g. MUSIC) to inform the design to achieve the outcomes stages in Section 3.6.5.

3.4.7 Material Life Cycle Analysis

Sustainability Plan 2030 commits the University to be Climate Active certified from 2025 onwards. The upfront greenhouse gas emissions associated with construction activities are included within the University's emissions boundary for Climate Active certification.

Design teams for new Buildings and major refurbishments must undertake a material life cycle analysis to EN 15978 *Sustainability of construction works - Assessment of environmental performance of buildings - Calculation method* to understand and reduce by an appropriate amount the upfront carbon emissions associated with the project. See Section 3.6.44 for target values.

The analysis should be used to identify the major sources of upfront emissions and to test options for reduction. The final version of the analysis must represent the as-built version of the project so that it can be used as part of the University's annual greenhouse gas inventory.

For minor refurbishments, fitouts and public realm projects:

- Projects >$5m in value must involve a Life Cycle Analysis (LCA).
    - Where a representative LCA has been undertaken previously, estimate the project's emissions using the appropriate functional unit (most likely kgCO2-e/m^2 GFA). For this option, the project must have the appropriate characteristics for the representative LCA to be applicable and apply the recommendations of that LCA.
    - Where a representative LCA is not available, undertake an LCA. Note that typically the cost to do an LCA is less than the cost of carbon offsets the Uni will likely have to pay for a $5m+ project from 2025 if the project's carbon footprint is estimated using the default spend-based approach.
- FOR Projects <$5m, there is currently no requirement however, projects are encouraged to consider the life cycle of selected materials.

3.4.8 Healthy Ecosystems

The Sustainability Plan 2030 aspires to curate campuses that *"support a diverse range of species through healthy ecosystems on campus and connections to ecosystems off campus"*. To fulfill this aspiration the University has committed to accomplish no net loss of biodiversity by 2025 and to be nature positive by 2030. To achieve this, on-campus biodiversity must be understood, protected, and enhanced.

Biodiversity Assessment

Design teams for all projects that will result in a modification to landscape must undertake a Biodiversity Assessment in consultation with the University's Biodiversity Officer, Campus Management. See the Biodiversity Assessment Guidance Note for detailed requirements.

The University's Biodiversity Assessment method is designed to:

- inform site selection and/or building footprint positioning and site and building design,
- support projects to achieve net gain of the Biodiversity Baselines as per Target 2 of the Healthy Ecosystems Priority of the Sustainability Plan 2030, and
- ensure compliance with all relevant local, state, and federal planning & legislative requirements.

In summary, the Biodiversity Assessment must:

- Identify if the proposed project site(s) may impact any Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) or Flora and Fauna Guarantee Act 1988 (FFG act) listed species or ecological communities and provide comment on the legal processes required to ensure compliance under these acts.

- Identify any areas of "Areas of Ecological or Environmental Significance", as defined by the University, that require protection.
- Calculate baselines for each candidate site for each of the University's seven biodiversity metrics (see Table 3 and Biodiversity Assessment Guidance Note) and identify any other biodiversity values present within the site boundary that may not be covered by these metrics.
- Identify any assets or areas that will:
    - require protection during construction, or
    - need to be removed and require an offset.

Projects that will negatively impact any existing site biodiversity must submit a Biodiversity Offset Proposal to the University's Biodiversity Officer for approval prior to any works starting on site. See Biodiversity Offset Proposal Guidance Note for detailed requirements.

Table 3 – Summary of the University's seven preliminary biodiversity baseline metrics

Metric	**Details**
1. Plantable area (m^2)	Plantable area = 'Plantable Ground Area' + ('Other Plantable Areas' / 2) *'Plantable Ground Area'* is area at ground level in which plants can be planted (this includes the area of garden beds, lawns and ponds). '*Other Plantable Area'* is an area of plantable area that has some form of soil volume constraint such as pots, containerised garden beds and green roofs. These areas will only be considered to have half the 'area' value of an equivalent 'Plantable Ground Area' due to their limited soil depth and volume and hence reduced potential to support biodiversity.
2. Areas of Significance	Significant Trees and Areas of Ecological or Environmental Significance must be protected throughout the project lifetime. Areas of Ecological or Environmental Significance cannot be offset.
3. Number of understory plant species	The number of plant species and individual understorey plants on campus must be conserved. In practice this means all removals should be replaced with the same number of individual understory plants and species (or more).
4. Number of trees 5. Number of tree species	The number of individual trees and tree species on campus must be conserved. In practice this means all removals should be replaced with the same number of trees and tree species. Trees removed should be replaced with trees that will become equivalent in size and age if values of metric 6 (below) are to be conserved. Trees must be inspected for hollows (and inhabitants) prior to removal.
6. Tree canopy cover area (m^2)	Tree canopy cover area (m^2) for each campus, precinct and project must be conserved and remain above baseline values prior to project commencement.
7. Number of fauna and fungi species	Biodiversity records of fauna and fungi made within the project area must be reviewed within Atlas of Living Australia (ALA) prior to project commencement. Records of biodiversity sighted in the last 20 years are considered current biodiversity. Species records from ALA must be compared to federal and state threatened species lists: • Flora and Fauna Guarantee Act Threatened List • Environment Protection and Biodiversity Conservation Act List of Threatened Fauna Where species recorded in the project area are included in the above listings, refer to the relevant legislation for removal of habitat or impacts to protected species.

Designing for Biodiversity

Landscape designs must demonstrate how they will meet all the Biodiversity Design Requirements detailed in the Biodiversity Design Requirements Guidance Note. In summary, to increase biodiversity on and around campus, designs must:

- Take note of learnings from the Biodiversity Assessment (refer to Biodiversity Assessment Guidance Note) to identify opportunities to increase biodiversity.
- Enhance the biodiversity values of areas to be retained in the landscape.
- Prioritise the retention and/or enhancement of ground level vegetation and identify additional greening opportunities on and within buildings.
- Prioritise the selection of a diverse range of plant species, indigenous, native or exotic (depending on the site context). Consult with the University's Grounds Manager and Biodiversity Officer, Campus Management.
- Incorporate plant species of varying structures, textures & heights.
- Provide non-living habitat components, including hollows, water sources, rocks, logs etc.
- Avoid creating conditions that impact or deter biodiversity to inhabit campus, such as unnecessarily increasing lighting levels at night or installation of loud infrastructure. All projects must minimise the impact of light on biodiversity by following the strategies in Table 18 and checklist in Appendix E of the National Light Pollution Guidelines for Wildlife[2].
- Aim to incorporate any offset requirements within the project site.

  Refer to Ch 15 Grounds & Landscaping for more information on design requirements relating to the public realm.

3.5 REDUCE CONSTRUCTION IMPACTS

3.5.1 Overview

Contractors for all projects must prepare and implement a Construction Environmental Management Plan (EMP) in accordance with Section 3.5.2.

Either as part of the EMP or as separate documents and activities, contractors must prepare plans to:

- Understand and protect biodiversity assets (Section 3.5.3)
- Maximise and report on resource recovery associated with demolition and construction waste as part of *Circular Potential – Demolition and Construction* report(Section 3.5.4)
- Manage and report on energy and water use in construction (Section 3.5.6)

3.5.2 Construction Environmental Management Plan

Contractors must prepare and implement a Construction environmental management plan (EMP) to a recognised and applicable standard or guideline to manage environmental performance, conditions and impacts arising from demolition, excavation and construction.

Examples of recognised standards / guidelines include:

- City of Melbourne

  www.melbourne.vic.gov.au/building-and-development/planning-and-building-services/construction-development/legislation-guidelines/Pages/code-of-practice-building-construction.aspx

- EPA Victoria

  https://www.epa.vic.gov.au/about-epa/publications/1834

Head contractors for major refurbishments and all new buildings must prepare and implement an environmental management plan in accordance with Green Star Buildings *Credit 2 Responsible Construction*.

[2] https://www.dcceew.gov.au/sites/default/files/documents/national-light-pollution-guidelines-wildlife.pdf

As part of this plan, all projects must include a construction indoor air quality plan, as recommended by Section 4.3.9.1 of the relevant NCC handbook[3].

3.5.3 Healthy ecosystems during construction

Contractors must protect all existing biodiversity assets identified as being retained in the Biodiversity Assessment, in accordance with relevant Acts or Australian Standards. Strategies to effectively protect flora, fauna and habitat during demolition and construction should be included in the Biodiversity Assessment Report. Some assets such as trees will require specific Protection Plans. Refer to both the Biodiversity Assessment Guidance Note and Section 15: Grounds and Landscaping, clause 15.8.1 Landscape Protection for more details on the necessary protection requirements.

Environmental Management Plans must reference the Biodiversity Assessment Report and any other relevant asset specific Protection Plans.

Contractors must report any sightings of fauna within the construction zone to the University's Biodiversity Officer. A sighting should comprise of photographic/video evidence, time, date and location. Knowledge of species name (common name or scientific) would be ideal. Sightings should be reported within 24 hours of occurring.

Any dead fauna found in or around the construction zone during the construction period must also be reported to the University's Biodiversity Officer. Reports must be submitted within 24 hours of discovery and include: contact details of discoverer, photographic evidence, species name if known (common name or scientific), time, date, and location. Carcasses are not to be removed until the University's Biodiversity Officer has acknowledged receipt of the report and determined if any further investigation is required.

Any species that is found to reside within the construction site that was not identified in the Biodiversity Assessment Report or that poses a risk to workers must be reported to the University's Biodiversity Officer to determine an appropriate course of action.

3.5.4 Healthy Water Cycles during construction

Environmental Management Plans must also outline control measures for any potential erosion, runoff, contamination or disruptions to waterways and ground water during demolition and construction.

3.5.5 Construction and Demolition Waste Management Plan and Reporting

Contractors must prepare a Construction and Demolition Waste Management Plan. This plan must build on the *Circular Potential – Demolition and Construction* report prepared by the design team.

All projects must divert at least 90% of waste from landfill.

All projects must track construction and demolition waste on a monthly basis and report this information to the University quarterly. The report must state the mass of each material stream and its destination (e.g. name of landfill or resource recovery facility).

Projects required to achieve a Green Star rating must comply with the requirements of the relevant credit (e.g. *Credit Achievement* of Green Star Buildings Credit 2 *Responsible Construction*), which includes a requirement of audits or disclosure statements from the waste contractor/s and processing facility/ies.

For projects not required to achieve a Green Star rating, the University may ask for evidence of appropriate collection, delivery and subsequent processing.

3.5.6 Construction energy and water use

Head contractors for all projects required to undertake a Material Life Cycle Analysis must track energy (electricity including percentage sourced from renewables, gas, liquid fuels etc) and water

[3] https://ncc.abcb.gov.au/sites/default/files/resources/2023/Handbook-Indoor-Air-Quality-Verification-Methods-NCC-2022.pdf

use (potable, harvested) associated with the construction process and report this to the University on a quarterly basis. This information is required for the material LCA and the University's annual greenhouse gas inventory.

3.6 OPERATIONAL OUTCOMES

The following sub-sections highlight key operational outcomes for the University in support of *Sustainability Plan 2030* and the University's desired campus experience.

3.6.1 Provision and Management of Sustainability related data

Access to data is essential to ensure all targets in the University's Sustainability Plan 2030 can be achieved. Access to data both in the form of utility usage, and asset registers will allow the university to strategically evaluate infrastructure upgrades and understand where spend is best allocated to achieve specific Sustainability targets. It will also enable timelier reactive and strategic proactive maintenance, more informed strategic planning and streamlined reporting.

The University is currently developing a multitude of dashboards to track the progress of various Sustainability plan targets and indicators including but not limited to:

A. Biodiversity Baseline Dashboards: to track changes in biodiversity e.g. plant and tree additions and removals etc.

B. Waste Dashboards: to track volume and type of waste disposed etc.

C. Water Dashboards: to track water usage, storage, rainfall etc.

D. Energy Dashboards: to track energy usage.

Project teams will be required to supply all the necessary information for their project's data to be pooled into centralised dashboards. Where provision of data is required, it has been highlighted in this section. Templates for data requirements will be provided by the University's Sustainability Team, Campus Management in consultation with the University's Smart Campus team.

3.6.2 Campus experience

Indoor Environment Quality

Projects must give due consideration to providing high quality indoor environments.

The following table summarises important characteristics of high indoor environment quality and where relevant requirements and benchmarks can be found in these design standards.

Table 4 – Indoor Environment Quality requirements

Indoor air quality	• Ventilation and filtration - Refer to Section 2 Occupational Health and Safety, Section 9 Mechanical Services
	• Minimise indoor pollutants
	  ○ Use low/zero VOC and formaldehyde paints, sealants, adhesives, carpets and timber products in accordance with Green Star Buildings Credit 13 *Minimum Expectation*
	  ○ Undertake a risk assessment and appropriately control any other sources of airborne indoor pollutants (E.g. laboratory chemical fumes, dust in workshops etc)
	• Consider use of indoor plants

Other potential toxins	Preference must be given to materials and products certified as being free from harmful chemicals (e.g. PFAS), such as via Global Greentag, GECA, Declare, Cradle-to-cradle etc Fly ash used in concrete must comply with the heavy metal limits set in Column 4 of Table 1 of the NSW EPA Coal ash order 2014[4] as demonstrated by a current test

[4] https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/waste/rro14-coal-ash.pdf?la=en&hash=7222DC20531E7EDEE919CDDE7CFB7FA740430841

	certificate undertaken in accordance with the testing methods in the Coal Ash Order. Green Star Buildings Credits 6 – 9, 13
Thermal comfort	Refer to Section 2 Occupational Health and Safety, Section 9 Mechanical Services
Lighting quality (including daylight)	Refer to Section 2: Occupational Health and Safety and Section 7: Electrical Services Green Star Buildings Credit 11
Acoustic comfort	Refer to Section 2: Occupational Health and Safety, Section 9: Mechanical and Section 12: Acoustics, Vibration and EMI Green Star Buildings Credit 12

End of trip facilities to support active modes of transport

Active modes of transport include, walking, running or cycling to and from campus during the commute, as well as during the day, such as lunch breaks.

Facilities must be provided, unless:

- It can be demonstrated that the precinct or campus already has sufficient active transport facilities, or
- The University is developing the required active transport facilities as part of a separate project elsewhere, or
- A precinct or campus active transport & cycling strategy or enabling plan does not require them.

Cyclist facilities includes bike racks, lockers, showers, changing rooms and amenities to support active transport users (such as drying and ironing facilities). There should also be provision for facilities to have secure parking, storage and charging for e bikes and e-scooters to support greater e-mobility, as well as bike repair equipment.

The quantity of active transport facilities should be based on the greater of University data and industry benchmarks (e.g. Green Star, planning scheme). For example, pre-COVID data for the Parkville main campus indicates that cyclists were in the range of 11 – 18% of people on campus.

The University requirements are listed below and must be compared to requirements set via planning or Green Star as appropriate to the project.

Table 5 – Active transport facilities

Item	**Requirement**
Bike hoops / racks	• Capacity for 15% of the relevant population to ride bikes. The relevant population must be based on who has access to the facilities (e.g. are they public or inside a building) and the likely catchment area (i.e. from how far away people are likely to come to use the facilities). • For new buildings and major refurbishments, the quantity should be informed by a green transport plan. • Provision of wheel in/ on the ground bike hoops are preferred to avoid the need to lift bikes- especially e-bikes. • Refer to Section 15: Grounds and Landscaping, clause 15.7.12.B for public realm bike park requirements.
e-bike/scooter charging	• Provide power to enable e-bike/scooter charging to 20% of bike hoops.
Lockers	• One locker per bike park

	• Sized for hanging personal clothing items and separate ventilated shoe storage • Appropriate locks for the installation location and likely user groups (e.g. public space with wide usage vs in a building used by local staff only)
Amenities	• Drying area / cupboard • Ironing board and iron • Hairdryers
Changing areas	• Located immediately adjacent to lockers and in close proximity to showers • Provide space and seating for users to get changed • Provide adequate space for circulation • Access controlled
Showers	• Minimum 1 per 25 bikes. For new buildings and major refurbishments, the quantity should be informed by a green transport plan.
Bike Repair Stations	• Refer to Section 15: Grounds and Landscaping, clause 15.7.12.B for public realm bike repair station requirements. • Internal Bike Repair Stations should be installed as per the specification in Appendix 1 of Section 15. • Bike Repair Stations must have a sign stand installed as per the specification in Appendix 1 of Section 15. The most recent University branded design for Bike Repair Station signs will be provided by the Sustainability Team, Campus Management.

3.6.3 Campus as a living lab

New buildings and major refurbishment projects, and significant public realm works, must include signage or other forms of engagement (e.g. QR codes to digital content, augmented reality, self-guided or virtual tour etc) to communicate to users the sustainability attributes of the project.

Projects should explore opportunities to contribute to research-based campus living labs, noting that collaboration with an industry or academic champion/s is critical for the ultimate success.

3.6.4 Climate Leadership

Overview

For new buildings and major refurbishments, the approach to energy efficiency and low carbon must be informed by the energy analysis and material life cycle analysis described elsewhere in this section.

Energy-related emissions

The default approach is for buildings to be all-electric. The use of mains gas is not permitted (refer to Section 6: Hydraulic Services).

For projects required to undertake energy analysis, the optimum plant/ equipment efficiencies and build fabric performance for lifecycle cost and Green Star points must be tested and reported on. Any building fabric modification must take a balanced approach to energy, thermal comfort, daylight, views, glare, materiality selection etc and not improve one outcome to the unacceptable detriment of others.

Minimum plant and equipment efficiencies are stated in relevant sections of these design standards.

- Section 6: Hydraulic services
- Section 7: Electrical Services
- Section 9: Mechanical Services
- Section 10: BAS

- Section 11: Vertical Transportation Services

For new building and major refurbishments, minor refurbishments and public realm projects, project teams must report to the University on opportunities for onsite generation, including solar resource potential, and electrical and structural capacity. Consult the University's Project Manager for information regarding University-wide programmes for onsite generation (e.g. Smart Campus Energy Upgrades). Note that the Life Cycle Cost Analysis section requires a feasibility study into PV (refer Section 3.3.1). Refer to Electrical Services Section 7.12 for more information on PV systems.

Upfront construction emissions

From 2025, the University will be required to offset upfront emissions related to materials, equipment and construction activities as part of Climate Active certification.

New buildings and major refurbishments must minimise upfront carbon emissions to the extent appropriate, informed by material life cycle analysis.

The following figures indicate, based on LCA studies of Green Star rated University of Melbourne projects, the quantity of upfront emissions expected to be achieved (and ideally bettered):

- Fitout – 210 $kgCO_2$-e/m^2 GFA
- New building (whole building unless otherwise stated)
    - Laboratory – 830 $kgCO_2$-e/m^2 GFA
    - Teaching – 740 $kgCO_2$-e/m^2 GFA
    - Office (base building) – 420 $kgCO_2$-e/m^2 GFA
    - High rise student accommodation – 560 $kgCO_2$-e/m^2 GFA

Minor projects should minimise upfront carbon emissions by following recommendations from any LCAs that have been undertaken that are representative of that project type.

Refrigerants

Refer to Section 9: Mechanical Services

Transport related emissions

See 3.6.1 Campus experience for requirements related to active transport.

See Section 7: Electrical Services, clause 7.13 Electrical Vehicle Charging Stations for technical requirements.

Infrastructure, including space, engineering and equipment, to charge cars, and service contactors provisions, such as electric carts, buggies and vehicles, must be provided, unless:

- It can be demonstrated that the precinct or campus already has sufficient EV charging facilities, or
- The University is developing the required EV facilities as part of a separate project elsewhere, or
- A precinct or campus transport strategy or enabling plan does not require them.

Where staff, student and/or public car parking is provided in a project, at least 15%, or higher of those parks must have EV charging points at day 1, as well as electrical infrastructure and a load management plan to allow for future installation of EV charging to 25% of all car parking spaces. Note that the car parking with EV must be compliant with relevant and the most up to date fire protection requirements.

Refer to Section 15: Grounds and Landscaping for more information on outdoor EV Charging Stations.

3.6.5 Healthy Water Cycles

Water consumption

It is required that:

- All fixtures and fittings are appropriately water efficient (e.g. generally within 1 star of the best available WELS rating)

- Landscape/irrigation design is water sensitive. Refer to Section 15: Grounds and Landscaping
- Smart Pulse Meters must be installed to enable major water end-uses to be independently monitored.
- Building Metering should enable Building and Floor level consumption data.
- The use of captured rainwater is required for cooling towers, irrigation, and toilet flushing. Justification for not doing so must be stated. Refer to Section 6 Hydraulic Services.
- All non-potable water uses must be metered.
- Where potable and non-potable irrigation is possible each source must be metered.
- All irrigation units in public realm must have a smart meter and be connected to the Hydrawise system (refer to Section 15: Grounds and Landscaping)
- Infrastructure to meter and monitor harvested water usage must be provided (Refer Section 6: Hydraulic Services).
- New buildings and major refurbishment projects at Parkville should include water storage tanks and connect to the section of recycled water purple pipe (where available), adjacent to the project site.
- Water storage options in the public realm should either incorporate a open water body habitat provision or prioritise below ground storage as to maximise useable space. Storage options in the public realm could also include underground wells in Water Sensitive Urban Design (WSUD) pits.
- Water storage volumes and specifications must be provided to the University's Sustainability Team in Campus Management upon project completion to be added to the water storage register (.xlsx template for what information is required will be provided).
- Water meter specifications must be provided to the University's Sustainability Team in Campus Management upon project completion to be added to the water meter asset register (.xlsx template for what information is required will be provided). This register is essential to allow the University's Smart Campus team to pool data from new meters into the University's Healthy Water Cycles Dashboard.
- Drainage designs in the public realm should maximise access to rainwater particularly areas adjacent to or surrounded by impermeable surfaces to reduce irrigation demand.
- Provision of grey water for irrigation of immediately adjacent areas of landscape should be explored.

Stormwater discharge

New buildings and major refurbishments and large public realm projects must target stormwater quantity and quality performance as shown below, aligned to Green Star Buildings Credit 39 Waterway Protection – "credit achievement". Public realm projects must be designed to WSUD principles.

Table 6

Discharge characteristic	% reduction from pre-development to post-development
Annual discharge volume	40%
Total suspended solids	85%
Gross pollutants	90%
Total nitrogen	45%
Total phosphorus	65%
Hydrocarbons from uncovered car parking	98% of hydrocarbons

Chemical loading and storage areas Vehicle refuelling and work areas Cooking oil storage	Protected from rainfall. Spills draining to trade waste or appropriate treatment devices.

3.6.6 Circular Economy

The operational outcome that the University seeks to achieve is to reduce the flow and improve the circularity of materials passing through the University, with the aspiration of zero waste to landfill by 2030.

This operational outcome must be enabled and supported by the design of the project, as identified via the studies undertaken for Section 3.4.4 Circularity.

All buildings and public realm need appropriate waste storage infrastructure and space:

4. Cleaners' cupboards
5. Bins and signage
6. Waste storage – building and precinct hub

Waste chutes are not permitted.

Cleaners' cupboards

Projects must provide appropriate space (including storage for consumables and/or reuse items) and servicing (water, drainage, power) for cleaning cupboards. Consult Campus Management for current details of cleaners' requirements.

Bins

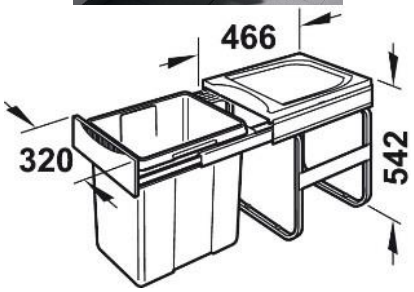
Projects must provide adequate space for waste collection, separation and processing for all relevant waste streams. This includes back of house operations and front of house collection. The project team must purchase all appropriate bins and accessories, including joiners and signage The project team is to confirm current requirements with Campus Management prior to purchase.

There cannot be single bins at any location, both internally and externally. Bins must always come in tri, quad or more depending on the project needs, to ensure users have an appropriate choice for disposal and can separate waste as needed.

The University supports a front of house 3 bin system, as a minimum: waste, co-mingled recycling and organics collection. There may be other waste streams that need to be accounted for depending on the specific project and space needs, such as paper/cardboard, e-waste and polystyrene (this list is not exhaustive). Contact the Sustainability Team, Campus Management for the current list of waste streams that the University manages.

Further guidance on bins and signage for other space types can be gained from the Sustainability Team, Campus Management.

Table7 – Minimum bin and signage requirements for projects

Space	Bin type and Quantity	Signage
Open office areas	Method brand bins plus joiner Left to right (facing the bins): Landfill (L), recycling, organics (R) If other bins are added (i.e. paper/cardboard) they must be added to the right. 1 bin set per approx 30 desks. These must be placed in open communal spaces. 	Tri signage is 925mm W x 460mm H. The design must be University approved branding from the Sustainability Team, Campus Management.
Kitchen / kitchenettes (default)	Type as above. Quantity of bins is to be determined per sqm of design, with confirmation by Campus Management.	As above
Kitchen / kitchenettes (where there is insufficient space for default)	  Halo Jumbo 42 hinged panel waste bin. Space for 3 (or more) separate waste streams are to be accommodated and no waste stream can be provided in the same compartment/cup board. Quantity of bins is to be determined per sqm of design, with confirmation by Campus Management.	Stickers for inbuilt bins must be A4 or A3 depending on enclosure size. The design must be University approved branding from the Sustainability Team, Campus Management.
Non kitchen in-built bins	Non kitchen inbuilt bins are not approved.	NA

Space	Bin type and Quantity	Signage
Bathrooms (default)	No bins (Electric hand dryers to be installed)	NA
Bathrooms (ONLY If paper towel dispensers are given an exemption and approved by the Sustainability Team, Campus Management	Method brand grey top paper towel bins. No bins in bathrooms allowed, if a paper towel bin is provided, there is one per bathroom.	University approved signage must be added. The design must be University approved branding from the Sustainability Team, Campus Management.
External	is suggested.	Signage must be A2 or A1. The design must be University approved branding from the Sustainability Team, Campus Management.

Waste Storage – building and precinct hub

The project team must provide the following as identified in the Waste & Circular Economy Operational Plan (WCEOP) (refer Section 3.4.4):

- Adequate space for waste infrastructure and vehicle access (including swept paths)
- Services, including ventilation, water supply, drainage, power & WIFI
- Hardstand and visual barriers

The University typically uses 120, 240, 660 and 1100 litre Wheelie bins or waste skips (4.5, 6, 8 m) for waste disposal.

Space must be provided for a weigh scale to weigh all waste streams.

Indicative requirements for vehicle types are detailed below but the design team must confirm the appropriate design vehicle size with Campus Management.

Table 8 – Waste industry standard vehicle sizes

WASTE VEHICLES	HEIGHT	WIDTH	LENGTH
Small Rigid Vehicle (SRV)	3.5m	2.3m	6.4m
Medium Rigid Vehicle (MRV)	4.5m	2.5m	8.8m

Heavy Rigid Vehicle (HRV)	4.5m	2.5m	12.5m
Compactor hook lift vehicle	5m	2.7m	11m

Provide clearance around the vehicle as follows: minimum:

- 2.0m clearance at the rear of the waste vehicle to allow for emptying of bins
- 1.0m clearance at the sides of the waste vehicle to allow occupants of the vehicle to safely exit and enter the vehicle
- Sufficient clearance above the vehicle (including no signs, lights, sprinklers, ducts, beams etc)
- Clearance for manoeuvring into and out of position for collection

Refer to Section 15: Grounds and Landscaping for additional design requirements for external waste compounds.

3.6.7 Healthy Ecosystems

To ensure new or enhanced landscapes can be properly maintained, maintenance requirements for any infrastructure or flora installed must be documented in writing and given to the University's Biodiversity Officer and Grounds Manager.

Designs must demonstrate how they have catered for both current and future maintenance requirements. For example, ensuring landscapes have access to automated smart irrigation to ensure persistence of plants & turf during more frequent and intense periods of extreme heat and drought.

All trees and plants in the landscape must be recorded in the University's Tree Management System and Plant Inventory. Projects must either populate this information directly into the University's Plant Inventory system or request a spreadsheet template to document the locations and numbers of flora species installed. Access to the system or template can be organised by the University's Biodiversity Officer.

Refer to Section 15: Grounds and Landscaping for more information relating to the desired operational outcomes relating to Healthy Ecosystems.

3.6.8 Green Star Buildings

Projects required to achieve Green Star ratings must do so in a way that is aligned with University policies, strategies, plans and values. As noted in Section **Error! Reference source not found.**, projects are required to identify how sustainability initiatives on a project can provide value to the University and track this over the course of a project.

Table 1 recommends Green Star credits for projects based on what is expected to provide best value for the University. The credits nominated are not necessarily mandatory (noting that some credits are set as requirements elsewhere in this and other sections of the Design Standards), but any deviation from those listed must be justified and approved by the University's Project Manager.

Table 6 – Recommended Green Star Buildings credits (blue cells)

	Credit	Minimum Expectation	Credit Achievement	Exceptional Performance	Typical / potential benefits: Quality and experience	Efficiency and productivity	Governance, risk and compliance	Brand and reputation	Design Standards cross reference	Policy / strategy alignment
	Responsible									
1	Industry Development	-	1	-			✓	✓	Sustainability Section 3.4.1	SP2030
2	Responsible Construction	●	1	-	✓		✓		Sustainability Section 3.5	SP2030 – Healthy Ecosystems, Just and Circular Economy
3	Verification and Handover	●	1	-		✓	✓		Hydraulics, Electrical, Fire protection and detection, Mechanical, BAS controls, Vertical transport, acoustics, Security	
4	Responsible Resource Management	●	-	-	✓	✓			Sustainability Section 3.4.4 & 3.6.6	SP2030 - Just and Circular Economy
5	Responsible Procurement	-	1	-			✓	✓	Sustainability Section 3.4.3	Modern Slavery obligations; SP2030 - Just and Circular Economy
6	Responsible Structure	-	3	2	✓		✓	✓	Sustainability Section 3.4.3, 3.4.4, 3.6.1, 3.6.4	SP2030 – Climate leadership, Just and Circular Economy
7	Responsible Envelope	-	2	2	✓		✓	✓	Sustainability Section 3.4.3, 3.4.4, 3.6.1, 3.6.4	SP2030 – Climate leadership, Just and Circular Economy
8	Responsible Systems	-	1	1	✓		✓	✓	Sustainability Section 3.4.3, 3.4.4, 3.6.1, 3.6.4	SP2030 – Climate leadership, Just and Circular Economy
9	Responsible Finishes	-	1	1	✓		✓	✓	Sustainability Section 3.4.3, 3.4.4, 3.6.1, 3.6.4	SP2030 – Climate leadership, Just and Circular Economy
	Healthy									

	Credit	Minimum Expectation	Credit Achievement	Exceptional Performance	Typical / potential benefits: Quality and experience	Efficiency and productivity	Governance, risk and compliance	Brand and reputation	Design Standards cross reference	Policy / strategy alignment
10	Clean Air	●	2	-	✓	✓			Mechanical; Sustainability Section 3.6.1	Health and safety, campus experience
11	Light Quality	●	2	2	✓				Electrical; Sustainability Section 3.6.1	Campus experience
12	Acoustic Comfort	●	2	-	✓	✓			Acoustics; Sustainability Section 3.6.1	Campus experience
13	Exposure to Toxins	●	2	-	✓	✓			Sustainability Section 3.6.1	Campus experience
14	Amenity and Comfort	-	2	-	✓					Campus experience
15	Connection to Nature	-	1	1	✓					Campus experience
	Resilient									
16	Climate Change Resilience	●	1	-	✓		✓		Sustainability Section 3.4.2	University Risk Register; Risk Management Policy (MPF1194)
17	Operations Resilience	-	2	-			✓			Risk Management Policy (MPF1194)
18	Community Resilience	-	1	-				✓		Risk Management Policy (MPF1194)
19	Heat Resilience	-	1	-	✓					
20	Grid Resilience	-	3	-						
	Positive									
21	Upfront Carbon Emissions	●	3	3		✓		✓		SP2030 – Climate Leadership
22	Energy Use	●	3	3		✓		✓		SP2030 – Climate Leadership
23	Energy Source	●	3	3		✓		✓		SP2030 – Climate Leadership
24	Other Carbon Emissions	-	2	2				✓		SP2030 – Climate Leadership
25	Water Use	●	3	3		✓		✓		SP2030 – Healthy Water Cycles
26	Life Cycle Impacts	-	2	-		✓		✓		SP2030 – Climate Leadership

	Credit	Minimum Expectation	Credit Achievement	Exceptional Performance	Typical / potential benefits: Quality and experience	Efficiency and productivity	Governance, risk and compliance	Brand and reputation	Design Standards cross reference	Policy / strategy alignment
	Places									
27	Movement and Place	●	3	-	✓				Sustainability Section 3.6.1	Campus experience
28	Enjoyable Places	-	2	-	✓			✓		Campus experience
29	Contribution to Place	-	2	-	✓			✓		Campus experience
30	Culture, Heritage and Identity	-	1	-	✓			✓		Campus experience
	People									
31	Inclusive Construction Practices	●	1	-			✓			
32	Indigenous Inclusion	-	2	-	✓			✓		Indigenous Strategy
33	Procurement and Workforce Inclusion	-	2	1				✓		Sustainability Plan 2030 – Just and Circular Economy
34	Design for Inclusion	-	2	1	✓					Diversity and Inclusion Strategy 2030
	Nature									
35	Impacts to Nature	●	2	-	✓			✓	Sustainability Section 3.4.8 & 3.6.7	SP2030 Healthy Ecosystems, Nature Positive Universities Pledge
36	Biodiversity Enhancement	-	2	2	✓			✓	Sustainability Section 3.4.8 & 3.6.7	SP2030 Healthy Ecosystems, Nature Positive Universities Pledge
37	Nature Connectivity	-	2	-	✓			✓	Sustainability Section 3.4.8 & 3.6.7	SP2030 Healthy Ecosystems, Nature Positive Universities Pledge
38	Nature Stewardship	-	2	-	✓			✓	Sustainability Section 3.4.8 & 3.6.7	SP2030 Healthy Ecosystems, Nature

	Credit	Minimum Expectation	Credit Achievement	Exceptional Performance	Typical / potential benefits: Quality and experience	Typical / potential benefits: Efficiency and productivity	Typical / potential benefits: Governance, risk and compliance	Typical / potential benefits: Brand and reputation	Design Standards cross reference	Policy / strategy alignment
										Positive Universities Pledge
39	Waterway Protection	-	2	2			✓	✓	Sustainability Section 3.4.8 & 3.6.7	SP2030 Healthy Ecosystems, Nature Positive Universities Pledge
	Leadership									
40	Market Transformation	-		-						
41	Leadership Challenges	-		-						