Australian Capital Territory

Planning (Urban) Design Guide 2026

Notifiable instrument NI2026–314

made under the

Planning Act 2023, s 50 (Design guides)

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1 Name of instrument

This instrument is the *Planning (Urban) Design Guide 2026.*

2 Commencement

This instrument commences on 1 July 2026.

3 Design guide

I make the design guide at schedule 1.

4 Revocation

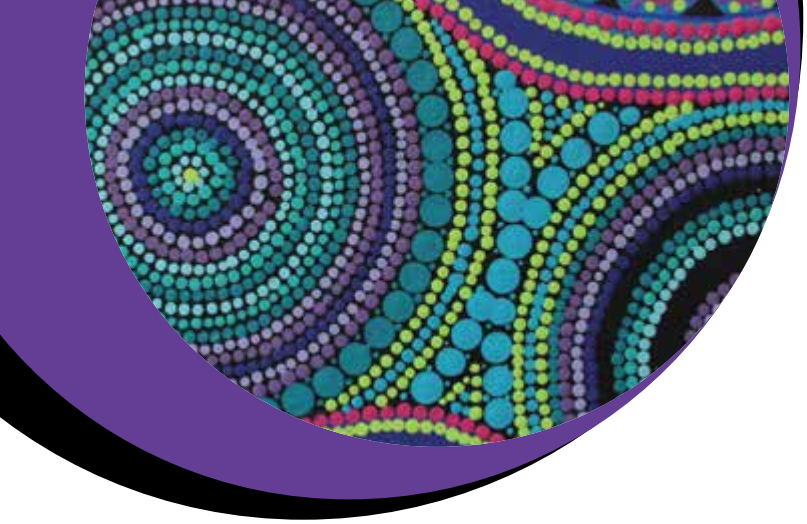
This instrument revokes the *Planning (Urban) Design Guide 2024* (NI2024-513).

Chris Steel MLA
Minister for Planning and Sustainable Development
29 June 2026

Schedule 1

ACT Government

ACT Urban Design Guide



Acknowledgement of Country

Yuma
Dhawura Nguna Dhawura Ngunnawal
Yanggu ngalawiri dhunimanyin Ngunnawalwari dhawurawari
Nginggada Dindi yindumaralidjinyin
Dhawura Ngunnawal yindumaralidjinyin

Hello,
This is Ngunnawal Country
Today we are meeting on Ngunnawal country
We always respect Elders, male and female
We always respect Ngunnawal Country

The ACT Government acknowledges the Ngunnawal people as traditional custodians of the ACT and recognises any other people or families with connection to the lands of the ACT and region. We acknowledge and respect their continuing culture and the contribution they make to the life of this city and this region.

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Produced by the City and Environment Directorate

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Authorised by the ACT Parliamentary Counsel—also accessible at www.legislation.act.gov.au

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URBAN DESIGN GUIDE

Vision for Canberra:

To be a sustainable, competitive and equitable city that respects Canberra's unique legacy as a city in the landscape and the National Capital, while being responsive to the future and resilient to change.

– ACT Planning Strategy

Part One: Introduction

INTRODUCTION AND PURPOSE

Canberra is growing. With more people living and working in Canberra, a clear and easy to use planning system is required so we can accommodate future growth without compromising the valued characteristics of the city. Our planning system has been developed to promote better outcomes for development, the environment and, most importantly, Canberrans.

A modern planning system is fundamental to the city's vision of a liveable and sustainable city. The system focuses on delivering high-quality built outcomes for the residents of Canberra, with embedded flexibility to encourage innovation.

The long-term goals for Canberra have changed in the 15 years since the last significant review of the Territory Plan. These changes reflect the significance of coping with climate change, providing critical infrastructure for our expanding population, and increasing housing choice and accessibility. The Planning Act, Territory Plan and ACT planning and district strategies establish the basis for our contemporary planning system.

The planning system also incorporates design guides to help the interpretation and application of the Territory Plan's assessment outcomes. The assessment outcomes specify ways that the desired policy outcomes for districts and zones in the ACT can be met. The design guides demonstrate ways the assessment outcomes can be met, particularly through the use of simple and clear diagrams and images.

Please refer to the separate practice note which provides explanatory information on the workflow and interaction of the design guides with other design guides, specifications and the like set by other Directorates in ACT Government.

The design guides provide general best practice design guidance. Reference guides, frameworks, strategies and the like in this design guide are not exhaustive and the user should take care to consider what other documents may be required to support the design and delivery of a development for specific design matters.

WHY THE NEED FOR DESIGN GUIDES

Though the Territory Plan contains assessment outcomes that will deliver the desired planning outcomes for the ACT, these need to be supported by clear methods and examples for how they can be met. This guidance can identify matters that must be addressed and where flexibility in design can be considered.

The design guides and design evaluation processes support the development application and assessment processes by identifying design possibilities and encouraging innovation.

They support the Territory Planning Authority in assessing and determining development proposals that contribute to high-quality development outcomes.

The purpose of the design guides is to elevate design understanding and literacy and elevate good design outcomes by not providing prescriptive quantitative measurements, but by providing clear and easy to understand qualitative guidance that will improve built outcomes for the city.

Design guidance has been developed in consideration of a number of ACT Government strategies and policies. Please refer to the Document Reference list in this guide. In the course of developing this guide, a literature review was undertaken and relevant policies and documents were identified and are cross referenced throughout the design guide. Earlier review work engaged by CED also provided a clear baseline for what constitutes good design.

Tip: These design guides, by their nature, use planning language. See the definitions in the glossary in the appendices.

AIM OF THE DESIGN GUIDELINES

The design guides assist proponents in interpreting and applying the Territory Plan's assessment outcomes. The design guides and design evaluation processes are also critical in supporting the design and assessment processes, particularly those planning provisions that are less prescriptive and leave more room for interpretation and innovation.

The overall purpose of the design guides is outlined below.

- → **Missing Middle Housing Design Guide** (MMHDG) addresses missing middle residential dwellings such as dual and tri-occupancy, townhouse, terrace housing and low-rise apartments.
- → **Apartment Design Guide** (ADG) addresses housing and built form outcomes at a range of densities, excluding single residential dwelling.
- → **City Centre Urban Design Guide** (CCUDG) is a place specific design guide that communicates the intent to deliver high quality best-practice design outcomes for the City Centre.
- → **Urban Design Guide** (UDG) addresses public space, streetscape and built form interface outcomes at a range of scales.
- → **Biodiversity Sensitive Urban Design Guide** (BSUDG) provides guidance on biodiversity and ecological design matters.

Other guides as notified by the Minister pursuant to Section 50 of the Planning Act may also be included. The reasoning for the design guides, which support the Territory Plan are outlined below.

Community benefit and value

Guiding best practice design can lead to social, environmental and economic benefits to the community, government and private business. Social benefits include supporting people's quality of life and overall health and wellbeing. Environmental benefits encompass the protection and enhancement of environmental assets and the inclusion of sustainable design features and travel. Economic benefits include reduced infrastructure and delivery costs as a result of efficient land-use patterns through greater density near activity centres, employment areas and active travel.

Greater clarity and flexibility in process

These guides can provide greater clarity, flexibility and consistency for the community, authority officers and industry. In supporting the Territory Plan, they help people interpret statutory policy, and guide proponents and statutory officers (including development assessment staff, courts and tribunals) within an outcomes-based planning system paradigm; clear writing is supported by images and graphics. These guides give all stakeholders the confidence to fully participate in the planning and development process.

Responsive to contemporary challenges

Our urban environments need to be responsive and adaptable to societal challenges such as natural hazards and pandemics. These guides can help public space and housing designs consider and be responsive to these challenges. By encouraging development to be designed in a responsive manner and of a high-quality, the guides will contribute to improvements in community health and wellbeing.

High-quality and place-based outcomes

An outcomes focused system puts the focus on achieving high-quality design outcomes. These design guides support the Territory Plan to ensure the planning system adequately considers design quality and development appropriateness, leading to improved design quality and overall planning and design outcomes. These outcomes can enable more distinctive places that have strong community identities.

PLACE-BASED DESIGN THINKING

Canberra is made up of many different places and districts, each with its own combination of people, culture, built form, landscaping and natural features. The distinct character of each district helps to define it, and helps planners and developers create places that are memorable, with distinct identities and functions. Good design focuses on these aspects, noting that the way a place makes people feel is significantly more important than merely how it looks.

WHAT IS PLACE-BASED DESIGN?

A place-based approach to design builds upon a place's character to create places that are responsive to their context and create a desirable sense of place. Designing for place requires a deep understanding of the physical, environmental, social and cultural attributes that make a place desirable, recognising that solutions that work in one place, may not work in another.

Place-based design recognises current values and patterns while enabling change, to create a compact, sustainable, affordable, vibrant and equitable city.

WHY IS PUBLIC SPACE IMPORTANT?

The importance of public space and amenity as part of successful urban outcomes cannot be diminished. The design guides specifically call out public space as a key element to be addressed. When public space is designed well, it provides places for human interaction and activity, including culture, entertainment, sport, recreation and commercial activity.

Streets make up a significant percentage of public space and the role and function of these streets are important to creating urban life and vitality. Streets come in many typologies and take on a variety of functions such as movement, commerce, events, servicing and socialising. Built form also plays a fundamental role in defining the character and quality of streets by forming the edges that define these public spaces, shaping places for pedestrians and creating a human scale environment.

NATIONAL CAPITAL DESIGN REVIEW PANEL

Providing high-quality and sustainable design outcomes is key to the future success of our cities and urban environments. A city must respond to the ever-changing demands and needs of those who use it.

Design review is an effective way to improve the quality of built outcomes within our major cities. Design review allows for key development projects and public spaces to be assessed by suitable peers and design professionals to achieve high-quality design outcomes. Design review is an efficient and cost-effective way to improve the design quality of development proposals.

The National Capital Design Review Panel (NCDRP) is an independent and expert panel that provides design advice to the ACT Government, developers and designers for major developments such as buildings, public spaces and public infrastructure projects.

The NCDRP supports decision makers in delivering high-quality, inspiring developments and public spaces to meet the needs of the broader community and to ensure integration with the surrounding environment. Through the process of peer-review by a panel of highly experienced design professionals, design review aims to achieve the best possible design outcome for each development proposal that is presented to the NCDRP.

Referencing the design guides and the Design Principles for the ACT, the NCDRP provides a structured process of design review for the provision of independent design advice for the benefit of the proponent, community and city at large.

Dairy Road District, Canberra ACT.
Design: OCULUS

ACT PLANNING PROCESS

The Territory Plan is a statutory planning document that guides the development and management of land use in the ACT. It sets out the policies and rules for how land can be used and developed including zoning, building height limits, environmental protection and infrastructure requirements.

The Territory Plan has been written through the lens of providing a more outcomes focused planning system. It is accompanied by supporting material such as design guides and planning specifications to deliver a more efficient development assessment process that focuses on developing high-quality built outcomes for Canberra.

The ACT Government has several strategies and frameworks that highlight the direction and vision for the city. Although not statutory in weight, these have been considered and referenced throughout these design guides to direct proponents to further information regarding the key ideas and initiatives where necessary. A list of these documents is provided in the appendices.

The application of the Urban Design Guide, Missing Middle Housing Design Guide, Apartment Design Guide, City Centre Urban Design Guide and Biodiversity Sensitive Urban Design Guide spans a range of project typologies and scales - including both public and private developments. This includes and extends beyond the design and delivery of municipal infrastructure projects and assets that might be handed over to Government. As such, the design guides and the Municipal Infrastructure Standards (MIS) should be considered alongside each other. Note for municipal infrastructure projects, the design guides are not intended to replace the MIS and these should be used where required through the course of planning and delivery processes including with referral agencies.

Design guides may provide guidance that goes beyond the requirements set in the Municipal Infrastructure Standards (MIS) for the design of municipal infrastructure. Proponents will still be required to provide a design response to the design guide.

HOW THESE DESIGN GUIDES RELATE TO THE TERRITORY PLAN

The design guides are a key element in the planning system that will help improve the planning and design of streets, public spaces and residential development in the ACT. The design guides do not form part of the Territory Plan but must be considered if the Territory Plan's assessment outcomes are to be achieved.

The guides support the development and interpretation of statutory policy by providing clear written and visual guidance to help proponents interpret the expected outcomes, while supporting an outcomes-based approach for development assessment.

- District Strategies
- District Policies
- Zone and other Policies
- Design Guides
- District Planning specifications
- Zone Planning specifications

DEVELOPMENT APPLICATION PROCESS

Proponents should consider the Territory Plan (including the relevant design guides) when preparing plans and DA documentation, including for pre-DA matters such as presentation to the NCDRP.

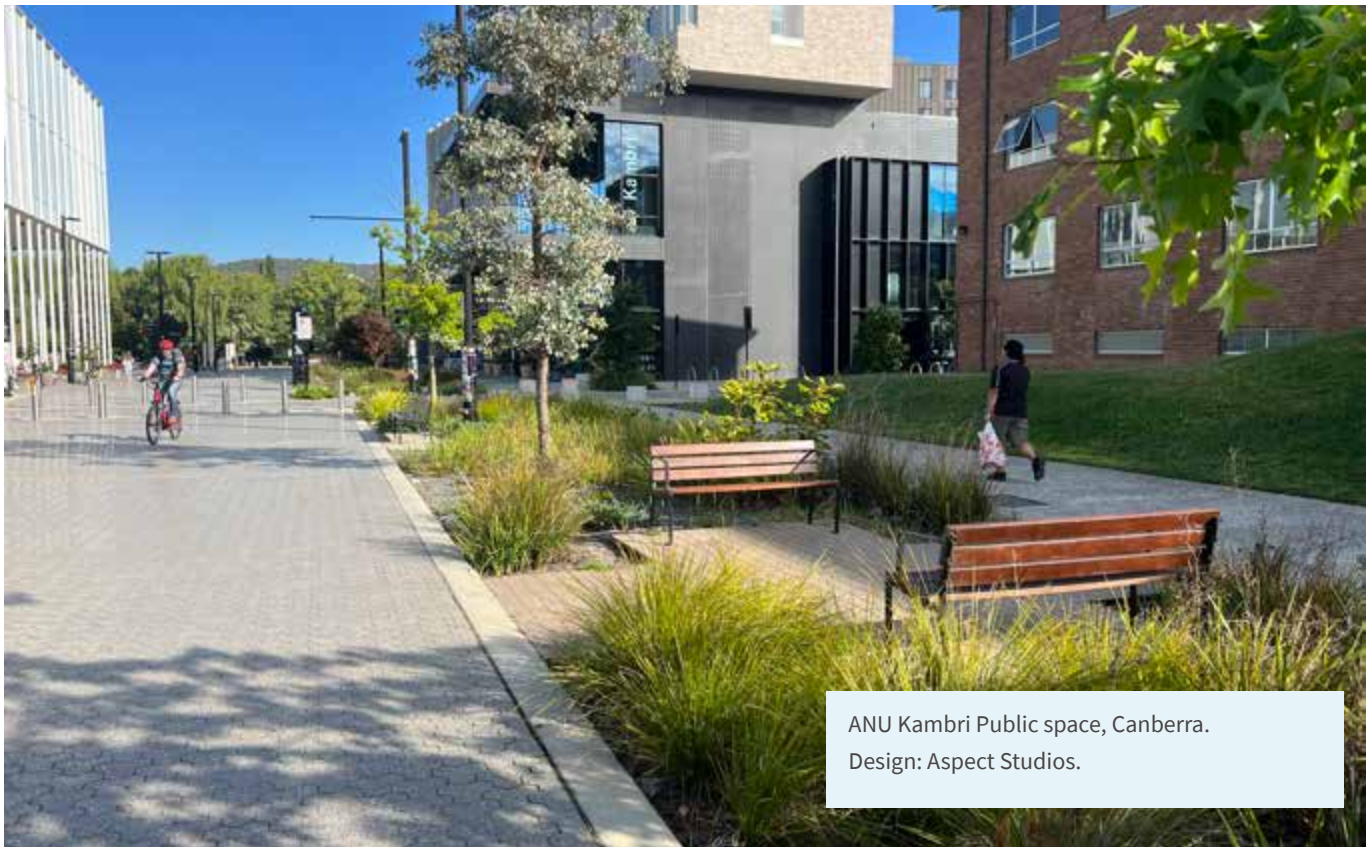
To help the development assessment process, proponents should consider and respond to the design guides at the beginning of the design process. This will allow flexibility in addressing key recommendations from the guide.

When preparing any plans and documentation, proponents must demonstrate their approach and how they have addressed the relevant elements ofany applicable design guide where required. This must be done before going to the National Capital Design Review Panel (NCDRP) and after NCDRP advice if relevant, and be part of their DA submission.

Reference and use of the guidelines would be made at the design review stage as part of the proponent presentation to the NCDRP. The panel would reference the design guides at design review as a tool to achieve optimum design outcomes for each design proposition, however, would not be seeking a demonstration of methodology to address elements in the guides.

Applicable development thresholds for NCDRP would, by default, then apply to the use of the design guides.

To help the development assessment process, proponents should consider and respond to the design guides and relevant agency design guides and the like that might be required through the development assessment and evaluation process. This includes the Municipal Infrastructure Standards



ANU Kambri Public space, Canberra.
Design: Aspect Studios.

HOW TO USE THIS GUIDE

This design guide communicates the ACT Government's intent to deliver high-quality best-practice design outcomes across new developments within Canberra. The design guides demonstrate how a broad range of development outcomes can support the delivery of better outcomes for the ACT.

WHO IS THIS DESIGN GUIDE FOR?

This design guide is intended for developers, design industry professionals, government officials, institutions, community advocates and anyone involved or interested in the planning, design and delivery of built environment projects in Canberra.

This design guide is a key tool for developers when briefing design consultants, assessing proposals, making decisions, advocating for change and targeting investment.

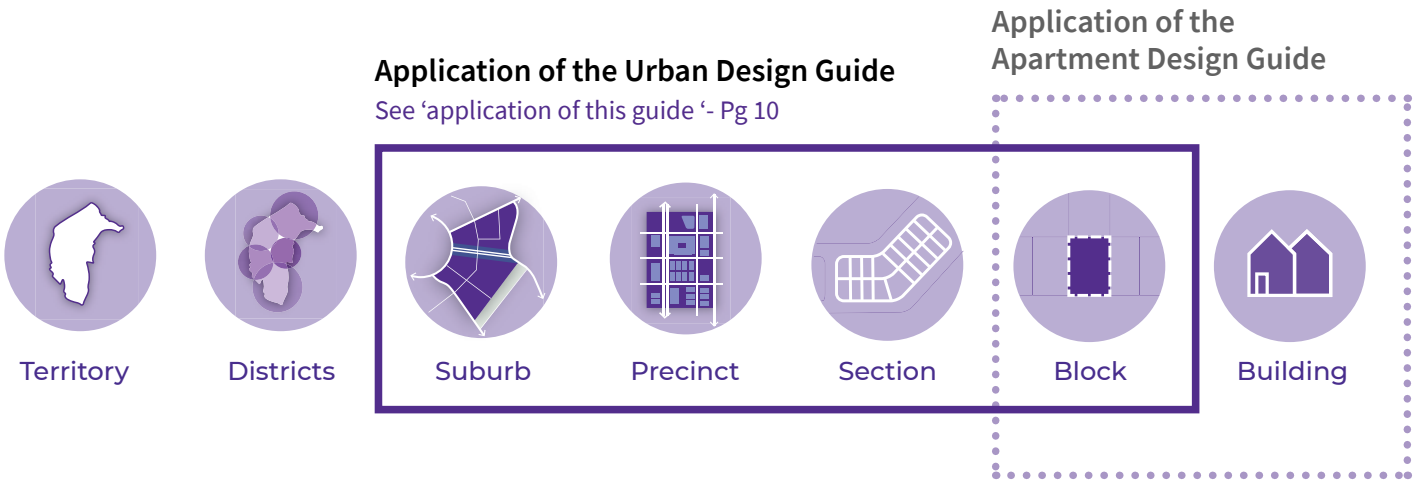
HOW IS THE DESIGN GUIDE STRUCTURED?

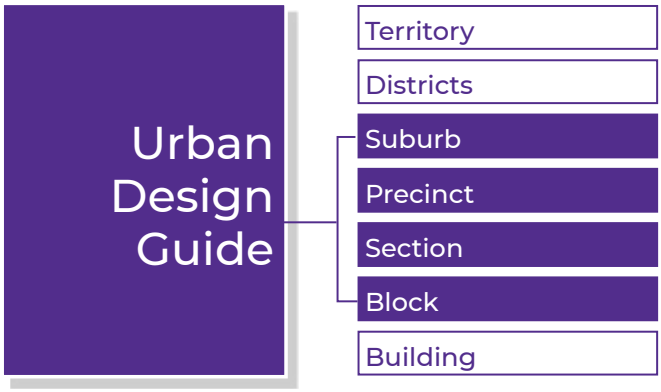
The Urban Design Guide and the Apartment Design Guide work in parallel and cross reference. They have the same structure for clarity and ease of reference; seven key chapters directly flow through to the Territory Plan and associated planning technical specifications.

WHAT DOES THE DESIGN GUIDE APPLY TO?

The Urban Design Guide contains design guidance for all seven chapters, which relate to the scale from suburbs, precinct, section and block. The Apartment Design Guide contains detailed design guidance for the three chapters that relate to residential developments at a block and building scale and refers to the Urban Design Guide for specific guidance where there is overlap between the two design guides at a block scale.

While the Urban Design Guide focuses more on the broader spatial and public space outcomes and the Apartment Design Guide focuses primarily on the built form and housing components, the interface between the built and public space is the most critical for success in any city, neighbourhood or street. To this extent, the Apartment Design Guide will reference the Urban Design Guide in areas of significant cross-over to ensure the successful integration between the two scales. The chapters are outlined on the next page, and the areas of implementation relevant to both guides are outlined.





Application of the Urban Design Guide

The zone of influence of the Urban Design Guide

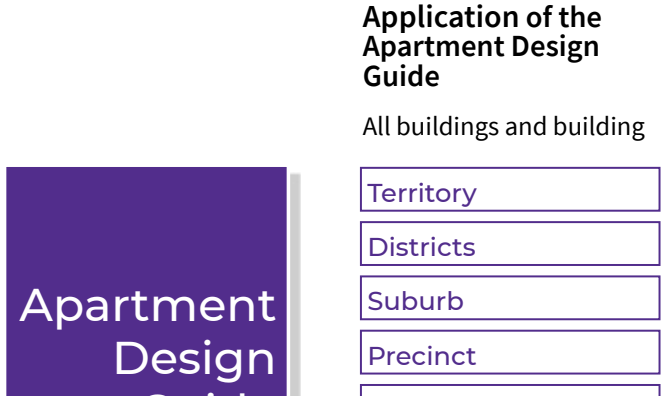
Urban Design Guide will directly influence:

- precinct planning
- planning proposals
- subdivision development applications

Urban Design Guide can inform:

- district strategies and district policies
- changes to the Territory Plan

Urban Design Guide



Application of the Apartment Design Guide

The zone of influence of the Apartment Design Guide

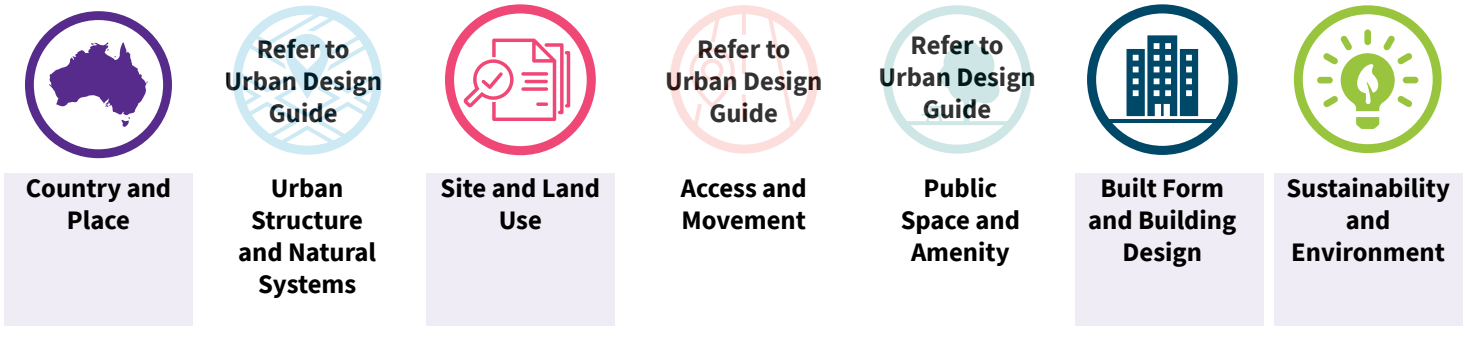
Apartment Design Guide will directly influence:

- residential development planning
- residential component of mixed-use developments
- preparation of development applications

Apartment Design Guide can inform:

- residential building design best practice
- building feasibility studies.

Apartment Design Guide



TERRITORY PLAN ASSESSMENT OUTCOMES

The Territory Plan outlines assessment outcomes for proposed development that align to each of the key chapters. Proponents must address these assessment outcomes and provide clear plans and documentation to support how these have been achieved through the development application. The design guides provide clear guidance to support the proponent in delivering great design that achieves the assessment outcomes.

Application of this design guide:

- → Development must be consistent with assessment outcomes.
  - – Development must consider and provide a design response to those design guides as notified by the Minister pursuant to section 50 in the Planning Act which includes but not limited to the Urban Design Guide, Missing Middle Housing Design Guide, Apartment Design Guide, City Centre Urban Design Guide and Biodiversity Sensitive Urban Design Guide.
- → Development is required to consider and provide a design response to the Urban Design Guide where:
  - – it is precinct scale with a site area greater than one hectare;
  - – the combined development gross floor area exceeds 10,000m^2;
  - – comprises more than 1,000m^2 of public or common space; or
  - – required to seek advice from the Design Review Panel.

Residential and mixed use residential development that provides more than one residential dwelling and is not for missing middle housing as defined by the Missing Middle Housing Design Guide is required to **consider and provide a design response** to the **Apartment Design Guide**.

In demonstrating **consistency** with the **assessment outcomes**, proposed development must demonstrate consideration of the design guidance provided in the Apartment Design Guide for each of the themes. This includes consistency with the assessment outcomes, noting the following **design elements** have an elevated weighting:

- – visual privacy and building separation,
- – solar and daylight access,
- – common circulation and spaces,
- – apartment size and layout,
- – ceiling heights,
- – private open space and balconies, and
- – natural ventilation

In demonstrating consistency with the assessment outcomes, proposed development must **demonstrate consideration** of the design guidance provided in the guide for the following **themes:**

- country and place;
- urban structure and natural systems;
- site and land use;
- access, movement, and place;
- public space and amenity;
- building design and built form;
- sustainability and environment

Projects may have different design responses to the assessment outcomes depending on the nature of the development and the Urban Design Guide and Apartment Design Guide provides design guidance that identifies and describes how they can be met.

Planning technical specifications provide measurable and quantitative guidance, and if met, will be taken to achieve the stated assessment outcome. Note, not all assessment outcomes are covered by a design guide and/or a planning technical specification.

Development may be required to consider and provide a design response to the **Biodiversity Sensitive Urban Design Guide**. Refer to the development thresholds outlined in the **Biodiversity Sensitive Urban Design Guide** for the application of this guide.

Please refer to associated documentation required by the design response at the development application stage. This includes any relevant tables that provide further details of assessment outcomes supported across multiple design elements which may need to be considered in providing a response.

Part Two: Design guide

COUNTRY AND PLACE

The Ngunnawal people, their culture and relationship to Country are foundational elements for all design projects in the ACT.

DESIGN ELEMENTS

1.1 NGUNNAWAL CULTURAL RESONANCE

1.1A Governance, process and engagement

1.1B Buildings, spaces and landscape character

1.1C Wayfinding and navigation

1

A ‘Welcome to Country’ sequence incorporated into the landscape design features carvings by local First Nations artists.

Photo 1: National Museum of Australia. Design: T.C.L. Photo: T.C.L

DESIGN ELEMENT:

1.1 NGUNNAWAL CULTURAL RESONANCE

The interconnections between the Ngunnawal people, the landscape and all its value past, present and future is a foundational element of planning for the future development of the ACT.

Canberra has a rich Aboriginal history, dating back thousands of years before European settlement. The Ngunnawal people are the rights holders of the Canberra region and have strong cultural and spiritual connections to the land, rivers, and forests in and around the city.

DESIGN GUIDANCE

1.1A GOVERNANCE, PROCESS AND ENGAGEMENT

i. Consider facilitating authentic and inclusive engagement and consultation processes with Ngunnawal people throughout the design and development process, particularly in the project's early stages to enable a holistic suite of strategy and design responses.

ii. Recognise and respect Ngunnawal people as rights holders in the ACT, their sovereignty, governance, ways of knowing, thinking and being, their social and cultural practices, their priorities and concerns, and their meanings and values – facilitating safe and welcoming environments for co-creation.

iii. Work alongside Ngunnawal Traditional Custodians of Country to protect, restore and manage sites of cultural significance through Connection to Country conversations with the Ngunnawal knowledge holders as deemed appropriate.

iv. Incorporate the aspirations of Ngunnawal people into decision making, planning and management to acknowledge, celebrate and incorporate Ngunnawal values, meanings and culture that reflect whatever contemporary Ngunnawal decision-makers choose these elements to be.

v. Acknowledge the structural inequality caused by colonial processes and the ways in which these have elevated and prioritised Western practices and knowledge structures to illuminate ways to move forward together in collaboration with The Ngunnawal people.

vi. Deploy engagement tools that allow Ngunnawal people as knowledge holders to clearly contribute to projects in ways that are meaningful and beneficial to them.

vii. Facilitate culturally appropriate engagement with the diverse First Nations people living in the ACT to collaborate on and contribute design perspectives respecting and valuing Ngunnawal Traditional Custodians' rights and protocols as decision-makers for Country.

viii. Collaborate with Ngunnawal and ACT First Nations people to explore diverse employment, business and research opportunities.

ix. Ensure community health and social services are available within the community.

x. Explore opportunities to incorporate Ngunnawal land management techniques into natural areas to facilitate employment opportunities and restorative landscape outcomes.

xi. Extend project partnerships and explore skill sharing opportunities to facilitate opportunities for stronger Aboriginal community networks.

Why this is important:
Completely and respectfully recognising Ngunnawal and First Nations people – their sovereignty, governance, ways of knowing, thinking and being, their social and cultural practices, their priorities and concerns, and their meanings, values and place as a contemporary and living culture – is fundamental in reconciliation, learning and enriching the lives of all Australians on all levels.

Exemplar:
A 'Welcome to Country' sequence incorporated into the landscape design features carvings by local First Nations artists.

Photo 2: National Museum of Australia. Design: T.C.L. Photo: T.C.L

1.1B BUILDING, SPACES AND LANDSCAPE CHARACTER

i. Identify and protect significant tangible and intangible Ngunnawal heritage, historic and environmental values to safeguard Ngunnawal histories, cultural values, narratives and knowledge systems for future generations.

ii. Reflect cultural and heritage values through creative interventions and responses in built form and public spaces to incorporate Ngunnawal knowledge, stories and history of place and landscape into the urban environment.

iii. Incorporate space for art, structures, planting, installations and embedding language to create both formal and informal opportunities for learning.

iv. Showcase native endemic species to celebrate Ngunnawal ecologies and strengthen the sense of place.

Tip: Ensure cultural safety in public space
The design process must encourage cultural safety and ensure that spaces express and resonate with First Nations communities. Cultural safety requires that we do not speak for others or on behalf of others without their approval. Cultural safety creates a space for those who are often silenced to voice their concerns and a space for those who, historically, have been excluded. Cultural safety provides time for all who need to be heard. Cultural safety ensures that all expressions of culture are enabled, irrespective of personal opinions.

Daniele Hromek, What is cultural safety and how do we design for it?, Architecture AU 23rd Jan 2023

1.1C WAYFINDING AND NAVIGATION

i. Incorporate Ngunnawal language and, where culturally appropriate, First Nations language through place naming and signage to improve community understanding of First Nations' histories and geographies, while strengthening a sense of place.

ii. Consider use of illumination, lighting, projections, and digital technologies to create memorable landmarks.

iii. Integrate artworks and languages through key spaces and routes.

iv. Preserve and emphasis historic sight lines through articulation of key spaces and built form.

Exemplar:
The planting strategy acknowledges and preserves the native landscape, providing a "window to the past" for the local Aboriginal Guringai people.

Photo 3: St Leonards Health organisation Relocation. NSW. Design: Arcadia, Photo: Paul McMillan.

URBAN STRUCTURE AND NATURAL SYSTEMS

Understanding and responding appropriately to a places urban structure will support the human experience and success of a place.

Urban design should respond to and contribute to a place's unique characteristics, qualities and place objectives in order to create bespoke design outcomes that sensitively integrate the project into its respective context and wider urban structures. Urban structure refers to the relationship between urban blocks, movement network, the key natural and built features of an area, as well as its history, social, economic, health and environmental conditions.

DESIGN ELEMENTS

2.1 OPEN SPACE NETWORK

2.1A Natural systems

2.1B Type, size, quality, function and connectivity

2.1C Topography and views

2.2 NATURAL SYSTEMS

2.2A Connectivity and access

2.2B Water management

2.2C Restoring ecology

2.3 URBAN STRUCTURE

2.3A Hierarchy of centres

2.3B Precinct structure and layout

2.3C Diversity of lot sizes

2

DESIGN ELEMENT:

2.1 OPEN SPACE NETWORK

Landscape, ecology and biodiversity are foundational elements that define urban responses.

With the ACT set to experience ongoing growth, the delivery of high-quality public spaces and streets will be critical to supporting urban renewal, future development and population growth, while safeguarding biodiversity outcomes for future generations. When designing and delivering large-scale structure plans, it is critical to lead with an open space and amenity-driven approach to establish and protect the defining elements of a diverse, self-sufficient and liveable community, around which development can be shaped.

DESIGN GUIDANCE

2.1A NATURAL SYSTEMS

i. Identify and protect the Urban ACT Ecological Network as defining, structural components that safeguard established ecosystems, support a resilient urban form and facilitate community access to natural amenity.

ii. Prevent infringement upon established protected conservation boundaries identified by planning overlays and ecological analyses to strengthen and protect biodiversity outcomes across the ACT.

iii. Prevent infringement upon other environmentally sensitive areas or important wildlife habitats, for example aquatic habitat, riparian corridors, wetlands, or grasslands / woodlands to strengthen and protect biodiversity outcomes and ecosystem services across the ACT.

iv. Provide new green connections between established habitats to provide greater wildlife permeability and mobility.

v. Consider large-scale nature-based water management and Water Sensitive Urban Design (WSUD) strategies to retain, treat and manage stormwater and water quality.

vi. Re-naturalise existing urban infrastructure such as stormwater channels, other water bodies, neighbourhood parks etc when appropriate to create natural assets that improve local amenity, water quality, urban cooling and biodiversity outcomes.

Related planning strategies and tools:

- → ACT District Strategies
- → ACT Nature Conservation Strategy
- → ACT Biodiversity Sensitive Urban Design Guide
- → Municipal Infrastructure Standards (MIS)

Figure 1: Conserves the terrestrial and aquatic natural ecosystems, wildlife habitats and their connectivity by reinforcing and connecting natural landscape and green corridors by linear parks along streets.

2.1B TYPE, SIZE, QUALITY, FUNCTION AND CONNECTIVITY

i. Ensure that the broader urban structure incorporates a wide spectrum of urban space typologies that caters to all daily needs of the community. These include spatial typologies such as major regional destination parks, district parks, neighbourhood parks, local parks, pocket parks, linear parks, green streets, urban spaces, plazas and town squares.

ii. Upgrade the functional and qualitative elements of the existing open space network where required, to better cater to the needs of the community.

iii. Strengthen the interface between parks, centres and residential areas through defined entrances and gateways and upgrading of adjacent streets and connections to provide better community access to open space.

iv. Co-locate public space with taller buildings that interact, activate and overlook open spaces.

v. Provide high-quality green and walkable connections between major open space elements to facilitate a green mesh of consistent, high-quality active travel connections.

Exemplar:
The concept of the Chandigarh plan established a fine grain network of linear parks that allow pedestrian and cycle movement off main streets, while providing for the community's daily spatial needs. The plan sensitively incorporates the natural systems and establishes additional green corridors for amenity throughout the plan.

Chandigarh plan by Le Corbusier.

vi. Use generously sized urban blocks where desirable to facilitate public linear parks that underpin a more permeable broader strategic green network.

vii. Deliver flexible, functional and programmable spaces that support a rolling program of events and activations.

The blue-green network
ACT District Strategies
Ecological sustainability integrates the protection of the natural environment's values with respect, protection and support of cultural systems and values. All future development in the ACT should consider the conservation of the natural systems of the land as defined in the ACT District Strategies.

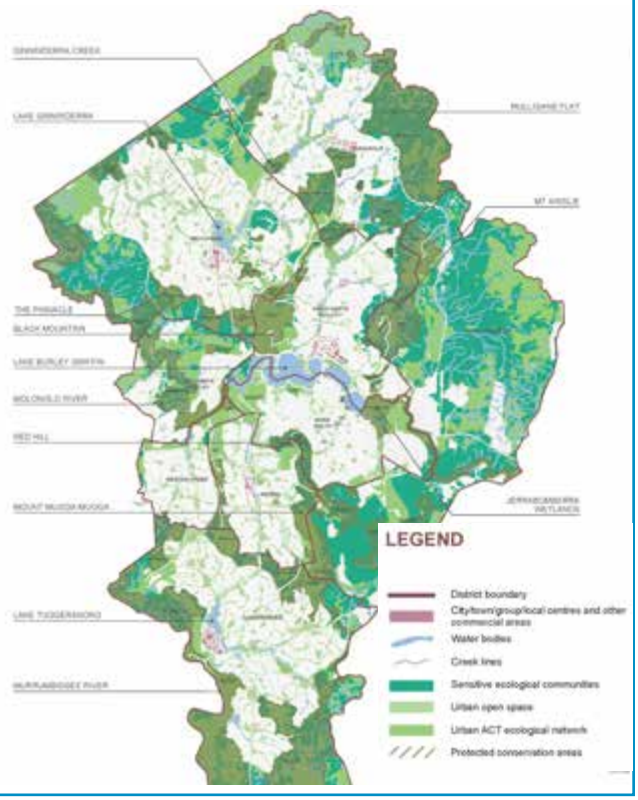


Figure 2: The blue-green network, ACT District Strategy

2.1C TOPOGRAPHY AND VIEWS

i. Sensitively integrate the structure of neighbourhoods, precincts and development with the natural topography. This will help the urban structure integrate successfully with existing ecological systems and minimise visual impact to the landscape.

ii. Celebrate the site's topographic and natural features to highlight visually identifiable elements and establish a distinct character for the place.

iii. Identify and protect key view corridors and sight lines to desirable landscape and urban features, places of cultural significance and landmarks to improve user orientation and ease-of-navigation while strengthening the sense of place.

iv. Use the natural topography and land features when designing the movement network and block layouts to maximise views from adjacent sites and facilitate more efficient street infrastructure grading outcomes.

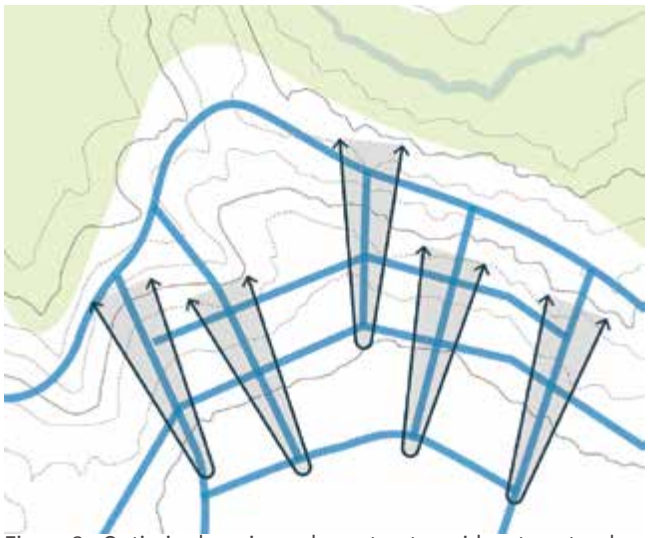


Figure 3: Optimise key views along street corridors to natural assets.

DESIGN ELEMENT:

2.2 NATURAL SYSTEMS

Find synergies with natural systems for the health and wellbeing of people and the planet.

Living with the natural systems is cornerstones for achieving sustainable habitats for humans and all other species. Providing easy access to healthy natural systems has tremendous health and wellbeing benefits for people and the planet.

DESIGN GUIDANCE

2.2A CONNECTIVITY AND ACCESS

i. Improve the connectivity of blue and green infrastructure networks through reducing man-made elements.

ii. Leverage the connectivity of blue and green infrastructure networks to improve the coverage and quality of the active travel network through providing high-quality, sensitively integrated cycle infrastructure.

iii. Leverage newly re-naturalised green and blue infrastructure corridors to improve community access to natural landscapes through sensitively integrating such things as social and gathering spaces, play equipment, fitness equipment, street furniture etc.

iv. Leverage newly re-naturalised blue infrastructure corridors to improve the coverage and quality of the active travel network through providing high-quality, sensitively integrated pedestrian and cycle infrastructure where compatible with ecological objectives.

v. Embed spaces in blue infrastructure corridors for the community to engage with the water, such as water ponds, lakes and water play opportunities.

vi. Increase visual connectivity from surrounding areas to natural systems.

vii. Improve the permeability of green and blue infrastructure corridors through embedding a range of formal and informal pedestrian crossing points.

viii. Provide safe and welcoming spaces that encourage people to sit and dwell.

Exemplar:

From concrete channel to re-naturalised creek. The old drainage channel will be transformed with vegetation and high-quality landscaping to cool the region and provide new community amenities, such as benches and tables, and shared use bicycle and walking paths to better connect neighbourhoods to nearby schools, shops and community services.

Photo 4: Arnolds Creek, Vic. Photo: alluvium.com.au/insights/reconnecting-urban-rivers-with-nature/

Related planning strategies and tools:

→ Canberra's Living Infrastructure Plan: Cooling the City 2019

→ ACT Urban Forest Strategy 2021-2045

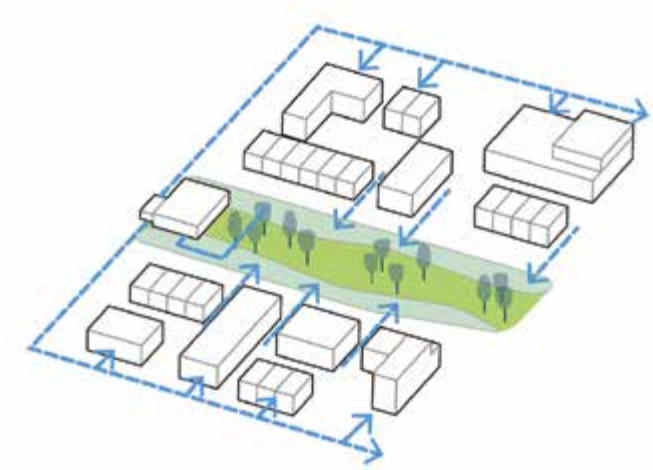


Figure 4: Precinct scale integrated water cycle management

Why this is important:
Protecting and enabling natural areas to work in connected systems alongside human habitation to maintain resilience in ecosystems, including climate change. This resilience will benefit all species, including humans.

2.2B WATER MANAGEMENT

i. Protect ecological and habitat values of existing riparian corridors.

ii. Use water infrastructure corridors such as stormwater drainage channels as opportunities to reintroduce natural landscaping and biodiversity into the urban environment.

iii. Establish natural drainage and water absorption cycles (such as ponds, wetlands, retarding basins and depression storage) that allow the urban environment to drain into the water table more naturally and increase water quality and enhance habitat.

iv. Reduce obstructions to water movement to provide for uninterrupted receding of water during flood events through focusing adaptations primarily at the edges of blue infrastructure networks.

v. Use planting and rough surfaces to improve water quality during low flow periods.

vi. Use horizontal levees and wetlands to better absorb the impact of heavy stormwater flow.

vii. Ensure landscape design enables ponds and wetlands to accommodate for varying water levels and aquatic and terrestrial plant species that are selected to suit the local conditions.

viii. Monitor erosion and sediment control during land development to help protect the health of natural systems.

Related planning strategies and tools:

- → Canberra's Living Infrastructure Plan: Cooling the City 2019
- → ACT Lakes and Ponds Strategy
- → ACT Urban Forest Strategy 2021-2045
- → ACT Water Strategy 2014-2044
- → ACT Practice Guidelines for Ecologically Sensitive Urban Design (to be developed)

2.2C RESTORING ECOLOGY

i. Identify key ecological values and threats, and design all development to achieve objectives of the ACT Nature Conservation Strategy.

ii. Re-naturalise blue-green infrastructure such as stormwater drainage corridors, other water bodies, or neighbourhood parks and other urban open spaces where appropriate to restore native habitats, improve water quality and amenity, and improve biodiversity in built environments.

iii. Connect green and blue infrastructure corridors into broader contextual ecology networks and connect habitats to facilitate wildlife movement corridors and avoid habitat fragmentation.

iv. Use simple construction and restoration techniques where possible to allow for community participation.

v. Design for stewardship to ensure the community can take ownership of the project into the future.

vi. Embed human-made habitats for wildlife where appropriate and desirable such as artificial wetlands or re-vegetated forests.

vii. Incorporate slipped edges enabling species migration during flood and heavy rainfall events where appropriate.

viii. Incorporate understory planting in natural systems blue/green corridors to support the increase of biodiversity.

ix. Contribute to the liveability of the ACT community and supported ecosystems through the proactive protection and restoration of water bodies in urban areas.

x. Minimise human disturbance of nature through suitable barriers such as dense plantings (where appropriate) or suitable environmental buffer areas.

DESIGN ELEMENT:

2.3 URBAN STRUCTURE

The public structure of urban places is the foundation of civic life.

Urban structure is the arrangement of key components of the city and/or precinct, including the understanding of where density lies and the transition to block and diverse lot typologies. Urban structure should be place-responsive, meaning it is built with careful consideration of its physical, cultural and economic context to blend in with the local urban fabric and landscape. The urban structure should support the precinct's planned built form and land use arrangement.

DESIGN GUIDANCE

2.3A HIERARCHY OF CENTRES

i. Deliver a clearly defined hierarchy of activity centres across the city (city, town group and local centres), with functional roles to deliver and distribute services, destinations, conveniences and amenities to the community as required.

ii. Design any new development to respond to the contextual conditions and requirements of its nearby centre, including its scale, land use mix, character, demographic profile, urban structure and infrastructure, to optimise the amenity and self-sufficiency of the ACT's framework of centres.

iii. Encourage higher density residential uses within walking distance of activity centres to unlock the benefits of condensed land-use conditions, public transport integration and sustainable settlement patterns.

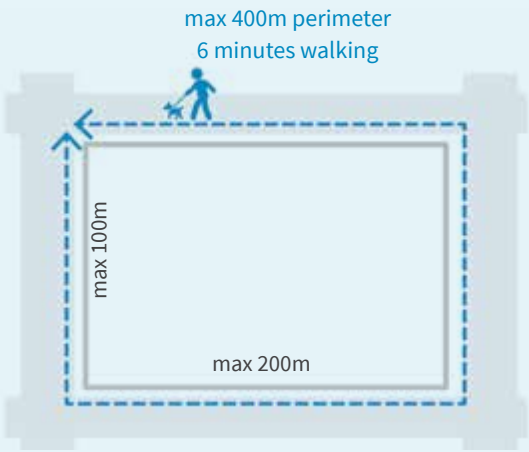
Figure 6: Clearly defined network and hierarchy of centres.

iv. Allocate an appropriate mix of centres throughout communities to ensure consistent access to and distribution of amenities, services and infrastructure.

v. Facilitate high-quality, consistent, convenient and easy-to-find public transport and active travel connections between activity centres to provide sustainable transport connections between key places.

vi. Embed high-quality active travel infrastructure within activity centres and to the immediate surroundings, facilitating a walking and cycling-friendly environment in higher density areas.

Figure 5: Walkable block size



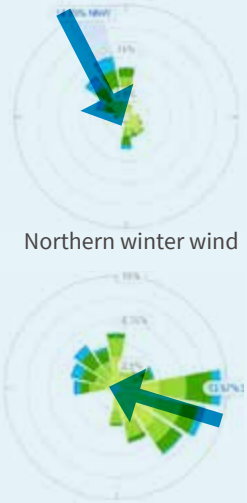
Tip: A walkable and adaptable block size
Providing a plot size dimension of maximum 400m perimeter that is approximately 100–200 m long and 60-100 m wide with a maximum area of 1 hectare can provide a walkable and permeable grid as well as being able to adapt to a range of lot sizes that can accommodate for future building needs and requirements.

Tip: Microclimate assessment

Microclimate assessments are the best way to design and develop urban heat responses specifically for your site. Microclimate assessments will provide site-specific guidance on elements such as the optimal use of tree canopy cover, cool materials, and built form / orientation to maximise energy efficiency, improve thermal comfort and mitigate against the urban heat island effect. Proponents can use microclimate assessments at all stages of a project, from early site investigations to maintenance and renewal on existing developments, and at all scales—from block to precinct, and above.

The ACT Government has published information on the different kinds of microclimate assessments and advice on choosing the best kind of assessment for your site in the Microclimate Assessment Guide.

Lower cost or community-led projects should focus on free and simple methods, whereas high-cost projects like major developments should undertake a combination of methods, including more sophisticated modelling (where relevant).



Northern winter wind

Eastern summer breeze

Figure 7: ACT wind diagram

2.3B PRECINCT STRUCTURE AND LAYOUT

i. Provide a diverse street network hierarchy that includes finer-grain streets and laneways within activity centres to facilitate better neighbourhood permeability, flexibility, serviceability and placemaking opportunities.

ii. Ensure that the movement and open space network is sufficiently permeable and pedestrian and cycle-friendly to facilitate ease-of-movement and encourage active travel within local neighbourhoods.

iii. Locate large format retail or commercial uses that generate high traffic volumes adjacent to major roads and arterials, while locating pedestrian-focused areas in the precinct interior to facilitate better vehicle access and create contained pedestrian-friendly environments.

iv. Locate higher density residential and commercial uses to benefit from areas of established amenity such as major open spaces, public transport infrastructure and social infrastructure such as schools and sports complexes.

v. Locate public and social infrastructure, facilities, spaces and destinations in highly visible and convenient locations to maximise their use and accessibility.

vi. Configure street widths to respond to accommodate elements such as active travel infrastructure, street furniture, street trees, WSUD infrastructure and parking as required.

vii. Locate sensitive land uses away from uses that impact air quality, such as high-volume traffic roads to avoid negatively impacting community health.

viii. Facilitate smaller retail and commercial tenancies on the ground level to support finer-grain and character-rich urban places and movement networks.

ix. Establish larger, flexible commercial blocks with a broad range of permissible land use mixes to enable maximum flexibility and adaptability, with the ability to stage over time.

x. Orient streets and blocks buildings and private open spaces to capture cooling, easterly summer breezes and improve passive cooling and amenity during warm summer months.

Why this is important:

A responsive and adaptable block configuration and structure that is dimensioned to support the human-scale and public transport modes is critical to achieve a healthy and walkable urban environment and set the best foundation for a successful neighbourhood.

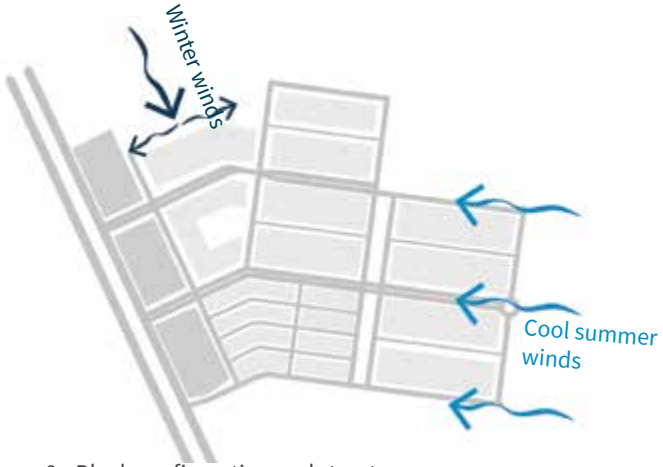


Figure 8: Block configuration and structure

Section structures with streets running east capture cool summer breezes and protect from winter winds. Large area blocks use should be positioned at the edge of precincts and along main streets to provide a buffer to finer grain blocks behind.

2.3C DIVERSITY OF LOT SIZES

i. Provide a diverse set of block typologies and land uses to support the intended character, level of activity and desired urban form of the neighbourhood.

ii. Target flexible lot typologies and sizes that enable more diverse land uses and activity to enable a vibrant and dynamic environment that supports a range of activities, abilities and lifestyles that can accommodate change over time.

iii. Provide a mix of housing typologies that support future needs of the community and provide housing choice and affordability to households of all shapes and sizes.

iv. Establish desirable outcomes such as cross-block connections and public spaces in the initial design and urban design framework to define and protect the long-term amenity and functionality of neighbourhoods and reduce the burden for individual developments to provide privately owned public spaces.

Why this is important:
Enabling adaptability of building lots will give a precinct resilience to adapt to changing needs, uses, building densities and pressures on land value that might arise in the future.

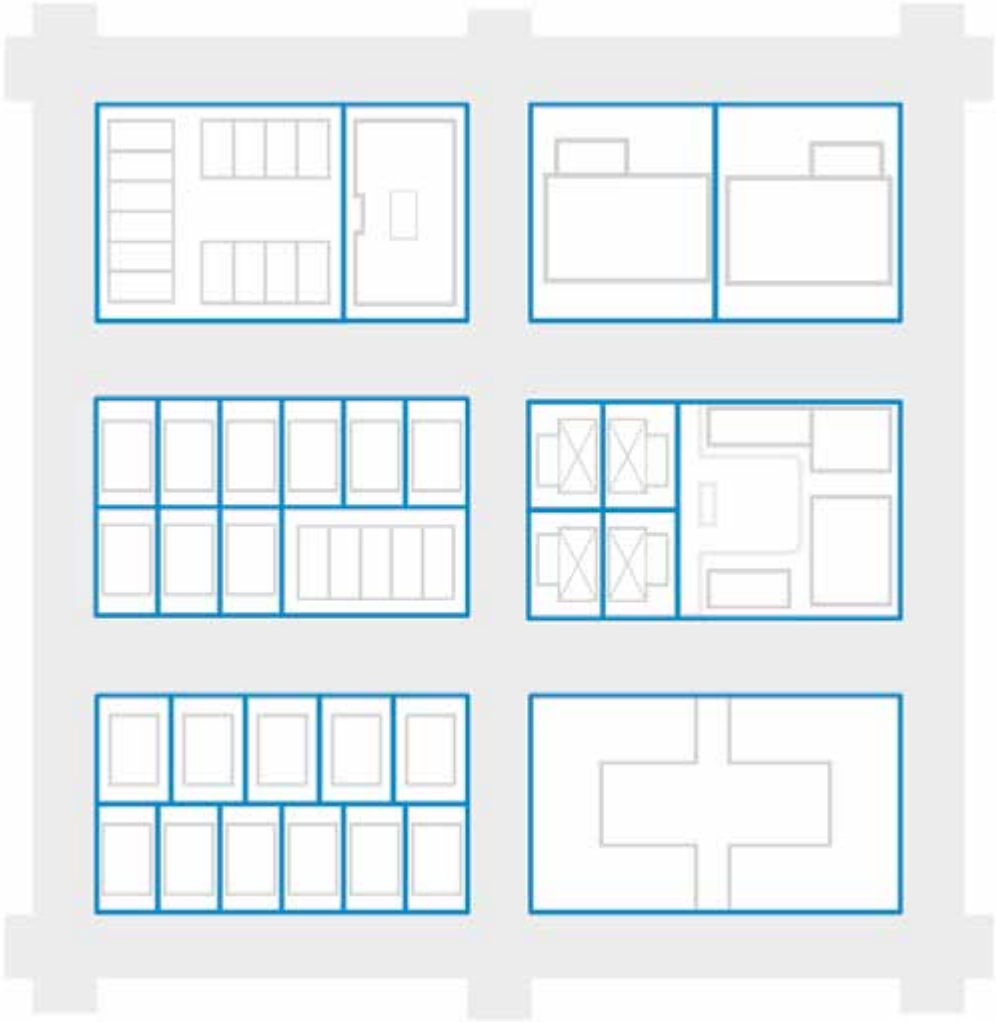


Figure 9: Blocks should be dimensioned to allow flexibility in lot sizes and land uses and be able to adapt to future lot subdivisions, amalgamations and access routes.

Exemplar
The development area shows diversity of lot sizes and building typologies within a typical Canberra plot grid. The development creates a range of experiences and open space typologies.

Photo 5: Kingsborough Masterplan, Canberra, ACT.
Image: © Nearmap 2023.

SITE AND LAND USE

Use new approaches to plan for change that creates high-quality environments and improved public life.

The planning, design and delivery of urban design, public space and built form outcomes should be informed by the city drivers and planning outcomes that respond to the city shape, form, amenity, landscape character and climate. Design outcomes must focus on place-led outcomes that are guided by the Territory's overarching principles and objectives. New approaches to the way we plan for changes in the urban environment, particularly through co-designing opportunities and smart technology data, will help create high-quality environments, improved public life and better outcomes on service delivery.

DESIGN ELEMENTS

3.1 CONTEXT AND CHARACTER

3.1A Griffin legacy

3.1B The Canberra character

3.1C Land use and zoning

3.1D Urban growth and densification

3.1E Precinct amenity

3

Mixed-use development and teaching centre depicting high-quality urban design outcomes.

Location: ANU Kambri, Canberra.

DESIGN ELEMENT

3.1 CONTEXT AND CHARACTER

A city that celebrates its unique context and character by showcasing the distinct natural, cultural, social and historical elements in its design.

Reinforcing the city's identity creates a sense of community and pride among residents and visitors. Incorporating the Ngunnawal culture and local context will make the city more relevant and tailored to the needs and desires of the people who live and work there.

DESIGN GUIDANCE

3.1A GRIFFIN LEGACY

i. Respond to the distinct strategies and spatial outcomes defined in the Griffin Plan to deliver a contemporary interpretation of the plan's intent, while enabling the outcomes suited to a 21st century capital city.

ii. Build upon the core defining features of the Griffin Plan, including maintaining the plan's bold geometrical spatial elements and corridors, civic spaces, grand boulevards, avenues, strong visual connections and the division of the city into distinct areas.

iii. Strengthen the ACT's garden city character through boosting the presence of greenery visible from the street. Achieve this by employing generously sized deep planting within the front setback, embedding visible greenery in podiums and façades and boosting tree canopy in line with regional canopy coverage targets.

iv. Respond to and sensitively integrate with the surrounding natural elements and environmental features such as topography, waterways, significant trees and vegetation, as well as views.

v. When planning and designing precincts, integrate natural elements and generously sized open spaces, using local planting and vegetation to create usable civic places for the community.

Related planning strategies and tools:

→ The Griffin Legacy, National Capital Plan

→ ACT District Strategies

3.1B THE CANBERRA CHARACTER

i. Demonstrate the impact of new development on already established local landscape and built form character, and develop mitigation strategies wherever possible.

ii. Actively design with the existing context character including established trees wherever possible to celebrate and safeguard Canberra's landscape character and protect habitats for biodiversity.

iii. Consider the existing character and anticipated magnitude of change to this local character from any new development including the natural, cultural and historic characteristics of an area that are intrinsic to the locality, and which the local community relate to.

iv. Consider and maintain built form characteristics to strengthen existing character or, in new areas, consciously establish character through built form.

v. Consider the appropriate suite of elements to achieve when establishing high-quality urban character depending on the context (Refer to tip on opposite page).

vi. When an anticipated development is lacking in quality surrounding character to respond to, consider and justify characteristic elements that establish a new precinct character that can be built upon in the future.

vii. Record and describe the key aspects of Canberra's character relevant to the developments site and context. This includes the local character of the site. Refer to related District Strategies for further guidance.

viii. Desired future character should also be considered in the design of a development. It is important to clearly articulate what is 'valuable' about existing character, but also, what is 'desirable' in terms of a future character.

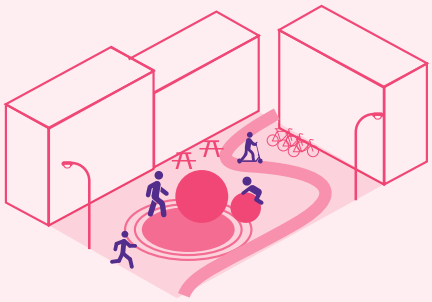
Why this is important:

The ACT is made up of established yet different areas, each with its own character and context. New character and urban characteristics are yet to be established in some areas. Knowing when to strengthen and build upon established context character or purposefully establishing new character will improve the overall distinctiveness and attraction of the ACT urban environment.

TIP: Urban design elements where significant urban character can be established in towns, neighbourhoods and streets:

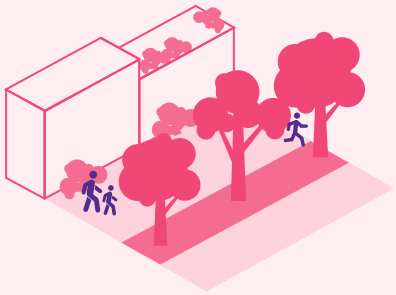
CHARACTERISTIC OPEN SPACE TYPES

Courtyards, streets, squares, piazzas, podiums, etc.



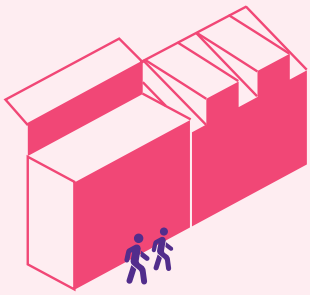
OPEN SPACE MATERIALS

Design detail, craft and tactile design elements



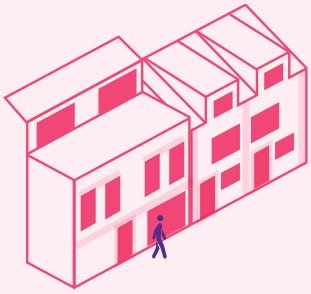
CONSISTENT PLANTING AND LANDSCAPE IMPLEMENTATION

Public space, streets and building design



BUILDING FORM

Building depths, height, setback, step-back, siting, roof pitch



BUILDING OPENINGS AND ARTICULATION

Windows, bay windows, doors, punched openings, solid-to-open ratios, and horizontal and vertical façade elements

BUILDING INTERFACE AND EDGE ZONES

Entrances, porches, front yards, materials

Figure 10:Urban character elements

Tip:

All places will experience change over time. It is important to clearly articulate what is valued in the existing character in a place, but also the future desired character. The distinct Canberra character may be different in different parts of Canberra. These differences should be reflected and might require a different response to enhance the desired future character. Refer to District Strategies for area specific character intent.

3.1C LAND USE AND ZONING

i. Analyse the zoning classifications adjacent to the site to identify opportunities to provide and optimise a complementary mix of uses.

ii. Consider the contextual demand for utilities, community services, production, conveniences, amenities and social infrastructure in the design process and provide for the community's needs.

iii. Blend land uses that are active at different times of the day to foster round-the-clock activation and vibrant urban environments in appropriate locations.

iv. Avoid co-locating overly large areas of single, or limited land use zones to reduce the presence of dead zones and unsafe areas.

v. Diversify land uses within precincts and use mixed-use built form typologies where appropriate to unlock dynamic mixed-use developments.

Figure 11: Mutually complementary transition zone between a high activity traffic corridor and low-density residential area

Tip: Temporary activation

Use temporary activation strategies, building uses, installations and placemaking initiatives on unbuilt sites as a testing ground for long-term mixed uses in a development.

Related planning strategies and tools:

The ACT's hierarchy of centres is a core idea in Canberra's planning system that organises shops, services and jobs in a layered structure so people can access what they need locally while still having larger hubs for higher-level services.

The hierarchy includes four levels:

- The City Centre
- Town Centres
- Group Centres
- Local Centres.

Each centre and their role is outlined more in the Territory Plan through the Commercial Zones Policy.

Centre classification	zones	Areas
City Centre	CZ1, CZ5, CZ6 zones	City Centre
Town centres	CZ1, CZ2, CZ3 zones	Belconnen, Gungahlin, Tuggeranong and Woden
Group centres	CZ1, CZ2, CZ3 zones	Calwell, Charnwood, Chisholm, Conder, Curtin, Dickson, Erindale, Hawker, Jamison, Kaleen, Kambah, Kingston, Kippax, Manuka, Mawson, Wanniassa, Weston
Local centre	CZ4 (potential omitted)	Local shops, non-retail commercial and community uses, service stations and restaurants to service a local community
Mixed-use areas	CZ5 zone	High-density residential and a variety of commercial uses in highly accessible locations (such as major avenues)

Related planning strategies and tools:

→ ACT Planning and Land Authority Development Codes

→ ACT District Strategies

Related planning strategies and tools:

ACT District Strategies 2023

Refer to the district strategies, which set the higher level strategic direction that seeks to capture the valued character and attributes of each of Canberra's nine districts: East Canberra, Belconnen, Gungahlin, Inner North and City, Inner South, Molonglo Valley, Tuggeranong, Weston Creek, and Woden. The five big strategic drivers are:

- → Blue-green network
- → Economic access and opportunity across the city
- → Sustainable neighbourhoods
- → Strategic movement to support growth
- → Inclusive centres and communities

The district strategies deliver the ACT Planning Strategy by providing more specific and targeted directions for each district.

In short, they will inform:

- → the strategic management of growth and change on a district scale
- → context of green and blue spaces
- → good travel connections
- → housing
- → employment growth
- → shopping and retail centres

Exemplar: A former industrial precinct being transformed into a creative mixed-use neighbourhood. Activating unbuilt and future building sites with temporary uses, attractions, installations and placemaking initiatives creates the foundation for a successful future mixed-use precinct.

Photo 6: Dairy Road, ACT. Design: Craig Tan Architects, OCULUS.

3.1D URBAN GROWTH AND DENSIFICATION

i. Provide higher density dwelling types in areas of low density within public transport catchments consistent with the district strategies and district policies.

ii. Reuse existing buildings and infrastructure to help preserve historic and cultural resources, reduce waste, and promote sustainability.

iii. Incorporate green infrastructure to help manage stormwater, improve air quality, and increase resilience to major weather events.

iv. Prioritise transit-oriented developments to reduce dependency on private vehicles and improve access to jobs and services consistent with the relevant district strategy.

v. Encourage innovation and experimentation around land use and activation to encourage resilient urban growth.

Figure 12:Distribution of density along transit-oriented corridors ensuring transition through missing middle typologies

Potential suitability of areas for new housing

ACT District Strategies 2023

The district strategies provide higher level direction setting that is not part of the DA assessment process (when the Urban Design Guide is triggered); however, alignment with district strategies is encouraged.

The suitability mapping identifies areas with the characteristics to accommodate future housing development. The residential development is mapped as areas connecting rapid and light rail stops to group and local centres. The area between and around the stop and centre represents an opportunity for additional housing consistent with public transport-oriented development principles. Within the opportunity areas, appropriate urban character types would be identified.

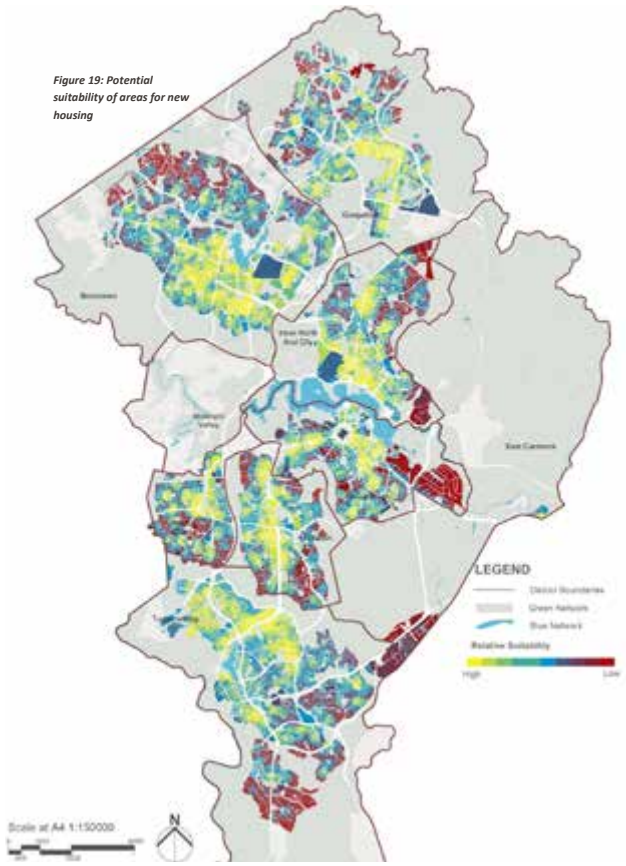


Figure 13:Potential suitability of areas for new housing from the ACT district strategies 2023

Related planning strategies and tools:

→ ACT District Strategies 2023

Exemplar:

This project delivers dwelling densification that is sensitively integrated into the suburban context.

Photo 7: Deakin Townhouses, Canberra. Design: Stewart Architecture.

3.1E PRECINCT AMENITY

i. Ensure a design and strategy-led approach to precinct and neighbourhood design to maximise human-centred amenity and balanced public infrastructure and active travel opportunities.

ii. Define a precinct vision that has distinct points of focus based on real opportunities, evidence and research to create precincts that are purposeful and serve the needs of their adjacent populations.

iii. Target the land use mix and placemaking program to respond to the vision, contextual opportunities and audience needs and values.

iv. Ensure large mixed-use venues such as stadiums, cultural venues and centres located in mixed-use areas are activated and contributing to the community life and activation outside of peak event periods to reduce the presence of 'dead zones' in the urban fabric.

v. Co-locate complementary functions and populations to unlock positive synergies and economies of scale that facilitate innovation and multifaceted clusters of destinations.

vi. Avoid co-locating uses that are likely to create conflict and poor amenity outcomes such as noise, crime and air and visual pollution.

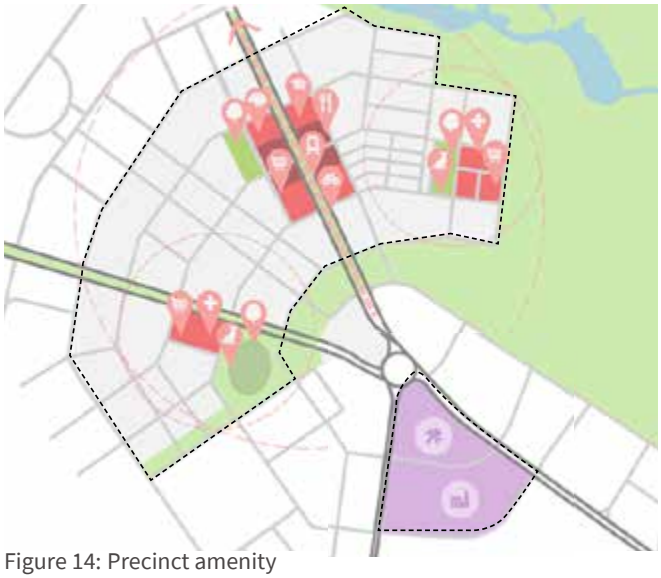


Figure 14: Precinct amenity

Land uses within a 15-minute neighbourhood with a larger cluster located with transport infrastructure. Location of less favourable land use away from amenity areas and open spaces.

vii. Densify land uses adjoining high frequency rapid transport infrastructure consistent with the Territory Plan and district policies to improve walkability and maximise the utility of transport infrastructure while facilitating a sustainable settlement pattern.

viii. Apply principles of a 30-minute neighbourhood so residents are close to daily needs and connected by safe pedestrian paths, cycling lanes and micro-mobility options. Consider the following:

- Provide convenient access to basic services to improve walkability.
- Facilitate compact and walkable, mixed-use neighbourhoods to maximise amenity, affordability and sustainable living outcomes.
- Prioritise active travel to reduce vehicle dependency while facilitating better community health and accessibility outcomes.
- Provide a variety of public spatial typologies to align with the daily spatial needs of the community.
- Integrate social and community infrastructure to improve social resilience outcomes.
- Embed venues, spaces and facilities for culture, arts, and creative activities to diversify the lifestyle, entertainment and amenity offer of local neighbourhoods.
- Facilitate sustainable development outcomes to reduce the per-person carbon footprint of urban communities.
- Create inclusive and equitable environments for all backgrounds, abilities, ages, genders and cultures thereby creating inclusive, welcoming and equitable environments and enabling the autonomy of the community.

Tip: From 30-min city to 15-min city

The 2016 Canberra: A Statement of Ambition, and 2020 ACT Transport Strategy identify that "Everywhere there is the demand from an increasingly time hungry workforce and community to live in the '30 minute city'. Since then, many cities around the world are operating with a 20 minute or even 15 minute city as the current benchmark for liveable cities.

TIP: Transport and amenity within 15-minute city

The 15-minute neighbourhood is a concept that aims to create communities where residents can access the essential services and amenities they need within a 15-minute walk, bike, bus or car ride. It is as much about land use planning as it is about transport. The idea is that by creating more compact and liveable communities, residents will have greater access to services and be able to lead more active and healthy lifestyles.

The below table indicates principles and aspirational amenity clusters, facilities, public space character and green spaces reachable with different modes of transport.

Related planning strategies and tools:

→ ACT Transport Strategy 2020

	15-MIN WALK	15-MIN BIKE RIDE/BUS	15-MIN DRIVE/RAPID PUBLIC TRANSPORT
			
AMENITY AND FUNCTIONS	**'What I need every day'** → Fresh groceries, convenience store and cafe → Health clubs, pharmacy → Informal sports and playgrounds → Community support functions → Kindergartens and early learning facilities → Primary schools → Place of worship	**'What I often need'** → Supermarkets and weekly shops and pubs/restaurants → Local health care and community support centre → Library and cinema → High school and adult learning centre → Workshop facilities, hobbies and DIY tools exchange → Organised sports facilities → Repair and light production	**'What I sometimes need'** → Specialty retail precinct (clothes, furniture, electronics) → Sports arena and events venues → University and higher learning education institutions → Art institutions and performance spaces → Governance, administration and courts
PUBLIC SPACE CHARACTER	**'Everyday-life' spaces to share with 'neighbours'** → Good quality residential streets → Front gardens and semi-private spaces (edge zones)	**'Necessity with dignity' spaces to share with 'community'** → High-quality and dignified public spaces and streets for recreation and to go about daily business	
GREEN OPEN SPACE	→ Pocket parks, community gardens and squares → Blue-green networks and green links	→ Adaptive natural landscapes that double as recreational spaces and neighbourhood parks → District parks and ovals	→ Large gathering spaces in parks, gardens, natural areas, river front, lake front with unique character
STREETS AND NETWORK	→ Fine grain network of local streets and pedestrian friendly environments	→ Arterials and corridors with multi-modal transport opportunities (pedestrian, cycle, bus, tram)	→ City Centre → Town centres → Destination precincts
MOBILITY	→ Pedestrian and bike friendly with slow moving traffic	→ Multi-modal transport opportunities and faster moving traffic	→ Access to pedestrian priority environment with slow moving traffic at grade and excellent transport interchange connections

ACCESS AND MOVEMENT

Streets are important places where people gather and interact. Reframe the understanding of streets as places for people instead of cars.

A shift is needed to refocus the primary use of streets for people and not cars. Successful cities place a high focus on movement and place and balancing the different movement demands required within the streetscape zone.

DESIGN ELEMENTS

4.1 CITY WIDE MOVEMENT NETWORK

4.1A Contextual movement network alignment

4.1B Community proximity to transit infrastructure

4.1C Diverse transport modes

4.2 BALANCING MOVEMENT AND PLACE DRIVERS

4.2A User needs

4.2B Movement network hierarchy and function

4.2C Local framework of places

4.3 PEDESTRIAN FOCUSED STREETS

4.3A Safe, inclusive and legible streets

4.3B Permeability and ease of movement

4.3C Comfort, convenience and amenity

4.3D Attractive, active and distinct

4.4 ACTIVE TRAVEL

4.4A Safe, inclusive and legible active travel network

4.4B Comfortable and convenient active travel routes

4.4C Supporting infrastructure for active travel

4.5 PUBLIC TRANSPORT

4.5A Public transport infrastructure separation

4.5B Inclusive and accessible public transport infrastructure

4.5C Servicing key destinations and populations

4.5D Transport modal change

4.6 VEHICLE ACCESS AND PARKING

4.6A On-street parking

4.6B Parking access and entries

4.6C Flexible parking structures

4.6D Underground parking

4.6E Parking and accessibility

4.6F Surface parking areas

4.6G Electrification and zero emission vehicles

4.6H Access to buildings and parking

4.6I On site access

4.6J Green accessways on lots

4

Photo: Ben Wrigley Photography

DESIGN ELEMENT:

4.1 CITY WIDE MOVEMENT NETWORK

Movement and transport guide distribution of key land uses and density across the city.

Integrating key principles around movement and place into large development projects early in the project life cycle will benefit the city. Aligning with the broader strategic transport planning framework creates opportunities to use existing and proposed infrastructure efficiently, while helpings to guide distribution of key land uses and densities across the city.

DESIGN GUIDANCE

4.1A CONTEXTUAL MOVEMENT NETWORK ALIGNMENT

i. Configure the structure of movement corridors and connections to align with the functional requirements of the broader movement network, to maximise the benefits of both systems and avoid duplication.

ii. Undertake a holistic movement and place analysis of the network according to the ACT Movement and Place Framework to ascertain the ideal balance of functional qualities for future streets and associated places. Include a considered analysis of relevant user groups to identify their daily spatial, movement and place-based needs.

iii. Consider the existing ACT Movement and Place strategy when considering the quality and expectation of movement corridors to align with broader regional movement network strategies.

iv. Facilitate a permeable street grid network that allows efficient traffic dispersal and distribution while enabling people-oriented spaces away from arterial traffic streets.

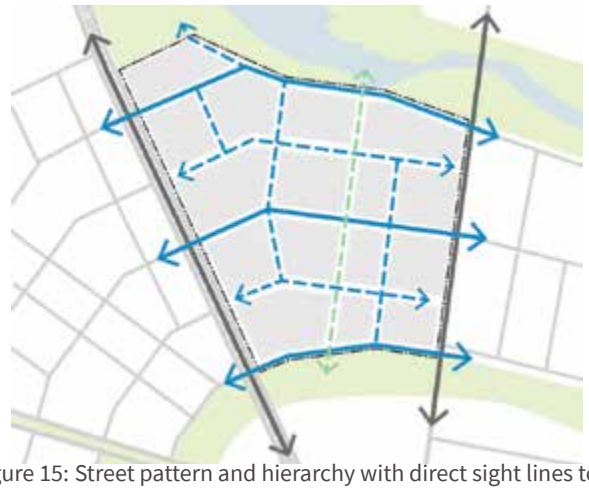


Figure 15: Street pattern and hierarchy with direct sight lines to key destinations.

4.1B COMMUNITY PROXIMITY TO TRANSIT INFRASTRUCTURE

i. Undertake a comprehensive analysis of the area to understand the contextual demographic, socio-economic and land-use patterns, including travel demand and the origin destination patterns of trips.

ii. Integrate transport nodes and interchanges into the heart of major trip generators, such as centres, villages, employment areas, higher density areas, major open spaces and destination parks and social infrastructure, such as schools and hospitals.

iii. Ensure that the transit network provides consistent coverage to the community while providing a frequency of services that meets projected demand.

iv. Use new high-frequency public transport nodes to catalyse higher density development in its immediate proximity, to facilitate a more sustainable settlement.

v. Ensure the movement network facilitates consistent access to public transport infrastructure to provide communities with sustainable transport alternatives and better access to trip generators.

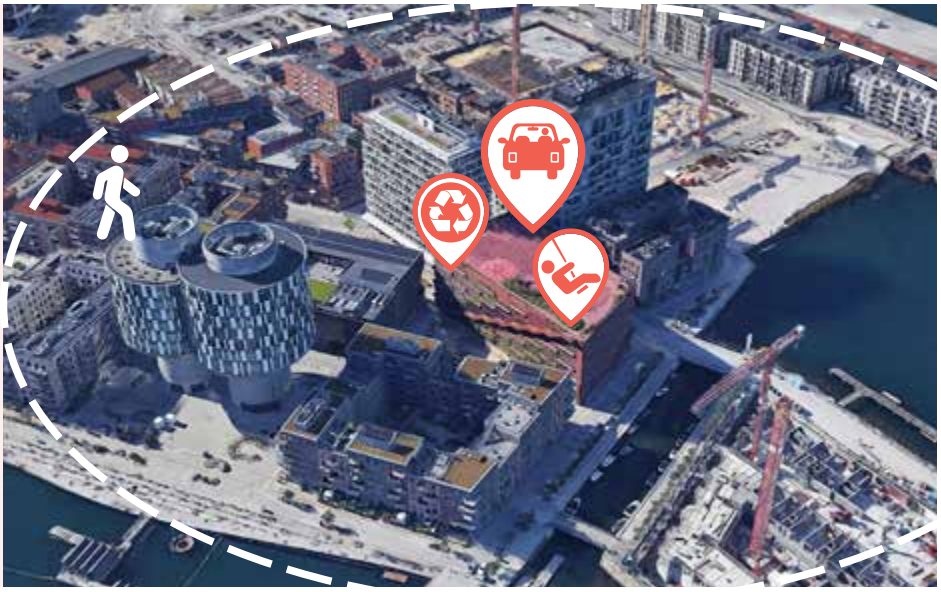
vi. Engage with the community in the design process, to ensure that the network meets the needs and expectations of the local population and stakeholders.

Why this is important:
Creating density and boosting community needs around transport nodes creates an efficient and accessible transportation system that connects people, goods, and services. The higher the density, the more likely people are to use public transport, reducing traffic congestion and the need for individual car ownership.

Exemplar: Shared parking structures

Newly developed precincts in Copenhagen have central car parking structures that often have a local supermarket at ground floor or community infrastructure services such as recycling and upcycling stations, playgrounds and sports facilities. Consolidating the private parking needs for a neighbourhood in one structure allows adaptation to change in private vehicle ownership models of the future while reducing vehicle traffic throughout a precinct.

Photo 8: Park 'n' Play, Denmark.
Design: Jaja Architects.
Image: Google Earth 2023



Strategic movement to support urban growth ACT District Strategies

Public transport is essential to contemporary sustainable cities. It is the urban structure for community and economic city life – connecting the people to the activities and that sustain them. Future population and economic growth opportunities in the ACT should align with the wider public transport strategy.

Figure 16: ACT public transport

4.1C DIVERSE TRANSPORT MODES

i. Facilitate a diverse, high-quality multi-modal transit network that provides communities with maximum choice in sustainable transport alternatives, such as public transport and active travel infrastructure.

ii. Provide interconnectivity between the full spectrum of transport and active travel services, such as buses, light rail, bike sharing, and ride-hailing services to provide a seamless, interconnected network.

iii. Provide dedicated infrastructure for a diverse multi-modal movement network, including bus lanes, separated active travel infrastructure and pedestrian walkways, to prioritise sustainable transport modes.

iv. Increase the quality, connectedness and priority given to pedestrians and cyclists across the movement network to encourage sustainable transit.

v. Improve the comfort, quality, connectivity and convenience of sustainable transit modes to improve take-up of non-motor vehicle transport.

vi. Explore the potential for large, integrated sites and precincts to provide shared, consolidated parking functions in order to reduce the burden on adjacent developments, unlock a more diverse range of typologies and deliver vibrant, walkable places.

Related planning strategies and tools:

→ ACT District Strategies
→ ACT Movement and Place Framework for Canberra
→ ACT Transport Strategy 2020

DESIGN ELEMENT:

4.2 BALANCING MOVEMENT AND PLACE DRIVERS

Seamlessly integrate the functional requirements of streets, while elevating the liveability and amenity of these key public spaces.

Realising the future potential of city streets and places requires improved integration of land uses, placemaking opportunities and multi-modal transportation planning. The combination of these elements will improve the liveability and amenity of the public space while supporting the safe, effective and dependable flow of all forms of transportation. The street network should promote activation and consider green infrastructure to reinforce the importance of the public space. The place-value within the streets will determine the city's future sustainable growth.

DESIGN GUIDANCE

4.2A USER NEEDS

i. Analyse local user needs (such as pedestrians, vehicles, cyclists, public transport, businesses and residents) to optimise and balance the street configuration.

ii. Identify and prioritise a balanced urban design outcome when a street has multiple functions or place aspirations.

iii. Provide access to a wide range of mobility choices to respond to user needs and boost the accessibility of the movement network.

4.2B MOVEMENT NETWORK HIERARCHY AND FUNCTION

i. Analyse the surrounding street hierarchy and movement network to optimise the street configuration to respond to the broader movement function within the network.

ii. Provide on-street parking in targeted locations to respond to the needs of key destinations and trip generators.

iii. Avoid providing overly frequent intersections on key structural routes to reduce impacts to traffic movement.

iv. Avoid focusing ground-floor activation on major structural routes that primarily provide significant traffic movement functions.

v. Improve the active travel network and optimise the street configuration to provide the ideal active travel configuration for a given street or road. This will encourage active travel to be the preferred and most convenient mode of transport.

vi. Analyse the surrounding public transport network to optimise the street configuration to support the needs of public transport infrastructure.

vii. Analyse the needs of residential, commercial and centre areas for ease of servicing and access for heavy vehicles where appropriate and desirable.

4.2C LOCAL FRAMEWORK OF PLACES

i. Analyse the needs of the surrounding spatial and destination network to optimise streets and adjacent spaces for flexibility and adaptability, with the capacity to accommodate events and activations where desirable and appropriate.

ii. Analyse the surrounding centre hierarchy to respond to the movement and place needs of adjacent businesses, centres and destinations where appropriate.

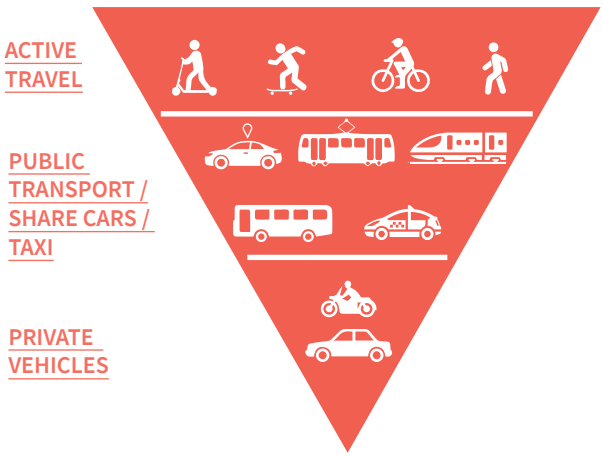


Figure 17: Movement hierarchy

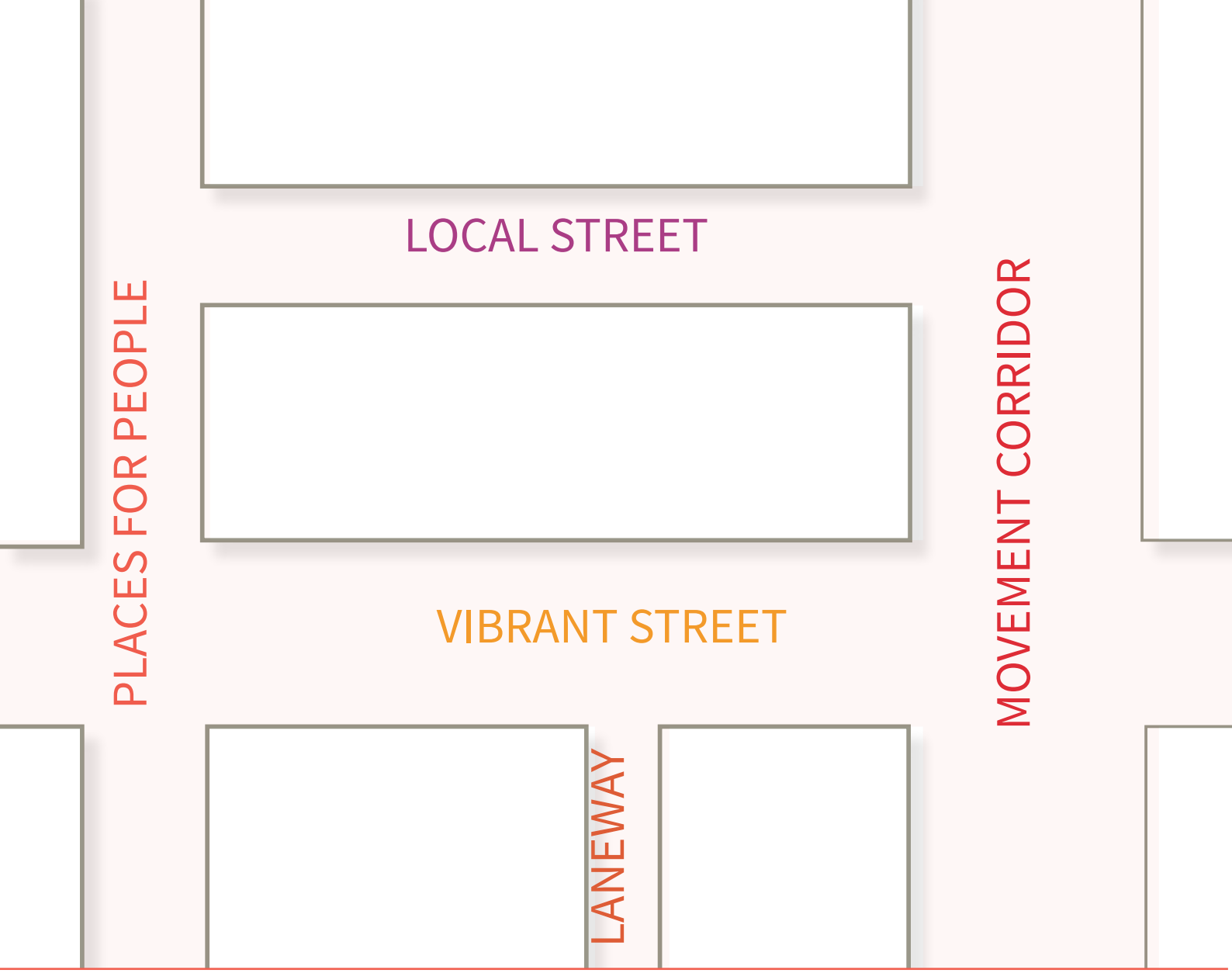


Figure 18: Generic plan arrangement

Note: This plan arrangement and street typology will be used across the following pages for consistency in the design guidance.

Alignment with ACT Transport Strategy for Movement and Place

Streets take up a high proportion of a city's public open space and are where most human interaction occurs. The *ACT Transport Strategy 2020* identifies a Movement and Place Framework that focuses on balancing the dual function requirements of streets. Defining streets as movement corridors and as places for people requires balancing these elements. The Urban Design Guide places strong importance on this approach. Identifying the types of streets required with a strong focus on place-based outcomes, will create more resilient and comfortable environments for people to occupy and strengthen connections between key places while encouraging more active mobility.

Figure 19: Movement and Place Framework for Canberra

DESIGN ELEMENT:

4.3 PEDESTRIAN FOCUSED STREETS

Make walking a safe and attractive option by providing high-quality streets

To encourage people to walk rather than drive or take alternate routes, streets must be designed to be as attractive as possible. Making walking interesting and entertaining, and giving people something to do along the journey, is a fundamental component of motivating more people to walk. Streets must feel safe, not just in terms of vehicle and cycle traffic, but as protection from other people, crime and our overall perceived feelings of safety.

DESIGN GUIDANCE

4.3A SAFE, INCLUSIVE AND LEGIBLE STREETS

i. Reduce the impact of crime by incorporating CPTED principles wherever possible, such as delivering activated building edges that provide passive surveillance of the street, providing well-lit and legible movement paths and minimising vulnerable spaces and clearly defined entries.

ii. Provide universal and inclusive design elements using strategies such as Tactile ground surface indicators, intelligent crossing systems, auditory and visual beacons, equitable level changes and all abilities entries and transitions to boost the autonomy of users of all ages and abilities.

iii. Provide clearly defined and accessible paths that are unobstructed by bollards, bins, lighting, utilities and other street furniture.

iv. Introduce lane narrowing or pinch points to slow traffic speeds and improve pedestrian safety and amenity, while decreasing crossing distances where appropriate.

v. Maximise visibility and safety through continuous and adjustable street lighting, introducing intelligent street lighting.

vi. Provide clear, legible and multilingual signage in logical places, identifying important locations, destinations and features and supporting simple navigational choices.

vii. Provide strategically located disabled access parking where appropriate and desirable.

4.3B PERMEABILITY AND EASE OF MOVEMENT

i. Provide clearly defined, accessible and unobstructed pedestrian paths that facilitate ease of movement.

ii. Provide footpath build-outs at intersections and desirable mid-block points to facilitate ease of crossing key roads, reduce crossing distances and improve safety.

iii. Provide publicly accessible cross-block connections on larger, longer sites to improve the pedestrian permeability of the urban environment.

iv. Provide raised pedestrian crossings and crossing islands where possible to calm traffic movement, clearly identify pedestrian crossing points and facilitate more accessible crossing movement.

Why this is important.

Improving urban permeability increases the ease and convenience of moving about on foot and by bike, thereby increasing the likelihood of someone choosing to walk rather than drive on short trips. This benefits individual health, the environment and activity of an area.

Related planning strategies and tools:

- → Municipal Infrastructure Design Standards (MIS)
- → Austroads and Active Travel Design Guide
- → Austroads Guide to Traffic Management

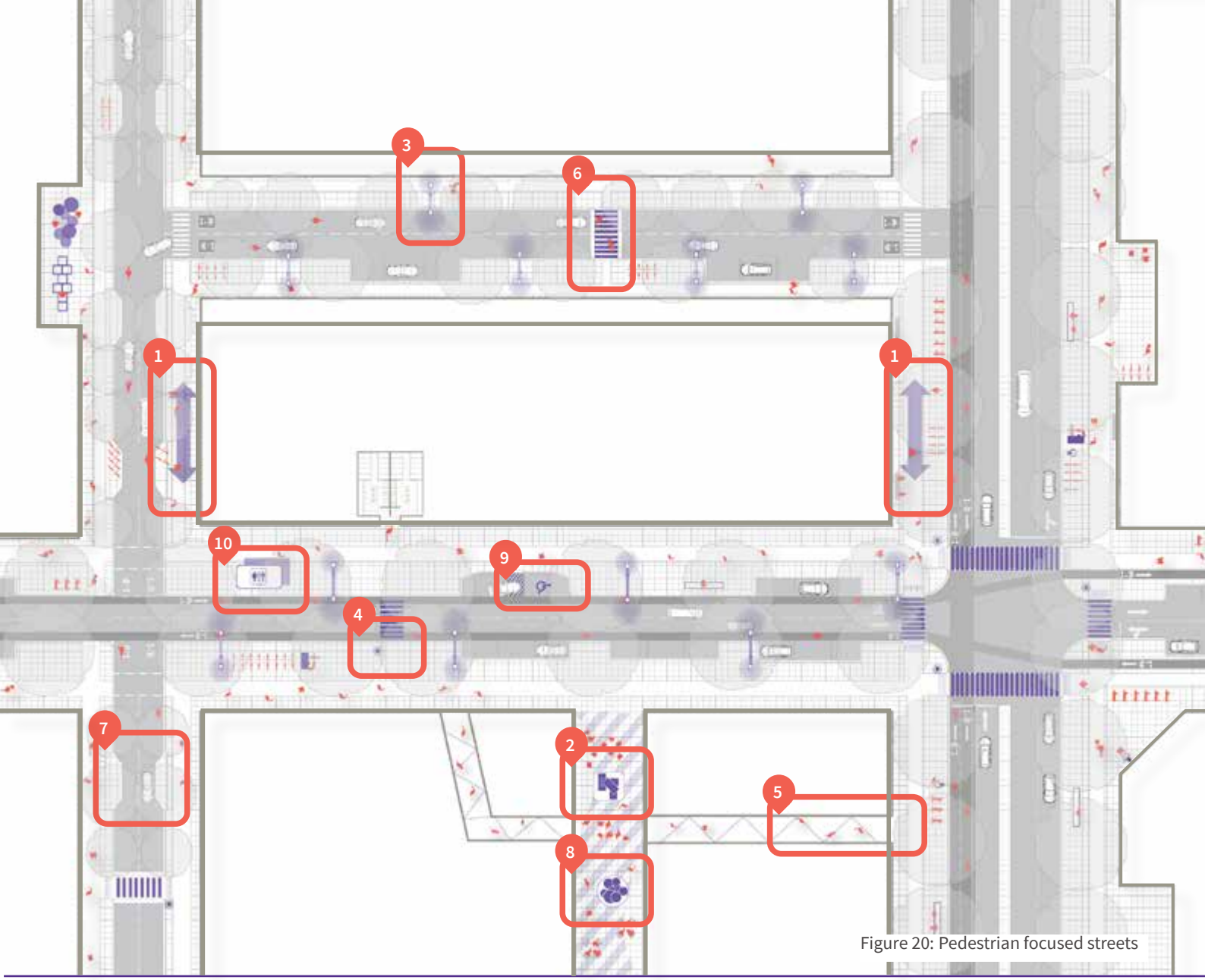


Figure 20: Pedestrian focused streets

1 CLEAR, WIDE AND UNOBSTRUCTED FOOTPATHS

2 PUBLIC ART AS FOCAL POINT OF URBAN ACTIVITY

3 MAXIMISE VISIBILITY AND SAFETY THROUGH STREET LIGHTING

4 UNIVERSAL AND INCLUSIVE DESIGN ELEMENTS

5 CROSS-BLOCK LINKS

6 RAISED PEDESTRIAN CROSSINGS

7 LANE NARROWING AND PINCH POINTS

8 PLAY ELEMENTS

9 DISABLED PARKING

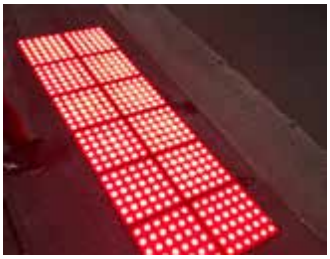
10 PUBLIC AMENITIES

Tactile ground surface indicators (TGSIs)

TGSIs provide outcomes to assist vision impaired pedestrians by providing a physical element within the pavement that can be felt underfoot.

Raised crossings

Raising the surface of the road to be flush with the kerb at key pedestrian crossings creates a safe and seamless transition to the street.



Intelligent crossings

Using technology and design in tandem can enhance safety of street crossings.

Safe footpaths

Safe and clearly defined pedestrian movement pathways and zones are free from obstruction and clutter such as furniture and signage.

Tip: Arts, events and pop-up activations

Activation of pedestrian focused streets can be provided through the programming of events. This can be through live performances, outdoor exercise classes, giant games and community activities. These activities give the community a sense of ownership and belonging and bring activity and identity to the community.

Photo 9: Federation Square VIC.

4.3C COMFORT, CONVENIENCE AND AMENITY

i. Improve the comfort and usability of the urban environment by incorporating street furniture in key places that encourages pedestrians to dwell, linger and enjoy urban life.

ii. Improve the convenience and usability of the urban environment by including amenities such as water fountains, public toilets, bins and other amenities, making urban life easier and more enjoyable.

iii. Ensure waste collection and infrastructure causes minimal impact and disturbance to public space amenity and use by locating waste collection points away from primary entrances and key public space.

iv. Provide wide and generously sized footpaths that allow for easy, comfortable and legible pedestrian movement where appropriate.

v. Minimise driveways and vehicle crossovers on primary pedestrian-focused streets and amalgamate driveways wherever possible to reduce the impact to the pedestrian experience.

vi. Boost the presence and coverage of the street tree canopy by introducing large, long-lived street trees wherever possible within the public road reserve.

4.3D ATTRACTIVE, ACTIVE AND DISTINCT

i. Consider built form edge conditions that interact positively with the public space and provide engaging, attractive and transparent edges and interfaces.

ii. Provide flexible and adaptable spaces with embedded activating infrastructure to boost the capacity of the place and accommodate a range of events and activities.

iii. Celebrate and embed First Nations narratives, stories and historical references wherever possible into the public space.

iv. Introduce high-quality and contextually responsive public art as focal points for urban life into the public space.

v. Embed formal and/or informal play elements to improve children's experience of the street, where appropriate.

Why this is important.

People attract people. Creating streets that invite people to spend time and engage with art, culture and each other has an enforcing effect on creating more interesting streets in an attractive and distinctive way.

Related planning strategies and tools:

→ Municipal Infrastructure Design Standards (MIS)

Photo 10: Bradley Street, Canberra, ACT.

DESIGN ELEMENT:

4.4 ACTIVE TRAVEL

Walking and cycling are effective active travel options that can move people around neighbourhoods and cities in a healthy and equitable way.

They increase the liveliness and vibrancy of streets, while producing no noise, air pollution or greenhouse gas emissions. To encourage more people to use active travel modes, they must be safe, legible, comfortable and convenient, and be supported by high-quality public space and streetscape amenities in between key destinations and activity.

DESIGN GUIDANCE

4.4A SAFE, INCLUSIVE AND LEGIBLE ACTIVE TRAVEL NETWORK

i. Provide high-quality active travel infrastructure such as on road, shared zones and protected bi-directional lanes on all structural road connections where possible.

ii. Provide generously sized footpaths that act as shared paths for both pedestrians and active travel users and boost the coverage of the active travel network.

iii. In areas of high cyclist and pedestrian activity such as town centres, provide separate paths for pedestrian and cyclists where possible.

iv. Incorporate buffering elements that facilitate active travel infrastructure that is separated and protected from vehicle movement. This will boost the safety, inclusivity and usability of the network and increase adoption and take-up of active travel by the broader community.

v. Provide easily identifiable and visible active travel infrastructure using road markings and material treatments to boost the legibility of the network.

vi. Provide clear signage and wayfinding elements throughout the active travel network to boost the legibility and usability of the network.

Why this is important:
Canberra has a topography and temperate climate that allows active travel with ease for most of the year. The continued investment in connected bike paths and active mobility infrastructure in all urban contexts throughout the Territory will lead to the success of healthy and sustainable transport. Making active travel convenient and safe are the top priorities to encourage use of active travel infrastructure.

4.4B COMFORTABLE AND CONVENIENT ACTIVE TRAVEL ROUTES

i. Include appropriately sized active travel infrastructure to allow for comfortable and safe usage.

ii. Boost the presence of large, long-lived street trees along active travel routes to improve shade coverage and the overall comfort and usability of the network.

4.4C SUPPORTING INFRASTRUCTURE FOR ACTIVE TRAVEL

i. Provide amenities and conveniences that support the usability of the network such as cycle parking, drinking fountains and bike repair and servicing stations.

ii. Provide end-of-trip facilities within developments such as private bike parking, bike storage, lockers, shower and change rooms, charging stations and public transport access.

iii. Use flexible zones such as parking lanes and footpath shoulder areas to accommodate infrastructure such as micro-mobility set down areas and cycle parking.

Related planning strategies and tools:
- → Municipal Infrastructure Design Standards (MIS)
- → ACT Active Travel Plan
- → ACT Design Guide for Best Practice Intersections

Why this is important:
End-of-trip facilities play an important role in promoting sustainable and active forms of transportation, such as cycling and public transportation, and helping to reduce car usage. They also improve the overall quality of life for commuters by providing a more convenient and comfortable transition between work and leisure activities.

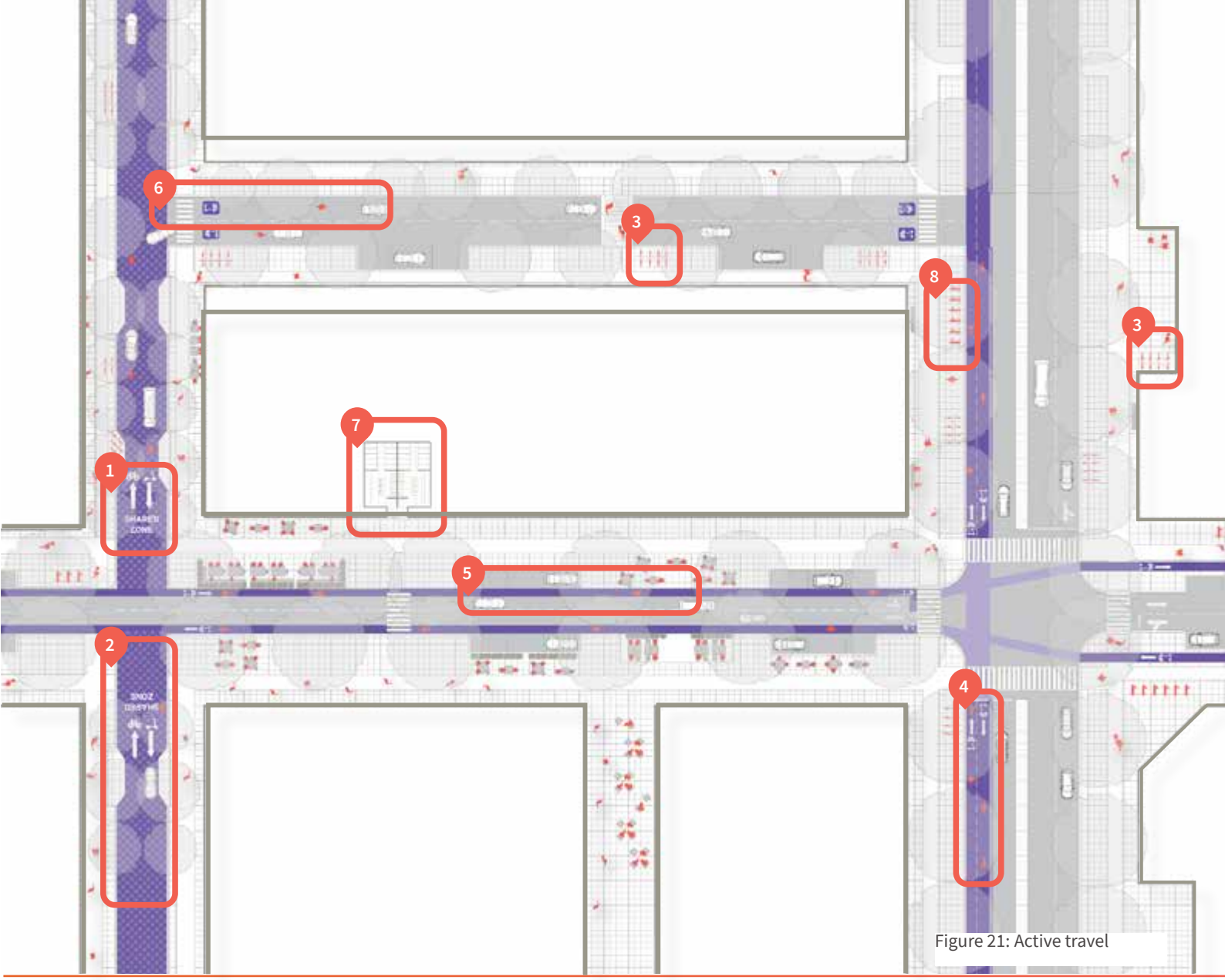


Figure 21: Active travel

1 CLEAR MARKINGS, SIGNAGE AND BUFFERS

2 SHARED VEHICLE, CYCLE AND MICRO-MOBILITY ZONE

3 CYCLE PARKING

4 PROTECTED BIODIRECTIONAL LANES

5 CONVENTIONAL ON-STREET LANES

6 BIKE ON ROAD

7 END-OF-TRIP FACILITIES AT MAJOR DESTINATIONS

8 MICRO-MOBILITY SET-DOWN AND PARKING

One-way paired bicycle-only path

Dedicated single directional on-street cycle path toward the outer lane of the street, sometimes separated by small medians or delineated by line marking or colour of paint. When no median separation is provided, this can create some safety concerns due to having no separation from moving vehicles.

Bidirectional lanes

Bidirectional lanes include two adjacent lanes of bicycle traffic going in each direction as a dedicated lane. These are generally separated from vehicles by either a raised median, buffer, vegetation, fencing or parking bays. They are completely separate from vehicle traffic.

Shared on-street

Shared infrastructure on the streets is located in areas where there are lower traffic levels, and bicycle sharing with vehicle traffic is considered appropriate.

Parking / set down

Dedicated bike parking and set down areas should be provided to allow for cycle and e-mobility parking in convenient places. These should be located within the flexible street zones near building entrances.

DESIGN ELEMENT:

4.5 PUBLIC TRANSPORT

Public transport should be inclusive and available to everyone in the community and structured as routes that link key destinations and places.

Canberra is now more liveable and connected following the introduction of the light rail network. Light rail has facilitated better integration of both active and public transportation types, co-locating multiple transport modes to allow for enhanced connections between different travel choices. Public transport must be inclusive and available to everyone in the community. It must consider appropriate routes between key destinations and places.

DESIGN GUIDANCE

4.5A PUBLIC TRANSPORT INFRASTRUCTURE SEPARATION

i. Provide separated, dedicated public transport infrastructure on significant transport routes, such as dedicated bus lanes to prioritise public transport movement, improve the efficiency of the network and increase usage.

ii. Include separate stopping areas from other moving traffic to improve safety and avoid conflict with other road users.

4.5B INCLUSIVE AND ACCESSIBLE PUBLIC TRANSPORT INFRASTRUCTURE

i. Provide appropriate ramping and accessibility to public transport infrastructure to make it accessible and inclusive for users of all ages and abilities.

ii. Include easily identifiable and legible public transport infrastructure and network information to encourage usage.

iii. Provide appropriate shading and street furniture associated with public transport infrastructure to boost the comfort and usability of the network.

4.5C SERVICING KEY DESTINATIONS AND POPULATIONS

i. Maximise the coverage of the public transport network through ensuring community access and proximity to public transport infrastructure.

ii. Ensure bus stops are frequent and accessible, and cater for the needs of users of all ages and abilities.

4.5D TRANSPORT MODAL CHANGE

i. Locate key stops and transport stations nearby to allow for different modes of transport. This allows for more modal choice, be it walking, cycling, public transport and private vehicle use.

ii. Provide bike parking at key public transport locations to encourage modal change and better use of the network.

iii. Increase accessibility for job opportunities and recreation by providing a more interconnected and broader transport network.

Why this is important:
Creating a connected, seamless, reliable, frequent public transport system has major impact on the experience, sustainability and equity of a city. Enabling convenient and seamless modal change between all modes of transport, through street design and public amenity, supports the likelihood of maximum use of public transport systems and reduction of private vehicular use.

Related planning strategies and tools:

- → NACTO Global Street Design Guide - Utilities and Infrastructure
- → Municipal Infrastructure Design Standards (MIS)
- → ACT Transport Strategy 2020

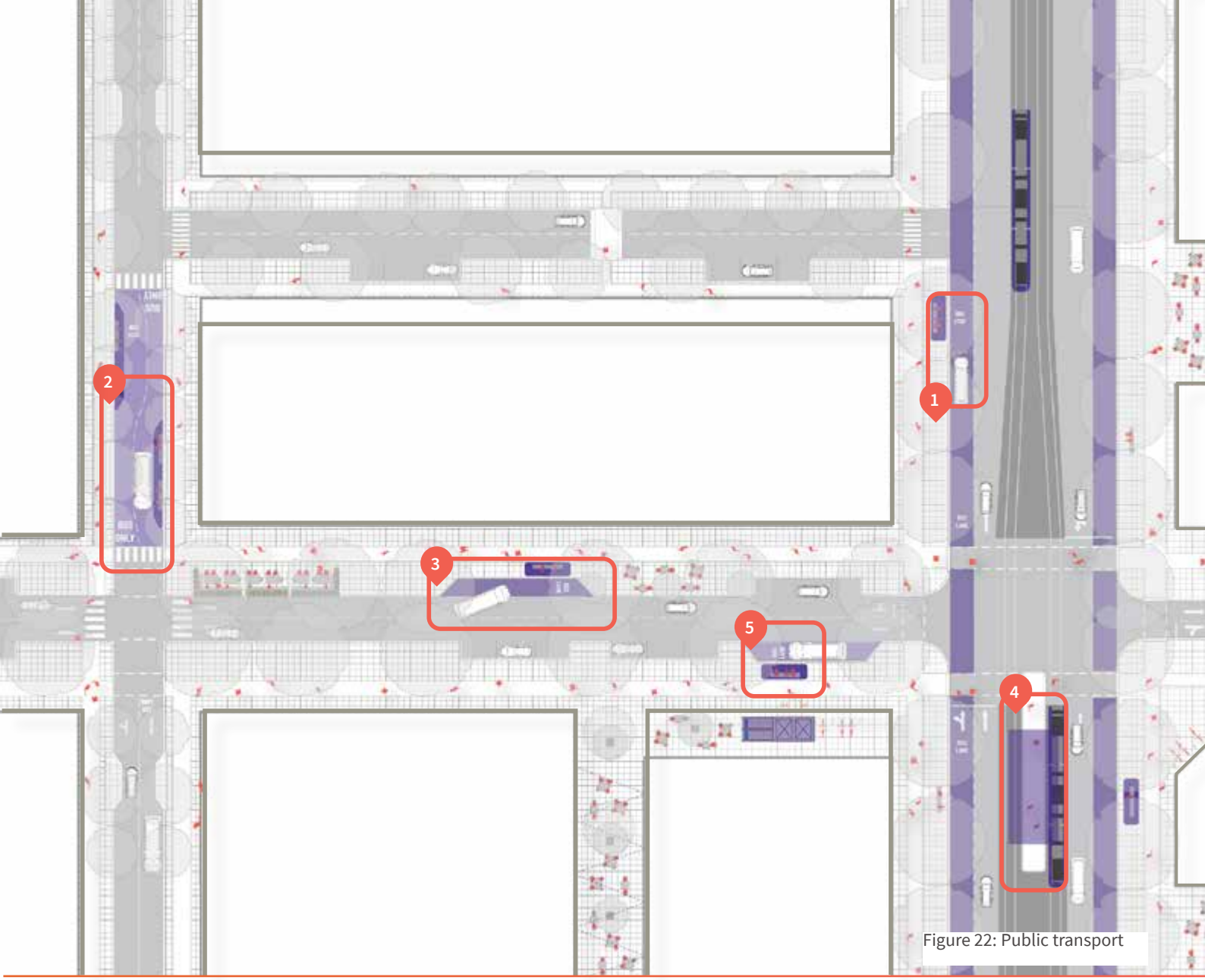


Figure 22: Public transport

1 DEDICATED BUS LANES

2 SHARED VEHICLE AND BUS LANES

3 BUS SET DOWN PULL IN LANE

4 ON ROAD BUS STOP

5 INTEGRATED MODE CHANGE INFRASTRUCTURE

Dedicated bus lanes

Similar to on-street cycleways, dedicated bus lanes are depicted by a change in paving or paint colour. They improve the efficiency of the public transport network by allowing for more direct travel and a reduced dependency on private vehicles.

Shared traffic lanes

Most transit lanes incorporate shared traffic lanes for the use of buses and private vehicles. Shared traffic lanes can have reduced efficiencies when compared with dedicated lanes, however, can allow for broader transport opportunities.

Light rail

The integration of light rail stations into high-quality public space outcomes can promote activity nodes. Subsequently, adjacent attractors can promote high-usage and activity. Accessible and integrated stations elevate the public transport experience and increase attractiveness.

Modal interchange

Co-locating multiple public transport modes to allow for enhanced connections between alternative transport modes should be promoted. Increased flexibility and ease of use can be achieved with integration to bikes and micro-mobility.

DESIGN ELEMENT:

4.6 VEHICLE ACCESS AND PARKING

Balance convenient access with the prioritisation of high place-value street that create a positive pedestrian experience and human scale.

Vehicle access and parking impact on the experience of our streets. Balancing convenient access to destinations with reducing the negative impacts of vehicle parking, speed and congestion is a key driver for creating high place-value streets, a positive pedestrian experience and human scale.

DESIGN GUIDANCE

4.6A ON-STREET PARKING

i. Locate on-street parking predominantly on-streets with low use such as residential and movement corridors.

ii. Parallel parking along active streets and people-places should only be short-term parking for drop-off and pick-up at significant retail areas to reduce inefficient use of street space and impact of cars to the public space.

iii. Construct all footpaths, car parks and non-service vehicle driveways from permeable surface materials where possible.

4.6B PARKING ACCESS AND ENTRIES

i. Design car parking entrances and exits for pedestrian and cycle safety by using clear markings and continuous path surfaces signalling pedestrian priority and reduced vehicle speeds.

ii. Avoid right-hand turns into car parking entries to promote pedestrian safety.

iii. Distribute consolidated vehicle entries/exits and servicing areas to avoid back-of-house character of streets.

4.6C FLEXIBLE PARKING STRUCTURES

i. Allow for future adaptability of free-standing car parking structures to other future uses or consider sustainable reuse/recycle of building materials for future reduced parking needs.

ii. Provide multi-storey parking structures in urban areas with current high vehicle parking demand that are expected to reduce in the future due to public transport investments, active mobility and autonomous vehicles.

4.6D UNDERGROUND PARKING

i. Integrate pedestrian entries and exits into high-quality public space or shared open spaces to facilitate meetings between people and improve the pedestrian experience.

ii. Provide underground parking in denser urban areas with high place-value to reduce negative impacts of car parking in the urban space.

4.6E PARKING AND ACCESSIBILITY

i. Locate disabled parking in visible locations close to key entrances.

ii. Allow for clear space around disabled parking locations to ensure sufficient space for wheelchair ramps, loading and unloading.

iii. Embed Tactile Ground Surface Indicators (TGSIs) and ensure they are connected and accessible from disabled parking spots.

4.6F SURFACE PARKING AREAS

i. Provide surface parking away from main active streets so as to not reduce high place values.

ii. Provide surface parking only in locations where integrated parking is not possible.

iii. Incorporate canopy trees to reduce urban heat effect and add visual amenity to parking areas.

iv. Consider placemaking opportunities to utilise surface parking where appropriate.

v. Locate car parks near key pedestrian routes to promote passive surveillance and safety.

vi. Implement appropriate lighting and CPTED principles.

Related planning strategies and tools:

→ Municipal Infrastructure Design Standards (MIS)

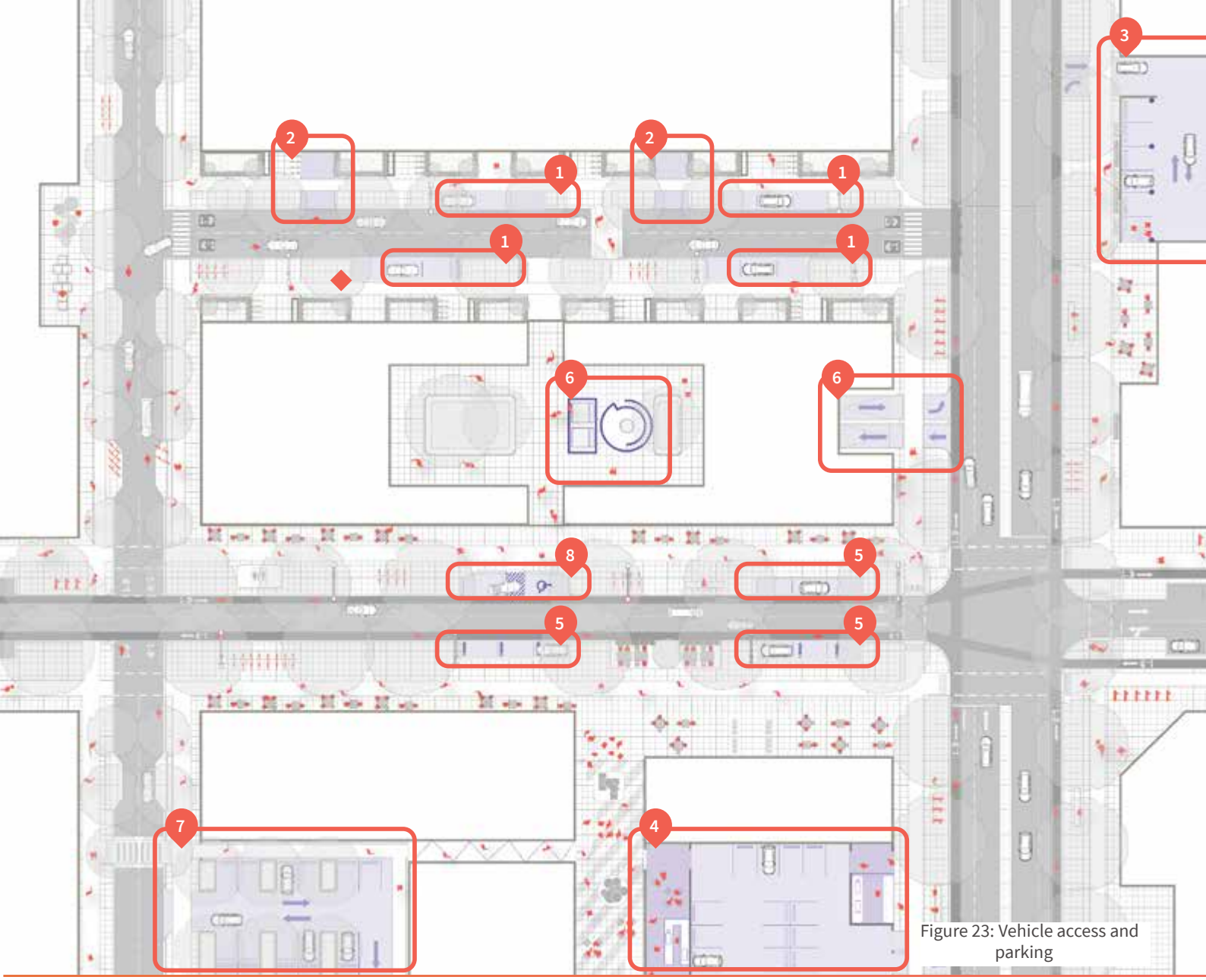


Figure 23: Vehicle access and parking

1 ON-STREET PARKING

2 RESIDENTIAL PARKING ENTRY

3 FLEXIBLE FREE-STANDING PARKING STRUCTURE

4 INTEGRATED PARKING

5 SHORT TERM PARKING

6 UNDERGROUND ENTRY

7 AT-GRADE CAR PARK

8 DISABLED PARKING

On-street parking

On-street parallel parking is protecting cyclists and pedestrians from moving traffic. A narrow buffer between the bike lane and the passenger side of the cars reduces the chances of conflict with cyclists and people getting in and out of the car.

Surface parking

Smaller surface parking lots can be located in suburban retail areas with tree canopy cover, permeable surfaces and visual amenity to create a pleasant pedestrian environment.

Short-stay parking

Short-stay parking areas can be incorporated into retail streets where vehicle access is required. Provide canopy trees, planted areas, cycle parking and seating in parallel parking zone to ensure a pedestrian priority street.

Flexible parking structures

Free-standing and integrated parking structures in an urban context should have active ground floor uses and architectural façade articulation to facilitate a pleasant pedestrian environment.

4.6G ELECTRIFICATION AND ZERO EMISSION VEHICLES

i. Make provision for electric vehicle (EV) charging infrastructure in new multi-unit residential and commercial buildings in accordance with the Territory Plan.

ii. Provide a shared EV connection to 10% of spaces allocated for visitors, or one space if fewer than 10 spaces are allocated for visitors (NSW UDG).

iii. Accommodate for future installation of electric vehicle charging infrastructure on unit titles and apartment building owners.

iv. Design new buildings and precincts to allow for the additional electrical loads and space requirements needed to accommodate the expected uptake of electric vehicles.

Related planning strategies and tools:

→ ACT's Zero Emissions Vehicles Strategy 2022 - 2030

→ NSW Draft Apartment Design Guide

As many vehicles in the ACT grow older and are retired, and as ZEVs continue to lower in price, Canberrans will increasingly be able to reduce their emissions through transitioning to ZEVs.

ACT's Zero Emissions Vehicle Strategy 2022-2030

4.6H ACCESS TO BUILDINGS AND PARKING

i. Locate vehicle entries (such as basement and podium parking access) and driveways to the rear of the building away from primary frontages and pedestrian streets to reduce the impact to on-street amenity.

ii. Where possible, consolidate driveways within the property boundary to reduce the impact of driveways on the street.

iii. Locate parking in podium or underground to reduce the spatial requirement for parking infrastructure on the ground level.

iv. Locate vehicle entrances clear of busy pedestrian crossings and paths.

v. Locate secure cycle parking access in a convenient at-grade location near building exit/entries to promote active travel.

vi. Provide clear and legible entrances for pedestrians and guest bike parking at the building 'front door'.

vii. Provide a safe and clear path from the street to secure and covered bike parking areas.

viii. Separate parking and facilities for residential and non-residential uses to improve security.

ix. Use permeable surface materials where possible.

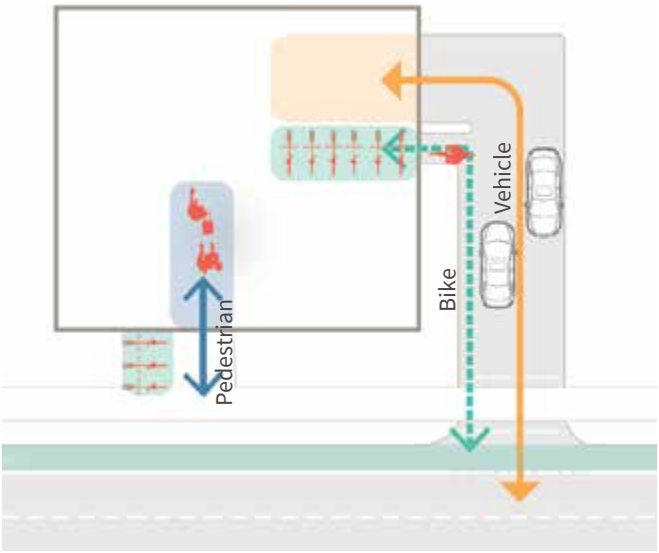


Figure 24: Site accessibility, showing separation of bike and vehicle entries from main pedestrian entrance and front door.

4.6I ON SITE ACCESS

i. Design driveways and service lanes as attractive and pedestrian friendly accessways that add amenity to the site.

ii. Use permeable surface materials where possible.

iii. Provide pedestrian connections through the site where appropriate to allow for a more permeability and pedestrian amenity.

iv. Include appropriately sized and articulated courtyards where possible to accommodate landscaping.

v. Design cross-block connections and courtyards to be open to the sky and articulate the built form for appropriate solar access.

vi. Provide courtyards with at least two public points of access through cross-block connections or publicly accessible interior arcades.

vii. Design for cross-block links and courtyards to provide additional pedestrian amenity to the site and development.

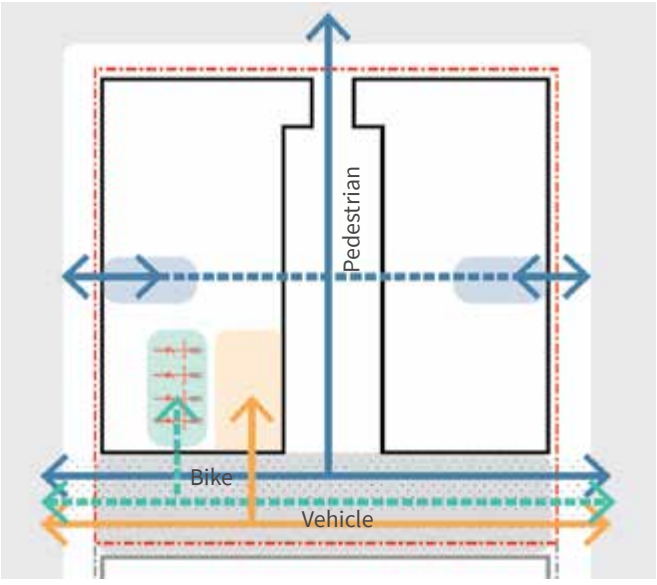


Figure 25: Internal and on-site accessibility highlight pedestrian circulation and requirement for visual amenity.

4.6J GREEN ACCESSWAYS ON LOTS

i. Incorporate planter zones and greenery along service lanes, driveways and internal streets to increase visual amenity and usability.

ii. Provide clear and legible laneways or accessways, designed to prioritise pedestrian and cyclist movement.

iii. Consider surface treatment and materials along laneways and accessways to manage shared space.

iv. Introduce a network of connected laneways on larger sites to increase permeability.

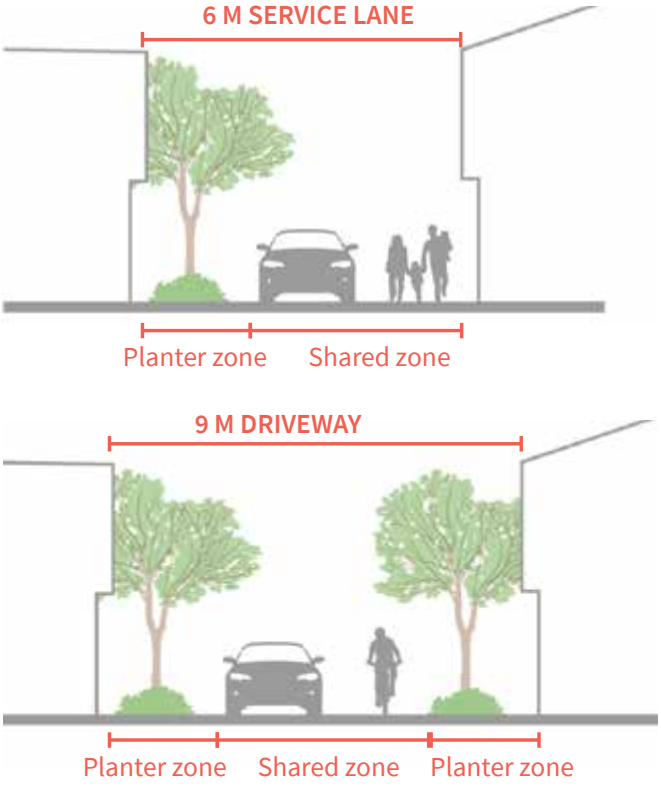


Figure 26: Green accessways on lots

Related planning strategies and tools:

→ Municipal Infrastructure Design Standards (MIS)

PUBLIC SPACE AND AMENITY

Create a hierarchy of public spaces that accommodate a diversity of activities that make sociable, well connected and warm environments.

Public spaces are where life between buildings unfolds, and where the community come together for activity and movement. The public space should be planned with the desires and principles of its users in mind, emphasising the creation of sociable, walkable, well-connected and warm environments. People will go farther, stop, stay and interact more in well-designed public areas and streets, which will increase social relationships and benefit the community. To create a broad hierarchy of publicly accessible spaces with a diversity of purposes and activities, consider the quality and operation of the spaces.

DESIGN ELEMENTS

5.1 QUALITY OF PUBLIC SPACES AND PLACES

5.1A Solar access and orientation

5.1B Accessibility

5.1C Active travel infrastructure

5.1D Building interface

5.2 FUNCTIONALITY

5.2A Flexibility, adaptability and activation capacity

5.2B Responsive design and programming

5.2C Pedestrian comfort, urban amenities and conveniences

5.3 TREES, LANDSCAPING AND NATURAL FEATURES

5.3A Boosting tree canopy and coverage

5.3B Local planting and vegetation species

5.3C Positive engagement with nature

5.3D Biodiversity habitats

5.4 GREENING THE STREETS

5.4A Street planting and canopy

5.4B Landscaped building interface

5.4C Optimised services

5.5 SAFETY AND INCLUSIVITY

5.5A Crime Prevention through Environmental Design (CPTED)

5.5B Inclusive design elements

5.5C Gender sensitive urban design principles

5.5D Legibility and wayfinding

5.5E Lighting

5.6 ELEMENTS, FURNITURE AND MATERIALS

5.6A Urban furniture

5.6B Public spaces and places material treatment

5.6C Public art

5

DESIGN ELEMENT:

5.1 QUALITY OF PUBLIC SPACES AND PLACES

A high-quality public space is well designed and welcoming to all users, and provides opportunities for social interaction, recreation and community building.

High-quality public space that is safe, clean and accessible contributes to the overall enjoyment and sensory experience of place. Consciously designing key spaces to be oriented and scaled to maximise the positive aspects of solar access and climate will provide the best foundations to creating comfortable, safe and enjoyable places for people. A high-quality public space is well designed and welcoming to all users, and provides opportunities for social interaction, recreation and community building.

DESIGN GUIDANCE

5.1A SOLAR ACCESS AND ORIENTATION

i. Orient site features to minimise exposure to hot westerly / north-westerly winds by including vegetation and water bodies on the upwind side to reduce local air temperatures.

ii. Orient spaces to capture easterly breezes where possible.

iii. Maximise sun access and minimise impact of cool wind from west and southwest for comfortable use in winter.

iv. Create spaces that are usable during both summer and winter. Provide enclosed spaces to capture winter sun and provide protection from the wind, while also including open and breezy spaces for active uses in summer.

v. Configure public spaces, appropriate in size, to enable long-lived shade trees to thrive.

vi. Orient adjacent buildings to provide passive surveillance over key active public spaces.

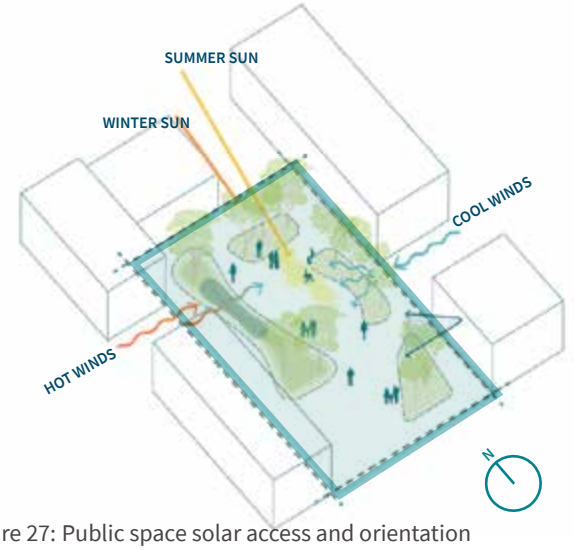


Figure 27: Public space solar access and orientation

PROTECTION		
Protection against traffic and accidents - feeling safe (protection for pedestrians and managed traffic)	Protection against crime and violence - feeling secure (passive surveillance, day and night activation, lighting)	Protection against unpleasant sensory experiences (wind, rain, cold/heat, pollution, noise)
COMFORT		
Opportunities to walk	Opportunities to stand/stay	Opportunities to sit
Opportunities to see (reasonable viewing distances, unhindered and interesting views)	Opportunities to walk and listen (low noise levels, inviting furniture)	Opportunities for play and exercise (physical activity throughout the day and year)
ENJOYMENT		
Scale (human-scale buildings and spaces)	Opportunities to enjoy the positive aspects of climate (sun/shade, heat/coolness, shelter from wind)	Positive sensory experience (good design and detailing, materials, artworks, planting)

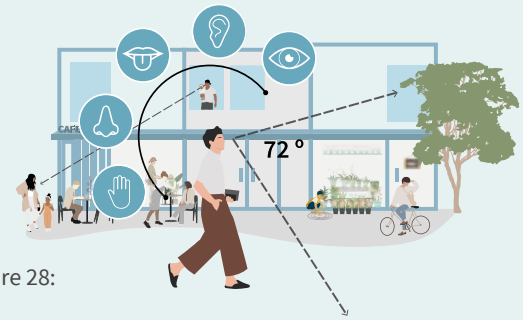


Figure 28:

Tip: Design for human-scale

Consider the size, orientation and sensory experience to reflect the human-scale and comfort. The 12 quality Criteria developed by Jan Gehl (Cities for People, Gehl, 2010) can be used as a guiding tool to assess the quality and human-scale of any space.

Exemplar:
Fully accessible staircase landscape, The Surgical, Treatment and Rehabilitation Service (STARS) is the first building to be completed as part of the redevelopment of Herston Quarter – an expansive health and wellbeing precinct in Brisbane, master planned and designed by Hassell.
Photo 11: Herston Quarter, Brisbane. Design: Hassell, Photo: Scott Burrows.

Exemplar:
Copenhagen University forecourt integrated extensive cycle parking into beautiful structures that also functions as storm water retention basins creating a continuous and integrated landscape design.
Photo 12: Karen Blixen Plads, Copenhagen University. Design: Cobe

5.1B ACCESSIBILITY

i. Ensure key public spaces are accessible via at least one, preferably two public streets or public pedestrian movement paths.

ii. Design key public spaces at-grade with public streets where possible or where level changes are required, deal with level changes using equitable and inclusive grade changes.

iii. Design for key public spaces to be visible and accessible from surrounding neighbourhoods and streets.

iv. Design adjacent buildings to address public spaces, providing an address, activating edge conditions and passive surveillance of the public space.

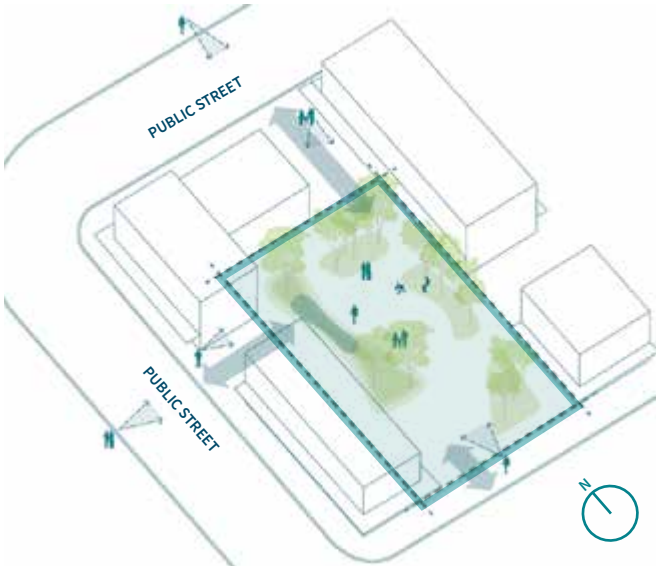


Figure 29: Accessibility in public spaces

5.1C ACTIVE TRAVEL INFRASTRUCTURE

i. Create a network of green spaces along walking and cycling routes to support active travel and outdoor recreation.

ii. Integrate bike parking at micro mobility set-down areas into the public space design at entrances and arrival points to open spaces.

iii. Prioritise green infrastructure in streets with high place-value and those likely to have higher pedestrian and active travel use.

iv. Design paths as direct and connected as possible and avoid dead ends to improve legibility and safety.

Why this is important:
Making open spaces easy to access for pedestrians and cyclists, as well as locating them along active mobility movement corridors, will increase use and activation by incidental use and meetings. This in turn will increase safety and amenity for the adjacent residents by having more activity and eyes on the street.

Related planning strategies and tools:
→ ACT Transport Strategy 2020
→ Municipal Infrastructure Design Standards (MIS)

5.1D BUILDING INTERFACE

i. Consider building uses that support public space activation and connect the inside and outside.

ii. Use built form to purposefully define the space between the buildings and the public space enclosure.

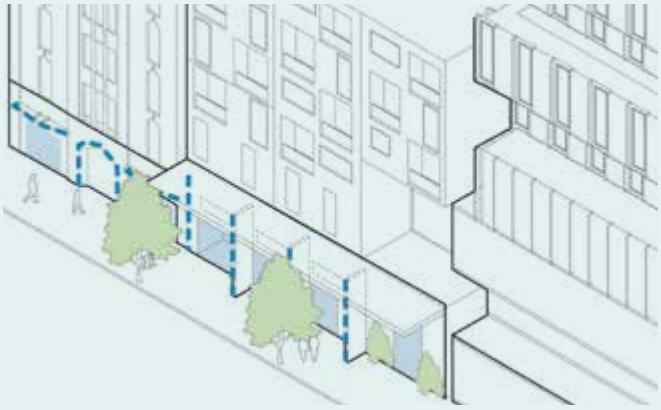
iii. Consider the interface between public space, mobility and building entries to support a legible and efficient public space.

iv. Provide ground floor interface and quality that supports the streets as public spaces where people want to spend time.

v. Provide a range of different kinds of public outdoor spaces, private outdoor spaces and shared/common outdoor spaces to create a variety of experiences that respond to different needs and activities.

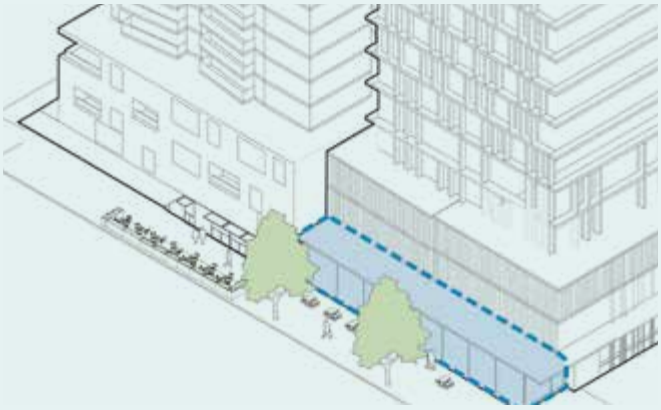
vi. Consider architectural and built form elements that support the human-scale experience of the public space.

Tip: Design for coordinated interface between buildings and public space



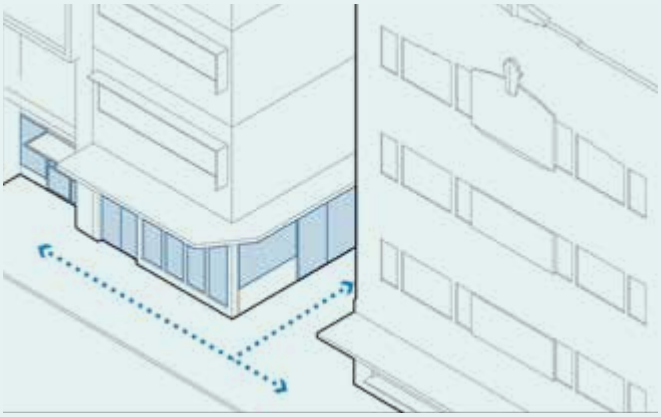
Visually interesting ground floors

Provide architectural detail and visual interest at ground floor level to support the positive sensory experience of buildings in the public space.



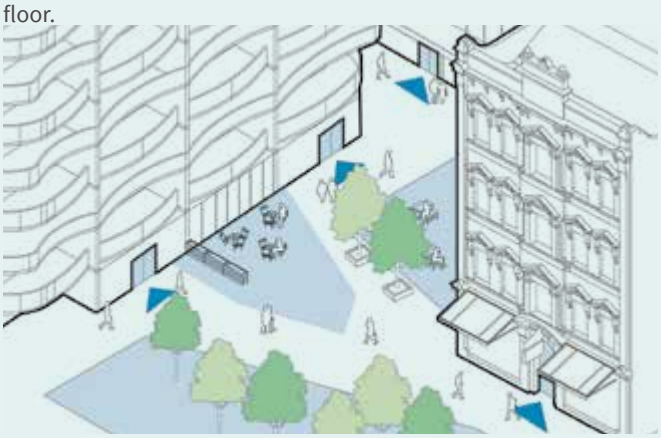
Activate underutilised setbacks

Large inactivated building setbacks from footpaths and public space create a disconnect to building activity and uses. Activate underutilised space and provide a continuously activated ground floor.



Provide continuity of ground floor activity along streets and laneways

Provide activated ground floors or passive surveillance in inactivated public spaces, streets and laneways to support safety and comfort.



Building uses to activate public space

Provide ground floor building uses to appropriately support the activation of the adjacent public space and design public space to support building uses.

Figure 30: Building interfaces

Exemplar:
The Ori apartment building activates the streetscape by interfacing Lonsdale Street with ground floor tenancies.
Photo 13: Ori Building, Braddon, ACT. Design: Judd Studio.

DESIGN ELEMENT:

5.2 FUNCTIONALITY

Public space should be multi-functional, adaptable and inclusive to all users.

Flexible and responsive open spaces create dynamic and lively public space that can adapt to the changing needs of communities and support a variety of activities and uses. These spaces should be multi-functional, adaptable, and integrate technology where appropriate to allow for varying uses. Public space should be inclusive to all users and provide pedestrian convenience and amenity where possible.

DESIGN GUIDANCE

5.2A FLEXIBILITY, ADAPTABILITY AND ACTIVATION CAPACITY

i. Design public open spaces with flexible enabling infrastructure, such as three-phase power and communications infrastructure. This will boost the capacity of the public space to accommodate a range of temporary activations and events, while allowing the urban environment to easily adapt to future technologies.

ii. Where appropriate, incorporate fixtures into the urban environment, that allow for a range of temporary installations to be fixed to the streetscape such as planters, platforms and public artworks.

iii. Include a diverse range of spatial typologies within the public space to provide users with the full spectrum of daily amenities, functions, and conveniences.

iv. Configure spaces that are appropriate in size and where greater flexibility is desired, with minimal urban clutter and movable furniture to maximise their utilisation as adaptable spaces.

v. Use programmable elements such as retractable bollards to allow for spaces to perform a variety of functions and facilitate after hours servicing, where appropriate.

vi. Develop a rolling program of contextually responsive events and activations to activate the public space and diversify the local offering, where appropriate.

Why this is important:
Enabling flexible uses in the design of public space increases the likelihood that the space will be used and activated throughout different parts of the day, thereby attracting more diverse users of the space. This is especially important in larger civic spaces that set the frame for different kinds of cultural events that can support the collective identity and sense of belonging to a certain space.

Exemplar:
Federation Square hosts a wide range of activities throughout the day and year. A flexible and adaptable landscape can set the scene for art events, sculptures, concerts, sporting events, live screening, food festivals and cultural happenings, creating appeal for a wide section of the city's population and sense of belonging to a common space.

Photo 14: Federation Square - Melbourne. Design: LAB architecture

Exemplar:
Dandenong created a local place that responded to the local Afghan community, establishing an engaging cultural destination. A rigorous community consultation process highlighted the diversity of local users and focused on shared ideas and aspirations to develop a community-endorsed design framework that supported social unity and expressed identity. The design is shaped by a deeper understanding of how to accommodate the community's specific cultural requirements and the way people use the space. These inputs were executed via a distinct visual character that uses Afghan Islamic symbolism.

Photo 15: Afghan Bazaar Cultural Precinct, Melbourne VIC. Design: Hassell. Photo: Andrew Lloyd

5.2B RESPONSIVE DESIGN AND PROGRAMMING

i. Design public spaces to have a positive contribution to community and place by responding to local contextual and cultural drivers, values and needs.

ii. Celebrate a living and thriving culture for Ngunnawal people and other Traditional Custodians.

iii. Drive design outcomes by undergoing an authentic and considered community engagement process to ascertain the drivers, needs and values of a project's user groups.

iv. Undergo a rigorous site analysis process for inputting functions and influencing factors, such as histories and stories of the place, demographic mix and local communities, adjacent land uses, climatic conditions, cultural artefacts, levels of density and urban intensity, block structure and urban grain.

Why this is important:
Sense of belonging and inclusion, as well as support for multiculturalism are key indicators of wellbeing and promote a feeling of being connected to and valued by those around us. Enabling ownership and reflecting cultural identity in open space empowers the community and is particularly important for some groups in the community who may experience marginalisation or exclusion due to bias or pre-conceptions of their identity.

See ACT Government Wellbeing Framework for further information about identity and belonging.

Related planning strategies and tools:
→ ACT Government Wellbeing Framework 2020

5.2C PEDESTRIAN COMFORT, URBAN AMENITIES AND CONVENIENCES

i. Include urban amenities and conveniences such as cycle parking, water fountains, bins, pump stations, public toilets, play equipment and kiosks where appropriate, to make spending time outdoors easier and more enjoyable.

ii. Include comfortable seating and rest spots along key walking routes that encourage pedestrians to stop, linger, eat and drink and enjoy urban life.

iii. Provide sufficient presence and coverage of shade in the urban environment by including shade structures, long-lived shade trees and boosting canopy cover to reduce on-street temperatures and create a more comfortable outdoor environment.

iv. Provide access to a diverse range of high-quality mobility choices with dedicated infrastructure to improve the usability and experience of the public space for all users.

Related planning strategies and tools:
→ ACT Transport Strategy 2020
→ Canberra's Living Infrastructure Plan: Cooling the City 2019
→ Municipal Infrastructure Design Standards (MIS)

DESIGN ELEMENT:

5.3 TREES, LANDSCAPING AND NATURAL FEATURES

Trees, landscaping and natural features provide numerous physical, psychological and environmental benefits.

They improve air quality, increase biodiversity, reduce stress, enhance community health, support water management and reduce urban heat island effects. The ACT Government has a strong mandate to reduce impacts of climate change and provide more liveable suburbs with better amenity and beauty.

DESIGN GUIDANCE

5.3A BOOSTING TREE CANOPY AND COVERAGE

i. Maximise the total green cover and vegetation density in urban environments by prioritising planting where there is access to sufficient soil volumes, soil quality and water to support dense growth of trees, shrubs and understory vegetation.

ii. Contribute to the ACT's Living Infrastructure plan of 30% tree canopy coverage and permeable surface objective of 30% by 2045.

iii. Select tree species that will provide dense, contiguous summer canopy coverage.

iv. Place trees where they can grow to a large size while minimising conflict with other infrastructure, both underground and overhead.

v. Retain existing trees, where possible, that are in good health to support the already established and mature canopy coverage of the city.

vi. Provide easily accessible green infrastructure in everyday activities that encourages positive engagement with nature and the urban environment.

vii. Provide tree canopy coverage in areas where pedestrians are likely to stay and dwell, such as lawns, seating areas, sport and recreation spectator areas.

viii. Boost tree canopy coverage of active travel infrastructure to improve the comfort and usability of the movement network.

ix. Complement tree plantings with a mix of native species in vertical layers to improve biodiversity outcomes.

Figure 31: Typical precinct canopy coverage with deliberate placement of trees on movement networks, streets, gardens and open space networks.

"Tree canopy cover can provide an average 15 °C reduction in surface temperature in summer; a 10% increase in canopy cover can give up to a 1.2 °C reduction in surface temperature."

- Canberra's Living Infrastructure Plan 2019

Related planning strategies and tools:

- → Canberra's Living Infrastructure Plan: Cooling the City 2019
- → ACT Climate Change Strategy 2019–25
- → ACT Urban Forest Strategy 2021-2045
- → Canberra Central City Design Manual - The Street Tree Masterplan, Technical Detail Part C4
- → Strategic Bushfire Management Plan and ACT Bushfire Management Standards
- → Municipal Infrastructure Design Standards (MIS)

5.3B LOCAL PLANTING AND VEGETATION SPECIES

i. Plant a diverse range of locally native species, with consideration of species likely to thrive in the ACT's changing climate, to reduce maintenance costs and support biodiversity outcomes.

ii. Use the *Canberra Plant Selector Tool* to help select appropriate plant species with sun/shade tolerance, frost tolerance, water rating, fire retardant status and native/non-native status.

Why this is important:
Native plants species tend to do well with the local climatic conditions and support the native wildlife while contributing to a unique Canberran character.

Related planning strategies and tools:

- → Gawari Ngilanmanyin. Remembering the Bush. A Climate-wise Landscape Guide for the ACT
- → CRA Sustainability Strategy 2021-2025
- → ACT Government Canberra Plant selector Website: actsmart-plantselector.com.au
- → Municipal Infrastructure Design Standards (MIS)

Exemplar:
The National Museum of Australia Forecourt features a mosaic garden which includes a palette of Australian native plantings that are suitable for the local climate of dry summers and frosty winters.

Photo 16: National Museum of Australia Forecourt Garden, Canberra. Design and photo: T.C.L.

5.3C POSITIVE ENGAGEMENT WITH NATURE

i. Use green infrastructure to create opportunities for interaction and positive engaging experiences with the natural environment through community gardens, wildlife observation and nature and water play.

ii. Incorporate nature-based elements that cater to all ages and abilities such as sensory gardens, nature-based play and informal learning elements.

iii. Incorporate landscaped environments that facilitate community health and wellbeing, aesthetic quality and better air quality.

Figure 32: Facilitate positive engagement between natural elements and community through the adjacent positioning of program and activity.

5.3D BIODIVERSITY HABITATS

i. Incorporate and restore habitats for a range of local native wildlife and ensure that habitats are well-connected through ecological corridors, while also enhancing blue / green infrastructure across the ACT.

ii. Build connectivity by introducing wildlife movement infrastructure (such as underpasses or bridges) to public and private road and rail design.

iii. Explore the potential for public space to integrate wildlife habitats, such as:

- establishing green roofs for pollinators on public buildings and incorporating pollinator friendly plants in urban open space
- maintaining continuous native grasslands using fauna-friendly road design
- retaining mature, even dead, native trees to provide natural shelters for birds and bats along key migration corridor routes
- preventing barriers to fish and other aquatic fauna movement in the design of riparian infrastructure.

iv. Where appropriate, incorporate landscaped areas that feature dense planting that reduces community access, allows for safe limb-fall from mature native trees, and provides safer environments for wildlife.

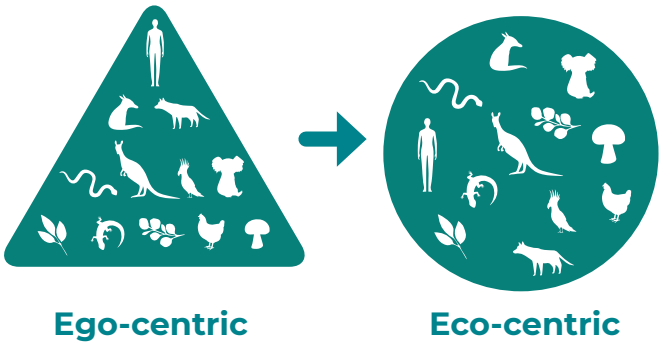


Figure 33: Human-centric vs Eco-centric. Image: Diagram adapted from German Architect Staffen Lehmann, Eco vs Ego diagram 2010.

Related planning strategies and tools:

→ Canberra's Living Infrastructure Plan: Cooling the City 2019

→ ACT Government Wellbeing Framework 2020

Exemplar:
The public space steps down to the water to create an open-air event space with the natural environment as a backdrop at the intersection of University Avenue and Sullivans Creek

Photo 17: Sullivans Creek, ANU campus, Canberra. Design: Aspect Studios.

DESIGN ELEMENT:

5.4 GREENING THE STREETS

Green streets encourage more sustainable modes of transport and can help mitigate the effects of climate change.

Designing streets that respond to their surroundings has a variety of advantages that enhance the city's sustainability and liveability. Green streets are smart and sustainable. They encourage more sustainable modes of transport and can help mitigate the effects of climate change. Streets should be designed to allow for street planting, extensive tree canopy cover, the integration of blue and green infrastructure and the optimisation of services to allow for this.

DESIGN GUIDANCE

5.4A STREET PLANTING AND CANOPY

i. Design streetscapes and road corridors with appropriate deep soil zones to allow for mature tree growth and shade canopy cover, while complementing larger trees with a mix of vertical layers to support the increase of quality habitats and biodiversity.

ii. Provide frequent street tree build-outs into parking lanes to boost amenity and support canopy cover.

iii. Incorporate landscape build-outs on kerbs to allow for mature tree canopy coverage while providing shade and pedestrian amenity.

iv. Prioritise the protection and retention of existing mature and significant trees.

v. Use local planting and material palettes to provide an urban character that is distinct to the region and boosts habitats for local biodiversity.

vi. Provide vegetated buffers and swales where appropriate between pedestrian and vehicle movement to boost on-street greenery and improve sustainability outcomes and pedestrian safety.

vii. Integrate water-sensitive urban design measures such as passive tree irrigation, bioswales, rain gardens and stormwater mitigation along green infrastructure corridors within streets.

viii. Establish vegetated swales in parallel to stormwater drains to capture pollutants and organic matter and prevent pollution of urban waterways.

5.4B LANDSCAPED BUILDING INTERFACE

i. Incorporate landscaped setbacks within front setback areas to allow for mature tree canopy coverage while providing shade and pedestrian amenity and greenery on the street.

ii. Provide deep soil planting zones within the front setbacks to streets to enhance street tree canopy and provide better privacy to ground floor uses.

5.4C OPTIMISED SERVICES

i. Provide underground power lines to allow for larger street trees and boost the coverage of tree canopy in the urban environment.

ii. Where acceptable, consolidate below-ground services and align them to pathways to reduce impact to tree planting.

iii. Where acceptable, combine underground services into a unified services trench to allow for more flexibility in delivering street trees, improve ease of access and maintenance and cause minimal disruption to hardscapes.

iv. Where above-ground power lines cannot be avoided, bundle power lines to allow for larger street trees.

Related planning strategies and tools:

- → Canberra Central City Design Manual - The Street Tree Masterplan, Technical Detail Part C4
- → Canberra's Living Infrastructure Plan: Cooling the City 2019
- → ACT Government Canberra Plant Selector Website: actsmart-plantselector.com.au
- → NACTO Global Street Design Guide
- → Municipal Infrastructure Design Standards (MIS)

Why this is important:

Greening of streets contributes to people's mental health and wellbeing, providing opportunities for people to connect with nature in an urban setting. Greening the streets also strengthens Canberra as a garden city and provides environmental benefits by reducing urban heat island impacts through shade, reducing the amount of heat absorbed by buildings and pavements.

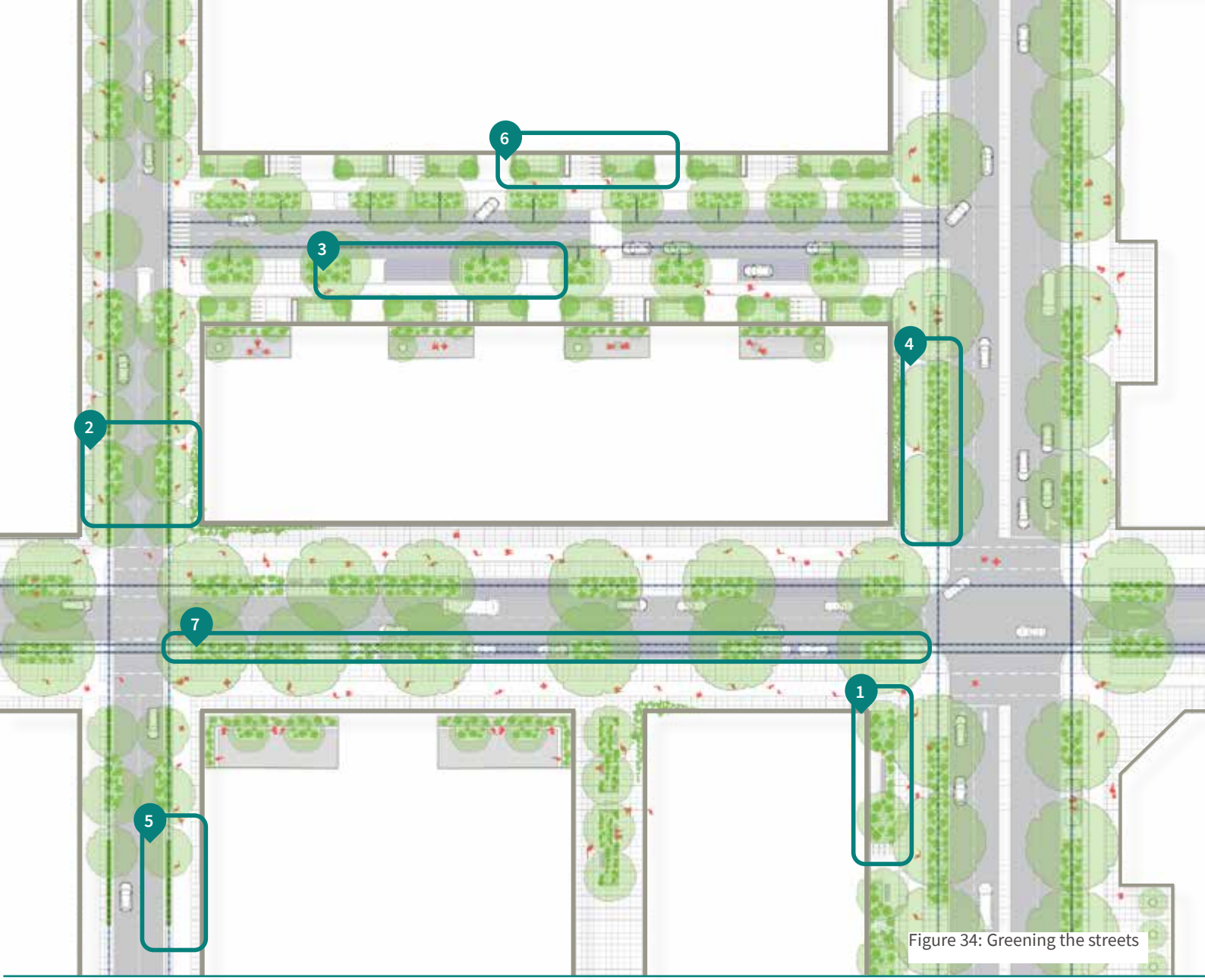


Figure 34: Greening the streets

1 DEEP SOIL ZONES

2 MATURE TREES

3 STREET BUILD-OUTS TO PARKING ZONES

4 LANDSCAPE BUILD-OUTS ON KERB

5 VEGETATED BUFFER TO ROADS

6 LANDSCAPE SETBACKS

7 UNDERGROUND SERVICES

Climate adaptation through greening

Enhance the environmental performance through the retention of valued natural features that contribute positively to the local context. Similarly, coordinating water and soil management, reducing the urban heat island effect and maximising the micro-climate enhancement, tree canopy and habitat values will promote the preservation of important green networks.

Productive landscapes

Access to fruit and vegetables is critical for mental and physical health. For many people, growing food restores a connection to nature and the ability to nurture themselves, their friends and family through food. Integrate food production in streets, public space and private developments through productive tree species and landscapes with consideration for Indigenous and native plant food sources.

Blue and green infrastructure

Water-sensitive urban design (WSUD) can be deployed in almost all aspects of the public space. This will facilitate living infrastructure in all projects, and at all scales. Consider storm-water solutions including local collection, storage and diversions, permeable pavements and the greening of hard surfaces including roadways and rooftops to increase the resiliency to severe weather.

DESIGN ELEMENT:

5.5 SAFETY AND INCLUSIVITY

Public spaces should be accessible and welcoming to people of all ages, abilities and backgrounds.

Safety and inclusivity help everyone feel welcome and secure while using these spaces. To foster inclusivity, public spaces should be designed to be accessible and welcoming to people of all ages, abilities, and backgrounds. This may involve providing seating and shade, installing accessible paths and ramps, and creating play areas for children. Cultural and community events can help promote a sense of belonging and inclusivity in the public space.

DESIGN GUIDANCE

5.5A CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

i. Design public spaces to cater for a range of different groups within the community to boost activation and passive surveillance of the public space.

ii. Provide passive surveillance of the public space by incorporating active functions along building edges that overlook key spaces.

iii. Create people-friendly places that promote activation and perception of safety, with clear unimpeded sight lines and adequate lighting throughout.

iv. Provide clearly demarcated and well-lit primary movement pathways to and through public spaces that align with and connect into the surrounding movement networks.

v. Create highly legible spaces by incorporating key visual cues and identifiers, such as view corridors, public artworks and easily identifiable landmarks.

vi. Design public spaces to be sited and configured adjacent to buildings that look over the space and provide passive surveillance.

vii. Integrate visible CCTV infrastructure along pedestrian movement paths and within key public spaces to discourage crime and improve the perception of safety.

viii. Include appropriate signage in legible and logical locations to allow for clear wayfinding outcomes.

ix. Articulate landscaping and built form, to reduce the prevalence of vulnerable spaces, such as dead ends, blind spots and hidden places that provide opportunities for concealment.

Figure 35: Active ground floor frontage from mixed-use building provides passive surveillance to public space

Figure 36: Clear, unobstructed, and well-lit movement path with legible entrances and adjacent buildings that looks over the public space

Exemplar:
Open faces, passive surveillance, clear view-line to other side, clear ownership of space and high-quality material increase feeling of safety.

Photo 18: Dairy Road Precinct laneway landscape, Canberra. Designer: Craig Tan Architects, OCULUS.

5.5B INCLUSIVE DESIGN ELEMENTS

i. Provide clear, legible and multilingual signage with lighting that allows for signage to be easily read by people with disabilities and in languages other than English.

ii. Embed tactile and sensory warnings and markings into the public space, including information points that provide cues for indicating footpaths, planting areas, navigation information and transitions in the public space.

iii. Provide signage, auditory bollards and lighting that can be digitally synced to reinforce location information, activating when in the presence of the smartphone a person with a disability.

iv. Provide clearly defined pedestrian movement paths that are logically designed and free from obstructions and clutter to create a safe, consistent, legible and more-usable urban environment for those with disabilities.

v. Incorporate well-designed and sensitively integrated ramps, outdoor elevators and compliant grade changes that allow the differently abled to more easily navigate changes in topography.

vi. Improve ease of walking with prams or other mobility needs by providing sufficiently wide paths and gutter lips.

vii. Provide an appropriate provision of all-abilities play equipment into the urban environment to diversify or upgrade existing local play offering and cater to those with disabilities.

viii. Provide age-appropriate design and play opportunities that cater to different age groups with consideration of factors such as developmental stages, physical abilities, interests and cultural norms.

Exemplar:
The central University Avenue provides a generous pedestrian-priority public space to be enjoyed by university students, staff and broader community. The continuous ground surface follows site desire lines and provides seamless accessible grade changes.

Photo 19: ANU Kambri Public space, Canberra. Aspect Studios.

Why this is important:
Age-appropriate design refers to the concept of creating products, environments, and experiences that are suitable and appropriate for different age groups. This involves considering factors such as developmental stage, physical abilities, interests, and cultural norms when designing products, interfaces, and experiences. The goal is to create designs that are safe, usable and engaging for people of all ages, while also taking into account the unique needs and abilities of different age groups.

Related planning strategies and tools:
- → ACT Government Wellbeing Framework 2020
- → CRA Sustainability Strategy 2021-2025
- → Municipal Infrastructure Design Standards (MIS)

Exemplar:
Photo 20: Lake Burley Griffin waterfront path network, Canberra

Exemplar:
Photo 21: Transport Canberra wayfinding signage, Canberra

5.5C GENDER SENSITIVE URBAN DESIGN PRINCIPLES

i. Create places that are highly active, sociable, welcoming and friendly, to encourage use by women, girls and gender diverse participants.

ii. Design for public space activation catering for a wide range of people including children, seniors, youths and families.

iii. Ensure key public spaces have strong visibility, avoiding blind spots and non-visible areas to ensure users have a sense of control and confidence in their safety.

iv. Design the urban environment, including pathways and ramps, with suitable width and surface treatments to facilitate equitable access and prams.

v. Provide a high-quality urban environment and public space that makes it easy and safe to get to and from key places, including movement with prams as well as access to car parking.

vi. Design public places to have adequate access to sunlight, shade, shelters and clean accessible amenities.

vii. Design urban places of appropriate scale that are surrounded by active buildings to promote safety and human-scale.

viii. Provide a choice of flexible furniture and seating arrangements to encourage use and socialisation.

ix. Provide appropriate lighting to activate spaces in the evening and enhance perceived safety.

x. Provide both formal and informal child-friendly play options to improve the usability and enjoyment of the urban environment for families with children.

Related planning strategies and tools:

→ Gender Sensitive Urban Design Framework and Implementation Toolkit (ACT Government 2022)

5.5D LEGIBILITY AND WAYFINDING

i. Incorporate high-quality, visually prominent, legible and multi-lingual signage (featuring maps where relevant), into the public space and at key decision points to boost the legibility and usability of the urban environment.

ii. Create distinctiveness in the public space, using elements such as landmarks, view corridors, heritage buildings, colourful elements, unique landscaping and public art, to act as memorable orientation cues and improve the navigability of the urban environment.

iii. Embed every cohesive place or group of places with its own perceptual identity, with regions of differing visual character to boost the user's sense of intuitive wayfinding and location within the urban environment.

iv. Provide a well-structured, logical and legible pedestrian movement network to improve the user experience and support the user sense of direction.

v. Explore digital wayfinding technologies and mechanisms to improve the user's ability to navigate the public space where relevant.

5.5E LIGHTING

i. Provide adequate lighting along streets and within key public spaces for safety, visibility and crime prevention.

ii. Provide lighting as a means of wayfinding and navigation through the public space.

iii. Consider the design and placement of lighting through key public spaces and adjacent built form as a key feature that can highlight public or historical elements as features.

iv. Use dynamic lighting, such as colour changing or interactive lighting to create a unique and engaging user experience.

v. Consider the use of energy-efficient lighting technologies to reduce energy costs and minimise the impact on the environment.

vi. Design lighting systems for easy maintenance and replacement to ensure long-term functionality.

vii. Provide flexible lighting designs to accommodate different events and activities in public spaces.

Exemplar:
Kambri Public space is a major pedestrian thoroughfare which features clear point to point view lines, passive surveillance from adjacent buildings, activated frontages and appropriate lighting. Equitable on-grade transitions and flexible spaces allow for formal and informal opportunities for a diversity of user groups.

Photo 22: ANU Kambri Public space, Canberra. Aspect Studios.

DESIGN ELEMENT:

5.6 ELEMENTS, FURNITURE AND MATERIALS

Street furniture and public art can help to define public spaces, pedestrian movement patterns and establish a distinct place character.

Urban street furniture and public art are key to the public space experience. A well-designed, robust, functional and uniform suite of furniture and materials adds a strong element to the wider ACT and Canberra City identity. Well-designed street furniture improves public amenity, while reducing street clutter and maintenance costs.

DESIGN GUIDANCE

5.6A URBAN FURNITURE

i. Develop an attractive suite of furniture and materials appropriate to the type, use and function of the urban area or street and in coordination with ACT design manuals.

ii. Include furniture that responds to the needs of the community including different demographics such as children, elderly, visually impaired and people with disabilities.

iii. When siting and selecting urban street furniture in a space, focus on reinforcing the intended function, activity and pedestrian movement, taking advantage of views, weather protection and seasonal changes.

iv. Locate furniture appropriately to reduce visual clutter and encourage safe and unintended pedestrian movement.

v. Use durable and wear resistant materials with low maintenance requirements.

5.6B PUBLIC SPACES AND PLACES MATERIAL TREATMENT

i. Develop a suite of ground and pavement materials in coordination with ACT design manuals.

ii. Minimise hardstand surfaces to reduce heat island effect through the use of permeable surfaces and efficient vehicle movement.

iii. Select appropriate pavement and surfacing materials so the pavement performs adequately under the anticipated uses and loads.

iv. Provide safe and comfortable walking and riding conditions for all users optimised for the intended function and level of use.

v. Comply with relevant ACT Government standards and specifications.

Why this is important:
High-quality urban furniture, materials and public art support contextual storytelling and add character and identity, destinations for play, and focus points to the public space.

5.6C PUBLIC ART

i. Consider adding a diverse range of public artwork installations into the built environment, such as murals and sculptures.

ii. Consider creative ways to use the built environment as a tool or canvas for creating destinations and driving a distinct and unique offer.

iii. Embed public artworks that are procured and informed by contextual opportunities and social engagement, and which make creative use of the available space.

iv. Encourage flexibility into the spatial network to accommodate a diverse range of temporary art mediums, including the ability to curate a rolling program of art installations, events and pop-up activations.

v. Engage artists in the early phases of the design process to explore integrated public art projects.

Related planning strategies and tools:

→ Urban Art Strategy 2020 - 2025 (ACT Government CRA 2018)

→ ACT Government Wellbeing Framework 2020

→ Municipal Infrastructure Design Standards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1. Pavement – Special Design Constitution Avenue, Jane Irwin Landscape Architecture, Canberra. Ability to control brightness of space through colour hierarchy, ease of pattern making through one size of paver, and can be used for wayfinding.

2. Pavement – Granite Paving Constitution Avenue, Canberra. Jane Irwin Landscape Architecture. High-quality paving material defines pedestrian surfaces.

3. Pavement – Coloured Concrete with Decorative Cut, Adelaide Airport, TCL and Woodhead Architects. Coloured concrete patterns create a distinct and unique design while animating the large surface area and reflect surrounding environment.

4. Asphalt pavement – Rose Street, Fitzroy, Melbourne. Otis Hope Cray and MPS Paving Design.

The durable asphalt has been transformed into a shared pedestrian street reflected in the design by painting and activating the surface.

5. Bollards – Main street upgrade, Victor Harbour, South Australia. Bollards in long-lasting and durable yet natural and tactile materials tie into a cohesive landscape material palette.

6. Bike Racks – Station forecourt, Emmaboda Sweden. High-quality and tactile materials for bike racks elevates the user experience of cycling while contributing positively to the public space.

7. Bin Enclosures – Jack Ross Park, Canberra. Corten colour resembles part of ACT geology. The material is durable and long-lasting. The unique and simple design is distinct to be seen yet restrained in character in the public space.

8. Seating – Moore Street, Canberra, FDC Building. Aesthetically pleasing 'stock' standard urban bench, the design is suited for urban and park environments. The block colours allow for adaptability with surrounding pavement and furniture colours.

9. Seating – Canberra Metro Train Stop, Architectus. Incorporates multiple building materials, maintains a visually pleasing look while showcasing longevity and durability. Local aggregates in concrete mix add to local character.

BUILT FORM AND BUILDING DESIGN

Built form shapes the quality and experience of cities.

The design of buildings and their interface with the public space are crucial to the overall function and success of the city. At the street level, building edges should facilitate attractive and engaging edges that support amenity, usability, safety and diversity of the urban fabric. At the precinct level, the built form should unlock a diverse range of new public spaces and opportunities. At the city level, built outcomes must be responsive to context and climate.

DESIGN ELEMENTS

6.1 RESPOND TO URBAN CONTEXT

6.1A Block permeability

6.1B Scale and massing transitions

6.1C Orientation

6.1D Overshadowing

6.1E Setbacks and separation

6.1F Layering uses

6.1G Integrated housing types and choice

6.1H Infill

6.2 INTEGRATED SERVICES

6.2A Waste collection, loading and delivery areas

6.2B Vehicle access and driveways

6.2C Ground floor services and infrastructure

6.2D Sleeved podium parking and services

6.3 GROUND FLOOR EDGE CONDITIONS

6.3A Residential urban apartment

6.3B Residential suburban townhouse

6.3C Commercial active edges

6.3D Commercial lobby / showroom

6.3E Adaptable

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DESIGN ELEMENT:

6.1 RESPOND TO URBAN CONTEXT

Built form should frame the future desired physical and cultural context.

Built form that responds to its context is functional and aesthetically pleasing, while also being sensitive to the needs and desires of the people who use it and the environment in which it is situated. New developments that are responsive to context consider the surrounding landscapes, neighbourhood character, intended land use purpose, micro-climate and cultural and historical context.

DESIGN GUIDANCE

6.1A BLOCK PERMEABILITY

i. Align the configuration of buildings to the surrounding context and hierarchy of streets, laneways and pedestrian movement pathways to facilitate better connectivity and consciously create enclosure in the spaces between the buildings.

ii. Provide new pedestrian connections through the site on longer blocks to support a permeable urban environment and reduce walking distances.

iii. Where a site addresses two or more streets or laneways, provide a pedestrian connection through the site to reduce walking distances.

iv. Activate cross-block connections by engaging building edges, such as active ground floor tenancies, entries, public seating, habitable spaces and balconies that provide passive surveillance.

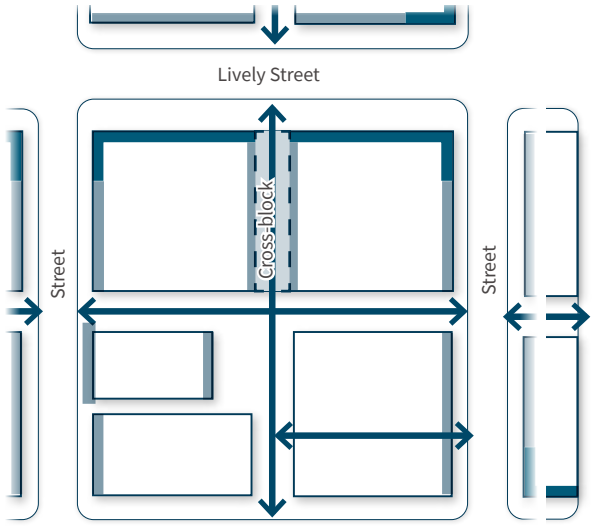


Figure 37: Block permeability

6.1B SCALE AND MASSING TRANSITIONS

i. Set building edges to create an appropriate urban scale, while using architectural elements to establish a human-scale experience at the street.

ii. Provide transitions to tower buildings to mitigate wind impacts and maintain an appropriate podium, street-wall scale.

iii. Breaking established heights or street datums should be justified by demonstrating a positive contribution to the street experience.

iv. Respond architecturally in form, scale and detail to important urban interfaces, such as street corners or park frontages.

v. Protect view corridors towards landmarks and significant natural features from streets and public spaces.

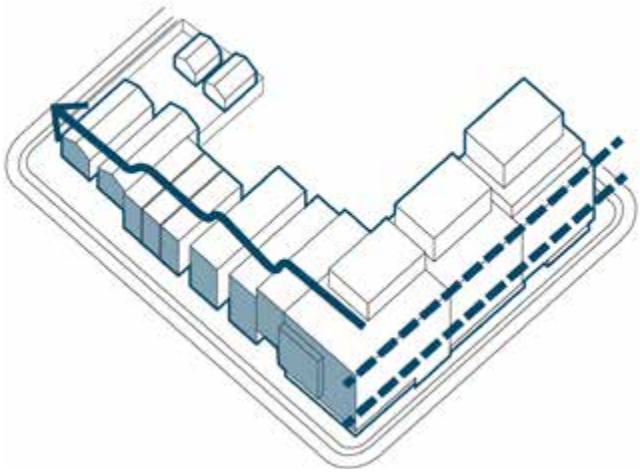


Figure 38: Transition of building height to lower existing buildings to avoid out-of-scale built form and maintain street height on key streets.

Why this is important:
Buildings should be oriented to maximise access to natural light, views and take advantage of local climatic conditions while consciously defining the street without overshadowing key open spaces.

Photo 23: Constitution Place, Canberra ACT. Design: Bates Smart, Photo: Peter Clarke Photography

6.1C ORIENTATION

i. Orient built form to overlook primary and secondary street frontages, public spaces and pedestrian cross-block connections, to provide passive surveillance and engaging building edges.

ii. Orient balconies and habitable spaces to minimise direct overlooking into adjacent buildings.

iii. Orient floor plates away from adjacent development sites and buildings, and to maximise views.

iv. Orient building massing to leverage predominant summer breezes and minimise wind tunnel effects from winter breezes.

6.1D OVERSHADOWING

i. Articulate built form to optimise solar access to the public space.

ii. Towers on top of podiums should be appropriately set back from adjacent buildings and the street edge to optimise sunlight penetration to the street.

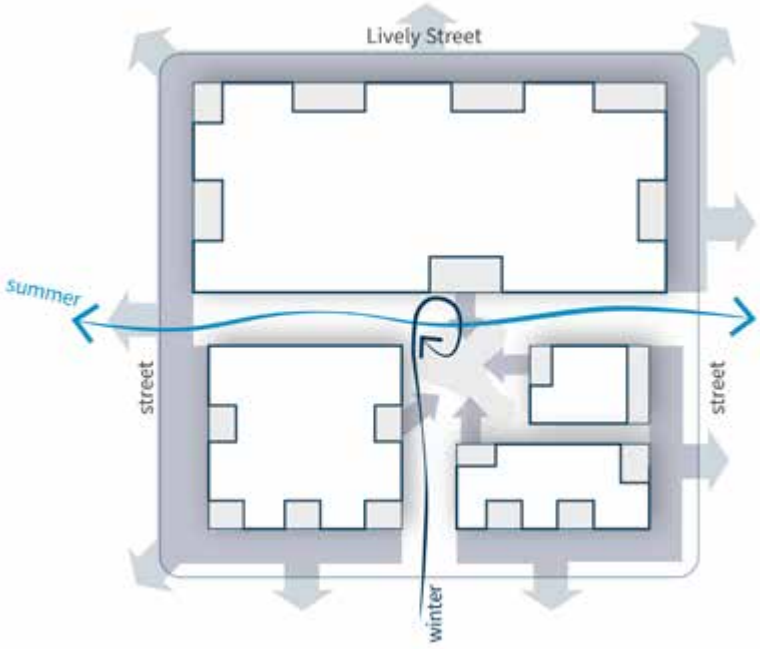


Figure 39: Building height is optimised to avoid overshadowing adjacent streets and public spaces.

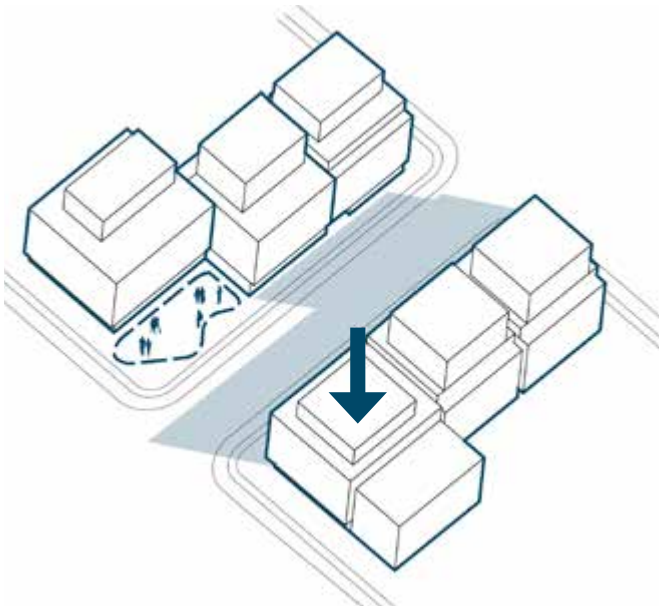


Figure 40: Building height is optimised to avoid overshadowing adjacent streets and public spaces.

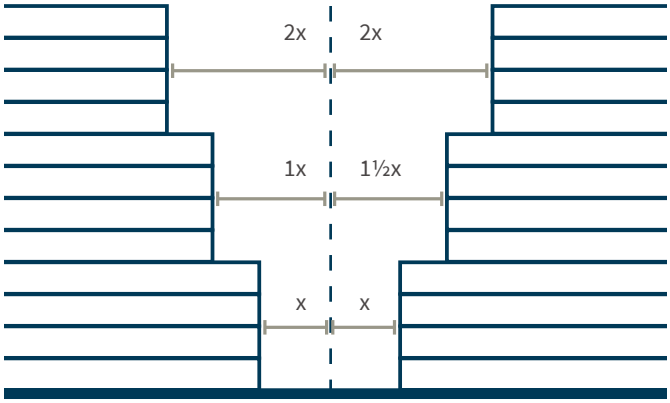
Why this is important:
Appropriate building separation to habitable spaces achieves a degree of visual privacy from surrounding buildings. It ensures that rooms are able to cross-ventilate and access adequate sunlight and allows natural light to adjacent open spaces.

6.1E SETBACKS AND SEPARATION

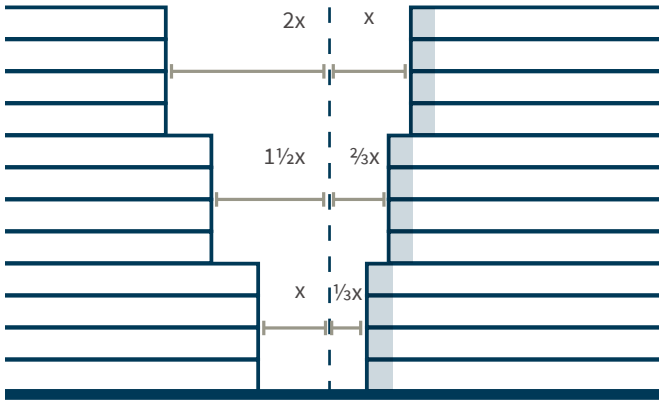
i. Separate new buildings from adjacent existing buildings (particularly those next to heritage sites) to ensure new buildings are not dominant within its immediate context.

ii. Set towers on top of podiums back from the street edge to minimise unwanted intensity of scale in the urban environment and establish a consistent human-scale pedestrian experience at the street.

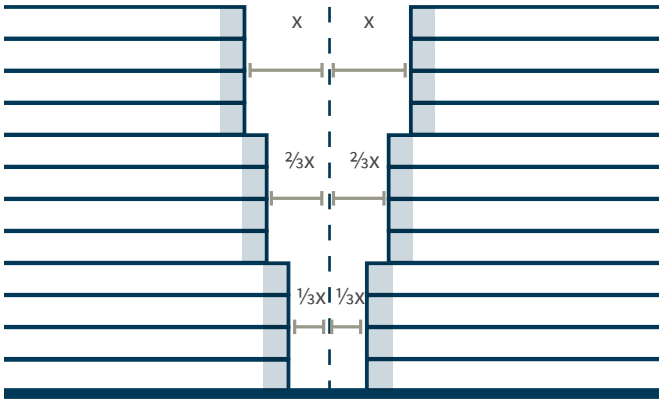
iii. Share tower separation requirements equally between adjacent sites, setting back each building façade no closer than half the required distance from the property boundary and not disadvantage other developments.



Separation between habitable rooms



Separation between habitable and non-habitable rooms



Separation between non-habitable rooms

Figure 41:Building separation

Tip: Give greater building separation to habitable rooms
When establishing the required building separation, provide greater separation to habitable rooms than non-habitable rooms to ensure greater outlook, daylight access and privacy to primary habitable rooms.

6.1F LAYERING USES

i. Co-locate community services, facilities and higher residential densities to promote mixed-use neighbourhoods with activity through more hours of the day.

ii. Concentrate mixed-uses near areas that are well serviced by public transport.

iii. Consider separation of uses within a development between residential dwellings and 'noisy' uses through 'buffers' such as commercial day-time use, communal facilities and green open space.

Why this is important:
Integrating a variety of mixed-uses provides more activity and life across more hours of the day within the suburb or neighbourhood. This improves overall safety and community wellbeing by increasing opportunities for social interactions and providing improved economic outcomes.

Exemplar:
The so called 'sandwich' has three distinct layers with a supermarket on the ground floor, sports facilities in the middle, and penthouse apartments on the roof.

Photo 24: Sundbyøster Hall II, Copenhagen, Denmark. Design: Dorte Mandrup. Photo: Adam Mørk

Tip: From stacking to mixing
The more complex the spatial system, the more varied its qualities, the greater the chance that a variety of activities and behaviours will occur.

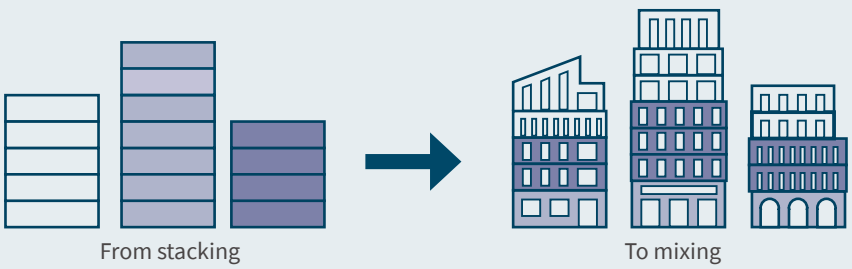


Figure 42:From stacking to mixing

6.1G INTEGRATED HOUSING TYPES AND CHOICE

i. Provide for a greater range of housing types such as community housing (affordable rental) and build-to-rent development to assist in addressing housing affordability.

ii. To improve diversity in housing choice, provide a greater range of housing types such as varying apartment sizes, duplexes, townhouses, units and innovative spatial configurations.

iii. By leveraging existing infrastructure, introduce new housing types and mixed-uses into existing urban areas to assist with housing affordability, improve amenity and sustainability.

iv. Co-locate community services, facilities, destinations and higher residential densities in areas well serviced by public transport.

v. Consider separation of uses within a development between residential dwellings and 'noisy' uses with 'buffers' such as commercial day-time use, communal facilities and green open space.

Figure 43: Housing types

Why this is important:
Providing a choice of housing types and sizes adjacent to each other has a range of benefits for the community in which it sits. It allows people of different living arrangements, ages, incomes and family structures to live close to each other and enables flexibility to stay within the community if housing needs and circumstances change. It also helps to prevent urban segregation and promotes a sense of community when people unexpectedly meet outside of their regular network.

Exemplar:
A wide range of apartment types, ownership models and typologies integrated into one park-front building. Duplex ground floor units, courtyard units, 1,2,3-bedroom apartments and generous penthouses.

Photo 25: Balfe Park Lane, Melbourne, Vic. Design: Kerstin Thompson Architects.

Why this is important:
Identifying areas for densification is critical to the growth of a more compact city. Densification provides greater housing choice, affordability and lifestyle choices that respond to changing demographics. It provides options for more sustainable growth through the redevelopment of sites with existing high amenity, while also providing opportunity for the further shaping of community and neighbourhood character.

6.1H INFILL

i. Facilitate housing choice and supply through the development of 'missing middle' housing types in existing areas with high levels of amenity and walkable catchments.

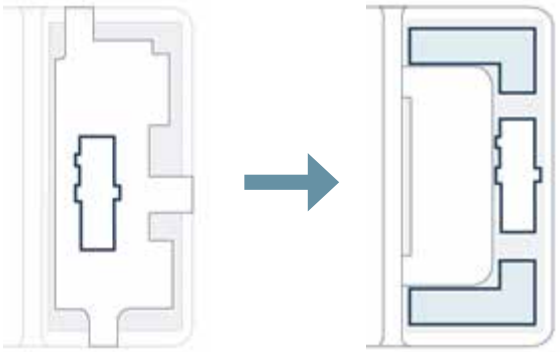
ii. Locate missing middle typologies between single dwelling and higher density/mixed use areas or sites with deteriorating single-family building stock for the development of missing middle density housing.

iii. Aim for low rise/high density typologies to preserve existing street frontage rhythm and ensure new development is responsive to existing character within the neighbourhood.

iv. Minimise the need for parking by increasing density in locations close to public transport corridors, essential needs, and active travel networks.

v. Design the development to contribute to an improved relationship to public domain through the integration of new active frontage uses and community amenity.

vi. Design the individual blocks and mass to have individual architectural character to give a varied and balanced composition in the streetscape.

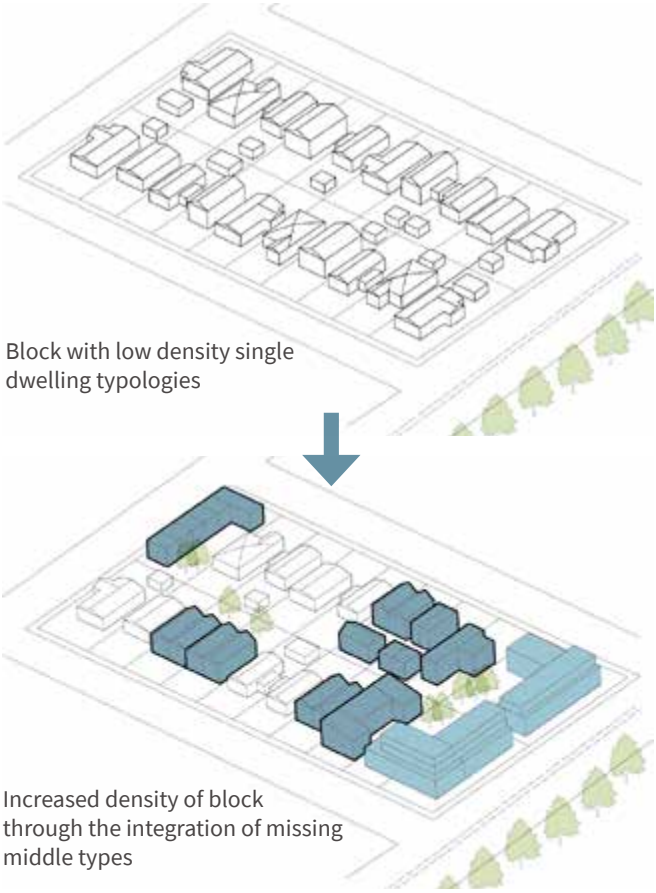


Large lawn and parking areas setback from street

Increased density opportunity with improved urban outcome.

Figure 44: Low density to high density

Tip:
Opportunities for densification can be unlocked by reconfiguring sites with large setback areas such as drive-in functions in suburban locations. Building to the street boundary also improves walkability and street activation.



Block with low density single dwelling typologies

Increased density of block through the integration of missing middle types

Figure 45: Missing middle types

Exemplar:
Providing townhouses, apartments and active ground floors in a suburb consisting of mainly single dwelling housing.

Photo 26: Roseneath St development. Melbourne, VIC. Design: Fieldwork Architects Photo: Tom Ross

DESIGN ELEMENT:

6.2 INTEGRATED SERVICES

Strategically integrate services to reduce impacts on public space.

Strategically integrating services, utilities and back of house functions promotes accessibility and efficiency while reducing the impact on the public space. This helps provide a more consistent and pedestrian-friendly environment while contributing to great places and streets for people.

DESIGN GUIDANCE

6.2A WASTE COLLECTION, LOADING AND DELIVERY AREAS

i. Locate servicing areas such as waste collection, loading areas and delivery areas to the rear of the building, away from primary frontages and pedestrian streets, to reduce the impact to on-street amenity.

ii. Consolidate waste collection, loading and delivery areas to minimise their spatial footprint and impact to the total site area on the building ground floor.

iii. Make sure there is adequate access for waste collection services.

6.2B VEHICLE ACCESS AND DRIVEWAYS

i. Locate building vehicle entries (such as basement and podium parking access) and driveways to the rear of the building, away from primary frontages and pedestrian streets, to reduce the impact to on-street amenity.

ii. Where possible, consolidate driveways within the property boundary to reduce the impact of driveways on the street.

iii. Minimise the size of driveways to minimise impact to the walkability of the street.

iv. Locate parking in podium or underground to reduce the spatial requirement for parking infrastructure on the ground level.

v. Locate secure bicycle parking access in a convenient at-grade location near building exit/entries to promote active travel.

vi. Provide for emergency vehicles access.

Related planning strategies and tools:

→ Municipal Infrastructure Standards (MIS)

Why this is important:

Servicing and infrastructure are critical elements for a building to function and be fit-for-purpose. Minimising impacts of these on building frontages and public space provides safe, coherent, visually interesting and comfortable streets and places for people.

6.2C GROUND FLOOR SERVICES AND INFRASTRUCTURE

i. Locate service cabinets to the rear of the building, near loading and waste collection point or when appropriate within the basement.

ii. Where services infrastructure must be located to address the street (e.g. fire hydrant boosters), avoid consolidating these elements to reduce their impact to the street and aesthetic quality of the building.

iii. Reduce the impact to the building façade by locating services infrastructure such as substations in laneways, within buildings or when appropriate in basements.

Exemplar:

Multi-use service spaces can be incorporated into the public space by using time scale – i.e. waste is only collected once a week and other activities can use this corridor at other times.

Photo 27: Verity Lane Market, Canberra, ACT, Design: Mather Architecture

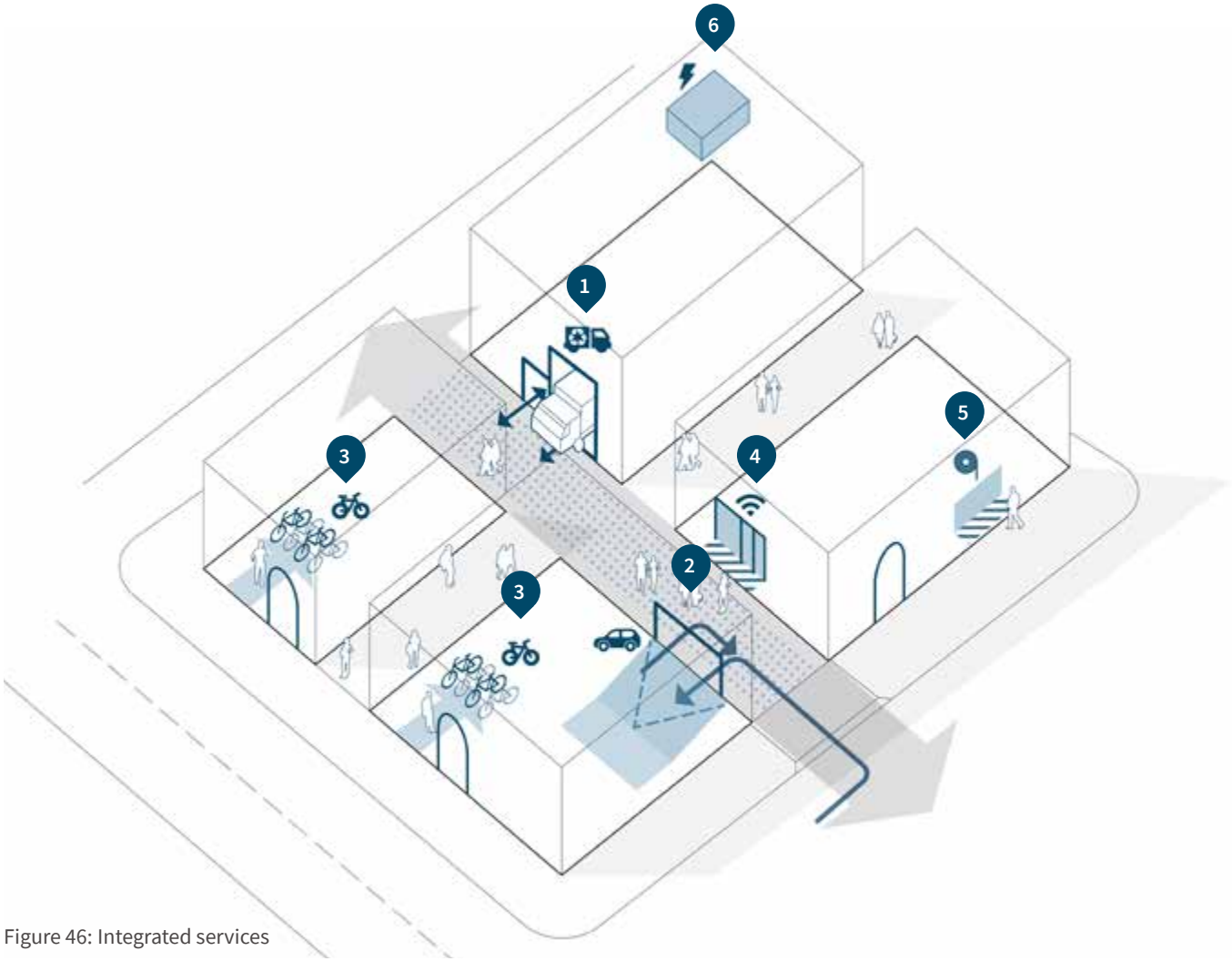


Figure 46: Integrated services

1. CONSOLIDATED SERVICING AREAS AND WASTE COLLECTION AT REAR
2. DISCREET VEHICLE ACCESS AT REAR OR SIDE STREET
3. SECURE CYCLE PARKING NEAR ENTRIES
4. SERVICE CABINETS TO THE REAR
5. DISCREET SERVICE INFRASTRUCTURE TO STREET
6. SUB-STATIONS AWAY FROM STREET

Exemplar:
Secure bike parking conveniently located near main residential entrances with guest parking on-street. Building services discreetly integrated into building frontage with high-quality materials.

Photo 28: Nightgale 2.0, Fairfield, VIC.Design: Six Degrees Architects

Why this is important:
Providing active uses and passive surveillance contributes to street activation and perceived safety in the street. Car parking areas are often inactive for long periods of time, which can create an unpleasant environment. Vehicle and pedestrian entries, when conveniently and visibly placed, can support street activity and safety.

6.2D SLEEVED PODIUM PARKING AND SERVICES

i. Where basement parking cannot be achieved, podium parking should be sleeved and surrounded by engaging, active uses that allow passive surveillance and engagement with the street.

ii. When sleeving parking podiums with residential uses, only sleeve north and / or east orientations to ensure sufficient solar access to dwellings.

iii. Podium parking ceiling heights should be of appropriate height and scale to allow for flexibility for change of use in the future.

iv. Where sleeved podium parking cannot be achieved, use attractive and engaging façade treatments and material screening and architectural articulation to create an attractive and engaging street edge.

v. Incorporate opportunities for planting into the façade to create a green interface, with cross ventilation as an additional priority.

vi. Short-stay car parking should be oriented toward street edges to encourage more activity, movement and passive surveillance.

Exemplar:
Non-active use sleeved car park which integrates 3D artwork into the façade to be visually engaging at street level. The project features local designers and variation in design and levels of permeability to breakdown the mass and ensure vertical continuity in street elevation.

Photo 29: Miami Museum Car Park, Miami, Florida. Design: Keenen/Riley. Photo: Miguel Guzman

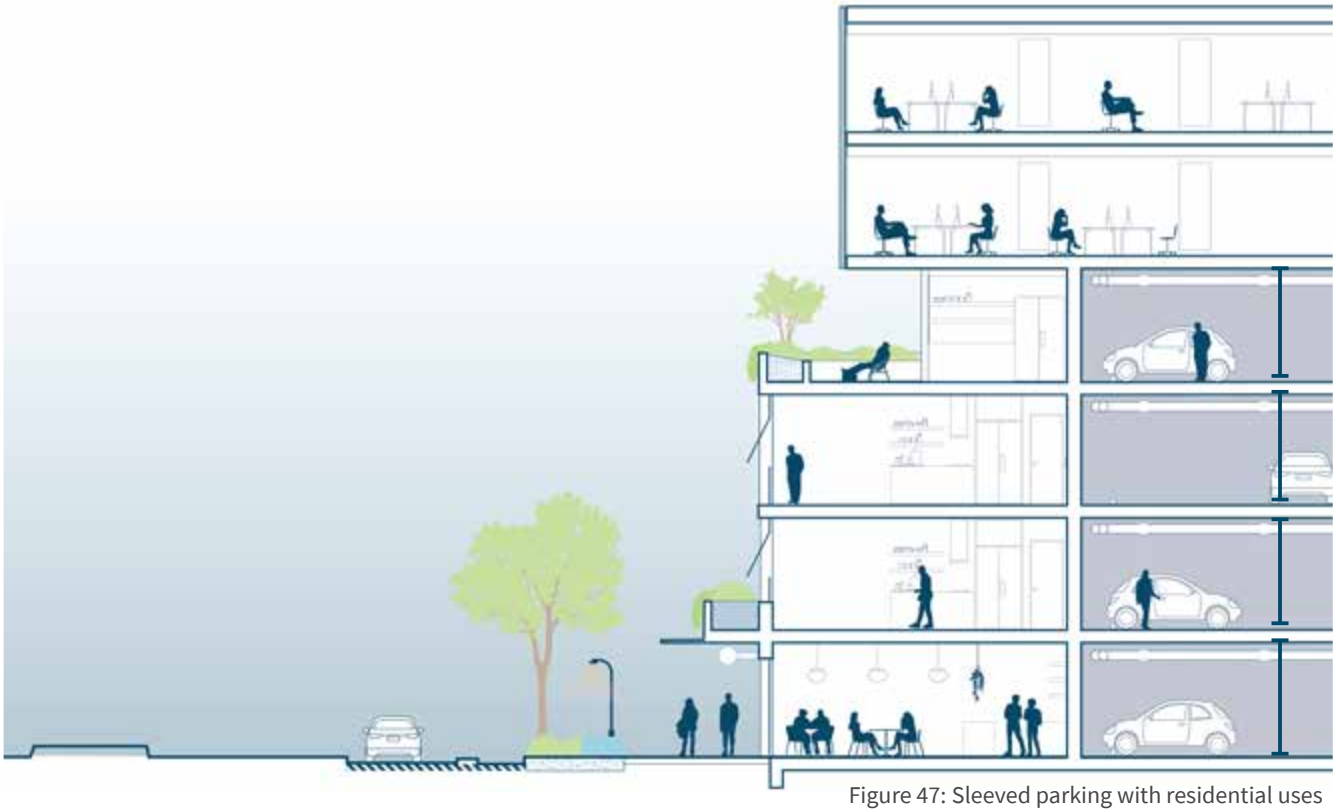


Figure 47: Sleeved parking with residential uses

Exemplar:
A former servicing laneway in the Sydney Building is changing character to a people-place with outdoor eating areas as part of an entertainment precinct.

Photo 30: Verity Lane Market, Canberra, ACT, Design: Mather Architecture, Photo: ACT Government

DESIGN ELEMENT:

6.3 GROUND FLOOR EDGE CONDITION

Provide engaging ground floor interfaces to all streets and public places.

The design of ground floor edges is key to the life of our streets and places. Good design invites people to engage with what is happening inside the buildings. All buildings should support a positive human experience and consider and provide the appropriate interface in any location.

DESIGN GUIDANCE

6.3A RESIDENTIAL URBAN APARTMENT

i. For ground floor units, provide narrow front-facing courtyards, slightly elevated above the street, to maintain a sense of privacy for ground floor residences.

ii. Provide individual private entries to ground floor units that ensure rhythm to the street edge and interact with the street where appropriate.

iii. Encourage landscaping closer to the street if appropriate deep soil planting zones are achievable.

iv. Use low height screening (maximum 1.2m) with limited visual permeability on front-facing courtyards and balcony balustrades.

v. Habitable areas such as front courtyards and balconies must address and engage with the street to contribute to the broader sense of activation and passive surveillance.

Photo 31: Slightly raised balcony with private access to street level in an urban context. Narrow planted zone softens the building edge and offers the opportunity to screen privacy further with taller planting. Design: Henning Larsen Architects

Tip: Providing a sense of privacy for ground floor residents is important for residents' comfort in dense urban environments. Slightly raising the ground floor level or filtering views through planting and front courtyards can provide privacy while maintaining presence on the adjacent street and public space. Failing to provide privacy will often lead to residents constantly living with closed blinds, thereby reducing passive surveillance and light quality.

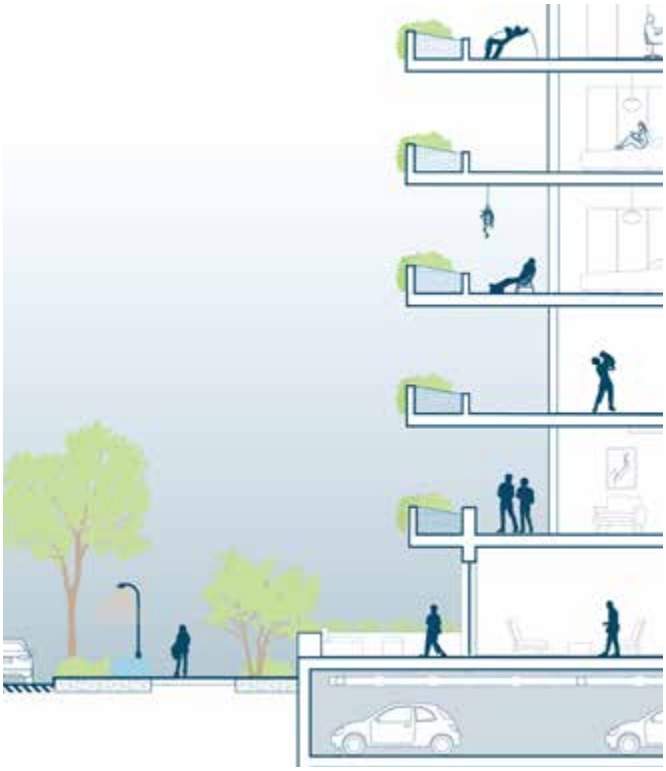


Figure 48: Urban residential interface

Elevate ground floor apartments slightly above street grade to provide views of adjacent public spaces and improve the sense of privacy.

Why this is important:
Providing ground floor dwellings facing the street with individual entrances and front gardens contributes to animating the street, giving residents direct access to 'their' private outdoor space, increasing perceived safety in the street and creating more opportunity for neighbours to incidentally meet, fostering a better sense of community.

6.3B RESIDENTIAL SUBURBAN TOWNHOUSE

i. Provide at-grade front-facing courtyard/garden in building setback for townhouses, terraces and single-family houses to provide passive surveillance of the street, while preventing views into ground floor residences.

ii. In front setback areas, incorporate a deep planting zone that allows for large, long-lived shade trees that provide privacy for ground floor residents and contribute to the green amenity of the street.

iii. Provide ground floor units and townhouses with individual private entries that provide rhythm to the street edge and interact with the street.

iv. Use low height screening (maximum 1.2m) with limited visual permeability on front-facing courtyards and balcony balustrades.

v. Do not allow building setbacks to be so deep that the connection between dwelling and street is completely lost.

Figure 49: Suburban residential interface
At-grade ground floor level with wider front courtyard and planted building set-backs.

Photo 32: Town house with at-grade entry from front courtyard and planted fence adds green amenity and provides opportunities for incidental meetings between neighbours. Design: de Rome Architects.

Photo 33: Slightly raised front-facing courtyards to ground-floor townhouses units provides activation of the street while maintaining privacy and passive surveillance. Design: Stewart Architecture.

6.3C COMMERCIAL ACTIVE EDGES

i. Incorporate outdoor dining within the front setback area to contribute to the activation and vibrancy of the street. Where appropriate, use footpath shoulder areas and parking lanes (as experimental activation) to expand outdoor dining capacity.

ii. Place active uses, such as retail, restaurants, entertainment, commercial communal areas and canteens, at-grade with the street level to maximise engagement with the street edges.

iii. Avoid blank walls, frosted glass and window treatments that obscure any visual link between the building and the street at ground level on primary street frontages.

iv. Incorporate planting elements within active edge areas to boost the green amenity of the street environment.

v. Provide a consistent awning for footpath weather protection; breaks in the awnings can provide for trees to provide continuous weather protection.

vi. Design frontages to be operable and open, promoting a visible indoor/outdoor connection. Where not operable, active frontage should deliver deep recessed environments through window reveals, columns and entries.

vii. Design occupiable areas to address building edges such as windows, balconies, podiums and elevated outdoor spaces, fronting onto and engaging with the street to contribute to the broader sense of activation.

viii. Step back upper storeys of buildings to reduce the intensity of tall buildings on the street and create enjoyable, human-scale urban spaces.

ix. Incorporate generous double height spaces at the ground level to allow better natural light penetration and amenity.

Photo 34: Darling Quarter, Sydney.

Commercial building with outdoor dining area, multiple entrances and planters with generous in-built seating looking onto adjacent public space. Design: fjcstudio.

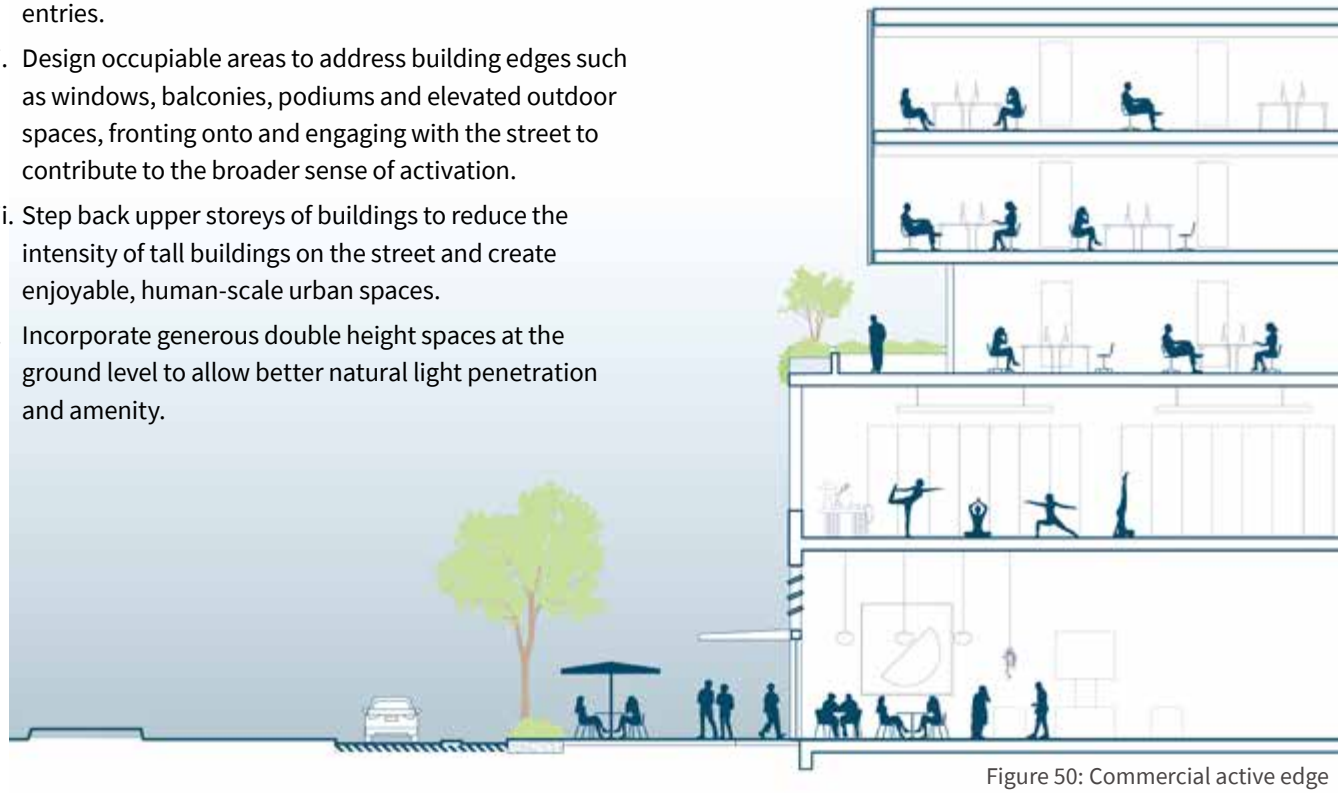


Figure 50: Commercial active edge

Why this is important:
Commercial buildings attract many people throughout large parts of the day and week. Investing in a commercial building's ground floor interface is good for the people who use the building, the people who walk past and the adjacent urban character.

6.3D COMMERCIAL LOBBY / SHOWROOM

i. Place lobby / showroom at-grade with the street level to maximise visual permeability and accessibility.

ii. Provide a consistent awning for footpath weather protection, with breaks in the awnings allowing for trees to provide continuous weather protection.

iii. Incorporate transparent materials to allow pedestrians to see into the building ground floor, ensuring even non-active built edges are engaging and contribute to the public space.

iv. Avoid built form edge treatments and glazing that create overly reflective and 'glary' environments.

v. Use front setback areas to incorporate elements that contribute to the amenity and diversity of the street, such as public seating and planting zones.

vi. Plan for occupiable areas to address building edges such as windows, balconies, podiums and elevated outdoor spaces, fronting onto and engaging with the street to contribute to the broader sense of activation.

vii. Incorporate generous ceiling heights at the ground level to create a more comfortable environment that also allows better natural light penetration and amenity.

viii. If in flood prone areas, accommodate level changes within the building so uses connect to the street at ground level.

Photo 35: ANU Kambri, Canberra. Design: BVN Architecture

High level of visual permeability and entrances to active uses at ground floor. Front setback areas incorporate public seating and a covered walkway for pedestrians.

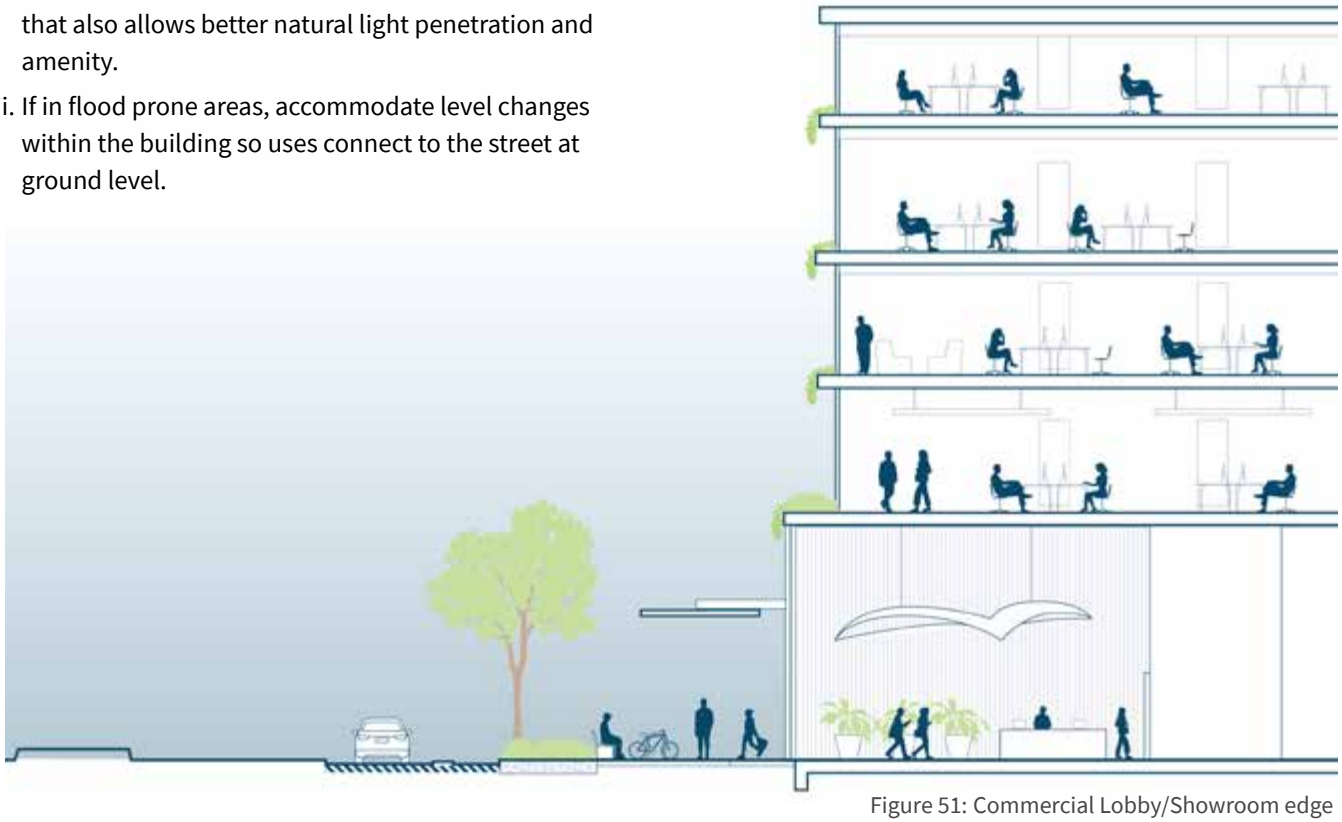


Figure 51: Commercial Lobby/Showroom edge

6.3E ADAPTABLE

i. Use double-height ceilings to accommodate a variety of ground floor functions.

ii. Incorporate spacious column bays to improve the flexibility to subdivide the ground floor tenancy for finer-grain functions if required.

iii. For most interior walls, use deconstructable partitions that are designed for faster renovations and minimal vacancy period.

iv. Provide flexible utilities, such as flexible base boards that are not embedded into walls, that allow walls to be moved and removed with ease.

v. Use modular ceiling grids that allow for faster, easier renovation through lighting and AV-plug-ins.

Photo 36: Casey Market Town, Canberra. Design: Cox Architecture, Photo: Sean Davey

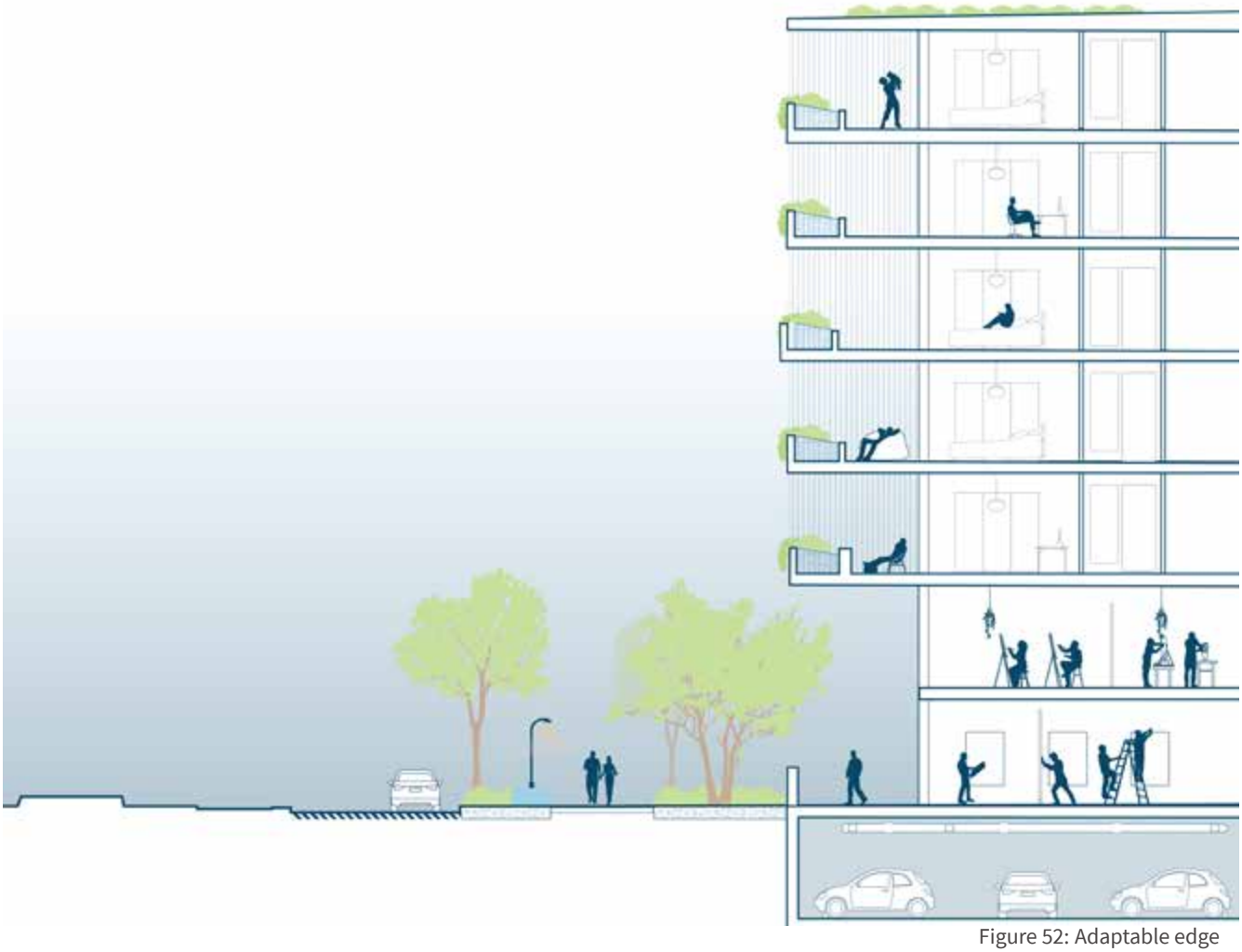


Figure 52: Adaptable edge

Tip: Adapting the ground floor edge condition to activate all environments
Bringing human-scale, public space activation and visual interest to all urban environments creates an attractive public space for people to be in. Attractive public space contributes positively to an area's character and ultimately the value of the buildings.

Photo 37: Greenhill Rd, Adelaide. Cafe in building setback activates the street. Design: Sans-arc Studio

Photo 38: Greenhill Rd, Adelaide. Cafe in building setback activates the street. Design: Sans-arc Studio

Photo 39: Amsterdam townhouses have narrow planted edge to shared street.

Photo 40: Kendall Ln, Canberra. Residential edge zone has generous planting. Design: Fender Katsalidis, OCULUS

Photo 41: Suburban town house development, Canberra with private outdoor space overlooking shared green space. Design: DNA Architects

Photo 42: Active street corner and outdoor serving. Design: Judd Studio.

SUSTAINABILITY AND ENVIRONMENT

Integrate natural systems, sustainable technologies, governance and the circular economy in design to improve liveability and amenity.

Realising a truly sustainable urban environment and community requires improved integration of natural systems, sustainable technologies, governance and circular economy. The combination of these elements will improve liveability and amenity for people while supporting the longevity and sustainability of our planet and resources. To achieve future health and sustainable growth, the built environment should promote visible connections to nature and regenerative systems and should encourage biodiversity and sustainable processes.

DESIGN ELEMENTS

7.1 NATURAL RESOURCE CAPTURE AND MANAGEMENT

7.1A Water sensitive urban design

7.1B District energy systems and creation

7.1C Food access and production

7.2 GOVERNANCE MODELS AND PROCESSES

7.2A Circular economy

7.2B Procurement, construction, upcycling and embodied carbon

7.2C Certification

7.2D Waste management

7.3 CLIMATE CHANGE RESILIENCE

7.3A Climate change resilience

7.3B Urban heat island effect

7.3C Flood mitigation

7.3D Bushfire mitigation

7.3E Robust, low maintenance materials and planting

7

DESIGN ELEMENT:

7.1 NATURAL RESOURCE CAPTURE AND MANAGEMENT

Efficiently managing, capturing and storing energy and water will increase future resilience and facilitate the transition to sustainable energy, food and resource management.

The urban and built environment offers obvious opportunities to implement sustainable practices, resources and energy production to improve the resilience and longevity of our human environments.

DESIGN GUIDANCE

7.1A WATER SENSITIVE URBAN DESIGN

i. Encourage infiltration and evapotranspiration of water in the landscape to contribute to the ACT's permeable surfaces target of a minimum of 30% by 2045.

ii. Improve water resource capture and management through incorporating rain gardens and tree trenches with storm-water infiltration soil pit systems that manage stormwater while maintaining tree health.

iii. Consider water capture elements that collect rainwater in underground tanks so water can be reused to irrigate nearby street trees and potable water consumption reduced.

iv. Where relevant in streets and public spaces, use water-sensitive permeable paving hardscape treatments that allow the movement of water through the surface so water can be stored, harvested, reused or discharged at a controlled rate.

v. Improve sustainable urban drainage. Next to busy thoroughfares, introduce swales and habitats that slow drainage into the stormwater network by facilitating more absorbent drainage into the ground.

vi. Introduce biofiltration basins into appropriate locations, allowing the natural filtration of water run-off from the urban environment.

Related planning strategies and tools:

→ Canberra's Living Infrastructure Plan: Cooling the City 2019

→ Municipal Infrastructure Design Standards (MIS)

Exemplar:

The Lyneham wetlands increase the aquatic and terrestrial habitat in urban areas while providing recreational amenity and storm water management such as flood detention, water filtration and irrigation.

Photo 43: Lyneham Wetlands, ACT

Figure 53: Precinct scale integrated energy creation and storage initiatives

7.1B DISTRICT ENERGY SYSTEMS AND CREATION

i. Eliminate technology dependent on fossil fuels for space heating, hot water, and cooking in new buildings to move towards climate-positive buildings.

ii. Explore opportunities to embed localised energy generation and storage infrastructure into the built environment, such as PV panels to complement the renewable energy grid.

iii. In consultation with utilities, provide space for neighbourhood-scale battery storage infrastructure to be co-located with electricity distribution substations. The design and placement of storage infrastructure must consider bushfire resilience.

iv. Where battery storage facilities are provided in the public space, use siting and urban design to protect visual and noise amenity.

v. Plan for electricity distribution systems to have sufficient capacity for future EV uptake and natural gas-free heating and cooling.

vi. Integrate EV charging stations into precinct developments to incentivise transition to sustainable transport modes. (See Access and movement)

vii. Use investment in new buildings as a catalyst to move away from gas and non-renewable energy consumption. (Refer to ACT Pathway to Electrification)

viii. Move towards de-carbonising future buildings' energy usage by deploying renewable energy technology as part of the building design and ensure 100% renewable electricity from energy providers.

7.1C FOOD ACCESS AND PRODUCTION

i. Foster activities that showcase urban food culture and encourage community connection through nature.

ii. Embed local community food production elements such as community gardens to maximise local food production and reduce emissions from imported foods.

iii. Encourage local and small-scale food production in urban environments to create awareness and build personal relationships with healthy food production.

iv. Ensure convenient access to fresh and healthy foods through encouraging local, visible and affordable healthy food production.

v. Encourage fresh, healthy and affordable food choices and convenient places to eat near schools and playgrounds to promote healthy eating habits to young people.

Why this is important:
We know that food systems account for about one quarter of all human-made greenhouse gas emissions, making what we eat a significant contributor to our carbon footprint. By making healthy food choices the easy and convenient choice, we impact the health and sustainability of our cities.

Related planning strategies and tools:

- → ACT Climate Change Strategy 2019-2025
- → City Renewal Authority Sustainability Strategy 2021-2025 (applies to Dickson, Braddon, Civic, Northbourne Avenue, Haig Park and West Basin, but offers information relevant for the whole of the ACT)
- → Strategic Bushfire Management Plan and ACT Bushfire Management Standards.
- → ACT Pathway to Electrification

DESIGN ELEMENT:

7.2 GOVERNANCE MODELS AND PROCESSES

Sound and sustainable management and governance and procurement processes will promote the transition to a sustainable and circular industry in the built environment.

Investing and implementing sustainable processes throughout all stages of construction will significantly help the ACT Government meet its sustainability target of reducing greenhouse gas emissions and reducing global warming.

DESIGN GUIDANCE

7.2A CIRCULAR ECONOMY

i. Embed sustainable practices in new projects throughout the project life cycle to design out waste and pollution.

ii. Consider whole-of-life costs and make best use of existing assets and infrastructure and consider avoiding the need to construct new assets to reduce emissions and material use.

iii. Use 100% low-impact and circular material management wherever possible to reduce the impact of procurement and construction on the environment.

iv. Implement management and monitoring strategies to ensure optimal treatment of resources for long-term life cycles.

v. Implement water recycling technologies and processes to create water self-sufficiency and reduce water consumption.

vi. Establish access to or generation of renewable energy sources wherever possible to reduce emissions and improve resilience.

vii. Explore the potential to embed facilities and conveniences such as repair workshops and shared amenities that reduce waste and emissions.

viii. Employ sustainable management of waste streams during the construction process to reduce material waste and environmental impact.

ix. Consider use of recycled content in civil infrastructure assets (such as road pavements, concrete assets, etc)

x. Consider designing for disassembly where appropriate, to facilitate future changes and dismantlement of built components for replacement.

Why this is important:
Purposeful design of the built environment can support greater resilience in a changing climate and future-proof our cities. Reusing of materials can provide potential economic savings and reduce greenhouse gas emissions and our reliance on natural resources.

Tip: Sustainability targets:
The ACT is committed to achieving net zero emissions by 2045 (based on 1990 levels). The ACT will get there progressively to reduce emissions across all sectors and industries, including the building industry.

We aim to reduce emissions by:

50 – 60% by 2025

65 – 75% by 2030

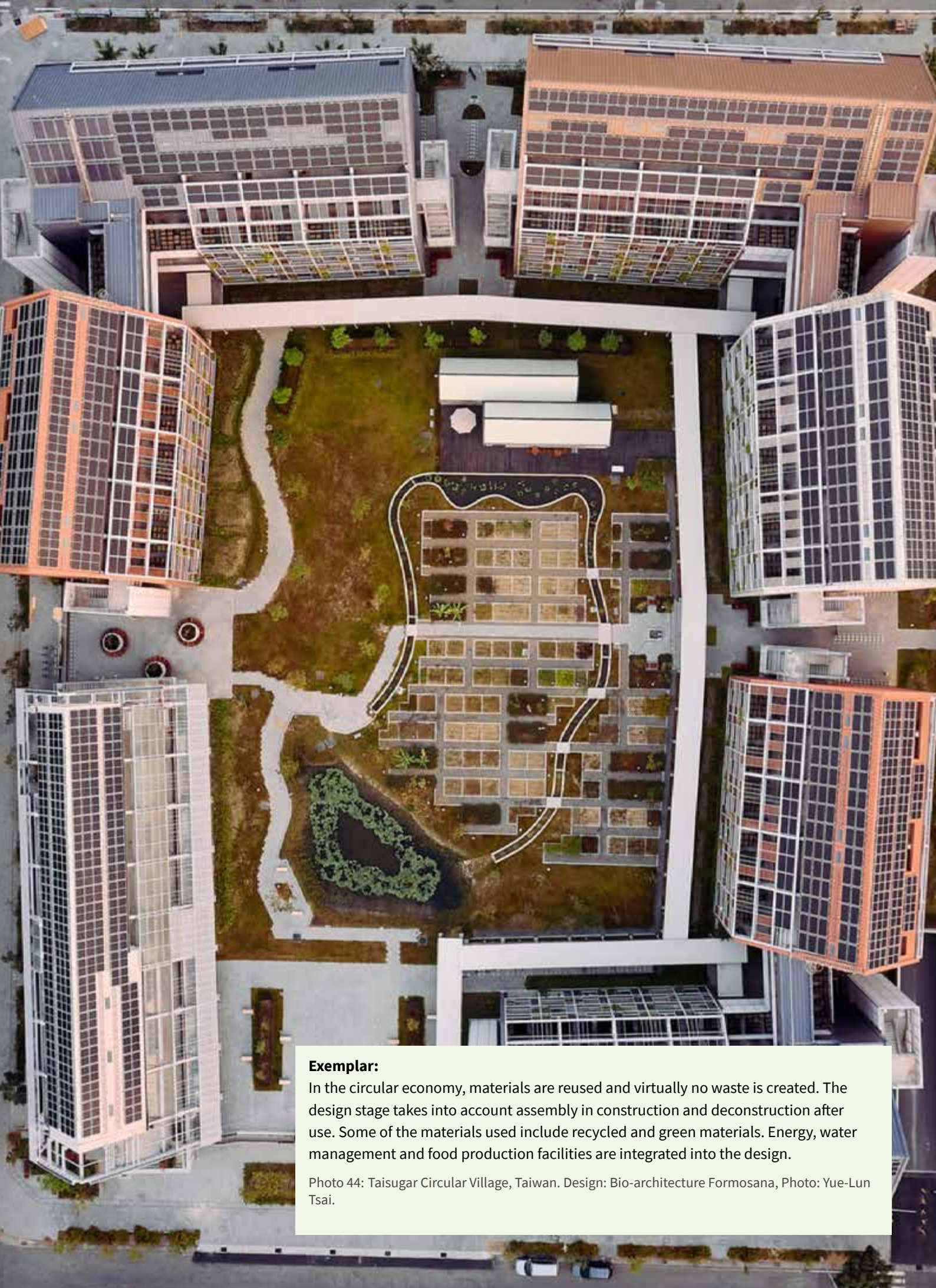
90 – 95% by 2040.

The targets are legislated under the Climate Change and Greenhouse Gas Reduction Act 2010.

The ACT Climate Change strategy outlines the steps the government will take to achieve these emission reduction targets.

Related planning strategies and tools:

- → ACT Circular Economy Strategy and Action Plan 2023-2030
- → ACT Climate Change Strategy 2019-2025
- → City Renewal Authority Sustainability Strategy 2021-2025 (applies to Dickson, Braddon, Civic, Northbourne Avenue, Haig Park and West Basin, but offers information relevant for the whole of the ACT)
- → ACT's Zero Emission Vehicles Strategy 2022-2030.



Exemplar:
In the circular economy, materials are reused and virtually no waste is created. The design stage takes into account assembly in construction and deconstruction after use. Some of the materials used include recycled and green materials. Energy, water management and food production facilities are integrated into the design.

Photo 44: Taisugar Circular Village, Taiwan. Design: Bio-architecture Formosana, Photo: Yue-Lun Tsai.

7.2B PROCUREMENT, CONSTRUCTION, UPCYCLING AND EMBODIED CARBON

i. Consider the adaptive reuse and refurbishment of existing buildings where possible, to prevent demolition and the loss of resources in the economy. As we grow our efforts to embed circular principles, we will shift to a proactive approach to sustainable infrastructure and building design.

ii. During design stages, consider assembly and disassembly in construction and deconstruction after use to minimise embodied carbon emissions.

iii. Use low-carbon concrete mixes such as fly ash, slag, calcined clays or lower-strength concrete in the construction process to reduce embodied carbon emissions.

iv. Use recycled materials and content to create sustainable concrete.

v. Quantify and report on the embodied emissions attributable to the development.

vi. The embodied emissions of the construction should be minimised, for example through re-used, recycled, low-carbon materials, locally sourced and low-emission materials to reduce the emissions associated with the extraction of raw materials, the manufacturing and refinement of materials, transportation, installation and disposal of old supplies.

vii. Incorporate circular economy tendering criteria into construction projects to demonstrate how these principles have been considered to reduce waste.

viii. Preserve existing building foundations wherever possible to reduce new emissions and build on existing embodied carbon.

ix. Use prefabricated, modular building components to improve efficiency and flexibility.

x. Incorporate circular processes in demolition and disassembly activities to close material loops and reduce waste and emissions through selective removal of structural components like window frames, doors, materials and components of existing buildings.

xi. Explore the potential to adapt, refurbish and reuse existing buildings to meet modern standards where appropriate to reduce waste and construction emissions.

xii. Reuse second-hand materials such as brick, metal, wood and broken concrete wherever possible to reduce embodied carbon emissions.

xiii. Adapt and reuse existing buildings, structures and landscapes where appropriate to help create a sense of place and reduce emissions embodied in construction.

Exemplar:
World's first upcycled skyscraper retains more than 65% of the original structure (beams, columns, and slabs) and 95% of the original core, resulting in an embodied carbon saving of 12,000 tonnes (the equivalent of 35,000 flights between Sydney and Melbourne).

Photo 45: Quay Quarter Tower, Sydney. Design: 3XN

Exemplar:
Use of recycled materials in urban open space, Canberra. For around 10 years the ACT Government has been installing bollards made from recycled plastic across Canberra's urban open spaces. More than 5,000 recycled plastic bollards have been installed in places such as sports grounds and parks.

Photo 46: Bollards

Related planning strategies and tools:

→ Municipal Infrastructure Design Standards (MIS)

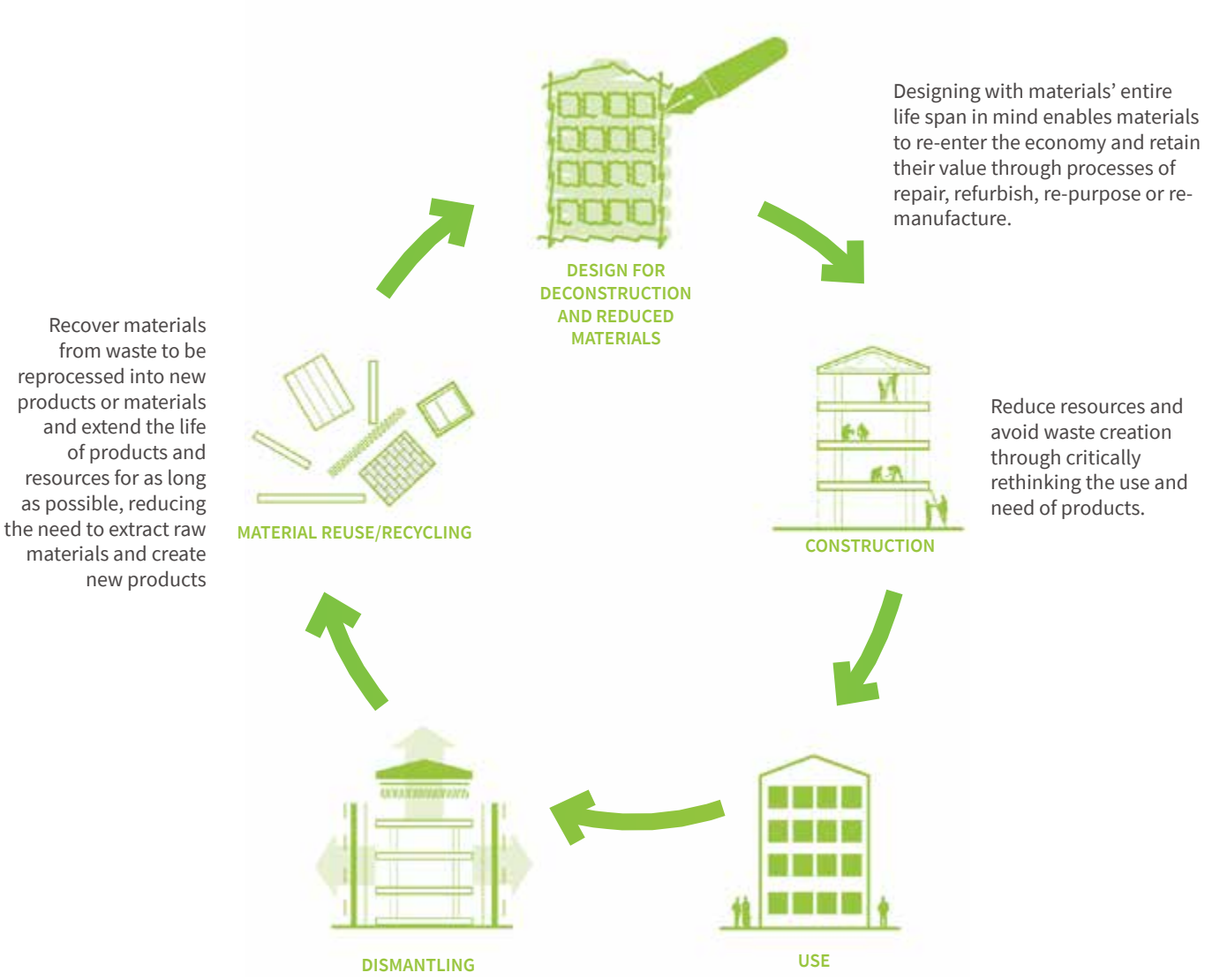


Figure 54: Upcycling and circular economy processes

TIP: Circular economy principles for the built environment in Draft ACT Circular Economy Strategy 2022-2025

Creating a circular economy goes beyond waste to embed the circular concepts across the economy. It expands on the prevention (reduce) and reuse measures to reduce the need in the first place and focuses on keeping materials in circulation for as long as possible before they need to be recycled.

Keep materials circulating in the economy at their highest value through purposeful design that consider durability, repairability, reuse and recycling.

"The ACT Government is developing a 10-year pathway to achieving world's best practice sustainable buildings, in the context of the ACT's net zero emissions target."

-as outlined in ACT Government Climate Change Strategy 2019-2025, the ACT Planning Strategy 2018 and ACT's Circular Economy strategy 2022-2025

Related planning strategies and tools:

→ ACT Circular Economy Strategy and Action Plan 2023-2030

7.2C CERTIFICATION

i. Certification and assurance processes such as Green Star Buildings, Green Star Communities, Living Building Challenge, the UN Sustainable Development Goals, NABERS, One Planet Living Framework, WELL Building Standard, and/or Fitwel Standards provide other tools for guiding sustainable design and monitoring processes for the ongoing performance of buildings and developments.

Exemplar:

Using upcycled bricks and waste wood as building material for new multi-dwelling housing without compromising quality or aesthetics. Brick façades from abandoned buildings have been reused and upcycled by cutting into larger building blocks, saving 29% CO_2 emissions by up-cycling 10% of building material.

Photo 47: The Resource Rows, Copenhagen. Design and photo: Rasmus Hjortshøj & Lendager.

7.2D WASTE MANAGEMENT

i. Link waste infrastructure with dedicated urban logistics services to collect, manage and deliver bio-waste to bio-fuel networks.

ii. Explore the demand for circular resource hubs that focus on on-site high value waste management activities, such as reuse, recycling and upcycling and repair functions.

iii. Implement circular waste management processes and technologies that align with biogas and fertiliser recycling and production plants.

Exemplar:

Local recycling centre is a social meeting place and hub for exchanging ideas and objects built out of household waste. These centres can be built into new residential precincts. Intuitive and efficient sorting and swapping increases the value of material fractions and accelerate the reuse rate.

Photo 48: Recycle Centre Nordhavn, Denmark. Design and photo: Rasmus Hjortshøj & Lendager.

Related planning strategies and tools:

→ ACT Circular Economy Strategy and Action Plan 2023-2030

“A circular economy that prioritises reuse, recovery and recycling in our growing built environment with influence to develop innovative and adaptive building and planning policies and practices.”

ACT Gov Circular Economy Strategy draft 2022-2025

DESIGN ELEMENT:

7.3 CLIMATE CHANGE RESILIENCE

Design should enable the built environment to adapt to acute shocks and long-term stressors caused by changing climate.

A built environment design responds and adapts well to acute shocks and long-term stressors caused by the changing climate. Deploying the appropriate mitigating strategies in the public space and urban design enables people to stay safe and comfortable while managing these challenges in a sustainable and liveable way.

DESIGN GUIDANCE

7.3A CLIMATE CHANGE RESILIENCE

i. Deliver walkable, mixed-use communities with access to high-quality public transport and micro mobility infrastructure that encourages active travel and emissions reduction through reducing the need for private vehicles.

ii. Provide climate-responsive buildings, places and spaces that reduce the need for mechanical climate controls such as air conditioning.

iii. Provide a diverse mix of amenities, conveniences and infrastructure in higher density neighbourhoods to encourage adoption of denser urban living that reduces emissions.

iv. Embed water capture and management elements that reduce vulnerability to drought and improve water system resilience.

v. Ensure developments are designed and built to safely withstand extreme weather scenarios.

Tip: Climate modelling
The ACT is included in the NSW Government's NARCLiM regional climate modelling. The ACT Government recommends you use NARCLiM when considering the ACT's future climate in engineering, urban design and planning projects.

"Changing climate causes increases in extreme weather events in the future. The ACT Government is committed to ensuring Canberra adapts to the changing climate so that it can remain a vibrant, resilient and liveable city."

ACT Climate Change Strategy 2019-2025

7.3B URBAN HEAT ISLAND EFFECT

i. Maximise green cover and permeability. Precincts should achieve 30% tree canopy cover and 30% permeable surfaces equitably distributed across the precinct, unless identified development constraints do not permit this to reduce heat island effect in urban environments and increase climate resilience of landscapes.

ii. Orient site layout and features to minimise exposure to hot summer sun and winds, while maximising access to cooling breezes and shade.

iii. Consider light coloured materials, particularly on rooftops and asphalt, to reduce heat impacts, including high albedo roof surface materials.

iv. Design for passive irrigation where run-off from hard surfaces is directed into vegetation to maximise cooling effects and mitigate against run-off.

v. Create outdoor 'cool zones' that provide an opportunity for outdoor access during hot weather, and consider the integration of fountains, water play features and/or misters to provide active cooling.

vi. Consider cool pavement typologies that have low heat conductivity, low heat capacity and high solar reflectance to reduce urban heat and provide better performance outcomes. Refer to the Municipal Infrastructure Standards.

Related planning strategies and tools:

→ ACT Climate Change Strategy 2019-2025

→ Canberra's Living Infrastructure Plan: Cooling the City 2019

→ ACT Urban Forest Strategy 2021-2045

"Evaporative cooling from permeable paving surfaces may decrease surface temperature by up to 20˚C and ambient air temperature around the immediate location by 2˚C."
ACT Gov Living Infrastructure

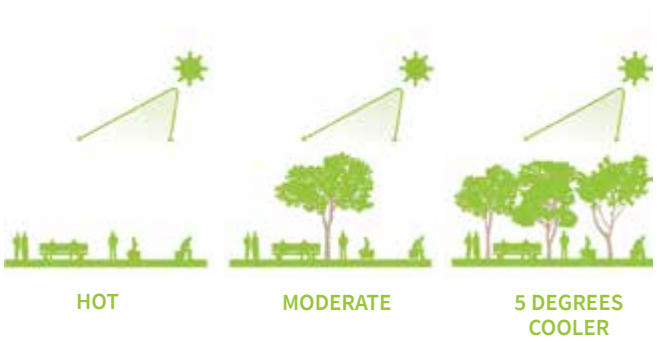


Figure 55: Effects of tree canopy coverage on climate

Related planning strategies and tools:

- → ACT Climate Change Strategy 2019-2025
- → City Renewal Authority Sustainability Strategy 2021-2025 (applies to Dickson, Braddon, Civic, Northbourne Avenue, Haig Park and West Basin, but offers information relevant for the whole of the ACT)
- → Canberra's Living Infrastructure Plan: Cooling the City 2019
- → ACT Wellbeing Framework 2020
- → ACT Gov Regional Fire Management Plan 2019-2028
- → Strategic Bushfire Management Plan and ACT Bushfire Management Standards.

7.3C FLOOD MITIGATION

i. Ensure development is located outside of and excluded from flood prone areas (above 1% AEP Flood level) to reduce flood risk and insurance cost burdens.

ii. Where development is located near flood-prone areas, elevate habitable and occupiable spaces above projected at-risk flood levels to improve the safety and resilience of development.

iii. Ensure flood and stormwater modelling considers the ACT's future climate, which is expected to include more extreme rainfall events, and mitigation of impacts upstream and downstream from development.

iv. Locate more permeable and less vulnerable functions such as parks, bio-swales and bio-remediation ponds in flooding areas to reduce stormwater run-off and mitigate flood risk.

v. For development near flood-prone areas, use robust and resilient materials, implemented in forms able to be easily repaired following a major flood event.

vi. Ensure development has no adverse impact on flood risk upstream and downstream of the development site (for the 1% AEP Flood Event)

vii. Ensure areas are to be drained appropriately, including the provision of overland flow paths and the avoidance of trapped low points that increase flooding risk.

7.3D BUSHFIRE MITIGATION

i. Appropriately locate new sites and streets with buffer setback or other mitigation strategies to reduce the risk of bushfires spreading to residential areas and reduce risks to lives and homes.

ii. Use materials and forms that are sufficiently resilient and robust to reduce bushfire risk and minimise repair and insurance costs.

iii. Avoid locating higher density development in areas adjacent to higher risk of bushfire, especially when a significant distance of emergency services infrastructure is required.

iv. Plant bushfire-resilient plant species in high bushfire risk areas to reduce the movement of embers and mitigate the potential spread of fire.

v. All development in the bushfire prone area will need to comply with the ACT Bushfire Management Standards.

vi. Ensure bushfire assessments consider the ACT's future climate, which is expected to be hotter with more extreme droughts.

7.3E ROBUST, LOW MAINTENANCE MATERIALS AND PLANTING

i. Use resilient and durable elements and materials that reflect quality and permanence and have visual and functional quality over time, while considering ongoing maintenance costs.

ii. Incorporate modular pavement that is easy to install, adapt and maintain, allowing streets to evolve over time, while reducing ongoing installation and maintenance costs.

iii. Use local endemic and drought tolerant plants species to reduce water consumption and plant maintenance costs.

iv. Design buildings, streets and spaces to be resource efficient, durable and low maintenance to reduce energy consumption and construction and maintenance costs.

Location: ANU Kambri Public space, Canberra. Aspect Studios.

Part Three: Appendices

URBAN DESIGN CHECKLIST

This design criteria checklist is an evaluation tool for those involved in the planning, design and delivery of built environment projects to demonstrate that a given project achieves good design outcomes in the ACT context. It should be used at several stages throughout a project, from early design concepts, to detailed proposals and completed works to track design proposals response to the desired outcomes.

COUNTRY AND PLACE	NOTES
This chapter supports the interpretation, application and assessment of the assessment outcomes specified in the Territory Plan.	
1.1 NGUNNAWAL CULTURAL RESONANCE	
1.1A Governance, process and engagement	☐
1.1B Buildings, spaces and landscape character	☐
1.1C Wayfinding and navigation	☐

URBAN STRUCTURE AND NATURAL SYSTEMS	NOTES
This chapter supports the interpretation, application and assessment of the assessment outcomes specified in the Territory Plan.	
2.1 OPEN SPACE NETWORK	
2.1A Natural systems	☐
2.1B Type, size, quality, function and connectivity	☐
2.1C Topography and views	☐
2.2 NATURAL SYSTEMS	
2.2A Connectivity and access	☐
2.2B Water management	☐
2.2C Restoring ecology	☐
2.3 URBAN STRUCTURE	
2.3A Hierarchy of centres	☐
2.3B Precinct structure and layout	☐
2.3C Diversity of lot sizes	☐

SITE AND LAND USE	NOTES
This chapter supports the interpretation, application and assessment of the assessment outcomes specified in the Territory Plan.	
3.1 CONTEXT AND CHARACTER	
3.1A Griffin legacy	☐
3.1B The Canberra character	☐
3.1C Land use and zoning	☐
3.1D Urban growth and densification	☐
3.1E Precinct amenity	☐

ACCESS AND MOVEMENT	NOTES
This chapter supports the interpretation, application and assessment of the assessment outcomes specified in the Territory Plan.	
4.1 CITY WIDE MOVEMENT NETWORK	
4.1A Contextual movement network alignment	☐
4.1B Community proximity to transit infrastructure	☐
4.1C Diverse transport modes	☐
4.2 BALANCING MOVEMENT AND PLACE DRIVERS	
4.2A User needs	☐
4.2B Movement network hierarchy and function	☐
4.2C Local framework of places	☐
4.3 PEDESTRIAN FOCUSED STREETS	
4.3A Safe, inclusive, and legible streets	☐
4.3B Permeability and ease of movement	☐
4.3C Comfort, convenience and amenity	☐
4.3D Attractive, active and distinct	☐
4.4 ACTIVE TRAVEL	
4.4A Safe, inclusive, and legible active travel network	☐
4.4B Comfortable and convenient active travel routes	☐
4.4C Supporting infrastructure for active travel	☐
4.5 PUBLIC TRANSPORT	
4.5A Public transport infrastructure separation	☐
4.5B Inclusive and accessible public transport infrastructure	☐
4.5C Servicing key destinations and populations	☐
4.5D Transport modal change	☐
4.6 VEHICLE ACCESS AND PARKING	
4.6A On-street parking	☐
4.6B Parking access and entries	☐
4.6C Flexible parking structures	☐
4.6D Underground parking	☐
4.6E Parking and accessibility	☐
4.6F Surface parking areas	☐
4.6G Electrification and zero emission vehicles	☐
4.6H Access to buildings and parking	☐
4.6I On site access	☐
4.6J Green accessways on lots	☐

URBAN DESIGN CHECKLIST

PUBLIC SPACE AND AMENITY	NOTES
This chapter supports the interpretation, application and assessment of the assessment outcomes specified in the Territory Plan.	
5.1 QUALITY OF PUBLIC SPACES AND PLACES	
5.1A Solar access and orientation	☐
5.1B Accessibility	☐
5.1C Active travel infrastructure	☐
5.1D Building interface	☐
5.2 FUNCTIONALITY	
5.2A Flexibility, adaptability and activation capacity	☐
5.2B Responsive design and programming	☐
5.2C Pedestrian comfort, urban amenities and conveniences	☐
5.3 TREES, LANDSCAPING AND NATURAL FEATURES	
5.3A Boosting tree canopy and coverage	☐
5.3B Local planting and vegetation species	☐
5.3C Positive engagement with nature	☐
5.3D Biodiversity habitats	☐
5.4 GREENING THE STREETS	
5.4A Street planting and canopy	☐
5.4B Landscaped building interface	☐
5.4C Optimised services	☐
5.5 SAFETY AND INCLUSIVITY	
5.5A Crime Prevention Through Environmental Design (CPTED)	☐
5.5B Inclusive design elements	☐
5.5C Gender sensitive urban design principles	☐
5.5D Legibility and wayfinding	☐
5.5E Lighting	☐
5.6 ELEMENTS, FURNITURE AND MATERIALS	
5.6A Urban furniture	☐
5.6B Public spaces and places material treatment	☐
5.6C Public art	☐

BUILT FORM AND BUILDING DESIGN	NOTES

This chapter supports the interpretation, application and assessment of the assessment outcomes specified in the Territory Plan.

6.1 RESPOND TO URBAN CONTEXT

6.1A Block permeability	☐
6.1B Scale and massing transitions	☐
6.1C Orientation	☐
6.1D Overshadowing	☐
6.1E Setbacks and separation	☐
6.1F Layering uses	☐
6.1G Integrated housing types and choice	☐
6.1H Infill	☐

6.2 INTEGRATED SERVICES

6.2A Waste collection, loading and delivery areas	☐
6.2B Vehicle access and driveways	☐
6.2C Ground floor services and infrastructure	☐
6.2D Sleeved podium parking and services	☐

6.3 GROUND FLOOR EDGE CONDITIONS

6.3A Residential urban apartment	☐
6.3B Residential suburban townhouse	☐
6.3C Commercial active edges	☐
6.3D Commercial lobby / showroom	☐
6.3E Adaptable	☐

URBAN DESIGN CHECKLIST

SUSTAINABILITY AND ENVIRONMENT	NOTES
This chapter supports the interpretation, application and assessment of the assessment outcomes specified in the Territory Plan.	
7.1 NATURAL RESOURCES CAPTURE AND MANAGEMENT	
7.1A Water sensitive urban design	☐
7.1B District energy systems and creation	☐
7.1C Food access and production	☐
7.2 GOVERNANCE MODELS AND PROCESSES	
7.2A Circular economy	☐
7.2B Procurement, construction, upcycling and embodied carbon	☐
7.2C Certification	☐
7.2D Waste management	☐
7.3 CLIMATE CHANGE RESILIENCE	
7.3A Climate change resilience	☐
7.3B Urban heat island effect	☐
7.3C Flood mitigation	☐
7.3D Bushfire mitigation	☐
7.3E Robust, low maintenance materials and planting	☐

DOCUMENT REFERENCES

A literature review was undertaken and the relevant policies and documents listed below are referenced throughout this design guide. In addition, earlier review work engaged by the Planning Review and Reform Project provided a clear baseline for what constitutes good design.

POLICY

Planning Act 2023

Territory Plan 2023

District, zone and subdivision technical specifications

GOVERNMENT PLANS

National Capital Plan

The Griffin Legacy: A blueprint for the future development of the central national areas, ACT Government 2006

ACT Infrastructure plan

ACT Canberra's Living Infrastructure Plan: Cooling the City

ACT Powering Canberra our Pathway to Electrification

ACT Conservation Effectiveness Monitoring Plan

ACT STRATEGIES

District strategies 2023

ACT Planning Strategy 2018

ACT Transport Strategy 2020

ACT Climate Change Strategy 2019-2025

ACT Digital Strategy 2020

ACT Water Strategy

ACT Circular Economy Strategy and Action Plan 2023-2030

ACT Urban Forest Strategy

ACT Waste Management Strategy 2011 - 2025

ACT City Plan

ACT and Region Catchment Strategy

ACT Nature Conservation Strategy 2012-2023

ACT Key Threatening Processes (KTP)

ACT Native Woodland Conservation Strategy and Action Plans

ACT Native Grassland Conservation Strategy and Action Plans

Zero Emissions Vehicles Strategy 2022-2023

CRA Sustainability Strategy 2019-2025

CRA Urban Art Strategy

Aquarian and Riparian Conservation Strategy and Action Plans

STUDIES

ACT Planning Reform - Delivering Best-Practice Urban Design Through Planning, 2021. Hodyl & Co, Andy Fergus, Adams Urban, Oculus and Creative Environment Enterprises

Environment Protection Guidelines for Construction and Land Development in the ACT Municipal Infrastructure Design Standards

Hodyl and Co Planning System Review and Reform - Achieving Improved Built Form, Place Design & Public Realm Design Outcomes

GUIDES

Gawari Ngilanmanyin. Remembering the Bush. A Climate-wise Landscape Guide for the ACT

ACT Microclimate Assessment Guide (Forthcoming)

ACT Design Guide for Best Practice Intersections

ACT Separation Distance Guidelines for Air Emissions

Practice Guidelines for Water Sensitive Urban Design in the ACT and Water Sensitive Urban Design General Code

National Capital Design Review Panel: Design Principles for the ACT

National Capital Design Review Panel: Practitioner's guide, Preparing for design review

Green Building Council Australia, A practical guide to electrification for new buildings

World Green Building Council, Bringing embodied carbon upfront

FRAMEWORKS

ACT Wellbeing Framework

ACT Economic Development Priorities 2022-2025: CBR Switched on

ACT Gender Sensitive Urban Design Framework

City and Gateway Urban Design Framework

ACT Gender Sensitive Urban Design Framework

ACT Living Infrastructure Plan

The Griffin Legacy

GLOSSARY

This glossary identifies the words and acronyms that appear frequently throughout the Urban Design Guide, to help the reader identify unfamiliar words and industry specific terminology.

The terms in the glossary do not replace defined terms or uses in the Territory Plan, refer to Territory plan definitions for any development applications.

ACT – Australian Capital Territory

Accessibility – The ease of reaching destinations. In a highly accessible location, a person, regardless of age, ability or income, can reach many activities or destinations quickly, whereas people in places with low accessibility can reach fewer places in the same amount of time.

Activations – A place with the appropriate facilities that invite people to spend time in that space, thereby activating it, making it lively.

Active frontages – Occurs where there is active visual or tactile engagement between the ground and upper floor of buildings and the adjacent street/public space.

Active travel – Any form of transport involving physical activity, e.g. cycling and walking.

Active use – Active uses are uses that generate many visits, in particular pedestrian visits, over an extended period of the day.

Adaptive reuse – Projects that give new life to an existing place, building or structure through sympathetic alterations, conversions and additions that enable compatible new uses and functions, while maintaining the heritage significance where applicable.

Affordable housing – Housing that is appropriate for the needs of a range of very low to moderate income households, and priced (whether mortgage repayments or rent) so these households are able to meet their other essential basic living costs. It differs to social housing which is provided and/or managed by the government (public housing) or by a not-for-profit organisation (community housing). Housing is often defined as affordable when a household spends less than 30% of their income on housing costs, and that household falls within the lowest 40% of household incomes.

Amenity – The features of an area, street or building, that provide facilities and services that contribute to physical or material comfort and benefit, and are valued by users. Amenity is important in the public, communal and private domains.

Articulation – An area in front of the building line that may contain porticos, balconies, bay windows, decks, patios, pergolas, terraces, verandas, window box treatments, window bays, awnings and sun-shading features.

Building depth – The overall cross-section dimension of a building envelope. It includes the internal floorplate, external walls, balconies, external circulation and articulation such as recesses and steps in plan and section.

Building edges – The façade plane of a building's ground floor that face the outer perimeter of a site.

CED - City and Environment Directorate

City Centre – The area broadly defined by Canberra's civic centre and bordered by the outer hexagonal road (Cooyong Street and extensions) radiating from City Hill, ANU and Lake Burley Griffin (map included in Commercial Zones Policy).

City Plan/CP – ACT Government document establishing the long-term vision for Canberra City Centre.

Communal open space – Communal open space means common outdoor open space within an easily accessible location on the subject site for recreation and relaxation of residents of a housing development.

Connectivity – The number of connecting routes and intersections within a particular area. An area with high connectivity provides multiple routes to and from destinations.

Corner apartment – Cross ventilating apartments on one level with aspects at least 90 degrees apart. Corner apartments are commonly located on the outermost corners of buildings.

Courtyard – Communal space at ground level or on a structure (podium or roof) that is open to the sky, formed by the building and enclosed on three or more sides.

CRA – City Renewal Authority.

Cross-over apartment – A cross ventilating apartment with two opposite aspects and with a change in level between one side of the building and the other.

Cross-through apartment – A cross ventilating apartment on one level with two opposite aspects

CPTED – Crime Prevention Through Environmental Design.

Datum – A significant point or line in space established by the existing or desired context, often defined as an Australian Height Datum. For example, the top of significant trees or the cornice of a heritage building.

Deep soil zone – An area of soil within a development that is unimpeded by buildings or structures below ground, and which has adequate dimensions to allow for the growth of healthy trees. Deep soil zones exclude basements, services, swimming pools, tennis courts and impervious surfaces including car parks, driveways, podium, and roof areas.

Density – Average number of residents, households, dwellings, or habitable space in a given area, usually expressed as dwellings/ people per hectare or floor area ratio.

Desired character– means the form of development in terms of siting, building bulk and scale, and the nature of the resulting streetscape that is consistent with the relevant desired outcomes, and any statement of desired character in a relevant district code. It does not necessarily reflect the existing character of the area.

Dual aspect apartment – Apartments which have at least two major external walls facing in different directions, including corner, cross-over and cross-through apartments, which provide for and improve ventilation.

Dual key apartment – An apartment layout with a common internal corridor and lockable doors to sections within the apartment so that it is able to be separated into two independent units. Dual key apartments are regarded as two dwellings.

Embodied emissions – Attributable to development, means the greenhouse gas emissions resulting from the materials used to construct a building that forms part of the development, including emissions from:

- the extraction of raw materials that are used to construct the building,
- transportation of materials,
- the manufacture of the materials used to construct the building.

Enclosure – Where building height and open space width created a feeling of contained space.

Façade – The external face of a building, generally the principal face, facing a public street or space.

Floor plate – The total floor area of a storey within a building or structure.

Good design – Architectural and urban design outcomes are expected to comply with good practice design principles as a minimum ambition.

Green roof – A roof surface that supports the growth of vegetation, comprised of a waterproofing membrane, drainage layer, organic growing medium (soil) and vegetation.

Habitable – habitable (including habitable room) means a room within a dwelling capable of being lawfully used for the normal domestic activities of living, sleeping, cooking, or eating, and:

GLOSSARY

Continued from previous page

i. includes a bedroom, study, living room, family room, kitchen, dining room, home theatre, rumpus room; but

ii. does not include a bathroom, laundry, hallway, garage, or other spaces of a specialised nature occupied neither frequently nor for extended periods.

Habitable space – Defined by spaces in a building where the most time is spent and important activities take place. Habitable rooms include bedrooms, living room, lounge, family room, kitchen, dining room, music room, playroom, home theatre, study, sunroom, retail, office working spaces and commercial balconies.

Heritage place – Any place from a building to a monument, natural area, landmark or viewpoint that has special cultural or natural heritage significance. Can be identified at a local, state, federal or global level.

Infrastructure – The basic systems, facilities or framework that support a community's population, e.g. roads, transport, utilities, water, sewage.

Key public space – May be located in parks, plazas or streets. They are public places of significance, with high levels of amenity.

Legibility – The ease with which a person is able to see, understand and find their way around an area, building or development.

Living infrastructure – The vegetation, soils and water systems that are sometimes referred to as blue or green infrastructure.

Local character/local identity– Local character makes an area distinctive and contributes to the identity of the place. This includes the natural, cultural and historic characteristics of an area that are intrinsic to the locality, and which the local community relate to. Local character and local identity are subject to change over time.

Missing middle – An umbrella term that is used to describe housing types that fall between single dwellings and mid and high-rise apartments. Dwelling types within this category are generally low rise, medium density, and designed to meet the needs of a diverse range household types and demographics, across different life stages. Missing middle housing types may include dual-occupancy, tri-occupancy, townhouses, terrace housing and low-rise apartments.

Mixed-use – Mixing residential, commercial, retail, entertainment and community uses in same building, site or precinct.

Modal interchange – Co-locating multiple public transport modes to allow for enhanced connections between alternative transport modes (e.g. bus and tram).

Natural cross ventilation – Wind-driven ventilation that provides ventilation rates at least seven times greater than a single-aspect apartment in the same location, due to two or more openings on separate façade aspects being exposed to a wide range of unobstructed wind directions. The improvement in ventilation rates is to be achieved over a year.

Non-habitable room – A space of a specialised nature not occupied frequently or for extended periods, including a bathroom, laundry, water closet, pantry, walk-in wardrobe, corridor, hallway, lobby, photographic darkroom or clothes drying room.

Passive surveillance – Observation from the street or adjacent buildings provided by ordinary people as they go about their daily activities.

Permeability (in the context of built form) – The extent to which the urban structure allows or restricts movement of people or vehicles through an area.

Permeability (in the context of landscape) – The quantity of pervious surfaces that allow for water to penetrate into and be retained by the landscape.

Planting area – Planting area means an area of land within a block that is available for landscape planting and that is not covered by buildings, structures, vehicle parking and manoeuvring areas or any other form of impermeable

element that impacts permeability of the ground surface (i.e., terraces, pergolas, patios, decks, or pools).

Plot ratio – The gross floor area in a building divided by the area of the site.

Podium – The base of a building upon which taller (tower) elements are positioned.

Potable water – Water which conforms to Australian Standards for drinking quality.

Precinct – Is defined as:

i. development on land that forms part of a centre – group centre, town centre, local centre

ii. development that forms part of a corridor.

Public space (ACT) – General term for an open area or place for public use. It is the collective, communal part of cities and towns, with shared access for all. It is the space of movement, recreation, gathering, events, contemplation and relaxation. The public space includes streets, pathways, rights of way, parks, accessible open spaces, plazas and waterways that are physically and visually accessible regardless of ownership.

Rights holder – Ngunnawal people.

Scale – The apparent size of a building in relation to its surroundings and to the scale of a person.

Solar access – The ability of a building to receive direct sunlight without obstruction from other buildings or impediments, not including trees.

Street setback – means the horizontal distance between a block boundary and the outside face of any building or structure on the block.

Storey – Storey means a space within a building that is situated between one floor level and the floor level next above, or if there is no floor level above, the ceiling or roof above but does not include an attic, a basement or a space that contains only a lift shaft or stairway.

Sustainability – An approach that considers the environmental, social and economic aspects (such as of a building) so it can meet the needs of the present, without compromising the ability of future generations to meet their needs.

TCCS – Transport Canberra and City Services.

TGSI – Tactile ground surface indicators to support people with visual impairment to navigate streets and public space.

TP / Territory Plan – Provides statutory planning guidance for development in the ACT.

Urban design development – is defined as:

i. development on land that is not in an industrial zone that has a site area greater than 1 hectare or

ii. development in relation to which a planning instrument requires a planning and response report to be prepared for the land before development consent may be granted for the development.

Urban fabric – The make-up of an urban area. Refers to characteristics such as movement network, block structure, building heights and grain.

Urban structure – Refers to the relationship between urban blocks, movement network, the key natural and built features of an area, as well as its history, social, economic, health and environmental conditions.

Visual and temporary activation frontage – Engaging activation of otherwise blank frontages on buildings, fences or hoarding during construction periods.

Water sensitive urban design (WSUD) – A set of design elements and on-ground solutions that aim to minimise impacts on the water cycle from our built environment and enhance our city's liveability.