Master Plan Overview

LEGEND

Catalyst sites
Hubs
Promenades

ANU Acton Campus Design Guide
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Introduction
ANU Acton Campus Master Plan

The ANU Acton Campus Master Plan (the Master Plan) is the principal planning and design resource that will guide investment and change across the 143-hectare ANU Acton Campus in Canberra.

The Master Plan establishes a vision for the campus that will make the most of its extraordinary natural, cultural and built assets. It aims to create a campus that will support the values and ambitions of this unique Australian university and translate them into the lived experience of the campus.

The Master Plan outlines the high-level principles that will underpin future development of the Acton Campus. It also details sub-principles and specific design elements to translate those principles into reality.

It provides a flexible framework to guide change over time, enabling projects to be delivered by many hands over many years, responding appropriately to demand, funding availability and resources.

ANU Acton Campus Design Guide

This ANU Acton Campus Design Guide (the Design Guide) has been developed to support the delivery of the Master Plan.

The Design Guide provides more detailed information for those delivering projects on campus, to support the implementation of the principles and design elements defined in the Master Plan.

The Design Guide has been developed to ensure:

- key elements of the Master Plan are realised in the design of individual projects
- consistent design outcomes are achieved across projects delivered at different times by different teams
- the essential design considerations required to deliver the Master Plan are clear.

The Design Guide is for all those involved in the design and delivery of projects, including:

- planners
- proponents
- designers
- managers
- stakeholders.

The Design Guide will also be used by ANU delegates to assess projects as part of the University’s governance processes. Accordingly, all project proponents will need to refer to this guide in presenting projects to ANU governance bodies. In particular, proponents will be asked to demonstrate how projects are consistent with the seven principles of the Master Plan, and how the design advice contained in this guide has been interpreted and integrated.

Achieving design excellence

ANU seeks the achievement of ‘excellence in all things’. In keeping with this goal, design work for the Acton Campus should not only demonstrably comply with this Design Guide, but should also aim to be a physical expression of the following ANU values:

- Originality
- Inclusivity
- Respectful of diversity
- Collegiality
- Informed risk taking
- Courage in advancing ideas
- Commitment to better environmental outcomes.
Structure of the Design Guide

This Design Guide is organised around the seven principles contained in the ANU Acton Campus Master Plan.

These are:
- **Principle 1**: Clearly defined hubs
- **Principle 2**: Landscaped promenade links
- **Principle 3**: Vehicle-restricted heart
- **Principle 4**: Strong city connections
- **Principle 5**: Harmonious ANU-distinctive design
- **Principle 6**: Vibrant living and working environments
- **Principle 7**: Environmental sustainability

It is structured in three sections:

1. **Introduction**
   Provides a general overview of the role and purpose of the document.

2. **Design guidance**
   Is the principal section of the document providing more detailed information to support the implementation of the principles and design elements defined in the Master Plan.

   For each principle, desired outcomes and design guidance have been organised according to four categories:

<table>
<thead>
<tr>
<th>Category</th>
<th>What you will find here</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Use</td>
<td>Guidance relating to the placement and arrangement of uses and activities on campus.</td>
</tr>
<tr>
<td>2. Movement</td>
<td>Guidance relating to the accommodation of infrastructure and facilities to support bicycles, vehicles, pedestrians and public transport.</td>
</tr>
<tr>
<td>3. Landscape</td>
<td>Guidance relating to the treatment and enhancement of the campus landscape and public realm.</td>
</tr>
<tr>
<td>4. Built form</td>
<td>Guidance relating to the design of buildings.</td>
</tr>
</tbody>
</table>

3. **Checklist**
   Provides an accessible summary of the Desired Outcomes for each principle.

   This summary is organised under the 4 category headings outlined previously (use, movement, landscape and built form) and presented as a ‘checklist’ to help decision-makers and designers quickly navigate the Design Guide requirements.

   Please note:
   - *This Design Guide should be read in conjunction with the ANU Acton Campus Master Plan for a full understanding of design objectives for the campus.*
   - *All design work must also meet the requirements of current relevant Australian standards and codes for building and operational works.*

Other relevant strategic documents

A number of other strategic documents have informed the development of the Master Plan, and may be especially relevant to particular projects in the future. Project teams should take the time to familiarise themselves with these documents and consult them in detail where necessary.

- ANU Strategic Plan 2019–2022
- Acton Campus Heritage Framework (2019)
- Acton Campus Energy Management Strategy (2019)
- The Australian National University: Comparative Campus Review (2018)
- the National Capital Authority’s Australian National University Precinct Code (2016)
- ANU Exchange Master Plan and Implementation Plan (2006)
- the National Capital Authority’s Acton Peninsula Precinct Draft Structure Plan (2017)
Design Guidance
Principle 1:
Clearly defined hubs
Five new hubs will become vibrant meeting points for students, staff and visitors.

They will contain the shared facilities of the University, as well as other activities and land uses, to ensure hubs become a focus for academic endeavour and life on campus. They will boast lively public spaces alongside buildings that showcase ANU collections and contain state-of-the-art learning and research facilities. Located at the intersections of promenades, the hubs will be both destinations in their own right and landmarks that aid wayfinding across the campus.

**The Master Plan**
- provides instructions for the location of each hub
- provides plans to guide the distribution of development intensity
- determines the key physical elements required to achieve the intent of each hub.

**The Design Guide**
- provides additional directions regarding the configuration of activities within each hub
- provides details to shape the creation of the public realm, movement network and built form to ensure all projects help to make the hubs vibrant meeting points.

### Desired outcomes

#### 1.1 Use
- A. Hubs will be lively centres containing all campus ‘shared’ or common activities and uses.
- B. Ground and first-floor uses will be configured to create an interactive environment in hubs.

#### 1.2 Movement
- A. Hubs will be well connected to transport, easy to get to and around.

#### 1.3 Landscape
- A. Public spaces within hubs will be versatile and designed to support community activities throughout the year.

#### 1.4 Built form
- A. More intense and larger-scale development will be concentrated in hubs.
- B. Built form will contribute to the creation of an interactive environment.
1.1 Use

Hubs will be lively centres containing all campus ‘shared’ or common activities and uses.

Locate the following uses in hubs, within a 3–5 minute walk of the hub centre:

- cafés and other retail
- collaborative research facilities
- libraries
- shared teaching, and learning areas
- accommodation
- facilities which have a ‘public face’, for example galleries, ANU collections
- mobility nodes (end-of-trip facilities, charging stations, campus shuttle stops).
Figure 1. The 'core and catchment' areas of the five hubs on campus: Kambri, Fellows, Peninsula, Sullivans and Barry

LEGEND
- High use, interactive social functions at ground and first floor
- Activities which look out onto promenades to provide natural surveillance
- Quiet, contemplative activities at ground floor
- Catalyst sites
1.1 Use

Ground and first-floor uses will be configured to create an interactive environment in hubs.

Locate the following uses on the ground floors of buildings in hubs:

> visible shared collaboration spaces
> industry/community collaboration spaces
> ground floor interactive areas
> ANU administrative and student facilities
> primary entries
> cafes
> convenience retail
> cultural facilities
> residential entries
> major mixed-use building entrances
> visible shared teaching and learning spaces
> ANU collections on display
> ANU research on display
> public/industry event spaces
> shared learning spaces.

Do not place internally focused laboratory, research, teaching and learning spaces fronting onto hub public spaces.

Further detail on the preferred uses in specific hubs is provided on the opposite page.

Locate the following uses on the first floors of buildings in hubs:

> shared teaching and learning spaces
> shared research areas
> general workspaces
> residential communal spaces
> industry/community collaboration spaces.

Configure the above uses so that they frame and provide activation of public spaces within the centre of hubs, as shown in Figure 1.
Optimal 'core' activities use-mix

**Kambri Hub**
- College of Arts and Social Sciences, including School of Art and Design, School of Music, College of Business and Economics
- Collaborative research facilities
- ANU Collections/display/cultural outreach
- Shared learning spaces
- Industry outreach spaces
- Collaboration spaces
- Undergraduate residential
- Undergraduate library
- Informal learning and information exchange in public spaces

**Peninsula Hub**
- Nationally oriented research institute, collaborative partnership
- Galleries of ANU collections – curated in pavilions
- Residential mixed-use
- Crawford School and events centre
- Recreation access to the Lake
- Hospitality

**Sullivans Hub**
- Collaborative research: John Curtin School of Medical Research, Research School of Physics and Engineering and CSIRO
- Consolidation of health teaching/learning
- Sport, recreation and hospitality
- Science/health collections on display
- Creekfront recreation

**Barry Hub**
- Research collaboration facilities, particularly between ANU Colleges and CSIRO
- Student and staff social and services space
- Residential mixed-use
- Shared teaching and learning facilities
- Science, technology, engineering and maths (STEM) with emphasis on ‘front door’ facilities, collaborative research and shared uses on ground floor

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Optimal campus ‘catchment’ activities use-mix

- New discipline-specific work places on upper floors
- Café overlooking Fellows Oval
- Undergraduate, postgraduate and visiting alumni housing
- Recreation activity
1.2 Movement

Hubs will be well connected to transport, easy to get to and around.

Ensure the centres of hubs are well serviced by transport options, in particular that:

- parking stations, public transport and campus shuttle stops are within easy walking distance
- campus shuttle stops are within a 3–5 minute walk
- drop-off/pick-up zones (all vehicle types, public transport, campus shuttle) are close to and within sightlines of main hub entries.

Locate mobility nodes to:

- enable convenient movement and interchange between transport modes
- be within a 3–5 minute walk of campus hub centres.

Refer Principle 3 Vehicle-restricted heart (3.1 A) for a full definition of mobility nodes.

1.3 Landscape

Public spaces within hubs will be versatile and designed to support community activities throughout the year.

Design external hub spaces to:

- be vibrant, comfortable and safe for people throughout the year
- encourage lingering, with comfortable and well-designed seating
- provide informal spaces close to the key entrances of buildings
- provide flexible spaces capable of accommodating informal and formal study
- incorporate the hub-specific landscape palette (refer page 50-53).
1.4 Built form

**A**

More intense and larger-scale development will be concentrated in hubs.

Design built form in hubs to:

- comply with the height provisions of the National Capital Authority’s *Australian National University Precinct Code*
- be less spread out than in other areas of the campus
- concentrate more intensive activities around the centres.

**B**

Built form will contribute to the creation of an interactive environment.

Design buildings to have ‘interactive edges’ to hub public spaces. Refer Figure 2.

Use the detailed design of facades, loggias, awnings, entries, doorways and general building thresholds to maximise interactivity and visual connection between internal and external activities.

Design buildings around hub public spaces to incorporate ‘interactive loggias’, as demonstrated in Figure 3.

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*Figure 2. Interactive edge facing hub public space*  
*Figure 3. Interactive edge with loggia to hub public space*
Principle 2:
Landscaped promenade links
A clear and connected network of nine tree-lined, landscaped promenades will make it easy, safe and enjoyable for pedestrians and cyclists to find their way and move around on campus.

The promenades will provide clear, attractive routes across the bush landscape for students, staff and visitors. They will be full of life and offer opportunities for interaction, connecting college precincts, campus hubs and the city.

**The Master Plan**

- provides the strategic, spatial instruction for the alignment, role and character of each promenade.

**The Design Guide**

- provides additional direction for the configuration of uses along each promenade
- provides details to shape the creation of the public realm and street profiles to support cyclists and pedestrians
- provides details of the built form to ensure developments contribute to the creation of an active, safe network of promenades.

**Desired outcomes**

2.1 Use

A. The promenades will be lively and safe spaces for pedestrians and cyclists.

2.2 Movement

A. The promenades will provide pedestrians with a generous and accessible environment to encourage walking and cycling.

2.3 Landscape

A. The promenades will be well-defined to ensure the campus is easy and comfortable to navigate.

B. The promenades will be comfortable, enjoyable and interesting campus spaces.

C. The footpath along Sullivans Creek will be enhanced to function as both a campus and Canberra-wide walking and cycling route.

D. Well-curated public artworks will animate the promenades, providing opportunities for interpretation and education.

2.4 Built form

A. Built form will align with and provide active edges to adjacent promenades.
2.1 Use

The promenades will be lively and safe spaces for pedestrians and cyclists.

Locate high-use social and interactive functions within the ground and first floors of buildings along campus promenades.

Ensure all principal building entries front promenades and that entries are legible and clearly defined.

Include the following uses in buildings adjacent to promenades to activate the promenades and provide 'eyes to the street' to enhance safety.

Ground floors fronting promenades:
- cafés
- shops
- general learning areas
- spaces for industry engagement
- exhibited ANU collections
- seating and informal gathering areas
- building entries
- collaboration spaces
- other activities that are public or semi-public uses.

First floors fronting promenades:
- meeting rooms
- collaboration spaces
- living spaces
- shared workspaces
- balconies.

Refer Figure 1.

2.2 Movement

The promenades will provide pedestrians with a generous and accessible environment to encourage walking and cycling.

Design promenades to prioritise the needs of pedestrians, and to facilitate cycling:
- ensure promenades conform with prescribed cross-sections dimensions described in figures 4-11
- provide safe pedestrian and cyclist road crossings at points of intersection with the promenades.
2.3 Landscape

**A**

The promenades will be well-defined to ensure the campus is easy and comfortable to navigate.

- Retain, protect and incorporate existing trees.
- Include new trees to establish a continuous avenue to define the full length of each promenade.
- Include social spaces, particularly near building entries and where buildings present the opportunity to activate the edges of promenades.
- Delineate adjacent outdoor spill-out learning areas and informal social and multi-use spaces.
- Differentiate promenades from ‘bush campus’ landscapes by using formal avenues of seasonal trees.
- Use species suited to local conditions.
- Use mature tree stock (where possible) to ensure trees establish an immediate and visible structure.
- Adopt the prescribed promenade hard and soft landscape palette outlined in the Campus wide palette on page 47-48.

**B**

The promenades will be comfortable, safe enjoyable and interesting campus spaces.

- Incorporate seating areas and places for informal interaction along promenades.
- Design lighting levels to match public safety lighting standards (AS/NZ 1158.4 Lighting for Roads and Public Spaces).
- Incorporate accent lighting for trees and artwork to emphasise their role as features in the landscape.
- Incorporate carefully curated public artworks along promenades, which:
  - are well integrated into promenade design
  - express and interpret ANU values and history.
2.3 Landscape

The footpath along Sullivans Creek will be enhanced to function as both a campus and Canberra-wide walking and cycling route.

Design the Sullivans Creek Promenade to conform with section widths shown in Figure 11.

Ensure this section width links into promenades and bicycle links to Lake Burley Griffin, The National Botanic Gardens, CSIRO and Civic.

Ensure the pathway is carefully lit to protect the natural character and biodiversity values of the corridor at the same time as enhancing pedestrian and cyclist safety.

Well curated public artworks will animate the promenades, providing opportunities for interpretation and education.

Make public artworks an integral part of landscape commissions.

Use public artworks to animate the landscape and provide interpretation.

Incorporate public artworks as wayfinding devices.

Integrate public artworks with smart technology to enhance the campus experience.
When designing buildings adjacent to promenades, ensure:

> all principal entries front promenades
> entries are legible and clearly defined
> ground-floor uses are visible from the promenade and have the capacity to extend activity into the promenade from inside the building
> ground-floor uses provide protected cover and external seating adjacent to the promenade
> upper-level uses fronting promenades provide ‘eyes to the street’
> building service areas and areas of blank wall longer than 5m do not front onto promenades.

Refer figures 4-10.
2.4 Built form

Figure 6. Typical promenade cross-section on Daley Walk

Figure 7. Typical cross-section on Ellery Walk at Kingsley Street

Figure 8. Typical cross-section on University Avenue
2.4 Built form

Seasonal tree
Shared path
(Pedestrians and cyclists)

Buildings address the promenade

Figure 9. Typical promenade cross-section on Coombs Walk, New Acton Walk, Parkes Walk and part of Daley Walk (near student accommodation SA8 building)

Figure 10. Typical promenade cross-section on Coombs Walk (along Garran Road)

Figure 11. The creek corridor will integrate opportunities for passive and active recreation
Principle 3: Vehicle-restricted heart
The campus will have a pedestrian and bicycle oriented green heart where access by private vehicles is restricted.

This will be achieved by replacing at-grade parking in the heart of the campus with a perimeter parking and vehicular circulation system. The campus will be easy to get to by public transport and easy to move around, with a comprehensive network of streets, paths and transport facilities, including a regular campus shuttle service. Reliance on private vehicles will be reduced.

**The Master Plan**
> provides strategic, spatial instructions for the configuration and hierarchy of the movement network and the distribution of car parks.

**The Design Guide**
> provides additional detailed directions to ensure multiple modes of transport are supported on campus, and that their associated infrastructure (including bicycle parking and electric vehicle recharging stations) is well located and accommodated in the design of the public realm and built form.

### Desired outcomes

<table>
<thead>
<tr>
<th>3.1 Use</th>
<th>A. Transport infrastructure will be readily accessible from hubs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2 Movement</td>
<td>A. The campus will be a pedestrian and bicycle friendly environment.</td>
</tr>
<tr>
<td></td>
<td>B. Parking facilities will be located towards the campus perimeter and easily accessible from the city street network and campus entrances.</td>
</tr>
<tr>
<td></td>
<td>C. The campus as a whole will provide a high level of accessibility for people of all abilities.</td>
</tr>
<tr>
<td>3.3 Landscape</td>
<td>A. All new landscape and public realm projects will support safe and enjoyable movement for all.</td>
</tr>
<tr>
<td>3.4 Built form</td>
<td>A. Parking structures will be designed to minimise their negative impacts on the campus environment.</td>
</tr>
</tbody>
</table>
A

Transport infrastructure will be readily accessible.

Ensure all transport infrastructure is well connected and in accordance with the Master Plan for:
- pedestrians
- cyclists
- public transport
- private vehicles.

Locate public transport, campus shuttle stops and mobility nodes within a 3–5 minute walk of hubs.

Ensure mobility nodes include a combination of:
- car parking
- bicycle parking/storage
- charging and parking for electric vehicles including bicycles
- passenger drop-off and pick-up spaces
- campus shuttle stops
- bicycle end-of-trip facilities (including change rooms/showers/secure lockers/self-service bicycle maintenance station)
- public-transport information.

Locate car parks within a 5-minute walk of hubs.
3.2 Movement

A

The campus will be a pedestrian and bicycle friendly environment.

Prohibit new at-grade car parking in the heart of the campus.

Design streets and pathways to prioritise the needs of pedestrians and cyclists in accordance with the cross-sections (refer figures 4-11 and 15-22).

Provide end-of-trip facilities in all mobility nodes and new buildings (where possible).

Provide bicycle parking close to the principal entrances of all buildings.

B

Parking facilities will be located towards the campus perimeter and easily accessible from the city street network and campus entrances.

Locate all general parking areas within structures on the campus perimeter and in accordance with the locations identified in the Master Plan.

Provide limited at-grade parking close to buildings to support the needs of people with disabilities and general building servicing only.

C

The campus as a whole will provide a high level of accessibility for people of all abilities.

Design all new promenades, pathways, buildings, landscapes, and transport infrastructure to actively welcome people of all abilities.

Design all aspects of the campus environment to prioritise connectivity and wayfinding for people of all abilities.
3.3 Landscape

Design pathways and the public realm to:
> prioritise pedestrian, cyclist and all-abilities movement
> be logical and easy to find/follow
> incorporate signage that is visible and logically placed
> provide minimum 6m wide shared pathways
> support access to building entrances, key facilities and spaces
> include resting points with carefully sited furniture to accommodate enjoyment of the campus landscape
> include carefully selected trees to ensure routes are comfortable throughout the year, providing shade in summer and access to the sun in the winter
> be well lit to support campus safety.

Refer to promenade and interface cross-sections – figures 4-11 and 15-22.

Figure 12. Parking facility under sports facility deck
3.4 Built form

Parking structures will be designed to minimise their negative impacts on the campus environment.

Accommodate any new or relocated parking:
- on campus streets
- within the basements of new buildings (where feasible)
- with consideration to ANU Parking Management processes.

Design multi-deck parking facilities to:
- include uses other than parking on ground floors facing principal street frontages
- positively address and contribute to the quality and character of the ANU campus, its setting, and surrounding streetscapes (refer to guidance in Principle 4 and Principle 5)
- be visually ‘recessive’ and integrated with the bushland setting where the bushland setting dominates
- explore opportunities for façade uses to include water-catchment devices and integrate vertical planting
- include the integration of high quality architectural and landscape design by accredited architectural and landscape professionals.

Refer figures 12, 13 and 14.
Principle 4: Strong city connections
New pedestrian links, perimeter landscape enhancements, public spaces and catalyst projects will create a welcoming campus with strong city connections and defined gateways.

**The Master Plan**
- provides strategic, spatial instructions to guide the location of catalyst development projects and key elements of the public realm at the campus edges.

**The Design Guide**
- provides additional direction for the configuration of uses at the campus/city interface
- provides specific details to shape the creation of the public realm, street network and built form to ensure all projects help to strengthen relationships between the campus and the city.

**Desired outcomes**

<table>
<thead>
<tr>
<th>4.1 Use</th>
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<tbody>
<tr>
<td><strong>A.</strong> Activities at key gateway locations will enhance the University’s presence in the city and be used to strengthen relationships with neighbours.</td>
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</table>

<table>
<thead>
<tr>
<th>4.2 Movement</th>
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<tr>
<td><strong>A.</strong> All transport infrastructure on campus will be integrated into the wider Canberra network to optimise use.</td>
</tr>
<tr>
<td><strong>B.</strong> Campus car parks will contribute to the character, amenity and safety of Canberra’s streets.</td>
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<th>4.3 Landscape</th>
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<tr>
<td><strong>A.</strong> Streetscapes and public spaces enhance the University’s presence in the city and invite the wider community to come in and enjoy the campus.</td>
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<tr>
<th>4.4 Built form</th>
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<tr>
<td><strong>A.</strong> Buildings at key gateway locations will be designed and sited to contribute to the creation of a distinctive and welcoming address that expresses the University’s identity and values.</td>
</tr>
<tr>
<td><strong>B.</strong> New buildings at the campus/city edge will contribute to Canberra’s urban amenity.</td>
</tr>
</tbody>
</table>
4.1 Use

Activities at key gateway locations will enhance the University’s presence in the city and be used to strengthen relationships with neighbours.

Locate ANU/external partnership projects on sites that are visible on the campus perimeter/interface areas:

> for commercial/business partnerships – on sites at the intersection of Marcus Clarke Street and University Avenue
> for CSIRO partnerships – on sites at the intersection of Barry Drive and Clunies Ross Street, or at Sullivans Hub
> for national and institutional partnerships – within Peninsula Hub.

4.2 Movement

All transport infrastructure and pathways on campus will be integrated into the wider Canberra network to optimise use.

Provide safe and direct pedestrian connections between the campus shuttle and the city-wide public transport network (including bus and light rail).

Provide well-designed streets for the safe, seamless and easy movement of pedestrian and cyclists between the campus and city.

Refer to cross-sections in figures 15-22.

Campus car parks will contribute to the character and safety of Canberra’s streets.

Accommodate new parking facilities along key city streets in the basements of proposed buildings.

Design multi-deck parking to:

> be lined with other uses on their ground floors where these occur on principal street frontages
> positively address and contribute to the quality and character of the both the campus and Canberra and its setting.

Refer to guidance in Principle 5: Harmonious ANU-distinctive design and figures 12-14.
4.3 Landscape

Consistently adopt the specified street cross-sections at each interface to enhance the legibility and accessibility of perimeter streets.

Consistently adopt the specified landscape palette at each interface to enhance the character cohesiveness and quality of the perimeter public realm:

- Civic interface – adopt the Kambri and Barry Hub palette
- Clunies Ross Street interface – adopt the Kambri and Barry Hub palette
- Barry Drive interface – adopt the Sullivans Hub palette
- West Basin interface – adopt the Peninsula Hub palette
- Parkes Way perimeter – adopt the Sullivans Hub palette.

Refer to Hub accent palette on page 50-53.

Streetscapes and public spaces enhance the University’s presence in the city and invite the wider community to come in and enjoy the campus.
4.4 Built form

A

Buildings at key gateway locations will be designed and sited to contribute to the creation of a distinctive and welcoming address that expresses the University’s identity and values.

Design new buildings at the city/campus interface to reflect the built-form provisions of Principle 5.

Design gateway buildings to:
> display research, partnerships and learning endeavours
> have clear entrances
> have a positive street address
> provide public amenity – including shelter, lighting, meeting points.

B

New buildings at the campus/city edge will contribute to Canberra’s urban amenity.

Design buildings to:
> create a high-quality urban environment
> be respectful and responsive to Indigenous and other culturally significant contexts
> address and/or activate the street
> consider and be responsive to established strategies for neighbouring sites in terms of land use, massing and design (refer to list in Section 1.0 Introduction - ‘Other relevant strategic documents’)
> respond respectfully to adjacent buildings in terms of form and massing
> frame and align streets
> clearly distinguish between the parts of the building/campus that are for academic purposes and those that are for residential purposes
> support activation and occupation of the street edge by including generous footpaths, mature street trees, and shrubs, shade structures, awnings, and seating.

Refer to cross-sections in figures 15-22.
4.4 Built form

Overlooking Ecological zone and boardwalks
Footpath Barry Drive

Figure 15. Typical cross-section of Barry Drive

Clunies Ross Street

Interactive edge
2m
3m
2m
2m
Footpath Swale
ANU Boundary
Road Reserve

Figure 16. Typical cross-section of Clunies Ross Street

Kingsley Street

Interactive edge
3m
2m
8m
Traffic lanes
3m
3m
Bike path
Footpath
Footpath
Activities open out to the street

Figure 17. Typical cross-section of Kingsley Street
4.4 Built form

Figure 18. Typical cross-section of Liversidge Street

Figure 19. Typical cross-section of University Avenue (Civic end – with cars)

Figure 20. Typical cross-section of Childers Street at Federal Circuit Court of Australia
4.4 Built form

ANU Boundary

School of Music

Accessible ramp

Marcus Clarke Street

Bike path

Figure 21. Typical cross-section of Marcus Clarke Street with retaining wall

Figure 22. Typical cross-section of Marcus Clarke Street
Principle 5: Harmonious ANU-distinctive design
The ANU campus will reflect a harmonious and coherent approach to architecture and landscape, with buildings complementing rather than competing with the natural landscape.

New buildings, in their massing, materials and landscape features, will demonstrate evolution, continuity and respectful integration with the existing campus setting. They will contribute to an overall sense of calm and timeless elegance.

A consistent palette of colours, textures and materials will be applied to new buildings and the public realm. New buildings and landscape features will interpret characteristics of existing significant buildings and the campus landscape, particularly courtyards and loggias, informal native plantings, and linear avenues of trees. The scale and massing of new built forms will be sympathetic to existing buildings.

The University’s distinctively vital culture will be expressed in public and semi-public spaces in and around buildings. These spaces will be designed to support collegiality, interactivity and the display of ANU achievements and research. The unique values of Aboriginal and Torres Strait Islander and other cultural heritage on campus will be supported in landscape and architectural design.

The Master Plan

> sets out an overarching philosophy for applying a consistent and coherent palette of materials and design strategies.

The Design Guide

> provides additional direction on how to work with Indigenous and European cultural heritage on campus
> provides design strategies and materials palettes to be adopted and interpreted across the public realm and within built form.

### Desired outcomes

#### 5.1 Use

A. The University’s research collections will be well located so that they support research, are publicly visible, and can be enjoyed by the wider community.

#### 5.2 Movement

Movement is not applicable under Principle 5.

#### 5.3 Landscape

A. The unique values of Aboriginal and other heritage places will be protected and enhanced in the design of new landscapes.

B. New landscapes will be designed to contribute to the creation of a coherent and harmonious campus.

C. New landscapes and public-realm initiatives will support the University’s distinctive culture.

#### 5.4 Built form

A. The unique values of Aboriginal and other heritage places will be protected and enhanced in the design of new buildings.

B. New buildings will be designed to contribute to the creation of a coherent and harmonious campus.

C. New buildings will support the University’s distinctive culture.

D. ANU collections will be exhibited as integral parts of gateway buildings.
Design Excellence
The pursuit of ‘excellence in all things’ is a core value of ANU. The pursuit of design excellence will, therefore, be a core objective for all projects, applying to all buildings, landscapes, infrastructure and public art on campus.

The definition of ‘excellence’ in the context of the Acton Campus Master Plan Design Guide is design which both demonstrably complies with the design guide AND extends to further thinking and achievement, particularly in the expression of the following ANU values (extracted from the ANU Strategic Plan 2019-2022).

These are:
> Originality
> Inclusivity
> Respectful of Diversity
> Collegiality
> Informed risk taking
> Courage in advancing ideas
> Commitment to better environmental outcomes.
5.1 Use

The University’s research collections will be well located so that they support research, are publicly visible, and can be enjoyed by the wider community.

5.2 Movement This category is not applicable in Principle 5.
5.3 Landscape

The unique values of Aboriginal and other heritage places will be protected and enhanced in the design of new landscapes.

**Places of Aboriginal cultural value:**
Protect, interpret and enhance landscapes of Aboriginal cultural value, mapped in the *ANU Acton Campus Heritage Framework*:

- the South Oval and its curtilage
- the Acton Peninsula Conservation Area and remnant vegetation
- Sullivans Creek
- views and connections to Black Mountain
- scarred trees identified within the campus.

Ensure Aboriginal and Torres Strait Islander imagery and symbolism are incorporated into projects where appropriate (refer to the *ANU Reconciliation Action Plan*).

Maximise opportunities to revegetate with original native and traditional food and fibre species.

Avoid or minimise impacts on areas of high archaeological potential (priority conservation areas, refer to the *ANU Acton Campus Heritage Framework*).

Adopt the mandatory ANU policy of ‘ask first’ from the point of commissioning.

**Places of other heritage value:**
Protect, maintain and enhance landscapes and trees identified as significant as part of a defined setting for significant or supporting buildings.

As appropriate, prepare heritage management plans or appraisals and obtain heritage advice for projects within heritage curtilage areas to guide design.

Refer Figure 23 - Aboriginal and other heritage.

**All projects must reference the advice and guidance set out in the ANU Acton Campus Heritage Framework to understand both statutory requirements for projects and what is required to achieve ANU best practice.**
Figure 23. Aboriginal and other heritage

**LEGEND**
- Significant heritage buildings
- Significant building heritage curtilage
- Significant landscapes (associated with significant buildings)
- Significant cultural places (including scarred trees)
- Priority conservation areas (predicted archaeological potential)
- Acton Peninsula Corridor (extensions over Sullivans Creek and beyond the campus boundary shown dashed)
- Former Sullivans Creek Corridor
5.3 Landscape

Enhance the quality and character of the University’s bushland setting to promote wider community enjoyment, using tree-planting and management regimes to consolidate, conserve, protect and enhance the existing ‘bush landscapes’.

Design landscapes and the public realm to respond to and interpret the following existing and distinctive landscape characteristics and features:

- courtyard gardens with ornamental water pools and sculptures
- avenues of seasonal trees
- eucalypt woodlands
- ornamental and fragrant gardens
- seasonal changes (including in light, colour and temperature) to celebrate and reinforce adaptability across the seasons
- views to bush landscapes, including black mountain
- campus topography.

Adopt and interpret the Kambri palette to inform materials choice across the campus. In hubs, adopt and interpret the ‘Hub accent palette’ to inform materials choice for the public realm (refer page 50-53).
Campus wide palette

The materials palette below should be adopted and interpreted to inform materials choice and application across the campus public realm.

Art Palette

Environmental sculpture  Water sculpture  Indigenous artwork

Wall Palette

Stone rendered wall  Sandstone wall  Block sandstone wall  Ecological Wall  Pre-cast concrete curved wall
5.3 Landscape

Canopy Palette

Promenade tree - Acer Freemanii ‘Autumn Blaze’

Promenade tree - Fraxinus pennsylvanica ‘Cimmzam’

Ground Palette

Promenades and vehicular trafficable zone - interlocking paver

Pedestrian path - stretcher bond paver

Breakout space - stack bond paving

TCCS paving - black granite pavers
5.3 Landscape

Promenade tree - Prunus cerasifera ‘Pissardii’

Promenade tree - Pyrus calleryana ‘Red Spire’

Site-wide rainwater garden

Vegetated swale

Concrete timber edged seat

Concrete timber edged bench

Furniture Palette
5.3 Landscape

Hub accent palette
The materials palette below should be adopted and interpreted to inform materials choice and application within hubs.

Barry and Kambri hub palette

Canopy palette
- Quercus phellos

Ground palette
- Courtyard - stretcher bond paver

Furniture palette
- Table and concrete bench - timber and concrete frame

Fellows hub palette

Canopy palette
- Eucalyptus mannifera ‘Little Spotty’

Ground palette
- Pedestrian path - permeable paver
- Turf

Breakout space - permeable pavers
Lighting palette

Festoon lighting  Lighting projection lamps  Light pole art sculpture
5.3 Landscape

Sullivans hub palette

Canopy palette

Ground palette

Eucalyptus blakelyi
Ecological roof
Low impact paths - starpath spray on coating
Rock mulch swale
Timber boardwalk

Peninsula hub palette

Canopy palette

Ground palette

Furniture palette

Prunus x blierana ‘Moseri’
Natural stone sett paving
Curved bench - timber
and steel frame
Furniture palette

Timber lounger

Timber lounge deck

Freestanding study pod - timber

Bench - timber and concrete

Acknowledgements

<table>
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<tr>
<th>Page</th>
<th>Description</th>
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<tbody>
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<td>28</td>
<td>Pedestrian and bicycle pathway along Sullivans Creek</td>
<td>Copyright 2019 Geoff Comfort</td>
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<tr>
<td>47</td>
<td>Concrete timber edged seat</td>
<td>Designers: Cenlitrosmetrocadrado Website: <a href="http://www.cenlitrosmetrocadrado.com">www.cenlitrosmetrocadrado.com</a></td>
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<td>47</td>
<td>Concrete timber edged bench</td>
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<td>48</td>
<td>Table and concrete bench - timber and concrete frame</td>
<td>Designed by: Reinadecorazones, Fabricated by: Carpinteria Santano</td>
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<td>49</td>
<td>Lighting projection lamps</td>
<td>project designers: Eos Lightmedia, client: University of British Columbia</td>
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<td>49</td>
<td>Light pole art sculpture</td>
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<td>Eucalyptus mannifera ‘Little Spotty’</td>
<td>Commons.wikimedia.org, 2015, user: Thennicke</td>
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<td>51</td>
<td>Timber lounger</td>
<td>In Situ - Paysages et Urbanisme - SAS Jabert et Associés (Paysages et Urbanisme = landscaping and urban planning)</td>
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<tr>
<td>51</td>
<td>Freestanding study pod - timber</td>
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<tr>
<td>50</td>
<td>Curved bench - timber and steel frame</td>
<td>BURRI public elements AG</td>
</tr>
</tbody>
</table>

All other images referenced in material palette were sourced by ANU, Arup or copyright free.
Create public spaces on campus that showcase ANU achievements and research.

Create public spaces on campus that support interaction and collegiate pursuits through designs that foster:

- informal gathering and discussion (for example, grouping of seating)
- ‘accidental meeting’ (for example, generous stopping points in pathways).

Create ‘unstructured’ spaces in the landscape for quiet reflection that showcase:

- exceptional and remnant trees
- Sullivans Creek
- Lake Burley Griffin
- Black Mountain.

Create landscapes that support learning, through designs that:

- provide spaces for quiet study
- provide spaces for informal interactive/group study
- include outdoor learning areas
- provide furniture that can be used flexibly by groups and individuals
- provide spaces that are warm in winter and cool in summer
- are supported by Wi-Fi and power.

As part of project design, curate public artworks that:

- provoke and educate
- profile ANU heritage, Aboriginal and Torres Strait Islander culture and technological innovation.
5.4 Built form

The unique values of Aboriginal and other heritage places will be protected and enhanced in the design of new buildings.

Plates of Aboriginal cultural value:
Use architecture to protect, interpret and enhance places of significant Aboriginal heritage value, mapped in the ANU Acton Campus Heritage Framework:
> the South Oval and its curtilage
> the Acton Peninsula Conservation Area and remnant vegetation
> Sullivans Creek
> views and connections to Black Mountain.

Ensure Aboriginal and Torres Strait Islander imagery and symbolism are incorporated into projects where appropriate (refer to ANU Reconciliation Action Plan).

Reference the advice and guidance set out in the ANU Acton Campus Heritage Framework to understand both statutory requirements for projects and what is required to achieve ANU ‘best practice’.

Avoid or minimise impacts on areas of high archaeological potential (priority conservation areas, refer to the ANU Acton Campus Heritage Framework).

Adopt the mandatory ANU policy of ‘ask first’ from the point of commissioning.

Places of other heritage value:
Retain and respectfully adapt buildings identified in the ANU Acton Campus Heritage Framework as having cultural heritage value.

Protect and enhance the visual settings of these buildings.

Protect and enhance the relationships between significant groupings of heritage buildings. Additions to buildings with heritage value should be carefully sited with consideration of their form and massing.

Ensure new development is complementary and sympathetic to heritage buildings, and is identifiable as new rather than mimicking historic buildings.

All projects must reference the advice and guidance set out in detail in the ANU Acton Campus Heritage Framework, which identifies individual buildings, collections of buildings and landscapes of significance, to understand both statutory requirements for projects and what is required to achieve ANU best practice.
Design new buildings to adopt the architectural palette described on page 57.

Design new buildings to interpret the existing and valued built-form morphology:

> include courtyards (an external public space that is completely or partially enclosed by walls or buildings) as organisational features for buildings

> use loggias to create sheltered communal spaces and provide a unifying architectural feature for the lower floors of buildings

> create 2–3 storey loggias in front of University Avenue, Ellery Walk and buildings fronting Daley Road

> incorporate loggias as features of courtyards.

Ensure buildings are recessive in scale, materials and colours in contexts where native trees/bushland are the dominant features.

Design buildings to adopt a calm orthogonal geometry rather than highly individualistic forms and colours.

Design new buildings to be sympathetic to the scale and massing of existing significant architecture (refer Figure 24).

Locate service/plant buildings within the footprints of main buildings, not in campus landscape areas.
Palette

- **Light colours predominate across entire campus**
- **Mid tones – potential for accent in Menzies and Birch precincts**
- **Bronze for window frames and sun shades across campus**

- **Painted white metal columns**
- **White concrete columns and fins where required**
- **Charcoal as recessive colour**

*Figure 24. Vertical articulation helps tall new buildings transition to heights of surrounding buildings*
5.4 Built form

New buildings will support the University’s distinctive culture.

Design public and semi-public areas of buildings to encourage informal interaction among people using the buildings, through the use of:

- generous stopping points on stairs and in corridors
- foyers and lobbies where people can view activity on other levels of the building
- informal seating and gathering areas in lobbies and kitchen areas.

Design public and semi-public areas of buildings to showcase ANU achievements, through the use of:

- digital information
- viewing panels to research and learning areas
- display and information areas
- display areas for ANU collections.

As part of project design, curate public artworks that:

- provoke and educate
- profile ANU heritage, Aboriginal and Torres Strait Islander culture and technological innovation.

Figure 25. Public and semi-public spaces in buildings encourage informal interaction
ANU collections will be exhibited as integral parts of gateway buildings.

Design buildings housing ANU collections to:

> provide opportunities to exhibit elements of ANU collections in public spaces and on the ground floor
> provide entries that are clearly articulated and welcoming
> be easily understood and support good wayfinding within the campus.

Sculpture of Kambri map gifted by the Traditional Custodians of the ACT and Region
Principle 6: Vibrant living and working environment
ANU will be a lively and engaging place to live and work. The public and semi-public spaces of the campus will be sociable, safe, welcoming and well used.

Living spaces and workplaces will be located in hubs and alongside promenades. Buildings and public spaces will be designed to maximise community safety and interactivity. The landscape setting and bush campus environment will provide ample opportunity for recreation and enjoyment.

### The Master Plan
- Provides strategic and spatial instructions for residential accommodation, working environments and recreational space.

### The Design Guide
- Provides additional design direction for the configuration of activities across the campus.
- Provides details to shape the creation of a public realm, movement network and built form that will contribute to the vibrancy and safety of life on campus.

### Desired outcomes

#### 6.1 Use
- Accommodation for students, staff and alumni will be located close to or within hubs wherever feasible.
- Activities will be located to match academic needs with social and cultural facilities.
- The Sullivans Creek corridor will contain passive and recreational uses.

#### 6.2 Movement
- The design of streets and footpaths will make it safe for pedestrians and cyclists to get around.

#### 6.3 Landscape
- Campus landscapes will support recreation and relaxation, with Sullivans Creek corridor a focal area for this.
- Courtyards will be green spaces that are quieter than hubs and promenades.

#### 6.4 Built form
- A mix of high-quality residential accommodation will be provided on campus, tailored to meet the needs of an increasingly diverse cohort of postgraduates, undergraduates, staff alumni and visitors.
- Built form will support flexible, interactive and technologically advanced research, teaching and learning spaces.
- Built form will contribute to campus and community safety.
- Built form will make a positive contribution to the setting and activation of Sullivans Creek.
6.1 Use

A

Accommodation for students, staff and alumni will be located close to or within hubs wherever feasible.

Create new accommodation options around the centre or within easy walking distance of the centre of hubs wherever feasible, either as standalone facilities or within the upper storeys of mixed-use buildings.

B

Activities will be located to match academic needs with social and cultural facilities.

Provide a mix of social and cultural activities for residents.

Ensure students, staff and visitors have easy access to:

> ANU sports and social facilities
> retail and other amenities
> health services.

C

The Sullivans Creek corridor will contain passive and recreational uses.

Locate any new areas and facilities for passive and active recreation within or close to the Sullivans Creek corridor.

6.2 Movement

A

The design of streets and footpaths will make it safe for pedestrians and cyclists to get around.

Design streets, footpaths, roads, bicycle paths, car parks, shuttle stops and mobility nodes to incorporate Crime Prevention Through Environmental Design principles, including:

> consistent levels of illumination at night
> logical and direct connections with clear sightlines that enable movement to be predicted
> routes that align closely with the front entrances and ‘interactive frontages’ of buildings.
6.3 Landscape

**A**
The design of campus landscapes will support recreation and relaxation, with Sullivans Creek corridor providing a focal area for this.

Create spaces within the bush campus setting that accommodate the following uses:
- physical exercise
- play, including play areas for children
- alfresco dining and barbecue areas.

Include facilities and spaces to support recreation and relaxation along Sullivans Creek.

Maintaining the integrity of the original land, design the creek corridor to provide opportunities for water-based and land-based passive and active recreation, including:
- creekside walkways
- gently graded grassy banks
- informal gathering spaces
- spaces to support entertainment
- spaces with access to Wi-Fi and seating to support informal learning.

**B**
Courtyards will be green spaces that are quieter than hubs and promenades.

Design courtyards to have the following characteristics:
- quiet and contemplative
- trees that provide shade in summer and sun in winter
- outdoor furniture to complement courtyard design
- water as an element of reflection
- carefully curated and sited elements of public art and sculpture.
6.4 Built form

A mix of high-quality residential accommodation will be provided on campus, tailored to meet the needs of an increasingly diverse cohort of postgraduates, undergraduates, staff, alumni and visitors.

Ensure residential accommodation on campus:

> meets the needs of diverse cohorts – from young single students to group-living configurations and family housing
> can be occupied outside of term time with particular attention paid to the extent and flexibility of shared amenities such as bathrooms, kitchens, and multi-use spaces
> provides opportunities for individual residences to have access to the outdoors by including more than one opening window and/or balconies
> provides well-distributed, accessible and visible communal spaces in the form of vibrant and vital social settings located across floors.

Design mixed-use buildings to include private entries and semi-private outdoor spaces for residents.

Built form will support flexible, interactive and technologically advanced research, teaching and learning spaces.

Provide large raked-floor learning and teaching spaces, of lightweight construction to allow for future re-configuration, and capable of accommodating diverse activities including lecturers and public/community events.
6.4 Built form

**C**

Built form will contribute to campus and community safety.

Design all new development to contribute to campus safety through the inclusion of:

- active uses in ground floors of buildings visible from public spaces
- windows facing towards streets and promenades
- balconies, terraces and windows that overlook adjacent spaces from all building floors.

Refer Figure 26.

**D**

Built form will make a positive contribution to the setting and activation of Sullivans Creek.

Ensure built form provides views and active edges to Sullivans Creek corridor.

Design new structures within the creek corridor to recede into the landscape setting and:

- be screened by generous planting
- positively contribute to the experience of the creek
- provide entrances, windows and balconies oriented towards the creek
- incorporate lighting that contributes to the atmosphere of a quiet natural space while maintaining safety.

Refer Figure 27.
Principle 7:
Environmental sustainability
The campus will demonstrate the University’s environmental sustainability through a suite of initiatives across all areas of environmental impact, including energy use, habitat, resources and waste.

Carbon emissions generated by the University will be reduced over the life of the Master Plan. The University’s environmental sustainability will be reflected in all new architecture, public realm, and landscape projects on campus.

This principle reflects an objective from the ANU Strategic Plan 2019–2022 – ‘to reduce carbon emissions intensity over the life of the Plan’, and a number of its initiatives are based on the ANU Acton Campus Energy Management Strategy.

The Master Plan
> provides strategic and spatial instructions for green infrastructure and environmental sustainability strategies across the campus.

The Design Guide
> provides additional detailed design direction for the configuration of uses and delivery of landscape and built-form outcomes.

Desired outcomes

7.3 Landscape
- A. New landscapes will enhance biodiversity, ecological health and environmental resilience.
- B. Landscape design will support the creation of energy-efficient environments inside and outside buildings.
- C. Energy performance and resource responsibility will be a visible component of the campus landscape.
- D. Energy performance and resource responsibility is a visible component of the campus landscape.
- E. New landscapes will be designed to minimise resource consumption.

7.4 Built form
- A. New buildings will be designed to promote biodiversity, ecological health and environmental resilience.
- B. New buildings will be designed to be energy-efficient and support the use of renewable energy.
- C. New buildings will be designed to minimise resource consumption.
- D. New buildings will be designed to support ‘long life, loose fit’.
- E. System resilience will be created through shared decentralised energy generation and local storage.
- F. Energy performance and resource responsibility will be a visible component of the campus landscape.
7.1 Use

The concentration of development intensity and mix of uses in hubs will be used to establish district energy systems.

Leverage off development intensity to strategically incorporate District Energy Plants (DEPs) as integral parts of hubs.

In hubs:
> develop a feasibility study and staging plan for DEPs as part of the first major project
> develop DEPs flexibly to enable progressive expansion.

7.2 Movement

Projects will support the use of low-carbon transport and mobility choices.

Provide:
> easily accessible and locatable visitor/casual bicycle parking
> end-of-trip facilities either in hubs or mobility nodes
> safe and well-connected cycling routes
> electric vehicle recharging facilities within mobility nodes
> photovoltaic panels on roofs and shade structures as part of any car park upgrades.

7.3 Landscape

New landscapes will enhance biodiversity, ecological health, and environmental resilience.

Protect, preserve and enhance the campus landscape by:
> improving the condition of and connectivity between habitats
> delivering biodiversity links using planting, green building façades and tree canopies
> reducing the intensity of artificial lighting along Sullivans Creek to protect and encourage wildlife
> incorporating interpretation, utilising artwork and technology to share information about the ecological value of the campus landscape.

Collect, retain and clean groundwater through the:
> use of permeable ground surface materials
> planned allocation of space for and implementation of water-sensitive urban design (WSUD) strategies.
7.3 Landscape

Landscape design will support the creation of energy-efficient environments inside and outside buildings.

Design spaces to be responsive to the wind:
> avoid narrow passageways between buildings in the direction of prevailing winds to minimise funnelling
> orient courtyards to be open to summer breezes and minimise exposure to north-westerly and southerly winter winds
> where recommended orientation is not favourable, consider strategic planting of trees to optimise comfort.

Design spaces to effectively utilise shading:
> consider deciduous trees to the north of public spaces to create cool zones in summer and allow penetration of low-angle winter sun
> target at least 30–40% of courtyard space to receive 3–4 hours direct sun during peak winter and be shaded from direct sun at any given time during the year
> shade a large proportion of hardscape surface through planting
> use materials with a high Solar Reflective Index
> target the delivery of a high percentage of softscape in courtyards.

Use bodies of water (for example, aerated feature pools) in public spaces to provide evaporative cooling in summer and reduce heat island effects.

Ensure Sullivans Creek corridor:
> demonstrates best practice water-sensitive urban design
> demonstrates best practice native habitat management and consolidation of biodiversity areas, including the link with Australian National Botanic Gardens.
7.3 Landscape

Use materials from renewable sources wherever possible. Where this is not possible, ensure materials are durable, re-used/re-useable and/or recycled/recyclable.

Use materials that have minimum biophysical and social impacts related to their source, manufacture and delivery.

Use materials with high durability related to their use, which resist weathering, decay, wear and tear and forces.

Promote environmentally efficient systems for water and wastewater management and reuse.

Use irrigation regimes, stormwater treatment, car park design and carriageway profiles together to minimise water wastage, control erosion and control water quality downstream.

New landscapes will be designed to minimise resource consumption.

Incorporate visible infrastructure in the public realm to demonstrate a commitment to performance – including recognisable items such as ‘smart’ street lights.

Energy performance and resource responsibility will be a visible component of the campus landscape.

Photovoltaic solar panels on the roof of the National Computational Infrastructure
New buildings will be designed to promote biodiversity, ecological health and environmental resilience.

Design buildings to minimise embodied energy, materials waste and resource usage (using recyclables).

Reduce materials and water demand as well as the dependence on energy for air conditioning for cooling and heating.

Incorporate renewable energy generation as a visible component of designs.

 Undertake a habitat assessment where significant and healthy habitat trees exist to inform action.

Daylighting

> optimise daylight penetration into buildings (balanced with limiting summer heat loads)
> reduce indoor artificial lighting energy consumption through efficient systems
> target a high percentage (>60% where possible) of the usable floor area with a modelled daylight factor.

Renewable energy sources

> design roof structures and detailing to support photo-voltaic panels (PV)
> target 50% of roof surface to be covered by PV panels
> prioritise connections to ground source heat pumps in DEPs
> employ single-bore geothermal, air-source heat pumps or reverse-cycle units for buildings not connected to hub DEPs.

Energy efficiency

> use orientation of massing and window design to improve daylight penetration and facilitate natural cross-ventilation
> orientate buildings to manage solar gain and avoid excess expenditure on façade shading and operational HVAC energy
> give preference to an east-west elongated axis (elongated north and south façades). Where this is not possible, optimise facade design to respond to orientation challenges
> use courtyards to maximise daylight performance and access to natural ventilation. Use shading and performance glazing to reduce summer solar loads on each orientation, balanced with daylight access.
7.4 Built form

C  New buildings will be designed to minimise resource consumption.

Use materials from renewable sources wherever possible.

Where this is not possible, ensure materials are durable, re-used/re-useable and/or recycled/recyclable.

Use materials that have minimum biophysical and social impacts related to their source, manufacture and delivery.

Use materials with high durability related to their use, which resist weathering, decay, wear and tear and forces.

Promote environmentally efficient systems for water and wastewater management and reuse.

D  Information on building performance will be made available to all.

Incorporate real-time display and dashboarding of energy performance and GHG emissions, making information available to all students and staff via display screens, websites or apps.

In new buildings and with electrical upgrades to existing buildings, install sub-metering for all energy uses of 100kVA or greater but at least separately for lighting, power, chillers, boilers, AHUs, car park fans, car park lighting, cooling towers, pumps and for specialist research equipment with potential large energy use.

Provide connection from photovoltaic panels and other renewable systems to centralised thermal and electrical storage facilities where applicable.

Provide a mechanism to alert relevant staff of pronounced changes in energy consumption trends – sub-meters to be connected to a common energy monitoring system.
Where appropriate, design buildings to be adaptive and capable of accommodating different uses and evolving research, teaching and learning practices, optimising university investment in the long-term.

Ensure ground-floor accommodation is of sufficient height to enable the available space to be converted for a range of uses.

Prioritise life-cycle costing for all construction and materials.

Consider feasibility of site-specific technologies to support central energy systems, such as:

- waste heat recapture from computing servers
- lake water heat rejection
- biodigester and renewable gas-fired plant at organic waste collection facility.

Determine a distribution strategy (such as chilled water loop, condenser water loop, loop vs headed pipes) on a case-by-case basis.

Projects should seek to:

- roll out large-scale on-campus electricity storage based on batteries, to reduce the significant cost of peak charges and infrastructure upgrades, and to reduce HV/MV network stresses
- provide centralised thermal storage in district energy plants in hubs
- identify opportunities for a small-scale pilot installation that could be connected to ANU research to gather data on feasibility
- integrate with transition to 100% electrical
- prioritise ground-source heat pumps
- locate boreholes at interfaces to open spaces
- consider central boilers as bridging technology only.
Checklist
### Use

**DESCRIPTION**

<table>
<thead>
<tr>
<th>Principle</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td><strong>P1</strong></td>
<td>A. Hubs will be lively centres containing all campus ‘shared’ or common activities and uses.</td>
</tr>
<tr>
<td><strong>P2</strong></td>
<td>B. Ground and first-floor uses will be configured to create an interactive environment in hubs.</td>
</tr>
<tr>
<td><strong>P3</strong></td>
<td>A. The promenades will be lively and safe spaces for pedestrians and cyclists.</td>
</tr>
<tr>
<td><strong>P4</strong></td>
<td>A. Transport infrastructure will be readily accessible from hubs.</td>
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<tr>
<td><strong>P5</strong></td>
<td>A. Activities at key gateway locations will enhance the University's presence in the city and be used to strengthen relationships with neighbours.</td>
</tr>
<tr>
<td><strong>P6</strong></td>
<td>A. The University's research collections will be well located so that they support research, are publicly visible, and can be enjoyed by the wider community.</td>
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<tr>
<td><strong>P7</strong></td>
<td>A. The concentration of development intensity and mix of uses in hubs will be used to establish district energy systems.</td>
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### Movement

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<tr>
<td><strong>P1</strong></td>
<td>A. Hubs will be well connected to transport, easy to get to and around.</td>
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<tr>
<td><strong>P2</strong></td>
<td>A. The promenades will provide pedestrians with a generous and accessible environment to encourage walking and cycling.</td>
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<tr>
<td><strong>P3</strong></td>
<td>A. The campus will be a pedestrian and bicycle friendly environment.</td>
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</tr>
<tr>
<td><strong>P7</strong></td>
<td>A. Projects will support the use of low-carbon transport and mobility choices.</td>
</tr>
</tbody>
</table>

**LEGEND**

- **Principle 1 (P1):** Clearly defined hubs
- **Principle 2 (P2):** Landscaped promenade links
- **Principle 3 (P3):** Vehicle-restricted heart
- **Principle 4 (P4):** Strong city connections
- **Principle 5 (P5):** Harmonious ANU-distinctive design
- **Principle 6 (P6):** Vibrant living and working environments
- **Principle 7 (P7):** Environmental sustainability
### Landscape

**DESCRIPTION**

<table>
<thead>
<tr>
<th>P1</th>
<th>A. Public spaces within hubs will be versatile and designed to support community activities throughout the year.</th>
</tr>
</thead>
<tbody>
<tr>
<td>P2</td>
<td>A. The promenades will be well-defined to ensure the campus is easy and comfortable to navigate.</td>
</tr>
<tr>
<td></td>
<td>B. The promenades will be comfortable, enjoyable and interesting campus spaces.</td>
</tr>
<tr>
<td></td>
<td>C. The footpath along Sullivans Creek will be enhanced to function as both a campus and Canberra-wide walking and cycling route.</td>
</tr>
<tr>
<td></td>
<td>D. Well-curated public artworks will animate the promenades, providing opportunities for interpretation and education.</td>
</tr>
<tr>
<td>P3</td>
<td>A. All new landscape and public realm projects will support safe and enjoyable movement for all.</td>
</tr>
<tr>
<td>P4</td>
<td>A. Streetscapes and public spaces enhance the University's presence in the city and invite the wider community to come in and enjoy the campus.</td>
</tr>
<tr>
<td>P5</td>
<td>A. The unique values of Indigenous and European heritage places will be protected and enhanced in the design of new landscapes.</td>
</tr>
<tr>
<td></td>
<td>B. New landscapes will be designed to contribute to the creation of a coherent and harmonious campus.</td>
</tr>
<tr>
<td></td>
<td>C. New landscapes and public-realm initiatives will support the University's distinctive culture.</td>
</tr>
<tr>
<td>P6</td>
<td>A. Campus landscapes will support recreation and relaxation, with Sullivans Creek corridor a focal area for this.</td>
</tr>
<tr>
<td></td>
<td>B. Courtyards will be green spaces that are quieter than hubs and promenades.</td>
</tr>
<tr>
<td>P7</td>
<td>A. New landscapes will enhance biodiversity, ecological health and environmental resilience.</td>
</tr>
<tr>
<td></td>
<td>B. Landscape design will support the creation of energy-efficient environments inside and outside buildings.</td>
</tr>
<tr>
<td></td>
<td>C. Energy performance and resource responsibility will be a visible component of the campus landscape.</td>
</tr>
<tr>
<td></td>
<td>D. Energy performance and resource responsibility is a visible component of the campus landscape.</td>
</tr>
<tr>
<td></td>
<td>E. New landscapes will be designed to minimise resource consumption.</td>
</tr>
</tbody>
</table>

### Built form

**DESCRIPTION**

| P1 | A. More intense and larger-scale development will be concentrated in hubs. |
|    | B. Built form will contribute to the creation of an interactive environment. |
| P2 | A. Built form will align with and provide active edges to adjacent promenades. |
| P3 | A. Parking structures will be designed to minimise their negative impacts on the campus environment. |
| P4 | A. Buildings at key gateway locations will be designed and sited to contribute to the creation of a distinctive and welcoming address that expresses the University's identity and values. |
|    | B. New buildings at the campus/city edge will contribute to Canberra's urban amenity. |
| P5 | A. The unique values of Indigenous and European heritage places will be protected and enhanced in the design of new buildings. |
|    | B. New buildings will be designed to contribute to the creation of a coherent and harmonious campus. |
|    | C. New buildings will support the University's distinctive culture. |
| P6 | A. A mix of high-quality residential accommodation will be provided on campus, tailored to meet the needs of an increasingly diverse cohort of postgraduates, undergraduates, staff alumni and visitors. |
|    | B. Built form will support flexible, interactive and technologically advanced research, teaching and learning spaces. |
|    | C. Built form will contribute to campus and community safety. |
|    | D. Built form will make a positive contribution to the setting and activation of Sullivans Creek. |
| P7 | A. New buildings will be designed to promote biodiversity, ecological health and environmental resilience. |
|    | B. New buildings will be designed to be energy-efficient and support the use of renewable energy. |
|    | C. New buildings will be designed to minimise resource consumption. |
|    | D. New buildings will be designed to support ‘long life, loose fit’. |
|    | E. System resilience will be created through shared decentralised energy generation and local storage. |
|    | F. Energy performance and resource responsibility will be a visible component of the campus landscape. |