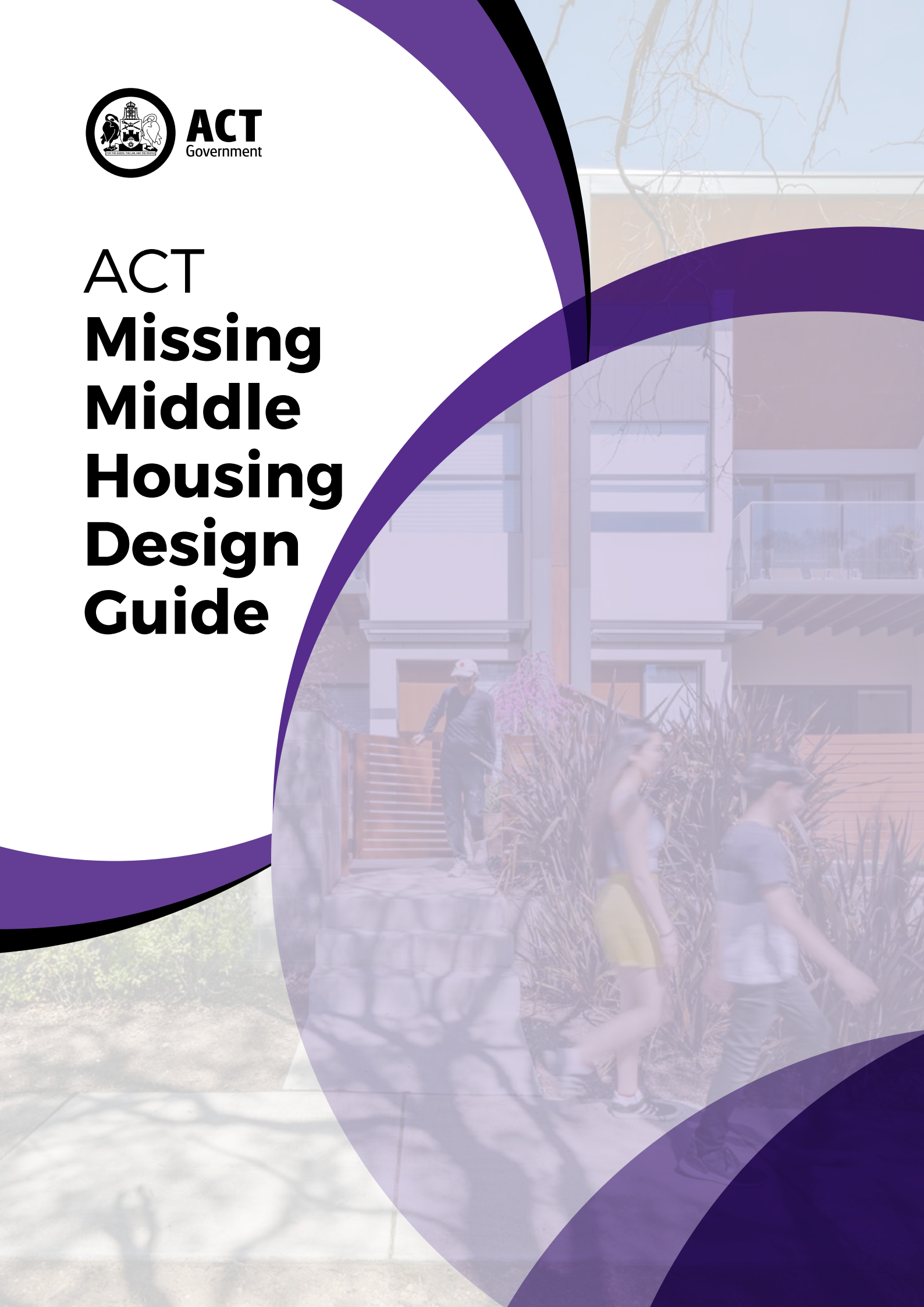
ACT Government

ACT Missing Middle Housing Design Guide



Acknowledgment 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.

Artwork: Relationships by Lynnice Letty Keen

Australian Capital Territory, Canberra 2026.

Director-General, City and Environment Directorate, ACT Government, GPO Box 158, Canberra ACT 2601.

Telephone: 02 6207 1923
Website: www.planning.act.gov.au

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MISSING MIDDLE HOUSING 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.

Haig Townhouses, Turner ACT. Architect: DNA Architects

Part One: Introduction and purpose

The nation's housing affordability crisis is complex, stemming from various factors across the breadth of the national economy. The planning system has a critical role in responding by enabling the delivery of new housing supply in a way that safeguards the character and liveability of the city. With a range of ambitious housing targets being set nation-wide, the ACT is aiming to enable 30,000 new homes by 2030. The ACT's Planning Strategy 2018 aims to deliver 70% of new housing growth in existing urban areas, with District Strategies identifying key areas for growth.

The vision of the ACT Planning Strategy (2018) is to be a sustainable, competitive and equitable city that respects Canberra as a city in the landscape and the National Capital, while being responsive to the future and resilient to change. This vision continues the original plan for Canberra as a city within the landscape that celebrates its bushland setting. It protects and enhances the qualities that we value about Canberra while managing growth and change across the city.

The ACT has limited land available for new suburban development and therefore, new suburbs cannot be relied upon alone to cater for the growing population. Urban infill involves building new homes on existing residential blocks rather than expanding into undeveloped areas, known as greenfield development. Urban infill is preferred because it makes better use of land and resources, reduces urban sprawl, and helps protect natural areas and farmland.

Maximising the use of already identified urban renewal areas is crucial for meeting the ACT's growth targets. Yet, these growth areas alone might not suffice to provide the housing choices in locations where people want to live. Consequently, there is a need to focus on encouraging renewal within suburban residential areas with higher density housing types and typologies.

WHY THE NEED FOR MISSING MIDDLE HOUSING?

Missing middle housing, which includes options like duplexes, triplexes and townhouses, can be a key part of urban infill. These types of homes fit well into existing neighborhoods and provide more affordable housing choices. By adding missing middle housing, communities can enjoy more diverse and vibrant neighborhoods, better access to amenities, and improved overall housing outcomes.

Residential intensification is a means to provide for housing growth and choice, while ensuring that our land is used efficiently. This is because traditional housing often doesn't meet the diverse needs of the population in our growing cities. Modern lifestyles require homes to be safe, comfortable, and adaptable. Unlike previous generations, our needs for multi-functional and flexible living spaces have evolved.

Missing middle housing—such as multi-occupancy, duplexes, townhouses, terraces, and small low-rise apartment buildings—can address this by offering housing options that fill the gap between single-family homes and high-rise apartments. Embracing a variety of housing types recognises a cultural shift from traditional models, allowing cost savings to be invested in quality materials and innovative designs.

As urban areas continue to grow and population increases, using land efficiently within our cities becomes more important. Missing middle housing provides for increased density without the bulk of large apartment complexes, reducing sprawl and preserving open spaces. These housing types cater to various life stages and income levels, as well as multi-generational living, offering more flexibility, aging in place opportunities and choice for different living arrangements.

They also promote walkable neighbourhoods by increasing residential living within existing communities, enhancing local amenity, and fostering vibrant, connected communities. In addition, well located higher-density housing supports sustainable communities by reducing resource use and improving public transportation.

This Design Guide should serve as a guide for all Missing Middle development regardless of whether this is in urban infill or greenfield areas.

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

KEY FACTORS IN DEVELOPING THE MISSING MIDDLE

Understanding the unique opportunities, challenges and other key factors affecting the delivery of missing middle housing is key to developing the design guides. Some of these factors include:

DEVELOPMENT FEASIBILITY VERSUS HOUSING AFFORDABILITY

The development of missing middle housing is a unique opportunity to balance feasibility with affordability. By ensuring appropriate density in more locations, we can provide more affordable housing options across the ACT. These types of homes, such as duplexes, triplexes, and townhouses, are less expensive to build than large apartment buildings but offer more variety than traditional single-family homes. Expanding where it can be developed allows not only professional developers but also typical homeowners, such as “mum and dad” developers to participate. This can increase the supply of moderately priced homes, making it easier for people to find affordable places to live and easing the pressure on housing markets.

LEGACY OF BLOCK PATTERN AND STRUCTURE

Over time cities evolve, creating different housing types and structures. The Griffin Plan created large city blocks, while newer areas have smaller ones. By understanding and using these different block sizes, we can create housing that fits well in each area. This means we can develop missing middle housing that respects the unique character of different neighborhoods.

BLOCK CONSOLIDATION CHALLENGES

Creating missing middle housing may require the consolidation of multiple blocks. While this may open opportunities, it can also be complex and costly. Adjusting regulations to allow for missing middle housing on single blocks and targeting areas of consolidated ownership or larger sites can overcome this. Block consolidation can unlock significant opportunities for creating diverse, well-designed, efficient and affordable housing options that may not be possible on individual blocks.

UPDATING PLANNING CONTROLS

Existing planning controls can make missing middle projects difficult. The ACT Government is exploring updates to planning controls, such as car parking requirements, block sizes and consolidation, and setbacks, to better support missing middle. By modernising zoning codes and standards, we can make it easier to build missing middle housing. These updates will make it easier to develop diverse housing options that meet the needs of our growing communities.

STREAMLINING PLANNING APPLICATION PROCESSES

Streamlining planning application processes can significantly enhance the feasibility of missing middle housing projects. By providing clear timelines, offering incentives for projects that meet specific criteria, and engaging with community stakeholders early on, we can reduce delays and foster a more supportive development environment. This proactive approach can encourage investment in missing middle housing.

DISTRICT STRATEGIES

The ACT’s District Strategies offer place-specific approaches to development and densification, aligning with the existing and desired future character of each district. By incorporating strategies that allow for missing middle housing, we can ensure that growth is balanced with the protection of local character and amenity. Strategies to deliver missing middle housing must consider these to support sustainable, community-focused development.

INVESTING IN INFRASTRUCTURE

Investing in infrastructure capacity to support increased density is crucial for the successful implementation of missing middle housing. By addressing community concerns and ensuring that infrastructure keeps pace with development, governments can create a supportive environment for new housing. This will help accommodate growth while maintaining quality of life for residents.

ENHANCING AMENITY IMPACTS

Renewing suburban areas for missing middle housing can enhance community amenity by carefully considering factors like driveway placement and street tree preservation. By addressing these elements, we can ensure that the implementation of missing middle housing is both successful and sustainable, contributing positively to the overall urban environment.

MISSING MIDDLE HOUSING IN THE ACT

Canberra is one of Australia's fastest growing cities. With an ageing population and an increase in non-traditional family structures, there is a pressing need for diverse and adaptable housing options. To make sure Canberra continues to be a great place to live, work and enjoy, we must plan for this growth now.

The ACT's population is currently around 470,000 people. But by 2050, our population is expected to reach almost 700,000 people. Our growing population means we will need to build 30,000 new homes by 2030 and up to 100,000 new homes by 2050.

Not only do we need more homes in the ACT, but also more housing choice. Right now, homes in Canberra lean towards low-density, separate homes and high-density apartments. This leaves a gap for medium-density homes, like townhouses and terrace houses. This gap is often called the 'missing middle.' Filling this missing middle gap is important to meet the needs of our diverse population.

The ACT has only a limited amount of available land left for new suburbs. This means we cannot rely on new suburbs alone to fit our growing population. In the ACT, we have set a target for 70% of Canberra's future development to be within existing suburbs. This is called infill development. Infill development is important because it can limit urban expansion and create more housing options closer to existing shops, transport, schools and services.

The ACT Government recognises the need for 'missing middle' housing - multi- occupancy, townhouses, terraces and low-rise apartments - to meet the future growth and housing demands of this city.

Missing middle homes can be an attractive option for many Canberrans. This includes older people who are looking to downsize, young families, smaller households and even first-home buyers. They can also be a more affordable, accessible and flexible housing choice for people.

The development of this type of housing options, however, requires careful consideration of zoning rules and design guidelines to ensure high-quality, sustainable, and affordable housing that respects Canberra's garden city character.

The current planning system inhibits the development of some missing middle housing in existing residential areas, limiting housing choices and flexibility.

This guide will be instrumental in informing potential changes to zoning rules and planning controls, and in delivering diverse, affordable, and sustainable housing options for Canberra's evolving community.

Figure 1: This figure illustrates the concept of missing middle infill development in an existing suburb over time.

WHY THE NEED FOR DESIGN GUIDES

The ACT Government is addressing housing needs through the Missing Middle Housing Design Guide, which aims to increase the availability of diverse and affordable housing options and choice.

This guide encourages the development of housing types like multi-occupancies, townhouses, terraces and low-rise apartment buildings that integrate into existing neighborhoods. By promoting these more moderately priced housing options in existing suburbs, the government is working to ease the pressure on the housing market, making it easier for families to find suitable homes. The guidelines also support sustainable and efficient land use, fostering more lively and walkable communities with better access to existing amenities.

AIM OF THE DESIGN GUIDELINES

Design guides help proponents interpret and apply the Territory Plan's assessment outcomes when proposing development across Canberra. The design guides and design evaluation processes are critical in supporting the design and assessment processes, particularly those planning provisions that are less prescriptive and leave more room for interpretation and innovation.

This Missing Middle Housing Design Guide adds to the suite of existing ACT Design Guides.

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

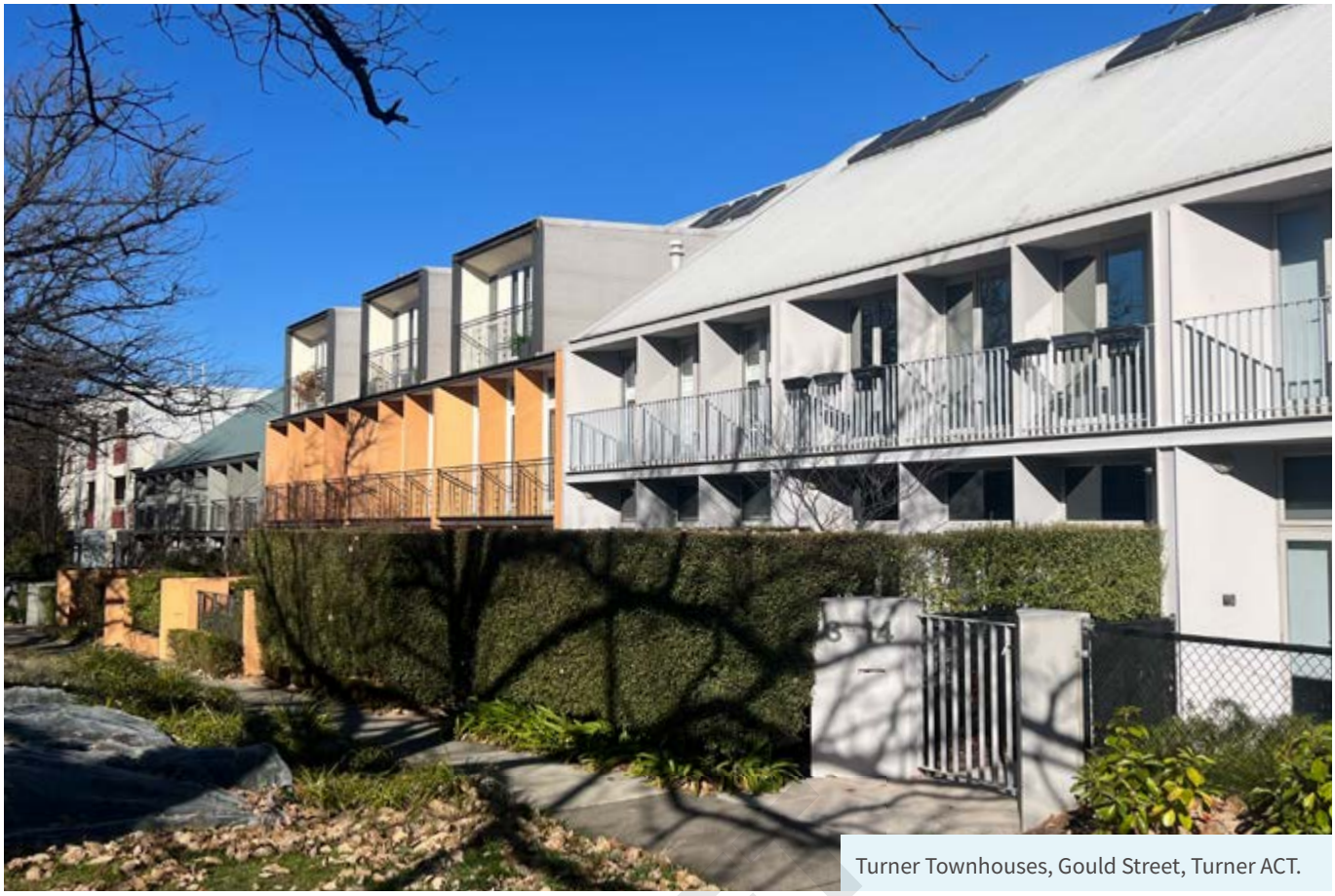
Design guides can provide greater clarity, flexibility and consistency for the community, authority officers and industry. In supporting the Territory Plan, they help people interpret statutory policy, and guide proponents and statutory officers (including development assessment staff, courts and tribunals) 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 environmental challenges such as climate change, natural hazards and the build-up of urban heating, and societal challenges, such as pandemics. Design 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 contribute to improvements in community health and wellbeing.

High-quality and place-based outcomes

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



Turner Townhouses, Gould Street, Turner ACT.

WHAT IS GOOD DESIGN?

Good design is not just about how a place looks, but how it works and makes people feel. It fosters better environments that enhance public value and support individual and community well-being. Achieving good design involves a thoughtful process that considers the specific context, including neighbourhood dynamics, street characteristics, and site features.

As we look to increasing density within urban areas, we must recognise the responsibility that comes with transforming communities and the important role that good design plays in the future character and functionality of our neighbourhoods. Good design also contributes to affordability and prioritises liveability and the natural environment, utilising existing site features and taking a conscientious approach to resource use.

- **Context and character -** Buildings define the quality of our neighbourhoods, shaping perception and functionality. Well-designed structures should integrate with their surroundings, reflecting local culture and history in architectural styles, creating a sense of identity and enhancing usability and diversity.
- **Access, movement and place –** Prioritising pedestrian movement and reducing the reliance on vehicles will create more accessible neighbourhoods, encourage active transportation and foster community interaction.
- **Built form and scale -** Buildings and streets should be designed to address the street and consider the human experience, creating inviting and comfortable environments.
- **Materials and building quality -** Quality materials are crucial for functionality and sustainability. They should be durable and visually appealing, minimising environmental impacts and enhancing integration with surroundings.
- **Public realm amenity -** The public realm should prioritise user needs, fostering walkable, inviting spaces, while promoting social connections and diverse activities through enhancing urban character.
- **Safety and security -** Design should incorporate elements that enhance safety through visibility and well-lit spaces, using principles like Crime Prevention Through Environmental Design (CPTED) to protect vulnerable groups.
- **Sustainability -** Urban ecosystems are vital for healthy communities. Developments should adopt sustainable practices and incorporate green spaces and sustainable materials to optimise resources and energy efficiency.

Good buildings exhibit qualities like those that we appreciate in good people: they are polite and well mannered, contribute to the community, are good neighbours and it's a pleasure to spend time in their company.

As our city grows in maturity and population, social performance characteristics are a measure of the qualities of this place and this community.

Good design ensures that enduring strength and resilience attributes are 'baked into' the city fabric.

Catherine Townsend, ACT Government Architect

MISSING MIDDLE DESIGN PRINCIPLES

To support the development of missing middle housing in the ACT, the following overarching design principles have been developed to support and encourage high-quality housing and comfortable environments for the community.

Principle one:

Respond to neighbourhood context and character to create a sense of identity and reflect local styles.

Principle two:

Contribute to healthy and safe communities through well designed streets and communal spaces.

Principle three:

Encourage sustainable design practices that optimise resource and energy efficiencies and minimise impact on the natural environment.

Principle four:

Support housing diversity and community needs by providing a mix of different housing typologies.

HOW TO USE THIS DESIGN GUIDE

WHO IS THIS DESIGN GUIDE FOR?

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

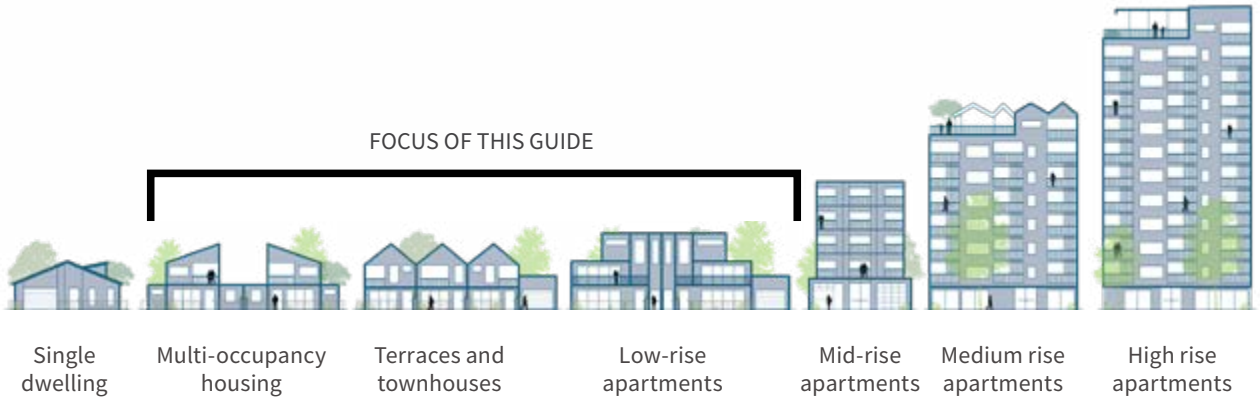
The Missing Middle Housing Design Guide has been prepared to:

- Assist first time small-scale developers wanting to expand and build multiple homes on their block if size permits.
- Assist developers, planners, urban designers, architects, building designers, landscape architects, builders and other professionals when designing and preparing Development Applications (DAs) for missing middle housing.
- Assist government planning professionals with preparing development controls and assessing development applications for missing middle housing.
- Inform the community of what is required to achieve good design and planning practice for missing middle housing.

Missing middle housing includes:

- **Multiple occupancy housing** where two or three dwellings are located on an existing block of land. These can be side-by-side, one behind the other, or located on corner blocks.
- **Townhouse** developments typically consisting of four or more dwellings which may be attached, detached or a combination of the two. Depending on the number of townhouses, there are many possible arrangements, though often as single or two storey dwellings sited perpendicular to the street.
- **Terrace** development typically consisting of four or more attached dwellings with shared side walls which have a continuous frontage to the street.
- **Low-rise apartments** are residential buildings made up of two or more residential apartments, up to three storeys. Typically, dwellings are single level, which have shared access and circulation.

WHAT BUILDING TYPOLOGIES DOES THIS DESIGN GUIDE APPLY TO?



MISSING MIDDLE DEVELOPMENT PROCESS

Below is a step-by-step guide for property owners in the ACT who want to develop their existing property into missing middle housing. This document provides guidance related to steps 1 to 4 below.

1. Understand missing middle housing

- Learn that missing middle housing includes options like multi occupancy, townhouses, terraces, and low rise apartment buildings.
- These housing types and typologies are designed to be more affordable and to fit well within existing neighborhoods.

2. Assess your property and future needs

- Evaluate your property to determine its suitability for missing middle housing development.
- Check the size, shape, and current use of your land to see if it can accommodate additional housing units.
- Ensure the size and cost of the development is suited to your circumstances.

3. Research zoning and regulations

- Review local zoning laws and regulations to ensure your proposal is permissible.
- Understand any restrictions or requirements that may apply to your proposed development.

4. Develop a concept plan

- Hire an architect or designer to help create a concept plan that fits neighborhood character and meets local regulations.
- Design homes that are affordable, sustainable, accessible, appeal to future dwellers and use modern methods of construction.
- Engage a qualified energy assessor to embed energy efficiency into the design process.

5. Secure financing

- Explore different financing options such as home equity loans, personal savings, or small business loans.
- Prepare a detailed budget that includes all costs, from design and planning to construction and marketing.

6. Obtain necessary approvals

- Submit your development application to the ACT Planning and Land Authority for assessment.
- Ensure you get all the necessary permits and approvals before starting construction.

7. Hire contractors

- Find builders and contractors to carry out construction work.
- Get multiple quotes and check references to ensure you hire reliable professionals.
- Consider modern methods of construction, including prefabricated, modular building technology and building with sustainable materials.

8. Monitor construction

- Hire a construction manager or prepare to monitor the construction with regular site visits, to ensure the work is progressing on schedule and within your budget
- Address any issues that arise promptly to avoid delays

9. Complete the project

- Conduct final inspections to ensure everything meets the required standards and regulations.
- Address any final touch-ups or issues before handing over the homes to future dwellers.

HOW IS THIS DESIGN GUIDE STRUCTURED?

The Missing Middle Housing Design Guide is organised in four parts as outlined below.

The more technical nature design guidance can be found in PART THREE: DESIGN GUIDELINES which is structured according to the design themes as outlined on the opposite page. The design themes relating to County and Place, and Urban Structure and Natural Systems, as represented in the other ACT design guides is not included in this guide, as these assessment outcomes do not apply to missing middle housing.

PART ONE: INTRODUCTION AND PURPOSE

Sets the scene and provides an overview of the purpose and structure of the guidelines. It provides and understanding of what good design is and how the design guide can achieve this, as well as providing an understanding on who this design guide is for, how to use the guide and how the design guide connects back to the Territory Plan.

PART TWO: CHARACTER AND SITE

Describes the process of preparing a thoughtful context analysis of the neighbourhoods, streetscape and site scales to set the foundation and understanding for which missing middle housing options are recommended and how you can make best use of the site. This section also describes the different building types and typologies, and identifies specific characteristics and guidance on where they differ from the general design guidance.

PART THREE: DESIGN GUIDELINES

Provides best practice design guidance for missing middle housing based on the founding design principles and organised in the following themes - Site and Land Use, Access and Movement, Public Space and Amenity, Built Form and Building Design, Sustainability and Environment. These theme chapters provide a direct link and connection back to the Territory Plan and assessment outcomes.

PART FOUR: APPENDICES AND CHECKLIST

Includes tools to support the design guidance and development process including missing middle housing development checklist, built form control metrics, document references, and a glossary.

DESIGN PRINCIPLES

Four overarching design principles have been developed to guide the overall intent and encourage high quality missing middle housing development outcomes and support community integration.

Principle one:

Respond to neighbourhood context and character to create sense of identity and reflect local styles.

Principle two:

Contribute to healthy and safe communities through well designed streets and communal spaces.

Principle three:

Encourage sustainable design practices that optimise resource and energy efficiencies and minimise impacts on the natural environment.

Principle four:

Support housing diversity and community needs by providing a mix of different housing typologies.

DESIGN THEMES

General design guidelines have been organised around seven key themes that align with the assessment outcomes of the Territory Plan and provide clear reference to support the development application.

Country and Place

*Refer to **Housing Design Guide***

Urban Structure and Natural Systems

*Refer to **Housing Design Guide***

Site and Land Use

Understanding your site
Land uses
Building envelope
Typologies

Access and Movement

Site access and connectivity
Resident and visitor parking
Integrated Services

Public Space and Amenity

Communal open space
Private open space and balconies
Landscaping

Built Form and Building Design

Scale and building form
Orientation and street interface
Diverse housing choices
Storage

Sustainability and Environment

Building design performance
Natural resource management
Climate change resilience

DESIGN ELEMENTS

Within the design themes, guidelines for specific design elements has been identified and should be addressed except where more specific outcomes have been identified per typology.

HOW DOES THIS GUIDE RELATE TO OTHER DESIGN GUIDES?

The Missing Middle Housing Design Guide is complementary to other ACT Design Guides.

Design guides help proponents consider how their developments can achieve better designed buildings and shared spaces that benefit the community. This system is focused on delivering best practice outcomes.

ACT Design Guides require proponents to think about the design of buildings and spaces, and their impact on the environment and community. It also gives the assessment team more information about a proposal. This ensures that the new development is beneficial to the community and that it is innovative in its design.

There may be some instances where proposals will require a proponent to consider multiple guides together.

There are development thresholds for when a proponent will need to consider the design guides and provide a response:

The triggers for when the **Missing Middle Housing Design Guide** (MMHDG) is used:

- Development of missing middle housing (as defined in this guide) is required to consider and provide a design response to the Missing Middle Housing Design Guide where the development is residential only and meets at least one of the following:
  - is three storeys or less and provides more than one residential dwelling; or
  - is for subdivision or consolidation of currently leased RZ1 and RZ2 blocks.

The triggers for when the **Apartment Design Guide** (ADG) is used if the below criteria is met:

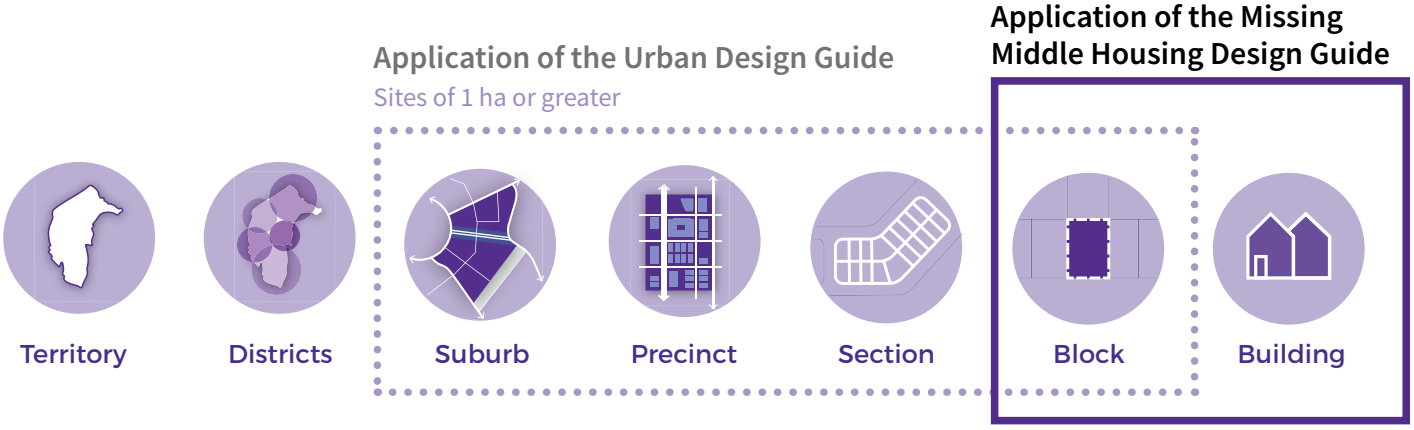
- Residential and mixed-use residential development is required to consider and provide a design response to the Housing Design Guide where the development meets all the following:
  - provides more than one residential dwelling; and
  - is not for missing middle housing as defined by this guide.

The triggers for when the **Urban Design Guide** (UDG) is used if one of the below criteria is met:

- 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 National Capital Design Review Panel.

The **Biodiversity Sensitive Urban Design Guide** does not apply to single dwelling housing or secondary residences. It also does not apply on developments where the increase in impermeable surfaces is 500m^2 or less.

Developers will still need to meet their minimum requirements in the Territory Plan.



Illustrations in this guide

The building examples and conceptual drawings presented in this design guide are not to be taken literally. They are aimed at demonstrating a particular concept and not necessarily a holistic design outcome, and will not guarantee a development approval

Grace, Dickson ACT. Architect: DNA Architects

ACT PLANNING PROCESS

The ACT population is increasingly growing. With more people living and working in the ACT, a clear and easy to use planning system is required so we can accommodate future growth without compromising the valued characteristics of the city. The ACT Planning System now promotes better outcomes for development, the environment and, most importantly, Canberrans.

HOW THESE DESIGN GUIDES RELATE TO THE TERRITORY PLAN

A modern planning system is fundamental to the city's vision of a liveable and sustainable city. The planning 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 past 15 years, reflecting the significance of coping with climate change, providing critical infrastructure for our expanding population, and increasing housing choice and accessibility.

The ACT planning system introduced 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 and provide general best practice design guidance.

DEVELOPMENT APPLICATION PROCESS

The Missing Middle Housing Design Guide provides consistent planning and design guidance for missing middle residential development within the ACT. The design guide aims to provide best practice standards for various forms of missing middle housing and can be used as tool for government to use to assess these housing types and typologies.

Developers should consider the Territory Plan assessment outcomes when preparing plans and DA documentation, including for pre-DA matters. To help with this process, consider the Missing Middle Housing Design Guide at the very beginning of the design process, to allow flexibility in addressing key recommendations from the guide.

When preparing plans and documentation, developers must demonstrate their approach and how they have addressed the relevant elements of the Design Guide where required.

BUILDING APPROVALS

Most building projects in the ACT involving new builds, alterations, additions and demolition require building approval (BA).

You'll need development approval (DA) before you get BA.

You must have a BA in place to ensure your proposed building work complies with relevant building laws and regulations and the National Construction Code (NCC, also known as the building code).

To ensure that a Territory waste collection service can be provided, the BA must comply with the Development Control Code for Best Practice Waste Management in the ACT 2019 or its successor.

TERRITORY PLAN ASSESSMENT OUTCOMES

The Territory Plan outlines assessment outcomes for proposed development that align to each of the key chapters in this document. 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.

In demonstrating **consistency** with the **assessment outcomes**, proposed development must demonstrate consideration of the design guidance provided in the Missing Middle Housing Design Guide for each of the themes.

Technical planning 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 technical planning specification.

The following pages refer to assessment outcomes specific to the Missing Middle Housing Design Guide.

Please also 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.

TERRITORY PLAN ASSESSMENT OUTCOMES

TERRITORY PLAN ASSESSMENT OUTCOMES	
SITE AND LAND USE	
 SITE AND LAND USE	The functionality and usability of the development is appropriate for its intended purpose/use.
	The proposed use and scale of development are appropriate to the site and zone, noting the desired zone policy outcomes and streetscape character.
	Adverse impacts of development on surrounding uses (within the site, on adjoining sites or to the public domain) is minimised and residential amenity protected. This includes between residential uses and between non-residential and residential uses.
ACCESS AND MOVEMENT	
 ACCESS AND MOVEMENT	The functionality and layout of the development is accessible and adaptable, while achieving good connections with the surrounding area. This includes consideration of passive surveillance.
	The development encourages active travel through safe and convenient access to the active travel network.
	Access to, from and within the site enables safe, efficient and legible movement while catering for all users (including pedestrians). This includes consideration of vehicle manoeuvrability and access routes.
PUBLIC SPACE AND AMENITY	
 PUBLIC SPACE AND AMENITY	The development achieves reasonable solar access and microclimate conditions to public areas and streets to support their use by the community.
	Private open space and communal open space provides sufficient space and facilities for residents and visitors to recreate and relax, as well as providing area for service functions. Spaces are readily accessible for a range of activities.
	Reasonable levels of active ground floor interface and passive surveillance to public spaces and streets is achieved.
	Any advertising or signs are suitable for their context and do not have a detrimental impact on the surrounding area (for instance due to size or light emission).
BUILT FORM AND BUILDING DESIGN	
 BUILDING DESIGN AND BUILT FORM	The height, bulk and scale of the development is appropriate, noting the desired zone policy outcomes and the streetscape. This includes consideration of building envelope and setbacks.
	Reasonable solar access to dwellings and private open space within a block and on adjoining residential blocks is achieved. This includes solar access into main living spaces within a dwelling and existing rooftop solar collectors and solar hot water services.
	Reasonable levels of privacy to dwellings and private open space within a block and on adjoining residential blocks is achieved.
	The dwelling mix and the internal size, scale and layout of dwellings in multi-unit housing provide for a comfortable living environment that meets the changing needs of residents.
	Courtyard walls and fences do not have an adverse impact on the streetscape.

TERRITORY PLAN ASSESSMENT OUTCOMES	
SUSTAINABILITY AND ENVIRONMENT	
 SUSTAINABILITY AND ENVIRONMENT	Sufficient planting area, canopy trees, deep soil planting zones and water sensitive urban design measures are provided to enhance living infrastructure, support healthy tree growth and minimise stormwater runoff.
	Urban heat island effects are reduced through limiting impervious surfaces and provision of canopy trees and plants.
	Threats to biodiversity such as noise, light pollution, invasive species incursion or establishment, chemical pollution, or site disturbance are avoided or minimised through good design.
	Minimise cut and fill to protect natural hydrological function and limit soil erosion and site disturbance.
	The development considers and addresses site characteristics, including heritage, natural features, topography, infrastructure and utilities.
	Environmental risks, including noise, bushfire, flooding, contamination, air quality or hazardous materials are appropriately considered for the development on the site.
PARKING, SERVICES AND UTILITIES	
 ACCESS AND MOVEMENT	The development provides electric vehicle parking and access to charging locations in multi-unit housing.
	The development provides appropriate end-of-trip facilities in multi-unit housing which includes secure bicycle parking.
 BUILT FORM AND BUILDING DESIGN	Vehicle and bicycle parking sufficiently caters for the development while minimising visual impacts from the street or public space. This includes consideration of parking dimensions, the number of spaces provided.
 SUSTAINABILITY AND ENVIRONMENT	Waste is appropriately managed on site without having a detrimental impact on residents and the surrounding area.
	The site is appropriately serviced in terms of infrastructure and utility services and any associated amenity impacts are minimised.

Throsby Court, Narrabundah, ACT. Photograph: Will Neill.

Part Two: Character and site

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 placed-based approach to design builds upon a place's character to create places 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, as envisaged by the planning reform, to create a compact, sustainable, affordable, vibrant and equitable city.

Why is public space important?

Public space and amenity plays a crucial role in achieving successful urban outcomes. The design guides specifically call out public space as a key element for consideration. Well designed public spaces provides places for interaction and activity, including culture, entertainment, sport and recreation.

Street interface contributes to a significant percentage of public space and the role and function of the street is important in creating urban life and vitality. Street interface comes in many typologies and takes 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 an urban environment.

Holmes Crescent, Campbell

URBAN CHARACTER

Canberra has a distinct urban character that is uniquely connected to Country. The 'bush capital' identity is a fusion of sweeping native landscapes with garden city geometry. Historically, urban form has been nestled into Country, sometimes very sensitively, providing opportunities for connection, recreation and wellbeing whilst maintaining and preserving the bush landscape. Canberra's dry, continental climate creates an arid, wild bush setting that has defined much of the city and particularly the suburbs. The bush setting makes Canberra a sought-after place to live.

The well known name 'bush capital' has new meaning as we explore opportunities for connecting to Country and to better understand and be informed by indigenous culture and practices which care for Country. As Canberra becomes more densely populated and compact, in keeping with the growth strategy to limit urban sprawl, there is an opportunity to continue this connection with the landscape, creating a city like no other.

Our ability to weave new development into preserved and regenerated landscapes will define Canberra's urban future and enable the bush capital to evolve in a sustainable way. There are a number of defining characteristics which make Canberra's residential neighbourhoods so special. These characteristics can inform the design of future neighbourhoods including missing middle projects, so that they contribute positively to their development context. These include:

Landscape Presence

Making landscape a priority is central to maintaining Canberra's urban character. No matter how small the project, there is always space for the smallest gesture of native landscaping contributing to the overall biodiversity of the city.

Some of Canberra's leading examples of middle scale residential development in suburban settings have a modest architecture which blends with the landscape, providing a backdrop to the natural landscape, rather than looking out of place. In this way the landscape is front of stage, the architecture humble and receding.

Bush Preservation and Regeneration

The quality and success of rich bio-diverse landscapes includes both preservation and regeneration. New development may require the removal of some existing landscapes but can promote regeneration through new native landscapes.

Modesty of Scale

Canberra's residential urban form has maintained a modesty of scale for many decades. Recent growth has seen an increase in the scale of larger buildings, however medium scale development is peppered throughout the Canberra landscape, particularly in the inner north and inner south. The certain modesty of scale perpetuates through the existing middle scale housing supply, demonstrating how density and continuity can be achieved with limited budgets.

Palette and Place

Architectural design can connect to place through materials and colours. In Canberra's unique setting, infill buildings can reflect the character of their surroundings by incorporating local materials, textures, and colours that resonate with the existing context including the natural landscape. Sensitive material and color choices can strengthen connections to Country, honouring cultural narratives and environmental significance while harmonising with the city's distinct bushland context.

Sense of Openness

Canberra's residential neighbourhoods maintain a sense of openness that is achieved through undefined boundaries and open landscapes that blur with public space. Canberra streetscapes are traditionally defined by open and inviting gardens which are not gated or defined by dominant courtyard walls. This heightens the sense of a bush capital and city closely connected to the landscape.

Tree-lined streets

The design of many Canberra streets celebrates their distinctive bushland character by integrating native vegetation and preserving Canberra's connection to its natural landscape. In many of the older areas the streets are celebrated with exotic tree lined streets.

Native streetscapes can incorporate locally endemic plant species, ensuring resilience to the climate and enhancing biodiversity. Thoughtful planning maintains open vistas, natural corridors and the interplay between urban development and the surrounding environment.

Streets should act as extensions of the bush, fostering a sense of place while reflecting the cultural and ecological significance of the land.

By prioritising soft landscaping, permeable surfaces, and low-impact materials, Canberra's native streets can uphold the city's identity as a bush capital.

Photo 1: A sense of openness, modesty of scale and large canopy planting that is distinctly Canberra.
Throsby Court, Narrabundah, ACT. Photograph: Will Neill

Changing character over time

Although Canberra as a city has a unique character and feel, the characteristic elements are not the same across all areas, suburbs and streets. Different periods of urban expansion brought with it different urban paradigms and architectural styles. We can interpret the unique local character and consider a design that respectfully and harmoniously contributes to the experience of a street. This approach is essential when designing missing middle housing that meets the contemporary needs of our population.

The illustrations below show street elevations typical of some of the characteristic areas found in Canberra.

Early suburban sub-division

Suburban expansion

New suburban growth areas

HERITAGE PRECINCTS

The ACT is home to a rich heritage fabric, with more than 1,700 individual residential blocks listed on the ACT Heritage Register. These include entire heritage precincts such as the 19th-century rural villages of Hall and the renowned Garden City precincts, as well as individual blocks featuring buildings of architectural significance.

What do I do if my home is in a Garden City Heritage Precinct, or is individually listed on the ACT Heritage Register?

If you live in a Garden City Heritage Precinct or a heritage registered residential block, you need to talk with ACT Heritage early to understand the heritage guidelines that apply to your property. Contact the team at heritage@act.gov.au. This is also true for provisionally registered and nominated properties.

To streamline the lodgement and assessment process, follow the ACT Heritage Application Guide when making an application.

Why are some areas or individual homes listed on the ACT Heritage Register?

Heritage registered residential blocks are located primarily in Garden City precincts. Garden City precincts in the ACT are valued by the community as intact, visually coherent, and early expressions of Canberra's foundational planning philosophies.

Their significance lies in the planned neighbourhood structure, subdivision and building pattern. These are typically composed of intact interwar era dwellings with generous garden settings, avenues of street trees, generous open spaces and centralised green spaces. The mature tree canopy, wide verges and landscaped front setbacks combine to form a green and open streetscape. These streets are the setting for low scale aesthetically unified domestic architecture —simple pitched rooflines, consistent materials and scale, and modest façades— supporting the landscape-dominant urban planning intent.

It is the combination of these landscape, urban design and architectural elements that form the core heritage values of Garden City precincts.

There are also many individual homes of architectural or social significance listed on the Heritage Register, and these have individual values and requirements that will affect their potential for further development.

Are multi-dwelling developments possible in Garden City Precincts?

Multi-dwelling development and unit titling is possible in Garden City precincts, providing the design is consistent with heritage conservation requirements of the Heritage ACT 2004, and the specific requirements included in the Heritage Register (The Register) entry for respective precincts. Examples of successful multi-dwelling developments in Garden City precincts to date include secondary residences or granny flats.

Residential densification is generally more constrained in Garden City precincts. Opportunities on corner blocks may be particularly limited. In some precincts multi-dwelling development is prohibited, such as in the Hall Heritage Precinct.

TIPS FOR GOOD DESIGN IN A HERITAGE PRECINCT

Conserve and complement the valued features of the heritage precinct, including its landscape setting, architectural character and historic subdivision pattern. Multi-dwelling development must be designed to avoid adverse visual or physical impacts on the heritage features of the block, the broader streetscape and precinct.

New development in heritage places must reinforce and complement the existing character by respecting the historic subdivision and building pattern, setbacks and scale, and spatial rhythm of buildings and gardens through sensitive design.

i. Building scale, height and massing must remain subordinate to the prevailing streetscape and original dwelling, avoiding visual dominance and maintaining the low scale of built form and setting. Siting away from the street with consideration to site coverage, planting area, height and massing is required.

ii. Architectural responses should be contemporary but complementary, using compatible scale and proportions, simple forms, and a restrained material and colour palette.

iii. Landscape and open space are integral to Garden City precincts. New development must retain the mature treescape, garden settings and verge planting, and reinforce established patterns of soft landscaping and fencing within each block.

iv. Proposals should consider opportunities to sensitively retain and adapt existing structures on the site and may incorporate both attached and detached dwelling forms where they respect the established character and heritage values of the precinct.

The overall aim is a design that is clearly new yet complementary and sensitive in approach, maintaining the heritage significance of the place.

Seek advice from ACT Heritage early in your design process to get clear direction on your goals and ideas. Your Development Application will be referred to ACT Heritage for ACT Heritage Council advice before it can be approved.

For more information, you can visit the ACT Heritage website or contact ACT Heritage via email (heritage@act.gov.au) or phone (13 22 81).

Exemplar (Aerial image):
Siting new secondary dwelling on a regular shaped heritage-listed block.

The secondary dwelling is sited at the rear of the heritage-listed lot to remain visually unobtrusive from the street. The garage, consistent with the historic pattern of detached structures, is the only visible element, ensuring the original dwelling retains its prominence and the open landscaped setting is preserved.

Photo 2: Aerial image.
Nearmap, Euree Street, Reid ACT

UNDERSTANDING YOUR SITE

Understanding your site is the first step in identifying your development potential and typology.

The city presents a diverse array of site conditions that could potentially support the development of missing middle housing. The following list outlines key characteristics to consider when evaluating the development or redevelopment of existing suburban blocks for this purpose.

SITE CONDITION CONSIDERATIONS

i. Block consolidation - Consolidation of multiple blocks enables greater development opportunities, including when individual blocks may not be large enough, efficiently shaped or have appropriate public realm frontages or access.

ii. Limited block depth or width - Smaller dimensions encourage compact development.

iii. Inefficient block shape - Encourages irregular site layouts and lower-scale development.

iv. Battle-axe blocks - Where lot frontages and access to public open space are favourable, battle-axe blocks promote typologies that provide positive street and open space interfaces for both front and rear dwellings.

v. Corner sites - Have a prominence that enables a greater level of densification than front or rear blocks as they have two street interfaces and may provide the opportunity for 'marker' buildings.

vi. Open space interface - Can provide a high level of amenity for both residents and park visitors.

vii. Transport corridors - Tend to be wider than normal streets and enable access to the rest of the city, making densification highly appropriate on interfaces with them.

viii. Laneway access - Driveways and servicing may be located away from the primary frontage, enabling greater density due to a higher level of amenity and access.

ix. Pedestrian connections - Between streets and open space can provide an additional public amenity.

x. Easements - Are common at the rear of blocks in ACT and it is important that access to these is preserved when densification is proposed.

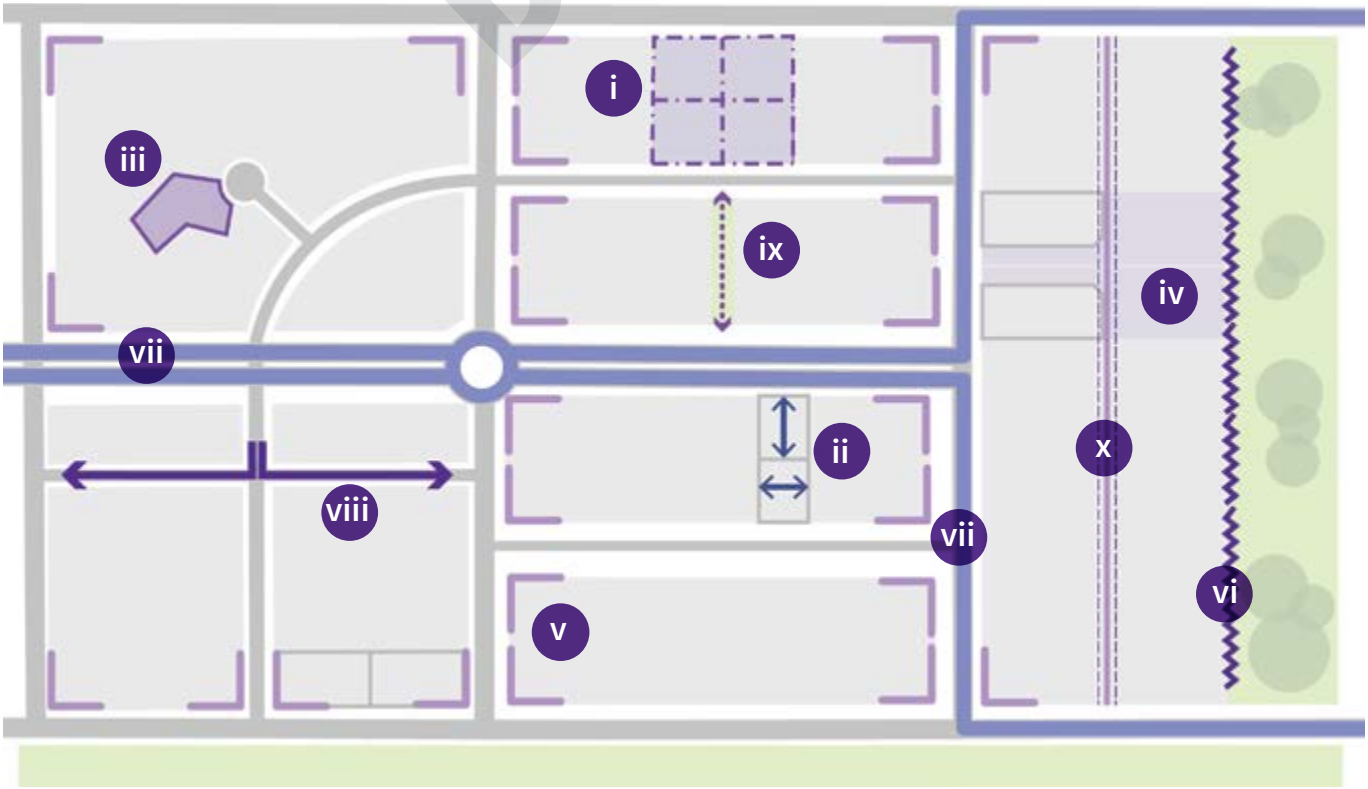


Figure 2: This figure illustrates a plan view of a fictional urban section with common site conditions that are found in Canberra. These should be identified and considered when planning your site development.

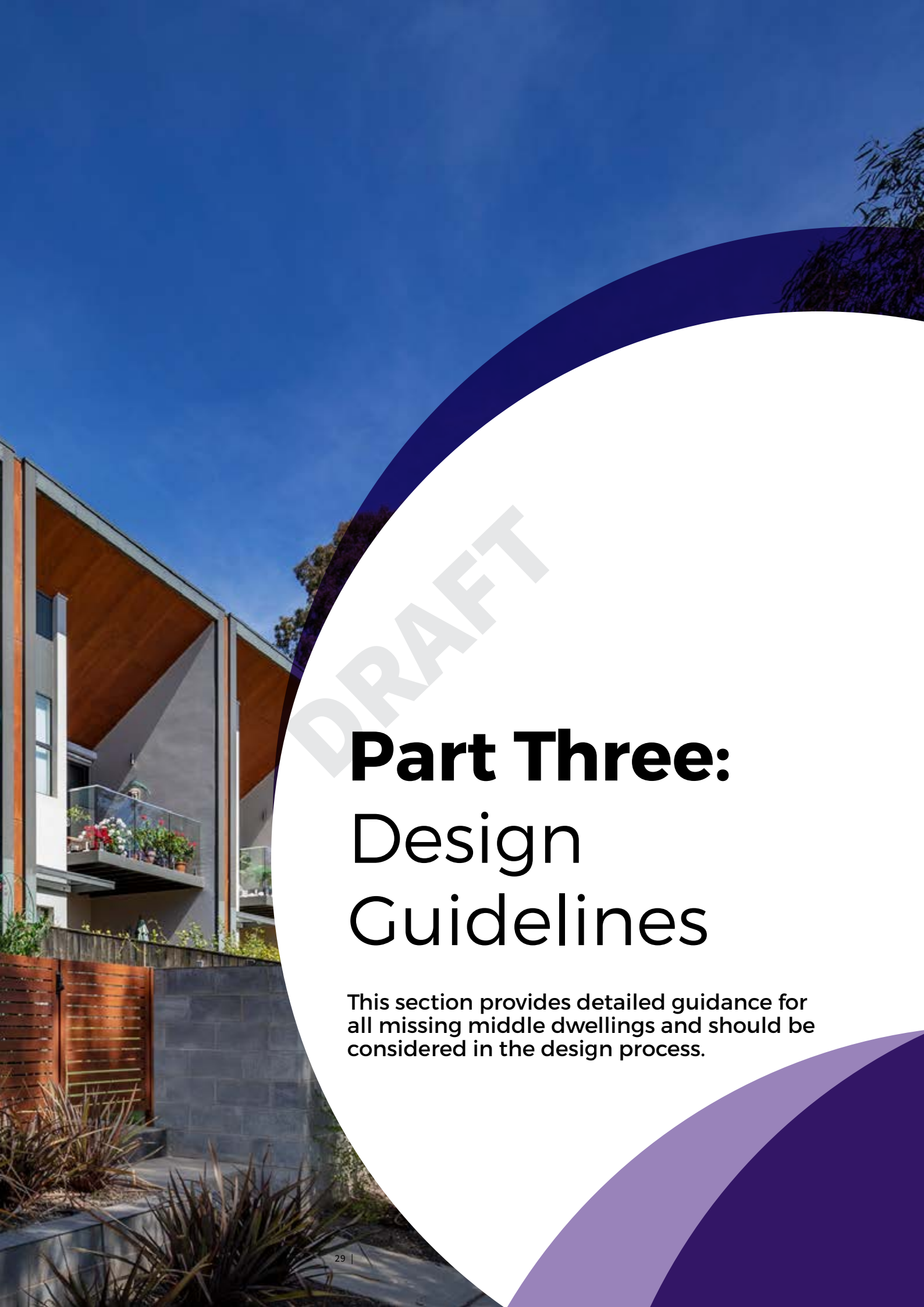
Site scenario matrix

The matrix table below associates Missing Middle typologies with site condition scenarios to give a general overview of how site conditions might help determine the appropriate typology for the site. Notable site conditions relevant to each typology are outlined with a purple box.

Note that this is a non-exclusive table and actual site conditions and typology feasibility may vary.

Typology	Block size guide	Site conditions	
Dual Occupancy	No minimum	i. Block consolidation	vi. Open space interface
		ii. Limited block depth or width	vii. Transport corridors
		ii. Irregular shaped blocks	viii. Laneway access
		iii. Battle-axe blocks	ix. Pedestrian connection
		iv. Corner sites	x. Easements
Tri Occupancy	>700 sqm	i. Block consolidation	vi. Open space interface
		ii. Limited block depth or width	vii. Transport corridors
		ii. Irregular shaped blocks	viii. Laneway access
		iii. Battle-axe blocks	ix. Pedestrian connection
		iv. Corner sites	x. Easements
Townhouse	>800 sqm	i. Block consolidation	vi. Open space interface
		ii. Limited block depth or width	vii. Transport corridors
		ii. Irregular shaped blocks	viii. Laneway access
		iii. Battle-axe blocks	ix. Pedestrian connection
		iv. Corner sites	x. Easements
Terrace	>800 sqm	i. Block consolidation	vi. Open space interface
		ii. Limited block depth or width	vii. Transport corridors
		ii. Irregular shaped blocks	viii. Laneway access
		iii. Battle-axe blocks	ix. Pedestrian connection
		iv. Corner sites	x. Easements
Apartment	>1200 sqm	i. Block consolidation	vi. Open space interface
		ii. Limited block depth or width	vii. Transport corridors
		ii. Irregular shaped blocks	viii. Laneway access
		iii. Battle-axe blocks	ix. Pedestrian connection
		iv. Corner sites	x. Easements

Aranda Townhouses,
Aranda ACT.
Architect: DNA Architects



Part Three: Design Guidelines

This section provides detailed guidance for all missing middle dwellings and should be considered in the design process.

SITE AND LAND USE

The proposed use and scale of development needs to be appropriate to the character of an area, site and zone.

The planning, design and delivery of the urban environment, public space and built form should be informed by the direction for the city and planning outcomes that respond to the city form, character, landscape setting, climate and amenity. The design response must focus on place-led outcomes that are guided by the Territory's overarching principles and objectives.

DESIGN ELEMENTS

3.1 TYPOLOGIES

3.1A Siting

3.1B Multi-occupancy

3.1C Townhouses

3.1D Terrace houses

3.1E Low-rise apartments

3.2 CONTEXT AND CHARACTER

3.2A Canberra Character

33 UNDERSTANDING YOUR SITE

3.3A Site conditions

3.3B Slope and topography

3.3C Water drainage

3.3D Tree retention

3.3E Prevailing winds and cross ventilation

3.4 LAND USES

3.4A Residential use

3.4B Non-residential uses

3.4C Block consolidation and sub-division

3.5 BUILDING ENVELOPE

3.5A Height and transitions

3.5B Orientation and outlook

3.5C Overshadowing

DRAFT

3

Hope Street Housing, White Gum Valley, WA.
Architect: OWA Architects and MDC Architects.
Photograph: Robert Frith

DESIGN ELEMENT:

3.1 BUILDING TYPOLOGIES

Different locations and site conditions require different building responses. Appropriately identifying your site conditions is an important step in determining the appropriate building type.

The typical building types for Canberra's missing middle housing are outlined on the following pages, described as typologies. Some larger sites might have a mix of multiple typologies. (See Understanding Your Site in Part 2 of this document). All together the typologies will deliver more housing choice and appropriate living options for the city as the population increases.

DESIGN GUIDANCE

3.1A SITING

i. Identify site size, site-specific conditions (see 3.2A), utilities, tree retention and other site constraints such as topography and solar access.

ii. Identify the relevant front, side and rear setbacks.

iii. Siting primary garden area and deep soil areas.

iv. Orient the primary outlook to the front and rear of the block where possible to avoid poor-amenity primary outlooks to side boundaries.

v. Ensure that primary outlooks do not compromise the privacy of neighbouring properties by considering sufficient setbacks and building separation.

vi. Ensure that the front setback allows for safe pedestrian access and visibility for vehicles entering and exiting the property as well as easy access to services such as waste collection and utilities.

vii. Analyse and respond to the site orientation, solar access and prevailing wind conditions by allowing solar access to dwellings (particularly in living areas) and open spaces and considering mitigating cold winds and catching warm breezes (3.2E).

viii. Determine requirement and location of private open spaces, communal open spaces and tree canopy cover. On larger development sites and corner blocks, consider creating a "courtyard type" to give spatial definition to the communal open space that is defined and separated from the street.

Photo 4: Apartment typology with separate pedestrian and vehicle access from the street. The ground level is slightly elevated from the street to increase the privacy of residents.

Haig Townhouses, Turner ACT. Architect: DNA Architects.

Typology illustrations

The typology layout diagrams illustrated on the following pages are for diagrammatic purposes only. While they illustrate a range of potential site configurations, further refinement would be required in relation to access, car parking and site coverage requirements.

Note:

→ The building examples and conceptual drawings presented in this design guide are not to be taken literally. They are aimed at demonstrating particular concepts and not necessarily a holistic design outcome, and will not guarantee a development approval.

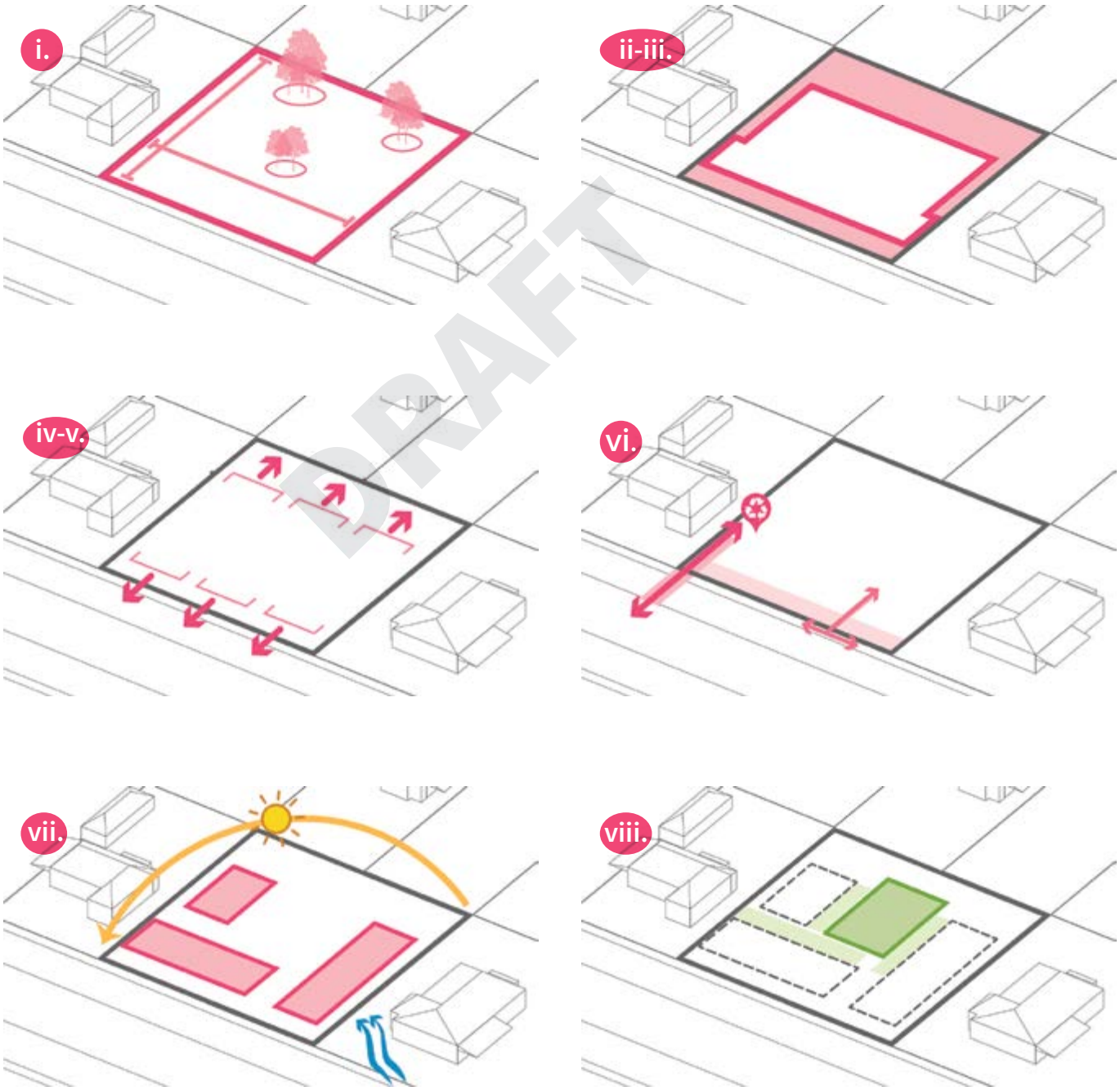


Figure 3: The above shows a step-by-step process for siting, corresponding to the elements in 3.1A.

3.1B MULTI-OCCUPANCY

Multiple occupancy housing is where two (dual occupancy) or three (tri-occupancy) dwellings are located on a single block of land. These can be side-by-side, one behind the other, or located on corner blocks.

Figure 4: Typical 2 storey dual occupancy on a corner block

Other names:

Two dwellings: semi-detached, duplex, dual-occupancy.

Three dwellings: semi-detached, triplex, tri-occupancy.

Key characteristics

Height:

1-2 storeys

Open Space Provision:

Typically, private yards, with some common landscaping if there is a shared driveway.

Parking arrangement:

Individual car parking associated with each dwelling.

Where to use

Multi-occupancy housing developments are especially appropriate in a low-density areas where the retention of single-family dwelling character is important.

Block characteristics: Dual occupancy is typically suited to mid-section blocks and single corner blocks without block consolidation. Tri occupancy is typically suitable on larger single corner blocks or with the amalgamation of two smaller blocks.

Block size: >600 sqm (dual occupancy), >700 sqm (tri-occupancy)

Benefits

- → Opportunity to sensitively increase dwellings density
- → Can offer more relatively affordable housing options compared to single-family homes, making it easier for people to live in the suburbs they want
- → Provide more diverse living arrangements, catering to different family sizes and lifestyles within the same neighbourhood.
- → Increased population density in established areas can enhance vibrancy, and support local businesses and services.

Built examples of multi-occupancy dwellings

Photo 5: A dwelling with a strong relationship to the street, including a second level with glazing integrated into the roof.
The Suburban Townhouse. Architect: Inbetween Architecture. Photograph: Tatjana Plitt

Photo 6: A high quality productive garden is integrated into the landscaping and is accessible from the buildings.
Terracotta House, Melbourne Victoria. Architect: Austin Maynard Architects. Photograph: Derek Swalwell

Photo 7: Articulation provides visual interest and glazing creates surveillance of the streetscape.
Hawthorn Siblings, Hawthorn, Brisbane QLD. Architect: Refresh Studio for Architecture. Photograph: Scott Burrows

Photo 8: Dwellings fronting public open space have low fences or hedges, access and an adjoining private open space.
The Village, Three Homes, Three Generations. Rivett, ACT. Architect: Light House ArchiScience. Photograph: Ben Wrigley

Photo 9: Parking access is sensitive to the topography and recessed from the street.
Rossmoyne Townhouses, Rossmoyne, WA. Architect: C. Kairouz Architects

Photo 10: The ground level interface creates visibility to the streetscape and a relationship between both dwellings.
Dual occupancy. Coburg North, VIC.

Typical layouts for multi-occupancy dwellings

There are a range of alternative siting layouts for the multi-occupancy housing that may be used depending on specific conditions such as planning controls, solar orientation, site slope, adjoining buildings, block dimensions and shape.

Some typical layout examples for multi-occupancy housing are outlined below and on the following pages. While they illustrate a range of potential site configurations, further refinement would be required in relation to access, car parking and site coverage requirements. They are aimed at demonstrating various concepts and not necessarily a holistic design outcome, and will not guarantee a development approval.

MID-SECTION BLOCK

Dual Occupancy

Figure 5: Attached dual occupancy with parking access from primary road creates clear address to street and generous rear gardens.

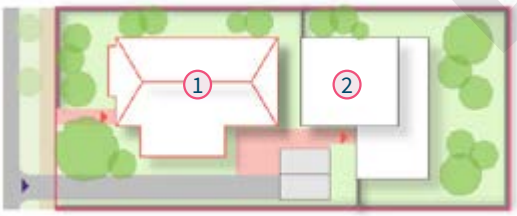


Figure 6: Detached dual occupancy where retaining the existing dwelling (in pink) with consolidated parking access from primary road. Buildings placed to allow for generous private open spaces.

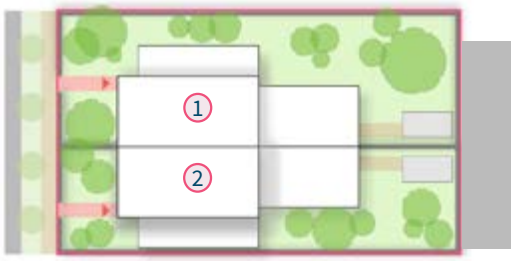


Figure 7: Attached dual occupancy with parking access from rear laneway creates good active frontage to the street.

Tri- Occupancy

Figure 8: Attached tri-occupancy with parking access from primary road with parking within the building. Dwellings are placed to maximise private open space.

Figure 9: Detached tri-occupancy with parking access from primary road. The free-standing buildings allow daylight from multiple sides and generous private open spaces.

CORNER BLOCK

Dual Occupancy

Figure 10: Attached dual occupancy on corner block with individual car parking access. Buildings are placed to allow for both front and rear gardens and good street frontages.

Figure 11: Detached dual occupancy on corner block, with retained dwelling (in pink) and each dwelling with individual access. The free-standing buildings allows daylight from multiple sides and generous private open spaces.

Tri- Occupancy

Figure 12:Attached tri-occupancy on corner block with individual parking access. Buildings are placed to allow front and rear gardens and good street frontages.

Figure 13:Detached tri-occupancy on corner block with two parking access locations. The buildings are placed to provide a centrally located shared open space and smaller private gardens.

IRREGULAR BLOCKS

Figure 14:Dual-occupancy on a ‘battle-axe’ block benefitting from frontages to public open space. The buildings are positioned to allow for front gardens and direct access to the public open space. This supports activation and passive surveillance to the public open space.

Note:

→ When planning a multi-occupancy development, consider the various land tenure options that are available and seek advice on the option that best suits your circumstances. Additional information on subdivision is provided in part 3.3C of this guide.

3.1C TOWNHOUSES

Townhouse developments typically consist of four or more dwellings which may be attached, detached or a combination of the two. Depending on the number of townhouses, there are many possible arrangements, though often as single or two storey dwellings sited perpendicular to the street.

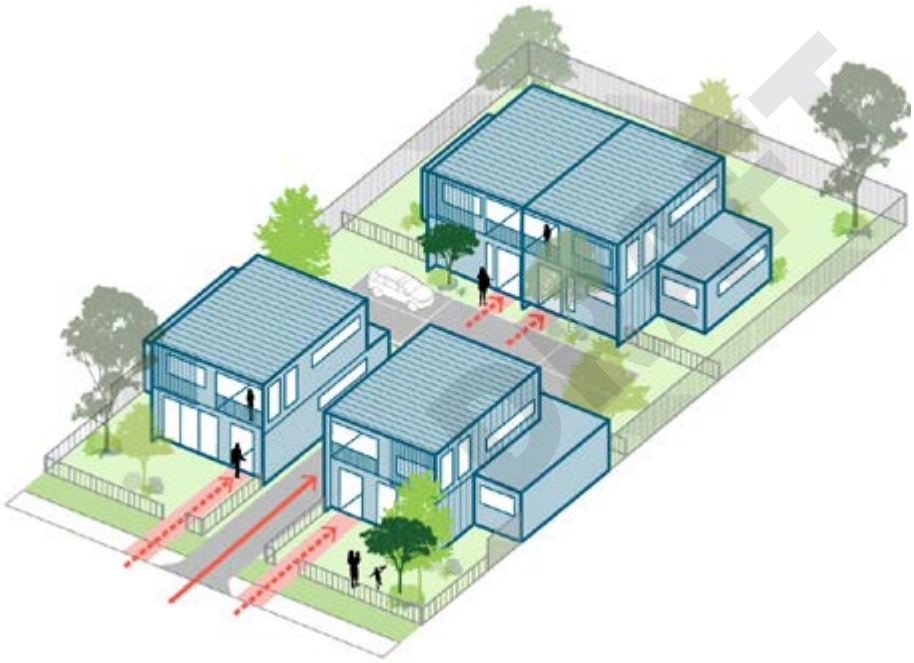


Figure 15:Typical 2 storey townhouses.

Other names:
Villas, cluster homes, grouped housing, courtyard homes.

Key characteristics

Height:
1 and/or 2 storeys. On large sites up to 3 storeys.

Open Space Provision:
Typically, private yards, with some common landscaping including common open space areas and/or facilities as well as around a shared driveway.

Parking arrangement:
Co-located together above or under ground, or associated with individual dwellings.

Where to use

Townhouses are especially appropriate in low-scale areas where small building volumes are appropriate and existing built form character is to be retained.

Block Characteristics: Typically suited to large mid-section blocks, irregular shaped blocks and consolidated blocks (2-3 consolidated blocks).

Block size: >800 sqm

Benefits

- → Providing higher density living while maintaining characteristics of single-family dwellings with amenity such as private front or rear gardens.
- → Can offer more relatively affordable housing options compared to single-family homes, making it easier for people to live in the suburbs they want.
- → Provide more diverse living arrangements, catering to different family sizes and lifestyles within the same neighbourhood.

Built examples of townhouses

Photo 11: Integrated landscaping can enhance communal and circulation spaces for townhouse developments.
Anne Street Garden Villas, Southport QLD. Architect: Anna O'Gorman Architects. Photograph: Christopher Frederick

Photo 12: A range of heights and materials ensure the townhouses complement the streetscape.
Knutsford Stage 1, Perth WA. Architect: Spaceagency Architects Photograph: Robert Frith

Photo 13: Permeable fencing, gates and architectural variation result in complementary relationship between townhouses and the open space. The Village, Three Homes, Three Generations, Rivett ACT. Architect: Light House ArchiScience. Photograph: Ben Wrigley

Photo 14: Louvres, screening and fencing maintain the privacy of the dwellings while also providing visibility.
Holder Townhouses, Holder ACT. Architect: Stewart Architecture

Photo 15: Effective placement of windows create a strong relationship to the adjacent park.
St Georges Grove, Parkville, VIC. Architect: Fieldwork. Photograph: Peter Clarke

Photo 16: A simple use of articulation and materiality creates visual interest.
Turner Townhouses, Turner, ACT. Architect: de Rome Architects

Typical layouts for townhouses

There are a range of alternative siting layouts for townhouses that may be used depending on specific conditions such as planning controls, solar orientation, site slope, adjoining buildings, block dimensions and shape.

Some typical layout examples for townhouses are outlined below and on the following pages. While they illustrate a range of potential site configurations, further refinement would be required in relation to access, car parking and site coverage requirements. They are aimed at demonstrating various concepts and not necessarily a holistic design outcome, and will not guarantee a development approval.

MID-BLOCK

Parking in the centre of site

Figure 16: Shared parking in the centre of narrow sites maximises private open spaces .

Figure 17:Shared parking in the centre of the site maximises private open spaces.

Shared parking to the side

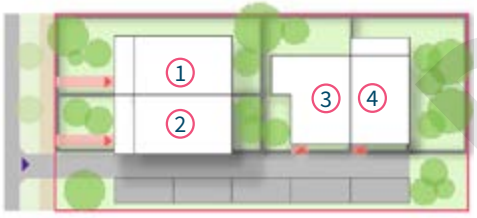


Figure 19:Shared parking along side boundary means buildings emphasise the streetscape and private open space is maximised.

Shared Parking in basement

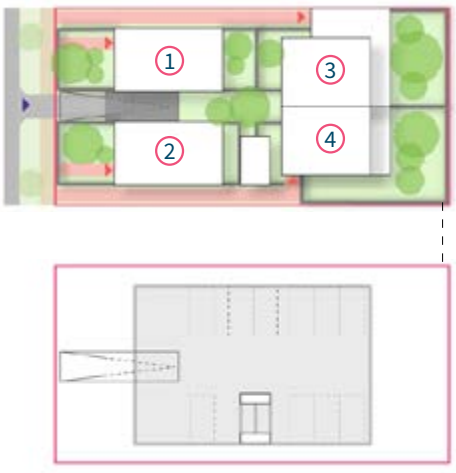


Figure 21:Shared parking in basement minimises any negative effects associated with surface-level car parking and access.

Figure 18:Consolidated blocks with individual parking in the centre of the site. This means that buildings emphasise the streetscape while allowing for garaging.

Shared parking to the rear

Figure 20:Shared parking to the rear of the site means parking does not dominate the streetscape.

Figure 22:Shared parking in basement minimises negative effects with surface-level car parking and access.

CORNER-BLOCK

Shared parking to the side

Figure 23: Corner site with shared parking along side boundary and central green space. This enhances the prominence of the street corner and the feasibility of a communal space.

Shared Parking in basement

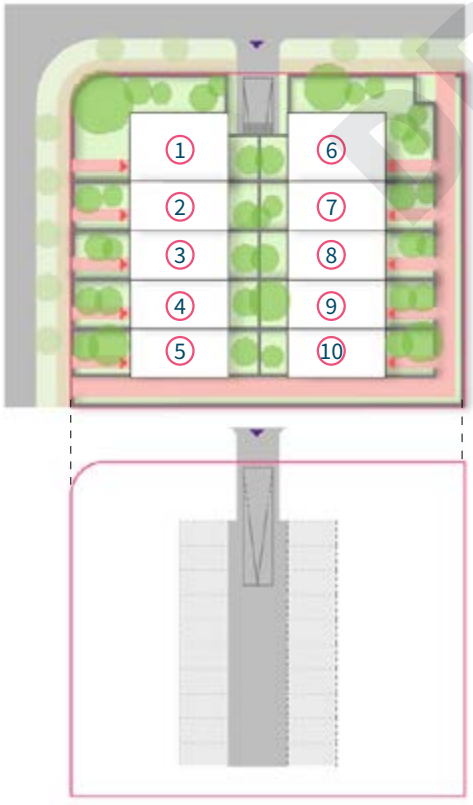


Figure 24: Consolidated corner blocks with shared parking in basement (or half basement to create a split-level townhouses). This provides a high level of internal amenity while reducing the prominence of parking.

IRREGULAR BLOCKS

Figure 25: Three consolidated blocks along a pedestrian connection between a street and a cul-de-sac. Provides 10 townhouses and shared parking area on three existing blocks, with a generous proportion of open space.

Note:

→ When planning a townhouse development, consider the various land tenure options that are available and seek advice on the option that best suits your circumstances. Additional information on subdivision is provided in part 3.3C of this guide.

3.1D TERRACE HOUSES

Townhouse developments typically consist of four or more attached dwellings sharing side walls which have a continuous frontage to the street .

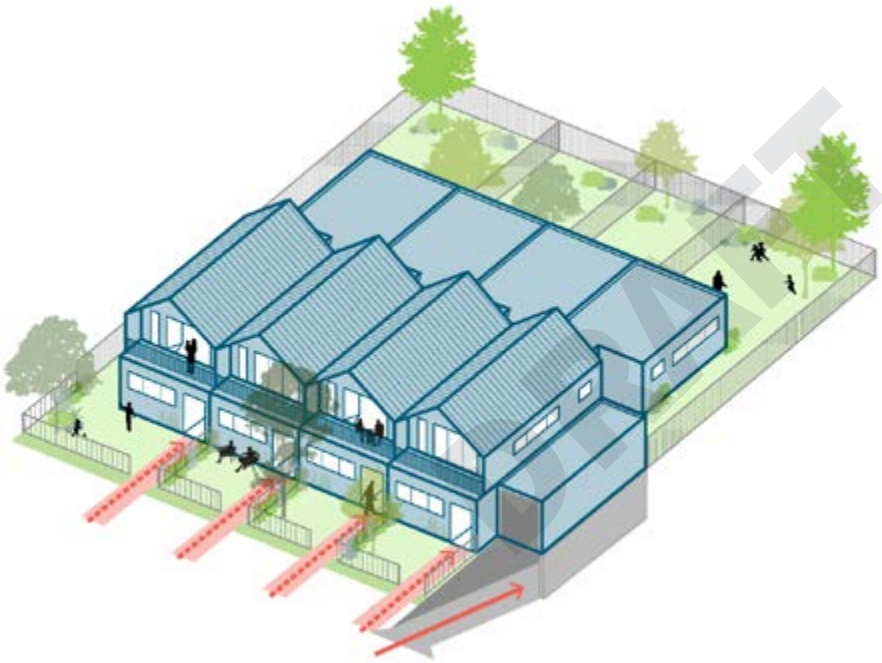


Figure 26:Typical 2 storey terrace houses.

Other names:

Row houses

Key characteristics

Height:

2 storeys. On large sites up to 3 storeys.

Open Space Provision:

Typically, private yards, with some common landscaping in larger development or around a shared driveway.

Parking arrangement:

Co-located together above or under ground, or individual rear access from laneway. Front parking access is generally to be avoided as it creates inactive frontages and many vehicular cross-overs

Where to use

Terraces are especially appropriate on residential streets with slightly higher vehicular traffic volume as they provide a large part of the dwelling that is acoustically separated and oriented towards the rear garden compared to other types. They are also appropriate where fronting onto open space where rear access can be provided.

Block Characteristics: Typically suited to wider mid-section blocks with wide frontages or consolidated sites of two or more blocks wider than 25m. They are also appropriate where fronting onto open space and pedestrian connections where rear access can be provided.

Block size: >800 sqm with frontage >25m

Benefits

- → A classic typology that offers many benefits for street activation and neighbourliness.
- → Offers clear separation between ground floor living and upper level bedrooms.
- → Clear separation between front garden and rear garden
- → Can offer more more affordable housing options compared to single-family homes, making it easier for people to live in the suburbs they want
- → Provide more diverse living arrangements, catering to different family sizes and lifestyles within the same neighbourhood.

Built examples of terrace houses

Photo 17: Terrace houses with a good quality ground floor interface can contribute to the safety and vitality of streets.
Aranda Townhouses, Aranda ACT. Architect: DNA Architects.

Photo 18: Architectural articulation and varied materiality can help to avoid a repetitive frontage.
Townhouses, Geelong, VIC.

Photo 19: Balconies activate the streetscape and a consistent architectural language creates an integrated built form.
Tarakan Street Social and Affordable Housing, Heidelberg West VIC. Architect: NH Architecture and Bird de la Coeur Architects. Photograph: Dianna Snape

Photo 20: The use of fencing creates a clear differentiation between public and private space.
The Bradfield, Downer ACT. Architect: AMC Architecture

Photo 21: Using the roof form maximises internal amenity while minimising height and visual bulk.
Portman Street Terraces, Zetland, Sydney NSW. Architect: CO-AP Architects. Photograph: Ross Honeysett

Photo 22: Landscaping in the front yard helps to soften the built form and benefits the streetscape.
Nest Townhouses, Lawson ACT. Architect: Stewart Architecture

Typical layouts for terrace houses

There are a range of alternative siting layouts for terrace houses that may be used depending on specific conditions such as planning controls, solar orientation, site slope, adjoining buildings, block dimensions and shape.

Some typical layout examples for terrace are outlined below and on the following pages. These examples may not be compliant with zoning specifications and regulations such as parking requirements, setbacks, easement clearance and site coverage. They are aimed at demonstrating various concepts and not necessarily a holistic design outcome, and will not guarantee a development approval

MID-BLOCK INDIVIDUAL PARKING

Front loaded terraces with parking in front

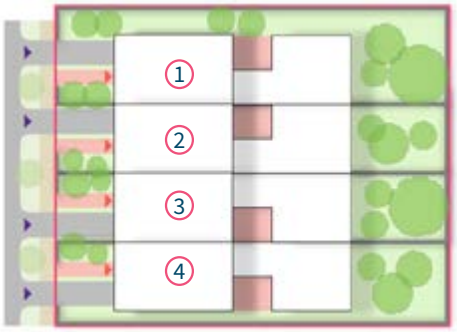


Figure 27: Terraces with individual parking from street. Individual parking from street can be appropriate on terraces with wide street frontages where dominance of garages on the frontage can be avoided. The site layout creates high amenity backyards for all dwellings.

Rear loaded terraces

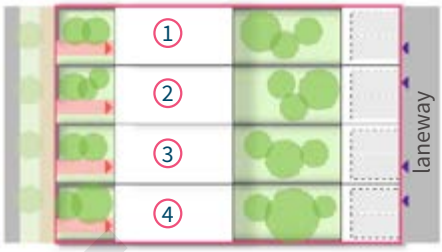


Figure 28: Terraces with individual car parking in laneway. This ensures a high quality street front with private backyards.

MID-BLOCK SHARED PARKING

Front loaded terraces with parking at the rear

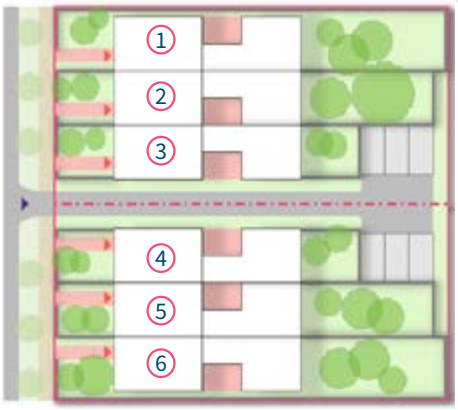


Figure 29: Terraces with shared access to consolidated parking area at the rear maximises the quality and size of private of open space for each dwelling.

Terraces with basement parking

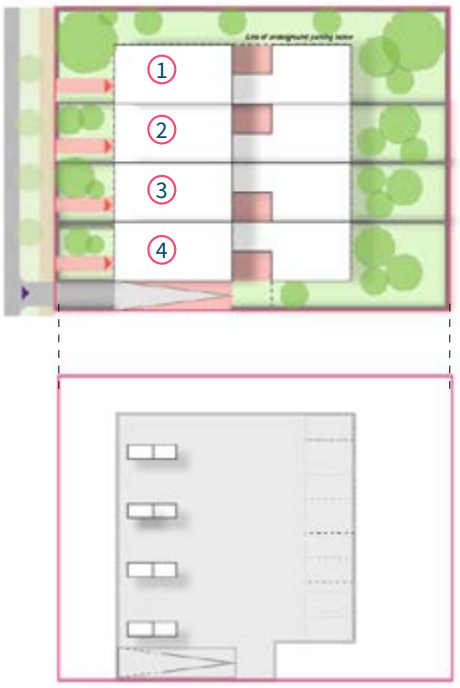


Figure 30: Terraces with underground parking from primary street. Minimises the negative impact of parking on each dwelling and on the streetscape.

IRREGULAR BLOCKS

Figure 31: Nine townhouses provided on three consolidated blocks along a pedestrian connection. The terraces have direct access to the pedestrian connection. Vehicular access is provided between the street and the cul-de-sac. The townhouses activate the connection and add to the movement network of the neighbourhood.

Note:

→ When planning terrace house development, consider the various land tenure options that are available and seek advice on the option that best suits your circumstances. Additional information on subdivision is provided in part 3.3C of this guide.

3.1E LOW-RISE APARTMENTS

Low-rise apartments are residential buildings made up of two or more apartment units of up to three storeys. Typically, dwellings are single level with horizontal property boundary and have shared access, circulation and communal open space.

Figure 32:A typical 3 storey low-rise apartment building.

Other names:
Apartments, manor house, triplex, tri-occupancy, quad-housing, quadruplex.

Key characteristics

Height:
2 storeys. On large sites up to 3 storeys.

Open Space Provision:
Typically, private courtyards for ground floor apartments and balconies for upper floor levels. Large sites may also include common open space areas and facilities.

Parking arrangement:
Co-located parking areas above ground or in basement.

Where to use

Low-rise apartment buildings are especially appropriate where higher residential density is a priority, Such as near smaller town centres, open space, community facilities and public transport.

Block Characteristics: Typically suited to large and consolidated sites of two or more blocks. This dwelling type is especially appropriate for mid-section and consolidated blocks on section ends. Three storeys may be appropriate on wider blocks (>25m) where stepped transition of building height is achievable or where adjoining development is constructed or permitted for greater than two storeys.

Block size: 1200 sqm and above

Benefits

- → These developments can be designed to provide significantly higher dwelling density with high level of shared amenity and convenience.
- → This typology is especially attractive for people who want to live with less maintenance and more shared amenity.
- → Can offer more relatively affordable housing options compared to single-family homes, making it easier for people to live in the suburbs they want.
- → Provide more diverse living arrangements, catering to different family sizes and lifestyles, such as ‘down sizers’ within the same neighbourhood.

Built examples of low-rise apartment buildings

Photo 23: The use of an upper level setback minimises the visual bulk associated with the height of the building.
Malvern Apartments, Melbourne VIC. Architect: C. Kairouz Architects. Photograph: Emily Bartlett

Photo 24: Balconies and glazing provide surveillance of the street at all levels.
Lowanna Apartments, Braddon ACT. Architect: Marcus Graham Architects

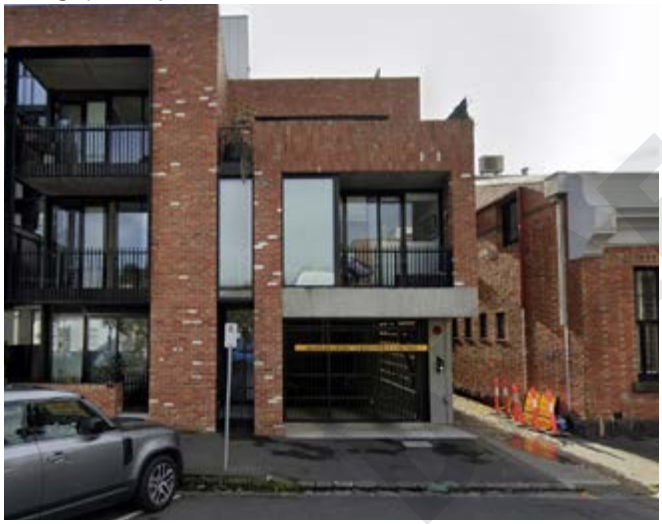


Photo 25: Parking access is recessed from the enclosing built form, minimising its visual impact.
Clifton House, Clifton Hill VIC. Architect: Idle Architecture Studio.

Photo 26: Landscaping and built form architectural articulation provide a clearly identifiable building entrance.
Torrens Street Apartments, Braddon, ACT. Architect: Ring and Associates.

Photo 27: A stepped transition to the street provides a usable balcony for the ground floor dwellings.
Hotham Hill Apartments, Melbourne VIC . Architect: MGS Architects

Photo 28: The positioning of the development on the street corner allows for a greater height and prominence.
The Grounds, Ivanhoe East VIC. Architect: Architectus. Photograph: JWLand

Typical layouts for low-rise apartment buildings

There are a range of alternative siting layouts for low-rise apartments that may be used depending on specific conditions such as planning controls, solar orientation, site slope, adjoining buildings, block dimensions and shape.

Some typical layout examples for low-rise apartment buildings are outlined below and on the following pages. These examples may not be compliant with zoning specifications and regulations such as parking requirements, setbacks, easement clearance and site coverage. They are aimed at demonstrating various concepts and not necessarily a holistic design outcome, and will not guarantee a development approval.

MID BLOCK

Apartment with shared underground parking

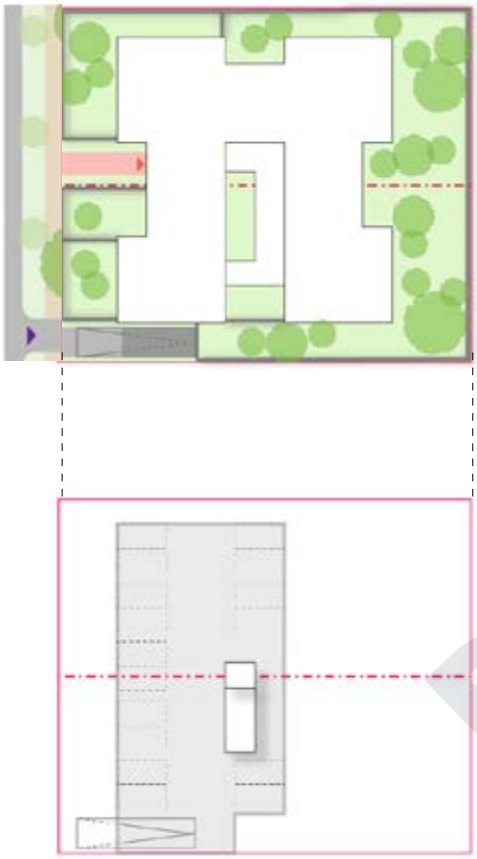


Figure 33: Apartments on consolidated block with shared basement parking from street. This layout maximises ground-level open space.

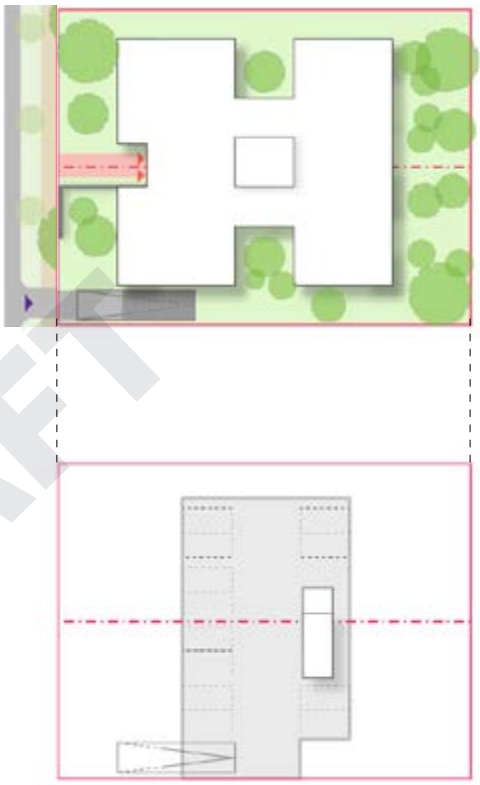


Figure 34: Apartments on consolidated block with shared basement parking from street. This layout maximises the opportunities for outlook and solar access for apartments.

Apartment with single lane access to shared parking

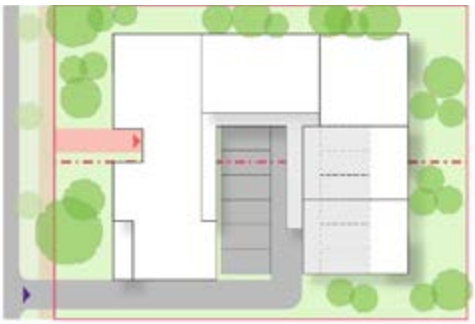


Figure 35: Apartments on consolidated block with shared parking in central courtyard accessed from the street. This maximises the efficiency and cost of car parking.

Figure 36: Apartments on single block with shared parking to the rear accessed from the street, ensuring a strong relationship to the street.

CORNER BLOCK

Apartment buildings with co-located parking

Figure 37: Apartment on a corner site with shared parking to side boundary. This maintains the prominence of the street corner.

Manor House with two parking entries

Figure 38: Corner block with individual car parking from street creates a high level of internal amenity and a suburban character.

IRREGULAR BLOCKS

Apartment buildings with shared basement parking

Figure 39: Apartment on three consolidated lots at a block end with rear communal open space and basement parking. This creates a large communal space with a high level of amenity.

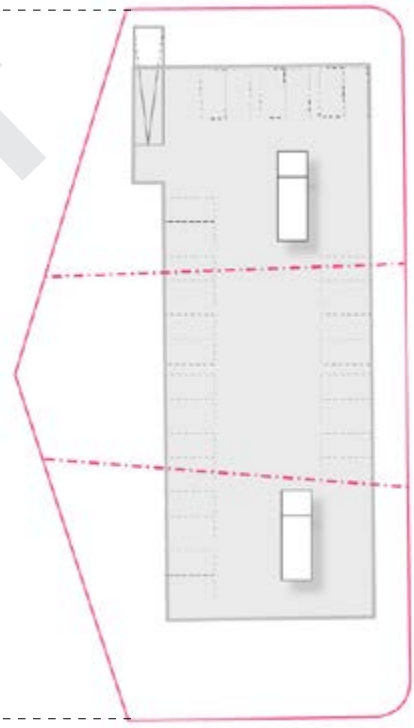


Figure 40: Indicative basement of apartment building on the Figure 39.

Note:

→ When planning a multi-unit development, consider the various land tenure options that are available and seek advice on the option that best suits your circumstances. Additional information on subdivision is provided in part 3.3C of this guide.

DESIGN ELEMENT:

3.2 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 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

3.2A 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. 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.

Related planning strategies and tools:
→ ACT District Strategies

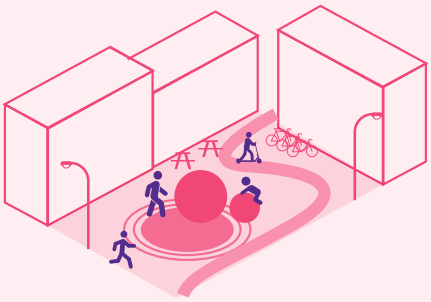
Why this is important:

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 neighbourhoods and streets:

CHARACTERISTIC OPEN SPACE TYPES

Courtyards, streets, squares, podiums

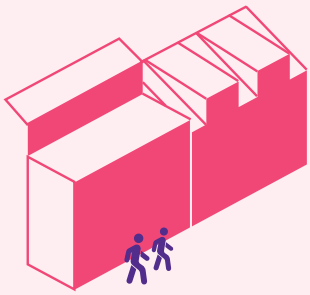


OPEN SPACE MATERIALS

Design detail, craft and tactile design elements

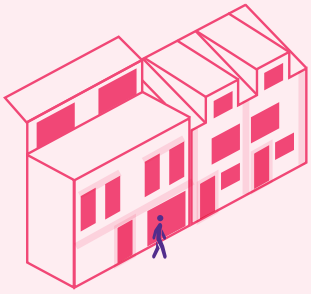
CONSISTENT PLANTING AND LANDSCAPE IMPLEMENTATION

Public space, streets and building design



BUILDING FORM

Building depths, height, setback, 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 41: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.

DESIGN ELEMENT:

3.3 UNDERSTANDING YOUR SITE

Understanding your site is the first step in identifying development potential and exploring feasibility.

Site conditions and other environmental characteristics, such as slope and topography, water drainage, tree retention and winds, provide key opportunities and constraints for potential development sites. Understanding and integrating these at an early stage ensures that design concepts are responsive to them.

DESIGN GUIDANCE

3.3A SITE CONDITIONS

i. Identify site-specific conditions that should be considered in your development such as: block depth and width, corner site, laneway access, pedestrian connection, open space, battle-axe blocks or easements.

ii. Block depth and width: Ensure the appropriate typology and yield is utilised for the size and scale of your site.

iii. Corner sites: Take advantage of dual frontage by creating visually appealing façades on both street fronts and assess suitability for a higher density outcome.

iv. Laneway access: Utilise laneways for servicing, such as waste collection, deliveries and car parking access to reduce congestion on main streets, and assess suitability for a higher density outcome.

v. Integrate pedestrian connections into the overall design using landscaping and architectural responses and treatment to enhance the appearance and pedestrian experience.

vi. Design buildings fronting open space to be active and engaging. Create visual connection with windows, terraces, balconies and gardens.

vii. Ensure access drive ways to rear blocks, such as battle-axe blocks, are wide enough to accommodate emergency vehicles, construction machinery and provide safe entry and exit.

viii. Easements at rear and side of blocks should be identified early so site layouts can be designed to enable access for maintenance.

Note:

→ Read 3.3A Site Conditions in conjunction with the site conditions and associated scenarios identified in Part 2: Understanding Your Site of the Missing Middle Housing Design Guide.

3.3B SLOPE AND TOPOGRAPHY

i. Assess slope stability by conducting a thorough geo-technical survey to understand soil stability and slope conditions. Consider the need for specialised engineering solutions on steep slopes (typically more than 15%).

ii. Minimise disturbance by designing the layout to follow natural contours of the land as much as possible to minimise grading and earthworks.

iii. Aim to balance cut and fill operations to minimise the need for importing or exporting soil, and to reduce costs and environmental impact.

iv. For steep sites, consider terracing to create level building platforms. Where significant cut and fill is necessary, use retaining walls or other stabilisation methods to ensure slope stability and prevent erosion.

v. Ensure that driveways and access paths are designed with appropriate gradients to ensure safe and convenient access and circulation (typically less than 10%).

For guidance on siting and layout:

→ Refer to 3.1 Typologies of the Missing Middle Housing Design Guide.

For information on character:

→ Refer to Part 2: Urban Character of the Missing Middle Housing Design Guide.

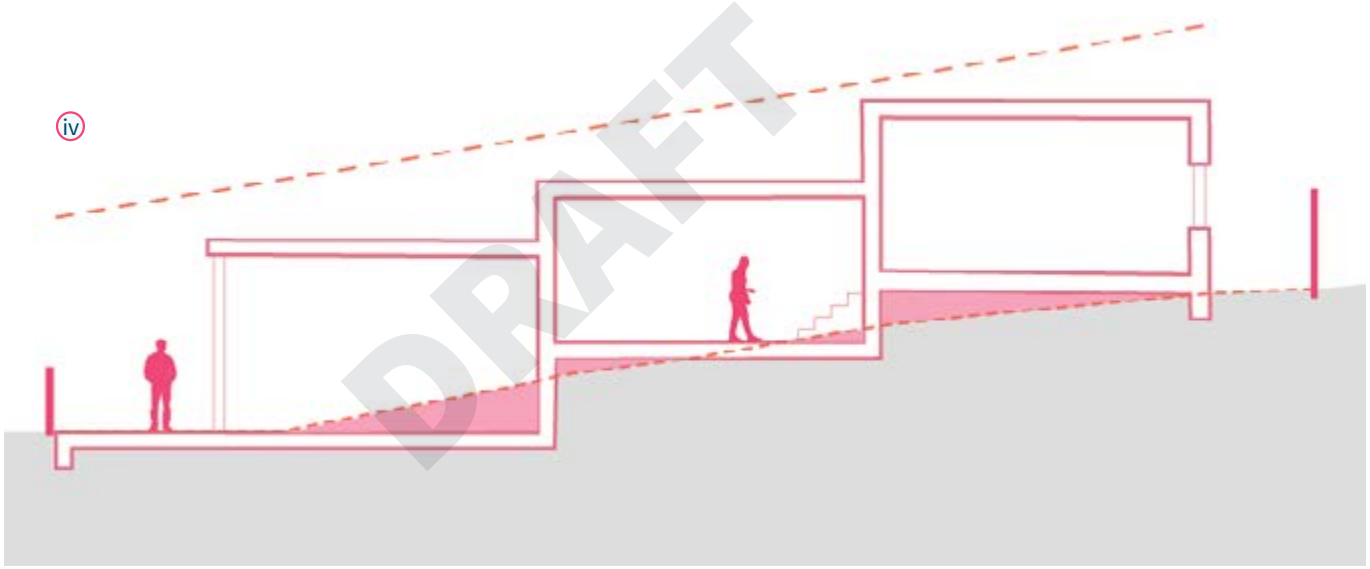


Figure 42: A stepped /terraced approach to development, along with balanced cut and fill, ensures that cost and environmental impact are minimised.

Photo 29: Working with the natural contours of the land by positioning development at the front of the site with parking to the rear minimises grading and earthworks.
Aranda Townhouses, Aranda ACT. Architect: DNA Architects

Photo 30: Terraced development creates an attractive form that is sensitive to the topography on steep sites, and can help to maintain a consistent relationship to the public realm.
Holder Townhouses, Holder, ACT. Architect: Stewart Architecture

3.3C WATER DRAINAGE

i. Consider preserving the natural drainage patterns and integrating the patterns into the site design to manage stormwater effectively.

ii. Consider allocating space for stormwater management such as green infrastructure, retention systems, and permeable pavements to manage runoff and reduce flooding risks.

iii. Encourage the use of rainwater harvesting systems to reduce the demand for central water supplies and manage rainfall surge events.

Why this is important:

Effective water drainage planning is vital to prevent flooding and erosion. Understanding natural drainage patterns and incorporating sustainable drainage systems ensures that stormwater is managed efficiently, protecting both the development and the surrounding environment.

Photo 32: Rainwater harvesting systems should be designed into developments to maximise their efficiency and appearance.

Photo 31: Permeable paving combined with green infrastructure, such as rain gardens, can help to manage runoff (reducing pollution) and reduce the risks associated with flooding and rainfall surge events.
Merri Green, Northcote VIC. Architect: Chamberlain Architects

3.3D TREE RETENTION

i. Conduct a tree survey to identify significant trees and vegetation that should be preserved on the site, including verge trees, consistent with the relevant ACT tree protection provisions.

ii. Incorporate trees into the design by integrating existing trees into the site layout as focal points in public spaces, streetscapes and private gardens.

iii. Establish buffer zones in accordance with arborist advice around retained trees to protect their root systems during construction. Avoid heavy machinery and storage of material within these zones.

iv. Develop and implement tree protection plans that include measures such as fencing, mulching and regular monitoring to ensure the health of retained trees during and after construction.

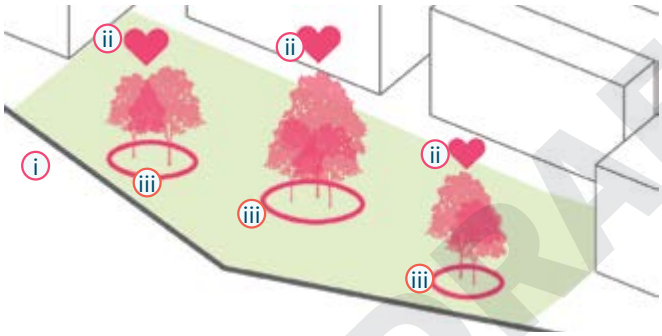


Figure 43: Tree retention ensures that significant trees are preserved during construction and provide focal points for the completed development.

Why this is important:

Preserving existing trees not only enhances the aesthetic appeal of a development but also provides environmental benefits such as improved air quality and reduced urban heat island effects. Understanding which trees to retain and how to protect them during construction is key to maintaining the ecological balance of the site and a leafy neighbourhood character.

Photo 33: A retained tree can help to provide a focal point for the access-way, as well as reducing the urban heat island effect.
The Village, Three Homes, Three Generations, Rivett ACT. Architect: Light House ArchiScience. Photograph: Ben Wrigley

3.3E WINDS AND NATURAL CROSS VENTILATION

i. Capture prevailing summer breezes through the building form to create more sustainable and comfortable living environments.

ii. Locate and position communal and private open spaces to be protected from downdrafts and the wind tunnel effect during winter.

iii. Include balconies and operable windows that can capture prevailing winds where possible.

iv. Consider the size and shape of the built form to capture or block prevailing winds depending on the season.

v. Ensure building separation is adequate to capture prevailing summer breezes and enable natural cross-ventilation to dwellings.

vi. Consider the orientation and spacing of buildings on site to avoid creating wind tunnels.

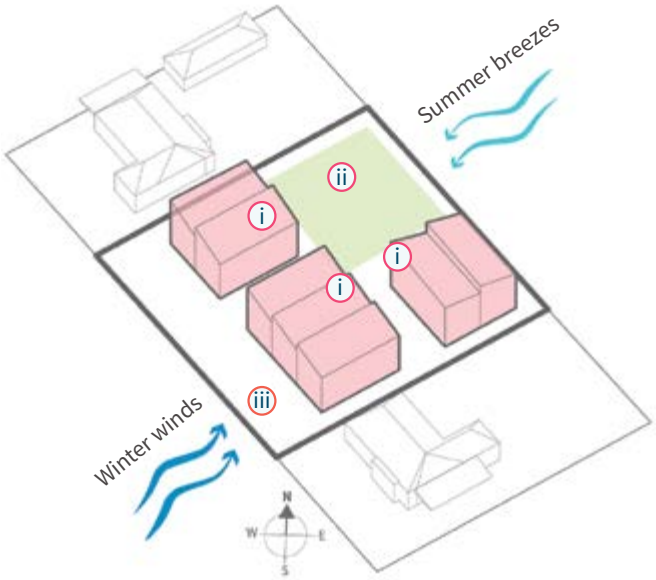


Figure 44: Designing for the dominant winds ensures that private open spaces and communal areas are sheltered during winter and experience gentle breezes during summer.

DESIGN ELEMENT:

3.4 LAND USES

Land uses encompass a variety of housing types, from single-family homes to multi-storey apartment buildings, each contributing to the diverse fabric of our city.

Effective planning of residential land uses ensures that housing developments are well-integrated with essential amenities, infrastructure and green spaces, fostering vibrant and sustainable neighbourhoods.

DESIGN GUIDANCE

3.4A RESIDENTIAL USES

i. To improve diversity in housing choice, provide a greater range of housing types such as multiple occupancy, townhouses, terraces and low rise apartments, as well as providing a varying of dwelling sizes and innovative spatial configurations across a development.

ii. 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.

For further guidance on 3.3A Residential uses:

→ Refer to 3.1 Typologies of the Missing Middle Housing Design Guide.

Photo 35:A mix of residential typologies and configurations are shown in the images above.
Merri Green, Northcote VIC. Architect: Chamberlain Architects

Photo 34:A mix of residential types, sizes and configurations provides a rich built environment with housing choice to suit a variety of housing preferences, life stages and household sizes across the community.
Juers Community Focused Social Townhouses, Logan QLD. Architect: Refresh Studio for Architecture. Photograph: Scott Burrows

3.4B NON-RESIDENTIAL USES

i. When planning controls permit, consider integrating a variety of non-residential uses, such as micro-retail or a cafe), which promote functionality and liveability of the suburb into the building design, or allowing for the future adaptation of such uses.

ii. Appropriate non-residential uses may include:
   - residential care accommodation
   - boarding house
   - guest house
   - early childhood education and care
   - community activity centre
   - health facility
   - guest house (adjacent to a commercial zone)
   - micro-retail or café space
   - co-working spaces
   - home businesses

iii. Ensure that non-residential uses are appropriate to future residential density and do not hinder the development of nearby sites.

iv. Consider the transport needs of non-residential uses and identify the required capacity for parking, public transport access and cycling/micro-mobility to avoid traffic congestion.

v. Consider the contextual and surrounding demand for non-residential uses and social infrastructure in the design process and provide for the existing and future community's needs.

Photo 36: Generous ground floor ceiling heights allow for flexible uses such as micro-retail or a cafe.
The Paddington, Wellington NZ. Architect: Design Group Stapleton Elliot

Photo 37: Communal buildings can provide a range of uses for events, co-working and home businesses.
Cohaus, New Zealand. Architect: Studio Nord. Photograph: Adam Luxton

Exemplar:
A pop-up cafe started out of a suburban house in Lawson has become a permanent community hub. The lack of hospitality venues in the suburb became particularly noticeable during COVID-19 lockdowns and led to the establishment of SV Coffee & Bakery by a local barista out of their own home. The extensive front yard space was retrofitted with a permanent cafe structure and outdoor seating that provides activation and vibrancy to the streetscape. The success of this initiative shows the potential for non-residential uses to enrich suburban areas around Canberra. The cafe has since closed.

3.4C BLOCK CONSOLIDATION AND SUB-DIVISION

Consolidation:

i. Consider developing in collaboration with neighbouring property owners to achieve more cohesive and efficient land uses through block consolidation.

ii. Consider and ensure that block consolidation aligns with the area's broader strategic planning goals, such as increasing density or creating larger development parcels.

iii. Prioritise block consolidations that deliver high quality urban outcomes. Regular block shapes support efficient building design, while corner and end of section consolidations improve vehicular access. Blocks fronting urban open space enhance amenity and passive surveillance. End of section and open space fronting consolidations also minimise perceived disturbance to the established subdivision pattern.

iv. Consider the number of dwellings suitable for the consolidated block, referring to zoning specifications for dwellings and block sizes.

v. Assess the capacity of existing infrastructure (roads, utilities, services) to support the increased development potential resulting from block consolidation.

vi. Ensure that the design of new development on consolidated blocks integrate harmoniously with the existing neighbourhood character and scale. Consider interfaces with adjacent development such as privacy, acoustic separation and vehicular separation to reduce impacts to neighbours.

vii. Ensure that all dwellings meet the minimum size requirement, consistent with residential zoning specifications.

viii. Ensure efficient and safe access for vehicles and pedestrians to the consolidated block.

ix. Consider providing pedestrian cross-section links and connections on consolidated blocks fronting two streets to increase permeability and access.

For further guidance on 3.4C(vii):

→ Refer to 3.5B Orientation and outlook and 4.1C Cross block links, 6.1 Scale and Building Form, 6.2 Orientation and Street Interface of the Missing Middle Housing Design Guide.

Why this is important:

Strategic block consolidation and subdivision can optimise land use potential, increase development viability, and support the creation of more fit-for-purpose buildings in a neighbourhood. Understanding the implications of these processes, including compliance with zoning regulations and infrastructure capacity, ensures that the development is feasible, practical and sustainable.

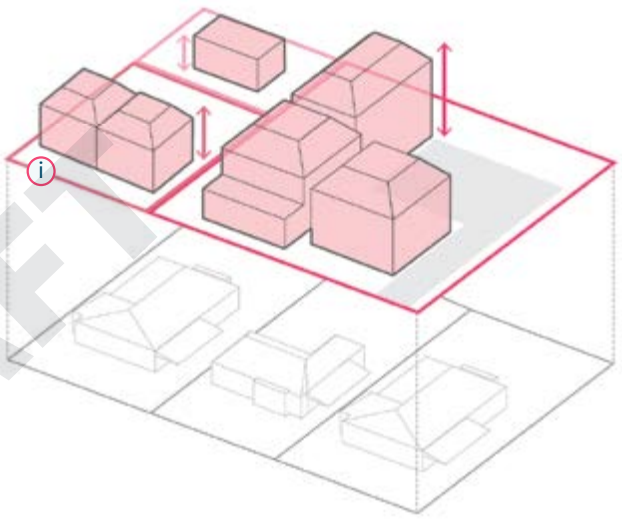


Figure 45: Considered block consolidation can deliver high quality outcomes such as efficient land use, density, pedestrian and vehicle access, and increased on-site amenity, while achieving a greater yield.

Figure 46: End of section block consolidation example.

Figure 47: Block consolidation adjacent urban open space example.

Figure 48: Mid section block consolidation example.

Subdivision:

i. Ensure that the subdivision responds to the ACT planning system and zoning objectives, and minimum block requirements.

ii. Design the subdivision layout to optimise an efficient use of land, providing well-proportioned blocks that are functional and fit for purpose.

iii. Ensure that subdivided blocks can reasonably meet future dwelling number and location requirements, consistent with residential zoning objectives and specifications.

iv. Plan for safe and convenient access to each block, including the design of internal roads, driveways, car parking and pedestrian pathways. Optimise the use of existing easements for suitable uses.

v. Ensure that all subdivided blocks are connected to utilities and have access to necessary essential services, such as water, sewer, electricity and telecommunications.

vi. Design the subdivision with flexibility in mind, allowing for potential future changes or expansions in response to evolving community needs.

vii. Maximise northern orientation opportunities.

viii. Consider block slope that minimises slope across front boundaries.

ix. Maximise block width opportunities where possible.

Battle-axe sites

x. Locate driveways to promote retention of existing street trees.

xi. Ensure the subdivision allows sufficient area for landscape treatment between battle-axe driveways and boundary fences to improve streetscape character and reduce the visual impact of additional hard surfaces.

xii. Vehicular access to and from a battle-axe site in a forward direction is encouraged.

xiii. Where the original dwelling is retained, consider mitigating the visual impact on the existing dwelling.

xiv. Where the original dwelling is retained, consider the relationship between the battleaxe driveway and retained dwelling to ensure privacy and amenity is protected.

xv. Ensure sufficient street frontage for servicing such as waste collection.

Tip:

Block subdivision and unit titling are two distinct methods of dividing property in the ACT, each serving different purposes and offering unique benefits.

Block Subdivision involves dividing a larger parcel of land into smaller, individual blocks, each with its own title. This process is typically used for creating separate, standalone properties such as houses or commercial buildings. Each block owner has full ownership and control over their parcel of land, including any structures on it. This method is ideal for developments where individual ownership and autonomy are desired. Block subdivision is typically used to create blocks for single dwellings, provided that individual service connections can be established for each separate block.

Unit titling, on the other hand, is a system of property ownership commonly used for multi-unit developments like dual occupancies, apartments, townhouses, or commercial complexes. Under this system, individual units or “blocks” within a building or complex are owned separately, while common areas such as gardens and shared driveways, are collectively owned by all unit owners through a body corporate. Unit titling allows for shared maintenance responsibilities and communal decision-making, making it suitable for medium and high-density living and mixed-use developments.

DESIGN ELEMENT:

3.5 BUILDING ENVELOPE

The building envelope is crucial in suburban development as it defines the physical limits of a structure, ensuring it fits harmoniously within its context and surroundings.

Appropriate height and transition in building form maintains neighbourhood character and prevents abrupt changes in scale and streetscape. Thoughtful orientation and outlook maximises access to natural light and views, enhancing livability. Addressing overshadowing protects sunlight access for neighboring properties, promoting a balanced and pleasant environment.

DESIGN GUIDANCE

3.5A HEIGHT AND TRANSITIONS

i. Adhere to zoning height assessment requirements to ensure the building fits within the planned character of the area.

ii. Design building massing to transition smoothly with the scale and height of neighbouring properties, avoiding abrupt changes, with consideration for permissible building heights and desired urban density.

iii. Use step-down design or graduated heights to reduce the visual impact of larger buildings on smaller adjacent properties.

iv. Break up the bulk of the building with architectural features, such as balconies, recesses, material changes and varied roof lines, to create visual interest and reduce perceived mass.

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

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

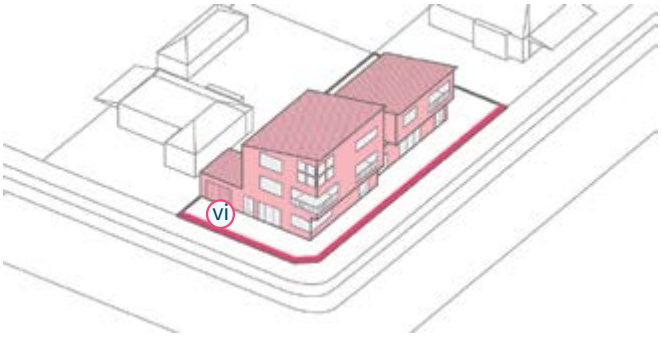


Figure 50:Corner sites have dual public realm (street) interfaces with the opportunity for greater variation in scale due to their prominence.

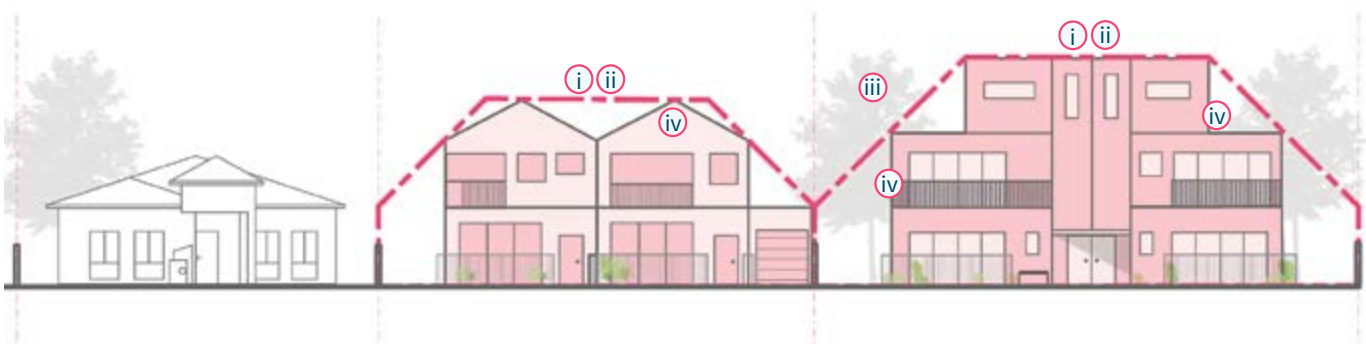


Figure 49:Larger block widths and depths enable a greater building envelope while maintaining a consistent neighbourhood feel and character.

3.5B ORIENTATION AND OUTLOOK

i. Orient primary outlook and provide visual connections to street frontages, rear gardens, public spaces and pedestrian cross-block connections, to provide passive surveillance and engaging building edges to minimise the impact on neighbouring sites and properties.

ii. Avoid overlooking to and from neighbour's private open spaces.

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

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

v. Orient and site buildings to maximise long views from dwellings and new private open spaces.

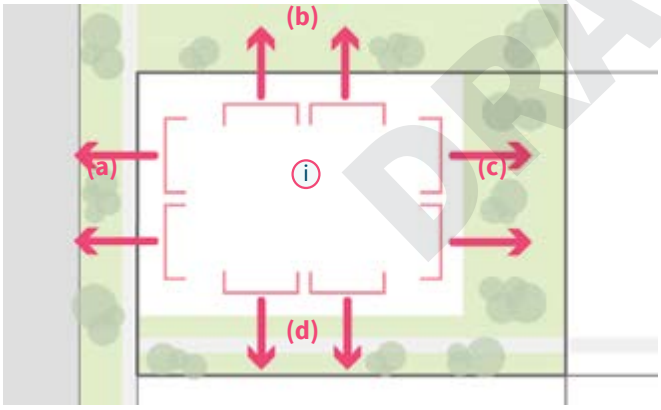


Figure 51: Orientating primary outlooks over (a) street frontages, (b) public spaces, (c) rear gardens and (d) pedestrian cross-block connections, minimises the potential impact of overlooking and maximises internal amenity.

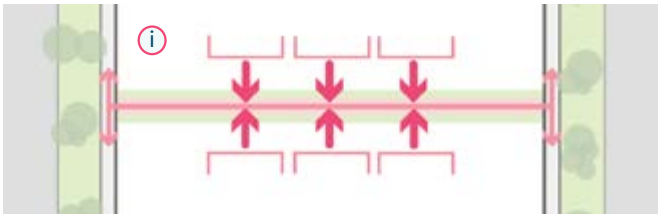


Figure 52: Orientating primary outlooks over pedestrian cross-block connections ensures that internal blocks are integrated into the wider urban form.

3.5C OVERSHADOWING

i. Minimise overshadowing of dwellings and private open space within a block and on adjoining residential blocks. This includes solar access into main living spaces within a dwelling and existing rooftop solar collectors and solar hot water services.

ii. Adhere to local zoning requirements to ensure appropriate building heights and setbacks provide adequate solar access for adjoining development.

iii. Minimise overshadowing to adjacent public open space.

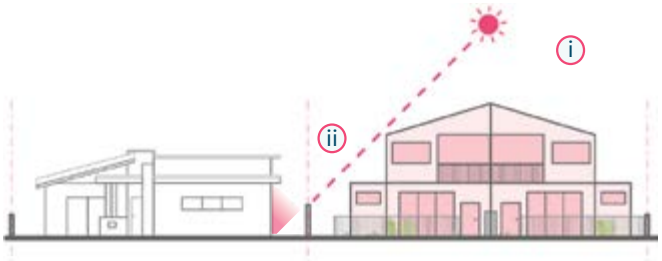


Figure 53: Minimise overshadowing of adjacent dwellings and private open space.

For further guidance:

→ On 3.5B Orientation and outlook refer to 5.2C Privacy and outlook of the Missing Middle Design

→ On 3.5C Overshadowing, refer to 6.2A Setbacks and separation of the Missing Middle Design

ACCESS AND MOVEMENT

Streets are important places for people to come together and interact.

The interface between buildings and the public space must allow for appropriate levels of movement and activity that meet the demands and needs of all ages and abilities. Streets must be adaptable and responsive to future changes in society, climate and technology, while unlocking efficiencies in using and managing resources. New housing should allow residents to easily connect with their surrounding community and environment, while providing pedestrian permeability from within the site, to the street and the broader precinct.

DESIGN ELEMENTS

Refer to the relevant themes of the Missing Middle Housing Design Guide as listed below for guidance around Access and Movement.

4.1 SITE ACCESS AND CONNECTIVITY

4.1A Vehicle access, driveways and laneways

4.1B Safe pedestrian and cycle access

4.1C Cross-block links

4.2 RESIDENT AND VISITOR CAR PARKING

4.2A Off-street and surface car parking

4.2B Garages and carports

4.2C Basement and sleeved podium car parking

4.3 INTEGRATED SERVICES

4.3A Waste collection, loading and delivery areas

4.3B Ground floor services and infrastructure

4.3C External storage and bulky items

DRAFT

4

Haig Townhouses, Turner ACT.
Architect: DNA Architects

DESIGN ELEMENT:

4.1 SITE ACCESS AND CONNECTIVITY

Visible, legible and accessible entrances can provide a sense of address and promote activation at street level. Prioritising pedestrian, micro-mobility and considered parking provisions supports active travel and improves convenience for the community.

Effective access and connectivity ensure that a site is well-integrated with its surrounding infrastructure, enhancing its accessibility for pedestrians, cyclists and vehicles. Prioritising pedestrian and micro-mobility access and car parking makes it easy and convenient to choose active mobility options to move around the city.

DESIGN GUIDANCE

4.1A VEHICLE ACCESS, DRIVEWAYS AND LANEWAYS

i. Consolidate driveways, where possible, within the property boundary to reduce the impact of driveways on the street frontage.

ii. Ensure driveways are efficiently designed to reduce dominance of cars in the development and provide additional opportunity for open space and landscaping.

iii. Incorporate deep soil planting zones and greenery along driveways and laneways to increase visual amenity and usability in addition to any required space for street waste collection.

iv. Provide suitable permeable surfaces for driveways and car parking areas where possible within the development site and reduce impermeable surfaces such as concrete and tarmac.

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

vi. Design driveways and laneways to prioritise pedestrian and cycle safety through elements such as paved surfaces and traffic calming devices.

vii. Advocate for shared driveways serving co-located garages and position all driveways to minimise verge crossings while maximising green verge space and on-street car parking. Typically allow for one on-street car parking space to be available in front of each development.

viii. Locate vehicle access points and surface car parking spaces away from habitable rooms to prevent headlight glare into dwellings.

ix. Ensure doorways or services located adjacent to driveways have adequate and safe spatial provisions to reduce pedestrian and vehicular conflicts.

x. Where required, incorporate adequate on-site turning areas to allow vehicles to enter and exit in a forward-facing direction, improving safety.

xi. Consider the relationship between building to driveway. Apply strategies to reduce visual impact and improve dwelling amenity and outlook.

Figure 54: Consolidating car parking areas within the development reduces the number of vehicle crossovers to the street and provides more on-site open space.

Photo 38: Permeable paving for driveways can effectively manage stormwater, reduce runoff, filter pollutants, mitigate urban heat island and enhance aesthetics.

Additional guidance:

→ For information on typology-specific driveway outcomes, see 3.1 Typologies of the Missing Middle Housing Design Guide.

→ For design strategies on the built form and its relationship to the driveway, see 6.2D Ground Floor Edge Conditions of the Missing Middle Housing Design Guide.

4.1B SAFE PEDESTRIAN AND CYCLE ACCESS

i. Provide clearly marked pedestrian entrances separated from vehicles and cycle access to ensure clear sight lines and safe pedestrian circulation.

ii. Ensure common circulation areas are well lit, accessible and easy to identify from building entries.

iii. Provide accessible and generously sized footpaths to entrances to allow for pedestrians, prams, wheelchairs and mobility scooters to pass each other.

iv. Provide secure and under-cover parking for bicycles, prams, and mobility scooters adjacent to dwelling entrances and/or streets where possible to make it easy and convenient to use active transport.

v. Allow for the provision of electric bike charging in secure undercover bike parking areas.

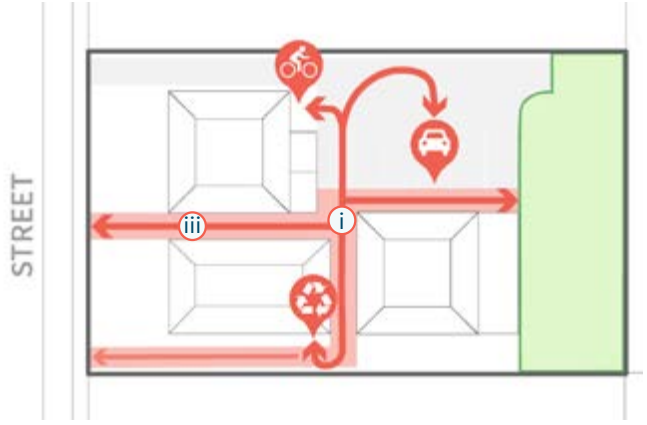


Figure 56: The pedestrian layout should allow for legible and safe movement between dwellings, on-site amenities the street and the wider active travel network.

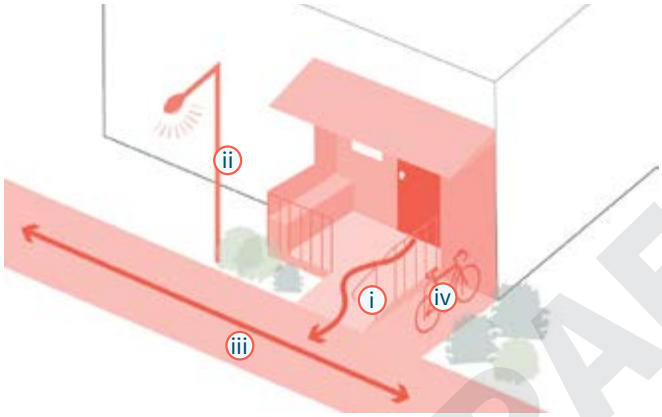


Figure 55: Common circulation areas should be well-lit and legible from building entries.

Figure 57: Bicycle storage and charging should be placed in secure locations accessible from dwellings, on-site amenities and the street.

4.1C CROSS-BLOCK LINKS

i. Incorporate cross-section links where possible to increase pedestrian permeability and amenity on sites fronting multiple streets.

ii. Provide dwelling entries along pedestrian links where entries cannot be located on the street.

iii. Include appropriately sized and articulated front courtyards along pedestrian links where possible to accommodate landscaping. (See 6.2D Ground Floor Edge Conditions).

Why is this important:
Cross-block links can enhance connectivity and safety, promote walkability and reduce traffic congestion. They create more direct routes for pedestrians and cyclists, improving access to local amenities, parks and public transport, ultimately contributing to a safer and more sustainable urban environment.

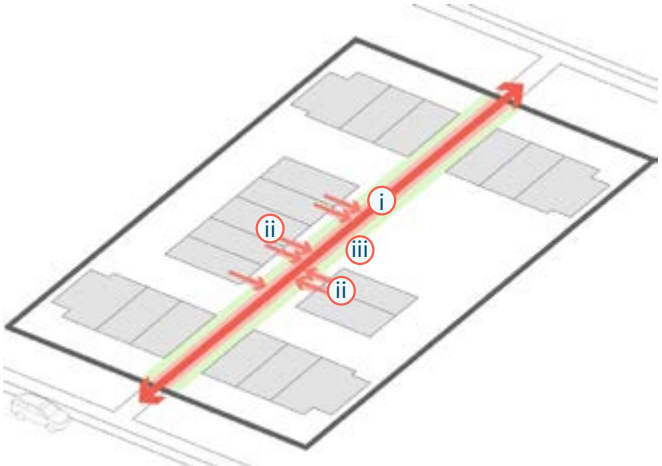


Figure 58: Cross-block links can provide additional permeability, access to amenity and link rear dwellings to the public realm.

Note:
Works outside the site boundary are subject to TCCS standards and assessment.

DESIGN ELEMENT:

4.2 RESIDENT AND VISITOR CAR PARKING

Integrating car parking sensitively into new development is critical to ensure lively streets are established with space for people and planting. Clever location of car parking can improve overall dwelling amenity while maintaining convenience.

Adequate and well-planned parking solutions are essential for meeting the needs of both residents and visitors. When increasing density, and maintaining parking requirements, this can limit the ability to provide appropriate landscaping. Good car parking and garage outcomes cleverly considers a design that is discreet and does not dominate street frontages where possible. This will improve the overall dwelling amenity while still ensuring convenience and high-quality streets.

DESIGN GUIDANCE

4.2A OFF-STREET AND SURFACE CAR PARKING

i. Locate car parking and car parking entrances away from the primary street frontage to reduce visual impact.

ii. Reduce driveway length and consolidate or cluster car parking areas to allow for additional landscaping and other uses.

iii. Locate car parking entry via laneway where possible to reduce conflict with the street and create a safer pedestrian environment.

iv. Incorporate medium and large canopy trees or shading structures around surface car parking areas to reduce urban heat island effect and to add visual amenity.

v. Car parking spaces should incorporate semipermeable materials and plantings. Low-level landscaping should be used on two to three sides to soften, screen and reduce visual dominance.

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

vii. Consider the terminating views from driveways. The use of permeable or flared fencing, appropriate setbacks for garages to allow for pause and pavement treatments to distinguish the pedestrian environment will provide clear visual endpoints, reduce clutter and create a more visually appealing environment.

viii. Locate guest car parking on street where possible along low-use residential streets.

ix. Implement appropriate lighting and passive surveillance to achieve Crime Prevention Through Environmental Design (CPTED) principles.

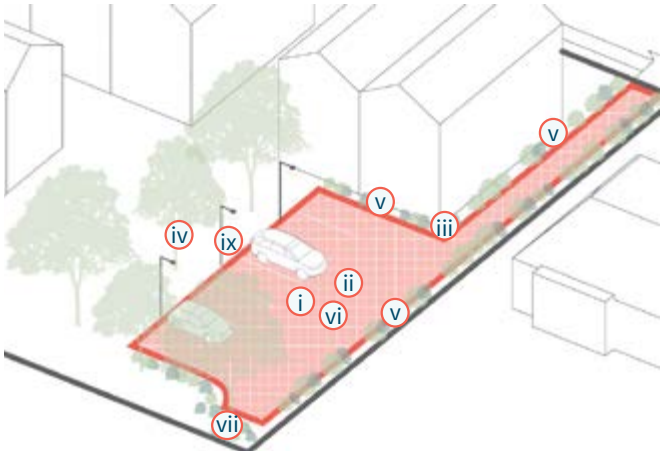


Figure 59: Consolidated car parking minimises the negative impacts on the street and creates an identifiable zone for vehicular movement.

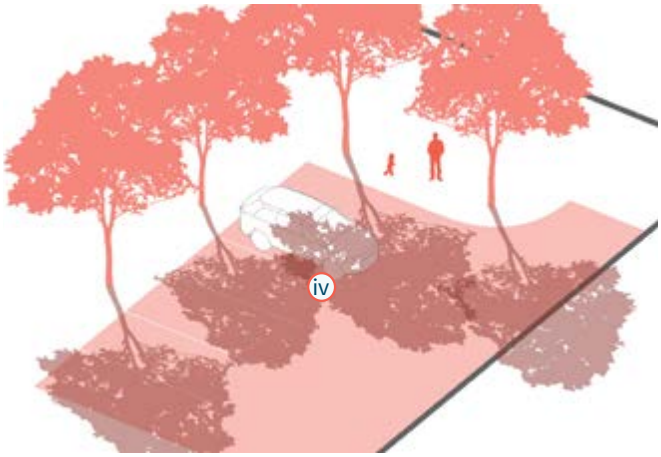


Figure 60: Canopy trees can provide shade and beautification for car parking, reducing the urban heat island effect and making them more pleasant environments.

4.2B GARAGES AND CARPORTS

i. Consolidate car parking garages where possible in multi-unit developments to minimise garage frontage on façades.

ii. Garages and carports should be setback from the front façade and predominant building line to reduce visibility from the street create an attractive street frontage to the public streetscape.

iii. Locate garages and carports away from frontages where possible to create more engaging streets.

iv. Design individual garages with access to natural light and ventilation to prioritise future adaptability for conversion into habitable spaces.

v. Consider the future conversion of garages and carports into habitable spaces or garden areas.

vi. Include step-free access from attached garages to the associated dwelling to enable universal accessibility.

vii. Consider flexible parking arrangements that encourage alternative car-share and ownership models with centralised car parking arrangements.

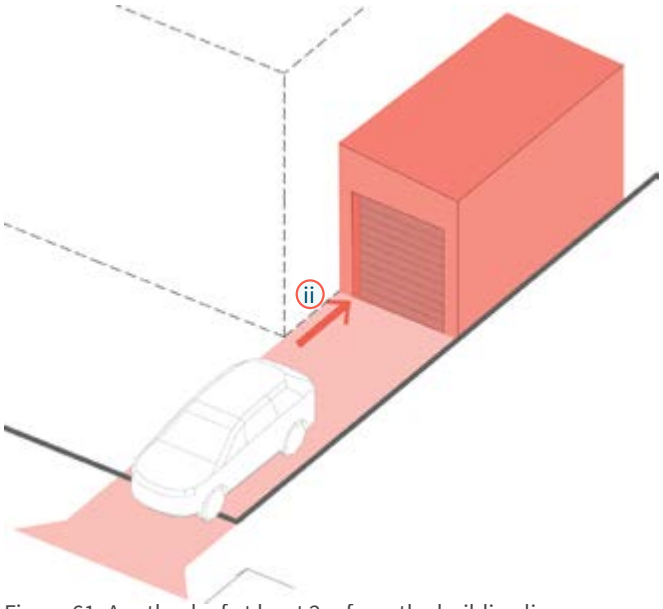


Figure 61: A setback of at least 2m from the building line ensures that garaging does not detract from the streetscapes.

Photo 39: Garages without natural light and landscaping creates an unattractive and hostile urban environment which does not encourage other uses.

Photo 40:An internal driveway and parking in a larger townhouse development that includes canopy trees and low-level landscaping to soften and naturally shade the environment.
Yarra Bank Court, Abbotsford, Victoria.

Photo 41:Setting individual garages back from the front building line reduces the visual dominance of garage doors and prioritise integrating dwellings to maintain a cohesive streetscape.

Photo 42:A shared garage has been integrated into the secondary facade of one dwelling to reduce driveway crossovers and hard stand to allow for additional landscaping to soften edges.
Longfellow Terraces, Norman Park QLD. Architect: Refresh Studio for Architecture. Photograph: Catherine Schusler

4.2C BASEMENT AND SLEEVED PODIUM CAR PARKING

i. Consolidate vehicle entries/exits and servicing areas to avoid back-of-house character of streets.

ii. Position basements under the building footprint to maximise the potential for deep soil planting.

iii. Where basement parking is utilised, ensure adequate and dispersed provision of deep soil planting space to support adequate tree canopy cover.

iv. Design car parking entrances and exits that prioritise pedestrian and cycle safety. This may include using clear markings, continuous path surfaces signaling pedestrian priority and reduced vehicle speeds.

v. Provide natural cross ventilation to basement and sub-basement car parking areas, where possible.

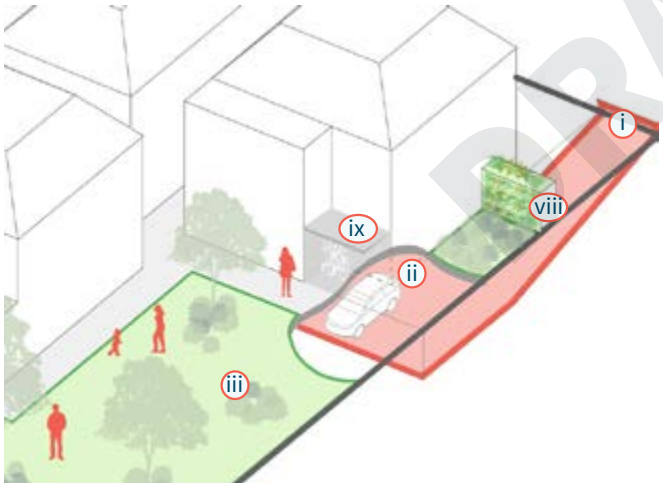


Figure 62: The placement of parking under the building footprint can provide space for more valuable land uses and deep soil planting. Effectively placed screening can reduce the visibility of vehicle entrances from both inside and outside the site.

vi. Integrate ventilation grills or screening devices for car parking openings into the façade and landscape design to minimise impacts to façades.

vii. Locate living areas at ground level to streets where sleeved basements and half-underground basements are provided to allow for passive surveillance and street activation.

viii. Provide planting along the façade of car parking where sleeving is not possible to create a green interface. Consider integrating cross ventilation as an additional priority.

ix. Provide sufficient space in garages for bicycle parking for all members of a household.

x. Avoid right-hand turns into car parking entries where possible to promote pedestrian safety.

Figure 63: Sleeved parking predominately contained within the building line enables alternate uses above as well as maximising deep soil planting space.

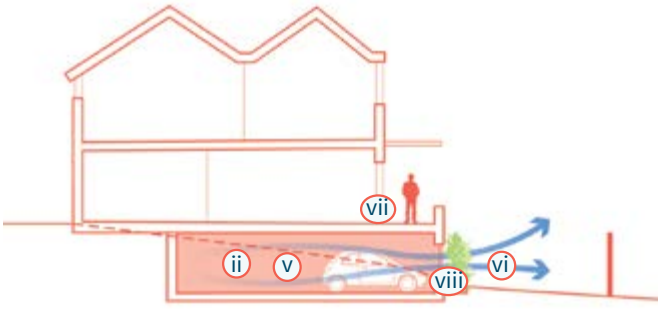


Figure 64: For basement and sub-basement car parking, using landscape screening at openings facilitates natural cross ventilation.

Photo 43:A sleeved driveway leading to a shared underground car parking area for the townhouse tenants.
Haig Park Townhouses, ACT. Architect: DNA Architects.

DESIGN ELEMENT:

4.3 INTEGRATED SERVICES

Services and infrastructure are important elements to making our dwellings safe and habitable. Strategically integrate services to reduce negative impacts on public, private and communal space.

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

DESIGN GUIDANCE

4.3A WASTE COLLECTION, LOADING AND DELIVERY AREAS

i. Provide appropriate space for all bin types including recycling, general and garden waste in line with local authority guidelines. These areas should be located discreetly away from the front of the development or, if possible, consolidated in the basement car park to reduce their spatial footprint and impact to the street.

ii. Ensure sufficient street frontage is available to accommodate kerbsides waste collection, with clear space free from obstructions such as trees, poles, or street furniture that may hinder bin placement or collection access.

iii. Integrate bin enclosures into the dwelling design and located away from habitable room windows.

iv. Ensure internal communal waste and recycling rooms are well ventilated, pest proof and in convenient and accessible locations.

v. Provide structures to screen waste collection, loading and servicing areas and integrate them into the overall building design.

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

vii. Waste travel paths and gradients need to be accessible, including where site and driveways exceed accessible gradients.

Photo 44: Accessibly placing bins in a screened location away from sensitive uses means that waste disposal is convenient and minimises potential negative impacts.

Photo 45: Not providing dedicated and screened bin storage can result in visual clutter and poor outcomes.

4.3B GROUND FLOOR SERVICES AND INFRASTRUCTURE

i. Co-locate building services on the least active portions of the façade as discreetly as possible. This could be at the rear of the building, near loading and waste collection points or within the basement when appropriate.

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.

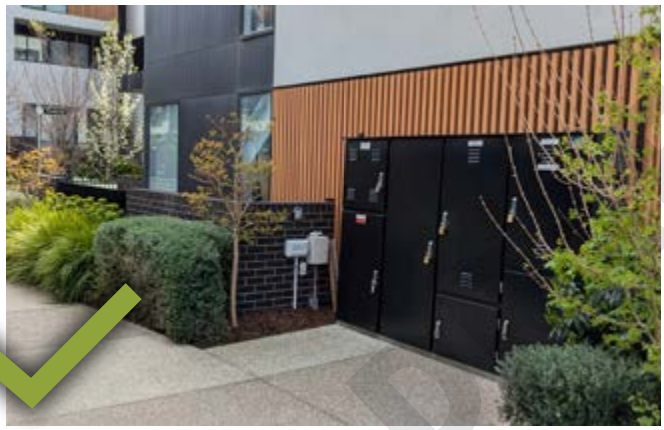


Photo 46: Co-locating infrastructure elements on the least active facade away from the street can be an efficient design outcome as this minimises negative impacts on the public realm.
The Mills, Alphington, VIC. Architect: DKO Architects

Photo 47: Consolidating services infrastructure to the street without any landscaping or architectural screening reduces the visual amenity and can be dangerous to the general public.

4.3C EXTERNAL STORAGE AND BULKY ITEMS

i. Provide enclosures within garages or adjacent to allocated car parking spaces for additional storage of larger items where possible.

ii. Allow for a convenient storage location outside of the main dwelling for bulky items and less frequently used equipment; this location should accommodate items of various shapes and sizes and be weatherproof, secure and allocated to specific dwellings.

iii. Provide visual screening to storage enclosures for improved security and functionality.

iv. Consider adding extra length to garage and car park areas to provide flexibility to residents for the storage of items.

v. Provide private storage of garden tools that is easily accessible from the garden area for dwellings with courtyards or lawns.

vi. If communal storage rooms are provided, these areas should be accessible from common circulation spaces of the building.

Additional guidance:

→ For more information on providing internal storage space, see 6.4A Within dwelling of the Missing Middle Housing Design Guide.

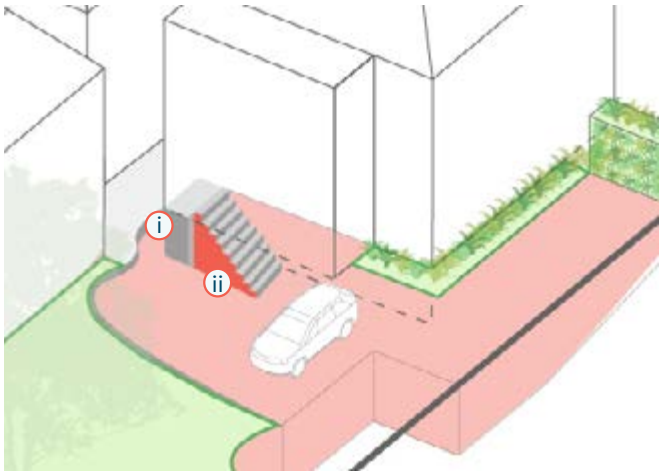


Figure 65: Under-utilised spaces that can be enclosed and covered, such as under staircases, can be used efficiently for the storage of bulky items.

PUBLIC SPACE AND AMENITY

Public spaces and open spaces are key drivers of livability and amenity. They should reflect the desires and needs of its users by creating welcoming, sociable, walkable environments.

Open spaces foster a sense of community, encourage social interaction, and provide residents with accessible areas for relaxation and physical activity. Private open spaces can cater to diverse lifestyle needs and balance privacy and communal interaction. These spaces contribute to mental well-being and create vibrant, cohesive neighbourhoods where people want to live.

DESIGN ELEMENTS

5.1 COMMUNAL OPEN SPACE

5.1A Use, size and location

5.1B Integrated landscaping

5.2 PRIVATE OPEN SPACE AND BALCONIES

5.2A Principal private open space

5.2B Public realm interface and passive surveillance

5.2C Privacy and outlook

5

Grace, Dickson ACT. Architect: DNA Architects

DESIGN ELEMENT:

5.1 COMMUNAL OPEN SPACE

Generous and high quality communal open spaces boost the amenity and liveability for missing middle living with shared spaces.

Communal open spaces in multi-dwelling development enhance quality of life and community cohesion. They provide essential green areas for physical activity, relaxation, recreation, and social interaction, fostering wellbeing and a sense of belonging. Considered design choices and endemic planting species in communal spaces also strengthen connection to Country. In addition, they increase amenity and attract a diverse range of residents, contributing to a more inclusive and vibrant community.

DESIGN GUIDANCE

5.1A USE, SIZE AND LOCATION

i. Complement the dwelling's private open spaces with shared communal spaces designed to provide high levels of amenity for residents of all ages and abilities such as courtyards, roof tops, lawns and gardens.

ii. Incorporate children's play spaces that are safely located with passive surveillance and thoughtfully designed to support diverse developmental needs.

iii. Provide for activities in the communal open spaces that facilitate social interaction between residents such as veggie patches, herb gardens, exercise areas, communal kitchen and entertaining areas.

iv. Locate communal open space where it is directly accessible from common entries and pathways and has a high degree of visual connection.

Tip:
Communal spaces boost the amenity, diversity, inclusivity and liveability of higher density urban living. They promote social interactions by creating shared spaces where residents can get to know each other.

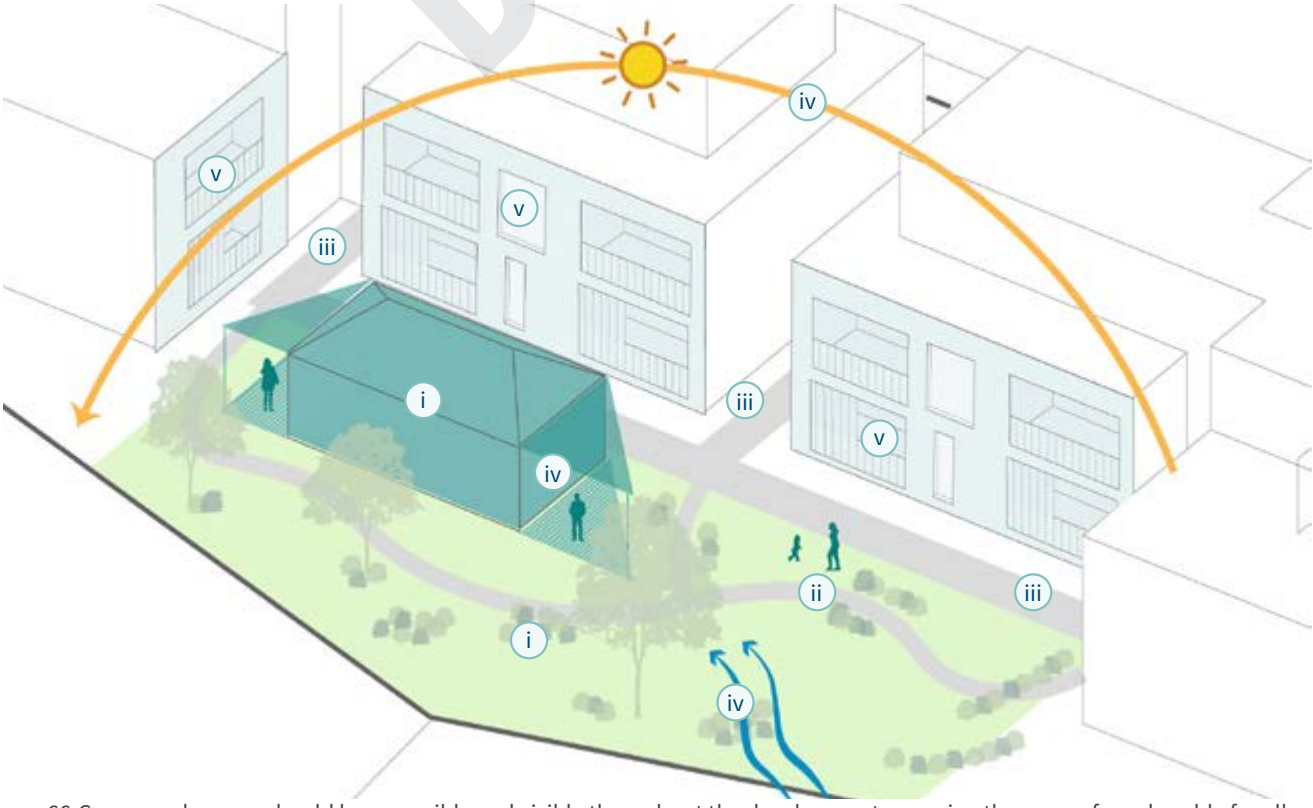


Figure 66: Communal spaces should be accessible and visible throughout the development, ensuring they are safe and usable for all residents. They should also a range of spaces for different uses and seasons, including both indoor and outdoor spaces.

v. Design communal spaces that are versatile and usable throughout the year by incorporating both enclosed spaces that capture winter sun and protect from wind, and open, breezy spaces that cater to active uses in summer.

vi. Consider the retention of privacy for private dwellings facing communal open spaces. Mitigate privacy through planting, setbacks, level changes and window positioning when necessary.

vii. Consider providing pet-friendly communal spaces on site.

viii. Where appropriate and feasible, incorporate rooftop gardens to enhance green spaces, improve the aesthetics of dwellings and support the physical and mental health of residents. Consider factors such as structural capacity, exposure to weather elements, accessibility and resident needs.

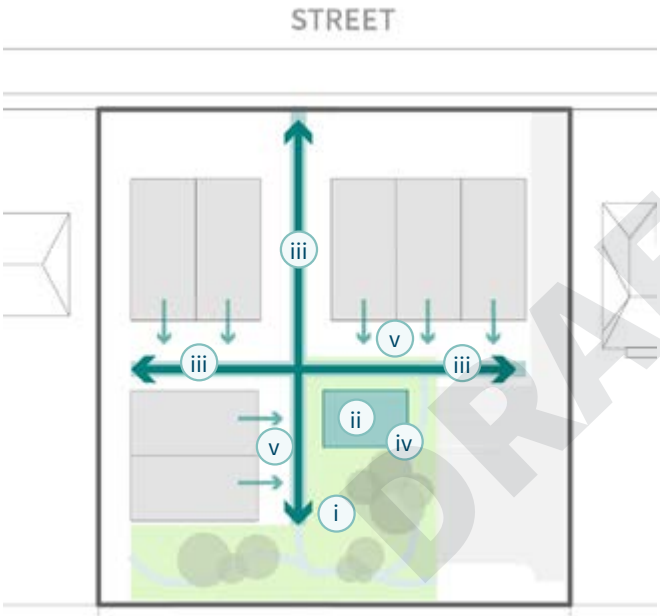


Figure 67: Locating communal open space that is easily accessible for all dwellings ensures shared enjoyment and privacy.

5.1B INTEGRATED LANDSCAPING

i. Integrate landscaping and planting within communal open spaces to enhance comfort, animate and soften the space, while also reducing the urban heat island effect.

ii. Locate mature and large canopy trees in communal open spaces in the front and rear garden of the block for easier maintenance and to allow residents to enjoy the benefits of shade and connection to nature that may not be possible in private spaces.

iii. Use landscaping to provide privacy and amenity between communal and private areas.

iv. Use communal areas for environmental opportunities such as urban agriculture, habitat biodiversity, improved water cycle and reducing stormwater runoff.

Photo 48: Elements such as playground facilities, seating, shade and amenity grassland can help to create vibrant communal open spaces that are used year-round.

Juers Community Focused Social Townhouses, Logan, Brisbane QLD. Architect – Refresh Studio for Architecture

Photo 49: Framing communal space with built form and private open spaces ensures that it is well-used and activated.

Toiora Cohousing, Dunedin NZ. Architect: Architype. Photograph: Andy Spain

Photo 50: A mix of planting, including community gardens, can help to soften the environment while providing activity and amenity for residents.

Dual occupancy in O'Connor, ACT. Architect: DNA Architects

DESIGN ELEMENT:

5.2 PRIVATE OPEN SPACE AND BALCONIES

Private open spaces and balconies connect people to the landscape and natural surroundings, offering significant benefits to enhance quality of life and personal well-being.

Private open spaces provide a personal retreat for relaxation, outdoor dining, and gardening, allowing individuals to enjoy fresh air and nature from the comfort of their homes. They offer a sense of privacy and ownership, contributing to mental health and stress reduction. Outdoor living is generally desirable, and can attract a diverse mix of residents and increase overall liveability.

DESIGN GUIDANCE

5.2A PRINCIPAL PRIVATE OPEN SPACE

i. Locate principal private open space and balconies adjacent to the living room, dining room or kitchen to extend the living space.

ii. Orient private open spaces and balconies north, east or west, where possible, to maximise solar access.

iii. Provide private open spaces that are proportional to the size of the dwelling and intended use.

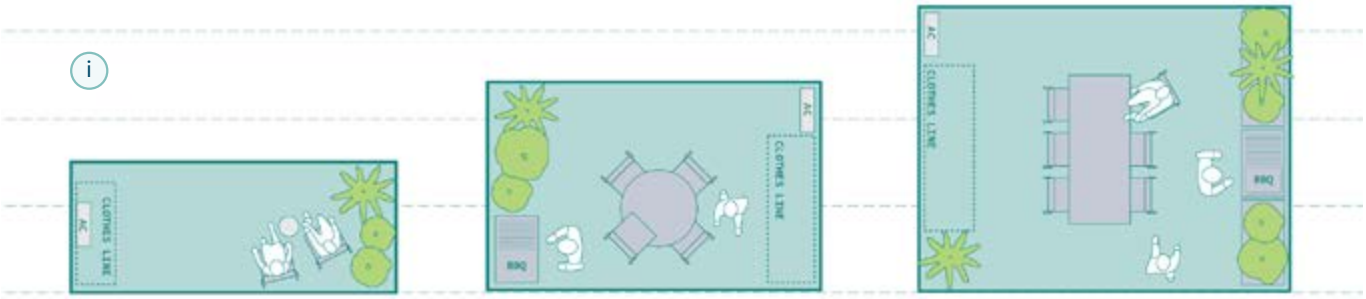
iv. Ensure that a reasonable portion of private open space is covered to offer protection from the elements.

v. Orient private open spaces and balconies so that their longer side runs along the building's façade or is open to the sky, optimising daylight access to adjacent rooms.

Additional guidance:

→ For more information, see 7.2A Solar access, shading and thermal performance of the Missing Middle Housing Design Guide.

Photo 51: Extending private open space from the kitchen and living areas in private internal open spaces allows fresh air, light and landscaping within the confines of the home.
Parkside Home, Melbourne VIC. Architect - Austin Maynard Architects. Photograph: Tess Kelly



Small: Studio and 1-bedroom dwellings should allow space for two people to sit comfortably.

Medium: 2-bedroom dwellings should allow for a 4-person table, BBQ, clothes drying area and planting.

Large: 3 + bedroom dwellings should allow for a 6-person table, lounge, BBQ, clothes drying area and planting.

Figure 68:Private open spaces should allow for a level of amenity proportionate to the size of the dwelling they are for.

Photo 52: Covered balconies can ensure a comfortable level of access to sunlight while limiting the exposure of open spaces to the elements and filtering privacy.

Malvern Apartments, Melbourne VIC. Architect: C. Kairouz Architects. Photograph: Emily Bartlett

Photo 53: Fencing, planted areas, gates and slightly elevated ground floor level helps to balance privacy and street activation.

Kingsborough Townhouses, ACT

5.2B PUBLIC REALM INTERFACE AND PASSIVE SURVEILLANCE

i. Maximise street activation and passive surveillance through the design of ground-floor dwellings (see 6.2D Ground Floor Edge Conditions).

ii. Design balconies to address and engage with the streets and the public space to contribute to the broader sense of activation and passive surveillance of public spaces.

iii. Create clear transitions between public and private open spaces through fencing, planting, paths and gates.

iv. Incorporate a slight change in level (e.g. step up or ramping) between the street and private front terraces to enable surveillance, while enhancing privacy for ground-level dwellings and maintaining accessibility.

v. Establish a street frontage setback that contributes to the intended character and amenity of the street or public open space.

vi. Provide semi-transparent fencing to courtyards and terraces that are within the front setback to allow for passive surveillance and engagement with the street.

vii. Front setback depths should consider the retention and support of healthy verge trees.

viii. Where possible, use front setback areas to incorporate deep soil planting zones that allow for large canopy, long-lived shade trees providing privacy for ground and upper floor residents and enhancing the street's green amenity.

ix. Provide a secondary open space for utilitarian uses, such as clothes drying, in dwellings where the front garden is the primary private open space to avoid cluttering the front garden to the street.

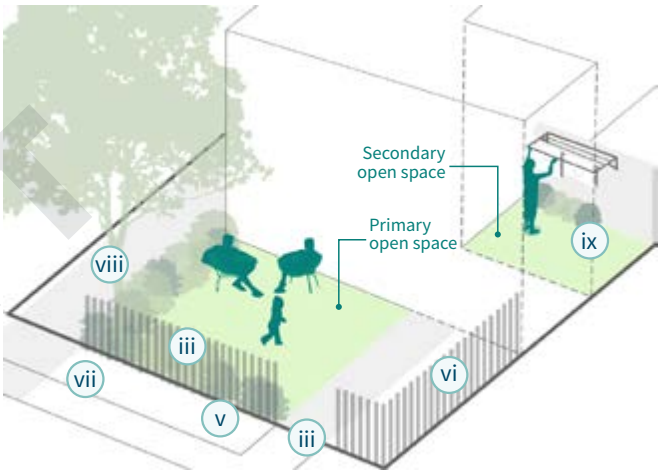


Figure 69: A secondary open space provides significant utility value while allowing for the full enjoyment of the primary front garden open space.

Figure 70: A range of fence heights between front, back, side and internal boundaries allow for a connection to the public realm and a strong sense of privacy for residents.

5.2C PRIVACY AND OUTLOOK

i. Elevate private open space such as terraces or balconies above street level to enable passive surveillance and connection to the street, without compromising privacy.

ii. Provide variation in size and position of private open space and balconies to minimise overlooking and create diverse dwelling design.

iii. Orient private open space to the street and rear garden to improve outlook and minimise the impact on neighbouring properties and avoid overlooking neighbouring private open spaces where possible.

iv. Position buildings to capture desirable views of natural features, such as lakes, peaks, ranges and landmarks to enhance residents' outlook and connection to the context.

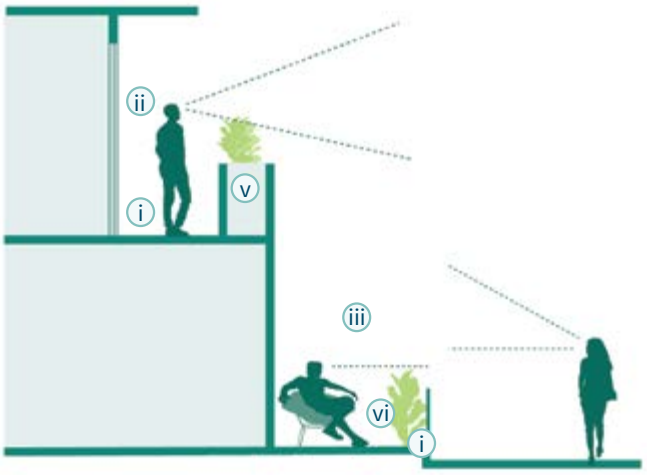
v. Consider incorporating planter boxes into balconies. Design to provide private planting and natural planted screening when possible.

vi. Use low height screening with visual permeability that balances privacy and passive surveillance towards front garden.

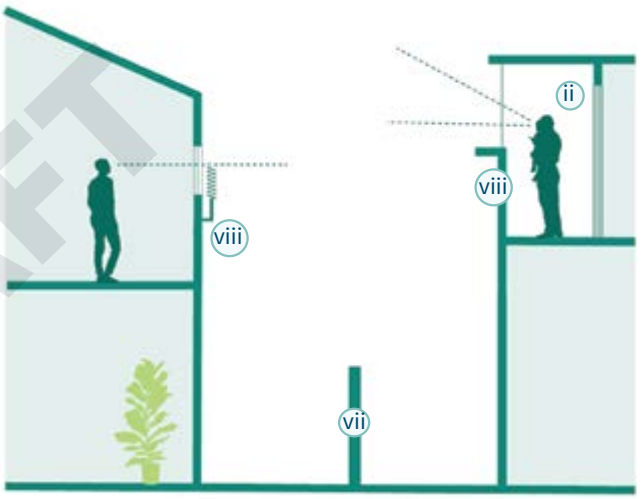
vii. Use rear fences to balance privacy and solar amenity between neighboring properties and within the development.

viii. Use architectural elements such as vertical screens, louvers, battens and opaque finishes on balcony balustrades improves privacy by redirecting or reducing views.

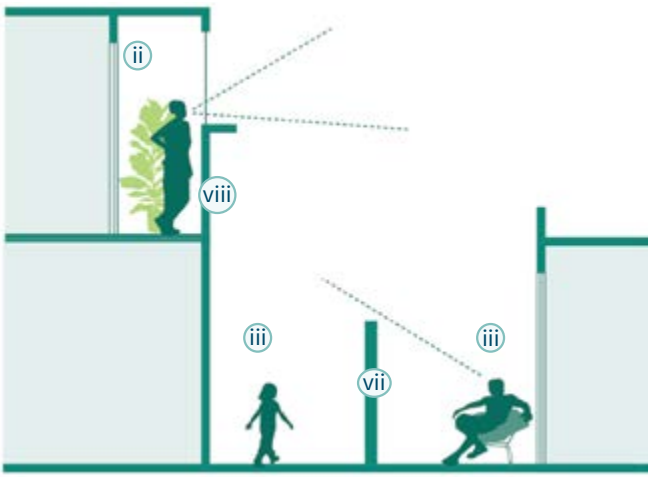
Photo 54: Planting can be highly effective at maintaining a level of privacy to dwellings facing communal areas. However, this needs to be balanced to maintain passive surveillance.
Grace, Dickson ACT. Architect: DNA Architects



Planting and landscaping are excellent natural privacy screens at the ground level and, where possible, on balconies.



Carefully locating private open space and balconies that are positioned differently to neighbouring dwellings will redirect views and reduce overlooking. If required, external architectural screens can be useful for additional privacy.



High rear fences must consider balancing privacy without overshadowing neighbouring or own private open space.

Figure 71: Intelligent planter box placement ensures that adjoining open spaces and balconies facing the public realm can retain an appropriate level of privacy.

Deakin Townhouses, ACT.
Architect: Stewart Architecture.

BUILT FORM AND BUILDING DESIGN

Design high quality housing to meet the needs of residents and catering for diversity in housing choice.

High-quality housing should be designed to meet the changing needs of residents, while catering for a diversity in housing choice, living arrangements, stages of life and working life. Higher density living increases amenity for residents by enhancing liveability and access to open space, transport opportunities and activity. Attractive and well-designed buildings bolster and strengthen a sense of community and ownership that has a positive impact on the broader streetscape and precinct.

DESIGN ELEMENTS

6.1 SCALE AND BUILDING FORM

6.1A Building heights and scale

6.1B Building visual form and appearance

6.2 ORIENTATION AND STREET INTERFACE

6.2A Setbacks and separation

6.2B Building entries

6.2C Building to street interface

6.2D Ground floor edge conditions

6.3 DIVERSE HOUSING CHOICE AND OCCUPANT AMENITY

6.3A Housing mix

6.3B Size, layout and construction costs

6.3C Housing accessibility

6.3D Ceiling heights

6.4 STORAGE

6.4A Within dwellings

6

Tarakan Street Social and Affordable Housing, Heidelberg West VIC

Architect: NH Architecture and Bird de la Coeur Architects

Photograph: Dianna Snape

DESIGN ELEMENT:

6.1 SCALE AND BUILDING FORM

The proposed use and scale of development should be appropriate to the local character and site context.

Through increasing housing densities, buildings should remain flexible and include high amenity spaces for residents and their changing needs. Building scale refers to the size and proportion of the buildings, while form pertains to the shape, structure and overall architectural expression. Maintaining a sense of place and ensuring that new developments integrate comfortably with the existing urban fabric is important to create street continuity and continuous experiences with consistent street patterns.

DESIGN GUIDANCE

6.1A BUILDING HEIGHT AND SCALE

i. Ensure scale responds to the existing context and desired character of the street and locality, including natural landforms and existing built form.

ii. Respect the rhythm of the streetscape through built form scale and texture by referencing datums, floor-to-floor heights, setbacks and massing of adjacent built form outcomes.

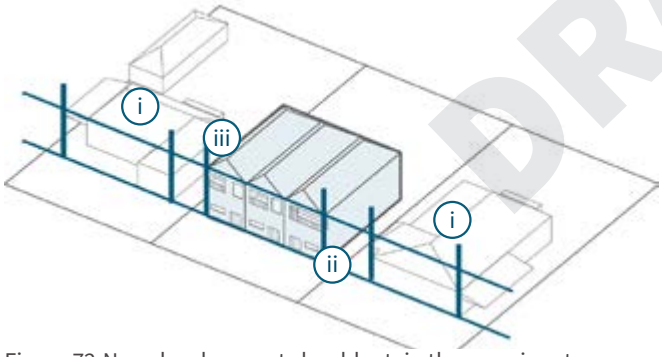


Figure 72: New development should retain the prominent building form and rhythm in the street with regards to height, levels and setbacks to ensure new development responds and fits within the local context.

iii. Consider enhancing articulation by breaking the building down to help blend larger new developments into any existing finer grain streetscapes. This can be achieved using recesses, stepping back, changes to materials and texture, to break down the apparent scale of new development.

iv. Consider the size and placement of windows and glazing that allows for adequate daylight and solar access for dwellings, neighbouring dwellings and open spaces (public or private), while capturing key views from dwellings and common spaces.

v. Consider and respect neighbour's privacy to avoid overlooking with appropriate building height, setbacks and siting.

vi. Accommodate all building programs including rooftop communal space, lift overrun, plant and articulated roof forms within the permissible building height limit outlined in the residential zoning specification.

vii. Consider using attic and roof spaces as an affordable opportunity to maximise usable space, providing options for additional living areas, storage, or functional lofts

Additional guidance:

→ For more information, see 3.4 Building Envelope of the Missing Middle Housing Design Guide.

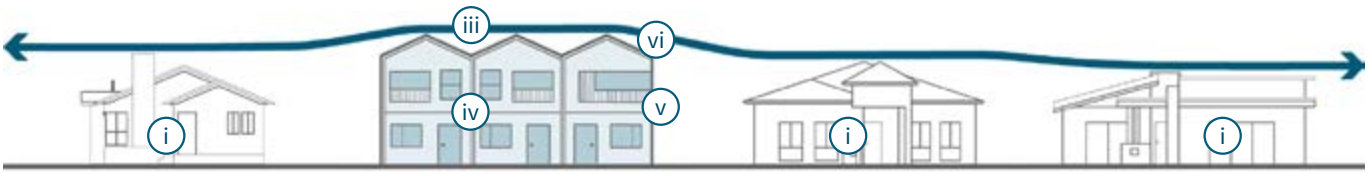


Figure 73: New development can propose an increased height while retaining the prominent building form and rhythm .

6.1B BUILDING FORM AND VISUAL APPEARANCE

Form and roof design

i. Design roof forms that are simple, uncluttered and visually appealing, that integrate well into the building design and respond positively to the streetscape.

ii. Design roof lines to allow for natural light entry through skylights or dormer windows without compromising energy efficiency.

iii. Define the top of the building by setting back upper levels behind the front building façade or expressing the shadow of an overhanging roof. A different treatment here also provides interest and variation.

iv. Select roof profiles that reduce the perceived mass of the buildings.

v. Utilise repeated patterns and rhythms in major building elements such as roof forms, material variations and rebates or projections in the façade line to create visual interest and reduce overall built form bulk and scale.

vi. Incorporate appropriate insulation and ventilation to improve thermal performance, particularly given Canberra's seasonal temperature extremes.

vii. Select roof materials and finishings, such as matte or low-sheen coatings in muted colours, with textured profiles to reduce glare.

Photo 55: Simple pitched roof forms provide visual interest and reduce the perceived mass of the dwellings.
The Bradfield, Downer ACT. Architect: AMC Architecture

Photo 56: Simple saddle roof form. The skylights indicate a usable attic space in the roof..
Turner Townhouses, ACT. Architect: Tzannes Architect

Photo 57:Repeated patterns and rhythms reflected in the built form and materials used reduce dwelling bulk and scale.
Nest Townhouses, Lawson, ACT. Architect: Stewart Architecture

Photo 58:Articulation in roof form at the second floor. The upper level setback and modulation in form reduce the visual bulk of the third floor.
Merri Green, Northcote VIC. Architect: Chamberlain Architects and Interiors

Materials, textures and finishings

i. Consider the immediate context and built form when selecting materials to add to the identity and local character of the place. This can be achieved by referencing local materials, colours and/or finishes.

ii. Provide variations in materials, colours and key elements, such as doors, windows and balconies, to provide scale, proportion and articulation which responds to the local character of the area.

iii. Choose robust, durable and low maintenance materials to ensure longevity of the finish, reduce ongoing maintenance costs and provide a high-quality design outcome.

iv. Use colour to provide accent and texture changes for visual interest of the building.

v. Use double glazing or high-performance laminated glass to improve thermal performance of the building envelope without compromising outlook and access to natural light.

Photo 59: The use of simple materials such as brick and details such as black finishes and trimmings creates visual interest.
Merri Green, Northcote VIC. Architect: Chamberlain Architects & Interiors.

Photo 60: The excessive use of materials of a similar colour does not provide a quality visual outcome. Instead, the facade is too busy and dominates the streetscape.

Photo 61: The contrast of timber and white brick helps to differentiate the levels of the building and is consistent with the use of setbacks and articulation.
Arnold Street Townhouses, Brunswick East, VIC.

Photo 62: The excessive use of materials and a lack of clear setbacks and articulation fail to successfully define the building.

viii. Building façade and articulation

i. Provide building depth to optimise cross-ventilation, daylight access, building separation, landscaping and views. For more information, see 7.2B Natural cross ventilation of the Missing Middle Housing Design Guide.

ii. Consider the aesthetic balance, proportions, shadow play, glazing ratio and facade depths to create a harmonious facade expression.

iii. Articulate street walls and podiums on long, wide street frontages to create finer-grain massing and modulation of the built form.

iv. Integrate or screen services and utilities so as not to dominate the façade design or roof silhouette. Ensure adequate air flow is maintained to services.

v. Articulate built form to respond to and indicate important building elements such as pedestrian entries and corners.

vi. Consider locating balconies and common circulation on frontages that can activate the streetscape.

vii. Establish and maintain horizontal and vertical datum lines in elements such as glazing and door set-outs, façade articulations and material patterning.

Photo 63: The contrast of materials provides a clean facade that helps define the building massing.
Hawthorne Siblings, QLD. Architect: Refresh Studio for Architecture.
Photograph: Scott Burrows

Photo 64: The excessive use of upper level setbacks and a single material makes the facade appear messy from the street.

Photo 65: The contrast of brick, glazing and metal is considered with regards to the massing and street interface.
Nest Townhouses, Lawson ACT. Architects: Stewart Architecture.

Photo 66: No windows provided in the facade which is mainly taken up by the garage door. Allowing no passive surveillance and street activation.

DESIGN ELEMENT:

6.2 ORIENTATION AND STREET INTERFACE

The orientation of a site or building, it's length of street frontage, shape and size all determine the layout of a development.

Houses should engage with the street through architectural elements, balconies and building openings to create an active and vibrant street edge. A well-designed street interface enhances the urban experience by promoting walkability, safety and social interactions for the broader community as well as enabling a connection to the surrounding community.

DESIGN GUIDANCE

6.2A SETBACKS AND SEPARATION

Front and street setbacks

i. Ensure that the new building front and street setbacks respect the existing urban pattern, adjacent buildings, desired streetscape and neighbourhood character and make efficient use of the site.

ii. Front setbacks should maintain relative consistency where it positively contributes to the streetscape.

iii. On streets with large predominant front setbacks, articulate new buildings' front setback to create a harmonious transition with adjacent buildings, using techniques such as stepped setbacks, articulated facades, and landscaping.

iv. Ensure side and rear setbacks are suitably designed to provide access for maintenance of easements.

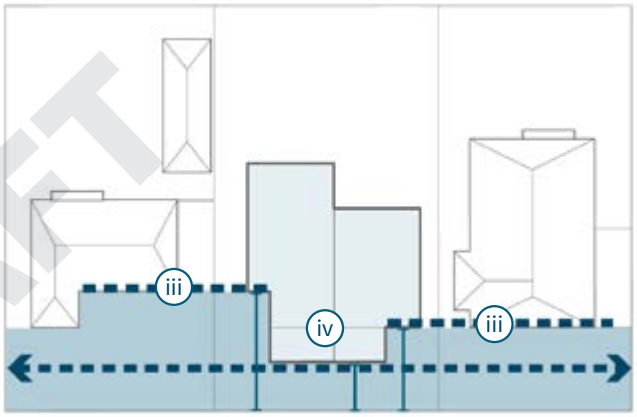


Figure 74:Where neighbouring sites have different setbacks from each other, development should be offset to allow for a good relationship to both.

Additional guidance:

→ For more information on the building envelope see 3.4A Height and Transition of the Missing Middle Housing Design Guide.

→ For more information on maximising solar access and daylight in setback areas, see 7.2A Solar access, shading and thermal performance of the Missing Middle Housing Design Guide.

Figure 75: Missing middle development integrating into and becoming part of the streetscape.

Side setbacks

i. Upper floor built form should be setback from the side boundary of adjacent neighbouring properties.

ii. Incorporate smaller courtyards, light wells and steps in building lines along the side setback to improve solar access and daylight amenity into the building.

iii. Use side setback zones to create courtyards for utility facilities such as water storage tanks, AC units and clothes drying.

iv. Side setbacks zones can be used for planting and smaller gardens that can improve the amenity and outlook from interior rooms.

v. Use side setbacks to provide access for maintenance of easements.

Rear setbacks

i. Both ground floor and upper level built form should be setback from the rear boundary towards neighbouring properties.

ii. Provide large consolidated garden areas and planted zones in the rear setback area including large canopy trees where possible.

iii. The visual and spatial amenity of rear setback areas should be high quality as this can be the primary outlook for residents facing away from the street.

iv. The rear setback can be a good location for communal garden areas for all residents in any multi-dwelling development.

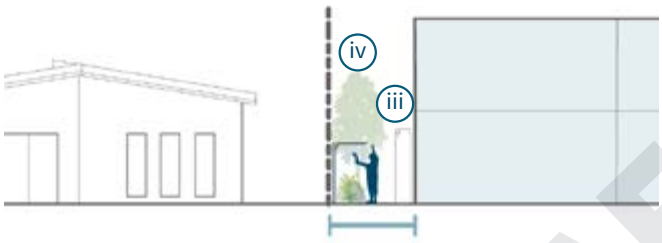


Figure 76: Side setback: Courtyards in the side setback can be used for utilities, light courts and provide access to easement where required.

Figure 77: Rear setback: Rear setback zone to be used for larger consolidated garden areas and planted zones.

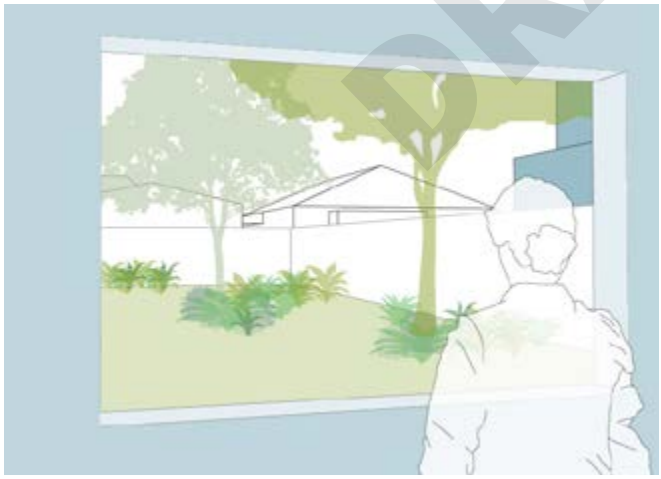


Figure 78: Visualisation showing anticipated built form massing to a side neighbour as viewed from an existing rear window.

Figure 79: Visualisation showing anticipated future built form massing to rear neighbours as viewed from an existing rear window.

Building separation

i. Building separation between dwellings within a site should consider privacy, solar access and uses of rooms within the dwelling.

ii. Where appropriate and possible, building separation and setbacks may need to be increased to maximise solar access, avoid unreasonable overshadowing of private open space and overlooking of neighbouring properties.

iii. Where sufficient separation between dwellings as demonstrated below cannot be achieved, additional privacy mitigating devices such as deep window reveals, louvres, fences or dense planting should be considered. Alternatively, consider offsetting window locations between neighbouring buildings to avoid direct sight lines into primary or private living spaces.

iv. Building separation distances should ensure solar access and views to the sky.

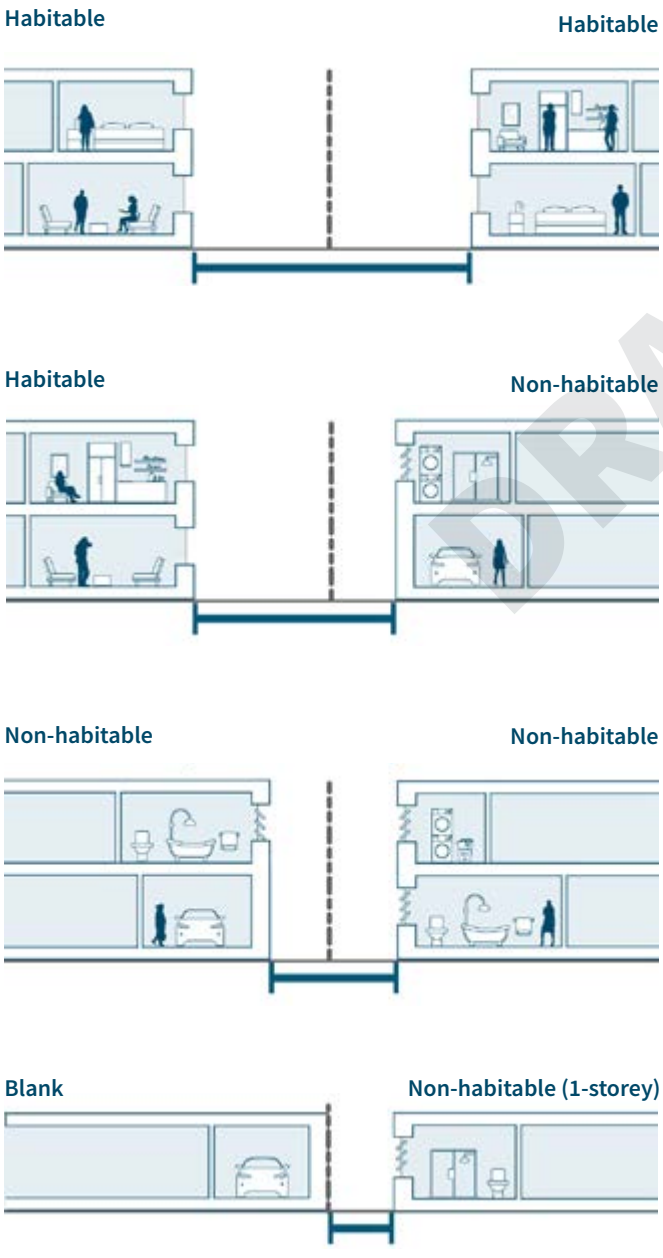


Figure 80: Indicative building separation distances between habitable and non-habitable rooms at single and multi-storeys.

Tip:
The greatest separation between dwellings should be proportional to the internal uses. In particular, habitable rooms require the largest building separation compared to non-habitable rooms.

Habitable rooms refer to spaces used as living rooms and primary bedrooms.

Non-habitable rooms refer to spaces used as bathrooms, laundry and garages.

Additional guidance:

→ For more information, see 5.2C Privacy and outlook of the Missing Middle Housing Design Guide.

6.2B BUILDING ENTRIES

i. Locate and design entrances to create building identity, distinguish between individual residences, and create visual interest for pedestrians.

ii. Consider the use of architectural detail and landscape treatment to emphasise primary entrances and to provide punctuation in the overall streetscape treatment.

iii. Provide clearly identifiable building entries to the street and communal spaces with architectural treatment of awnings for weather protection and defining private vs public realm.

iv. Provide a clear sense of address through clearly defined building entries, including at least one step free entrance, that are easily visible and identifiable from the street.

v. Have clearly defined and separate access for both pedestrians and vehicles to prioritise pedestrians and safety within the site.

vi. Provide visual connections from the street into ground floor so entries are safe, comfortable and user friendly.

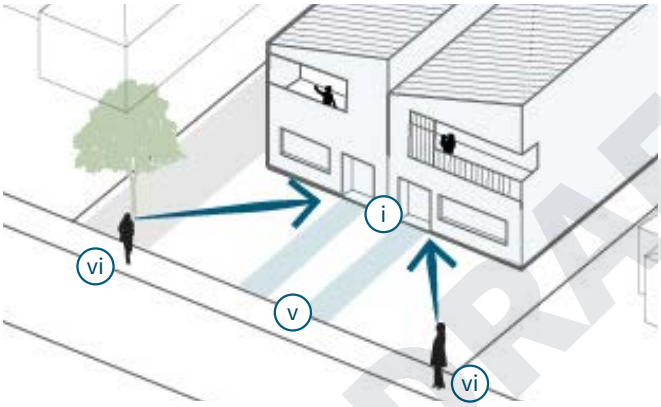


Figure 81: Main doors should be visible from the street, provide direct access from the public realm and contribute to street activation.

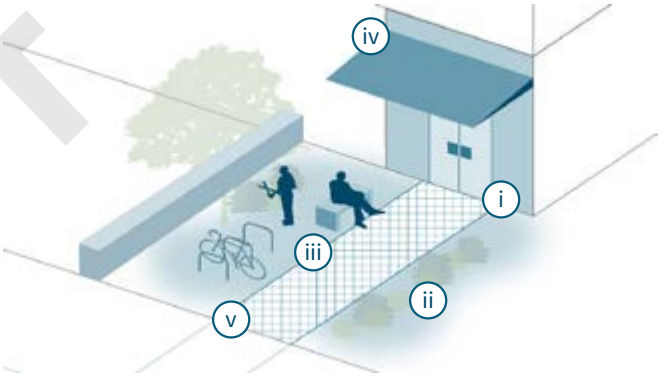


Figure 82: Apartment entrances should provide articulation, landscaping and amenity, ensuring a welcoming experience for residents and visitors.

Exemplar:
The dwelling maintains a strong building identity with a planted fence creating visual interest and clearly defined separation to the public realm.

Turner Townhouses, Turner ACT

Architect: de Rome Architects

6.2C BUILDING TO STREET INTERFACE

i. Detail ground floor setbacks with high-quality materials and urban furniture to create visual interest and positively contribute to the public space.

ii. Ensure new front setbacks maintain and enhance existing patterns of landscaping within the street. This can include landscape in the front yard and landscape between properties.

iii. Use front setback areas to incorporate deep soil planting zones that allows for large, long-lived shade trees that provide privacy for ground floor residents and contribute to the green amenity of the street.

iv. Consider secondary upper-level building setbacks and separation to reinforce the desired streetscape and building scale for the public space.

v. Maximise street activation and passive surveillance through active street frontages and the design of ground floor dwellings.

vi. Create permeable edges at the ground level to improve passive surveillance of the streets and public areas while creating a more inviting and activated frontage.

vii. Provide a legible transition from public space to private spaces.

viii. Include public amenity, landscaping and active uses on street frontages to animate street life and soften interface with new development.

ix. Consider the use of architectural detail and landscape treatment to emphasise primary entrances and to provide punctuation in the overall streetscape treatment. This is especially important for internal driveways and entrances to residential units.

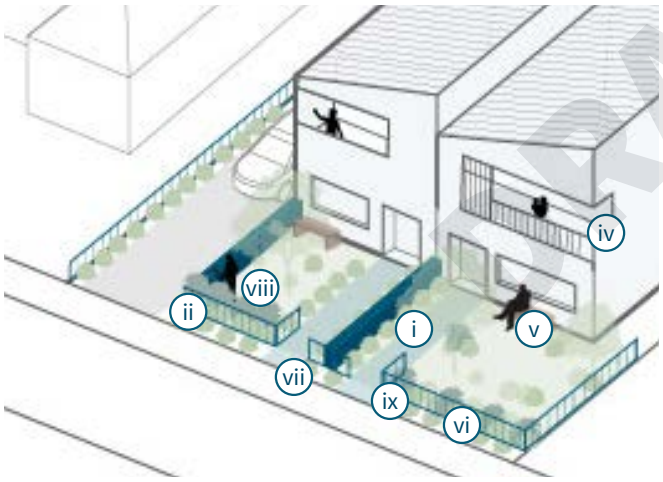


Figure 83:Front garden interface with driveway

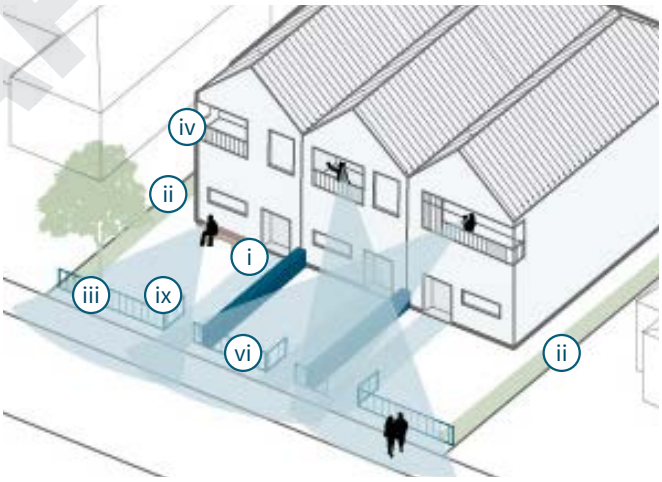


Figure 84:Passive surveillance

Photo 67:A building to open space creating a highly legible transition where the street is surveilled while residential privacy is maintained.

Tarakan Street Social and Affordable Housing, Heidelberg West VIC. Architect: NH Architecture and Bird de la Coeur Architects. Photograph: Dianna Snape

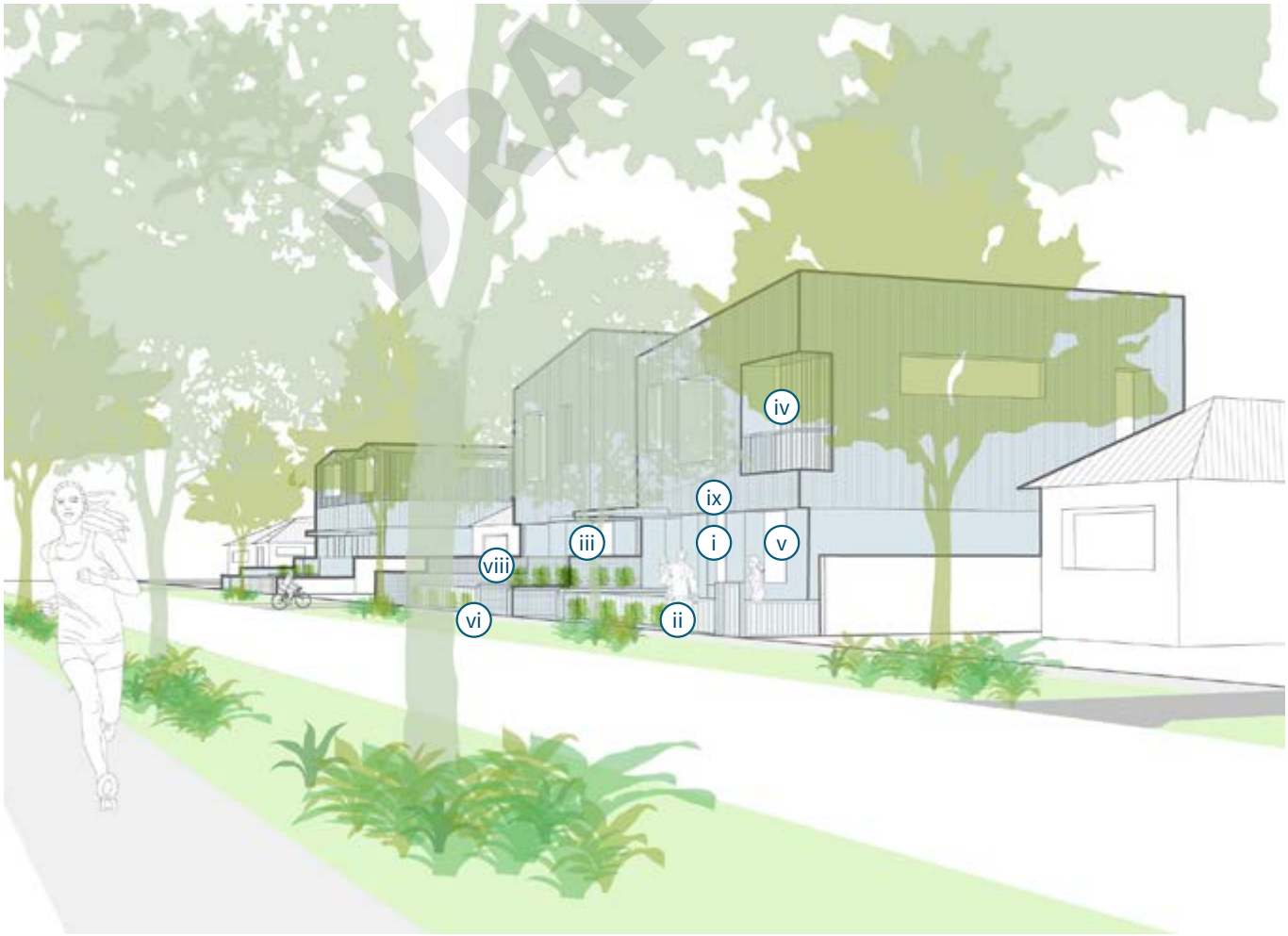


Figure 85: A typical Canberra street that has seen the development of missing middle housing. Providing a balance between passive surveillance onto the street and privacy into the dwelling contributes to a positive public realm. Consider how to layer the front garden to improve legibility and create a more activated frontage to the street.

6.2D GROUND FLOOR EDGE CONDITIONS

Primary street frontages

i. Provide at-grade front-facing courtyard/garden in building front setback with planting to balance passive surveillance of the street,and privacy of the ground floor residences.

ii. Incorporate deep planting zones 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. Use low height screening with more permeability on front-facing courtyards and balcony balustrades.

iv. Additional elements such as verandas, awnings and columns can provide additional and subtle privacy.

v. Prevent extensively large front setbacks that lose the connection between dwelling and street.

i. For ground floor residential units facing an internal laneway or driveway, provide narrow front-facing courtyards, 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. Provide landscaping closer to the street to ensure that deep soil planting zones are achievable.

iv. Use higher window sills and glazing to enable outlook while retaining good levels of privacy.

v. Provide a narrow planted zone along building façade to allow for screening plants to filter privacy and buffer connection between driveway/path and interior of the dwelling.

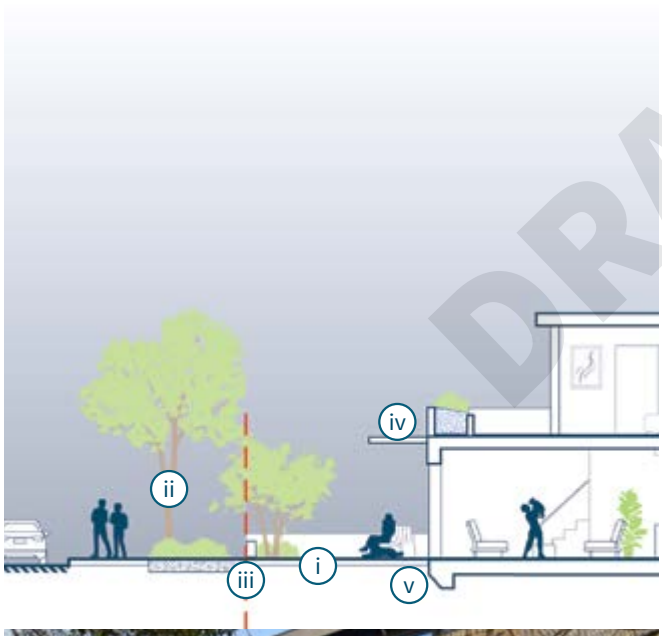


Photo 68: Front garden setback with veranda and planted garden area improve privacy and avoid overlooking from the street.

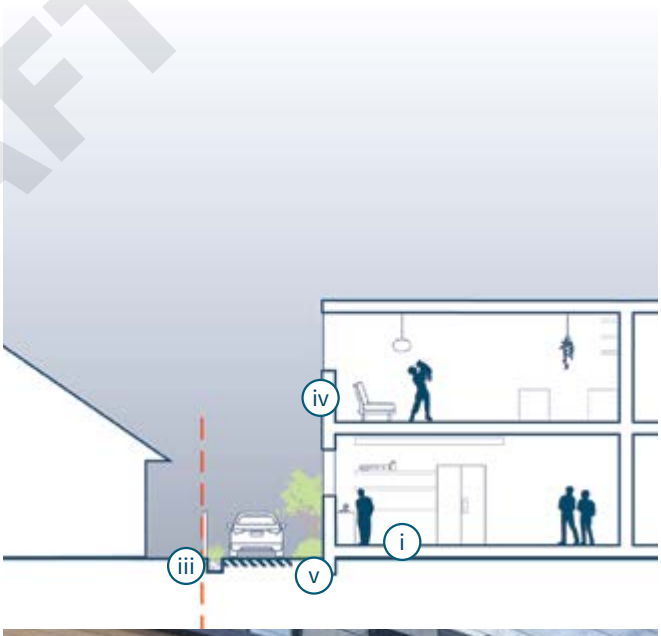


Photo 69: Narrow front setback with planted area in front of glazed windows and high window sills to mitigate privacy risk on ground floor level.

Public open space

i. Provide planted garden area along public open spaces to provide activation, passive surveillance and the grading of slopes to and from public and private space interfaces.

ii. Provide planted areas in front of the garden fence towards the public open space to soften the transition of built form and green open space.

iii. Connect habitable rooms to the open space-facing garden to ensure activity, passive surveillance to the open space.

iv. Consider raising the ground floor level facing the public open space to mitigate privacy risk and overlooking into private open spaces. Ensure level changes remain accessible for people with special mobility needs.

Private courtyard

i. Consider using taller fences around private courtyards that are half permeable to balance privacy and allow airflow. Consider providing additional privacy at the base of fences through planting.

ii. Floor to ceiling height glass doors and windows are appropriate to private courtyard spaces where overlooking from other properties is not an issue.

iii. Private courtyards should provide deep soil planting zones for tree planting where possible. Provide raised planters where deep soil areas are not possible.

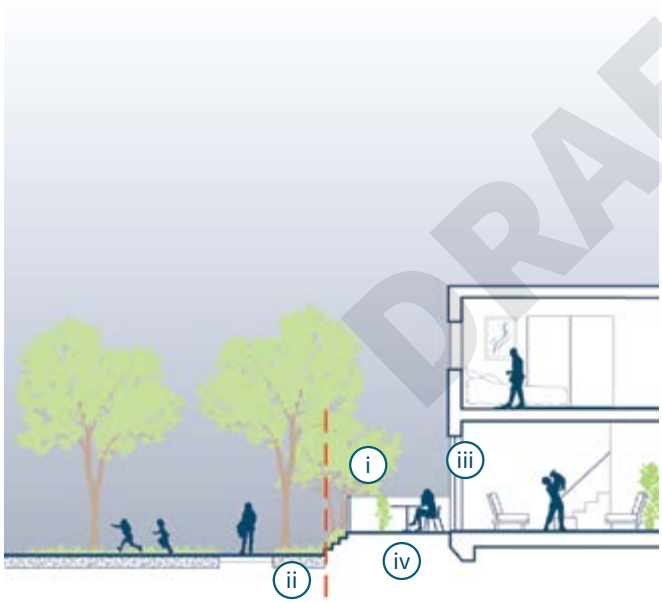


Photo 70: Raised front setback entry to public open space with planting in front of the fence minimises overlooking into private spaces.

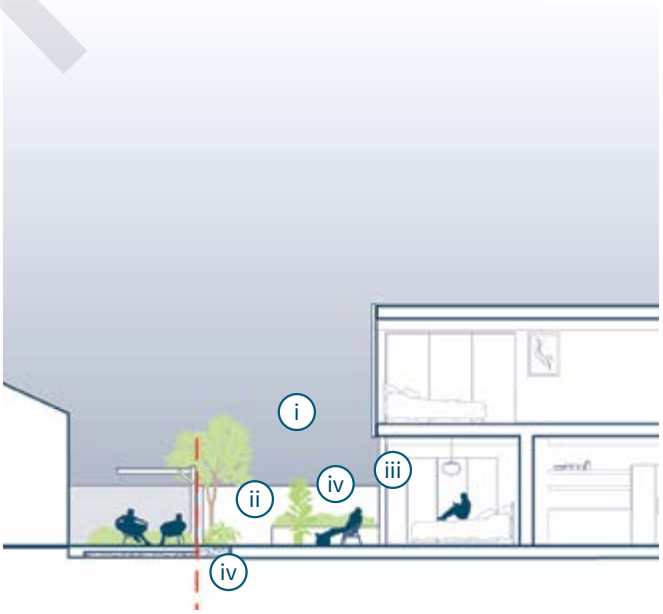


Photo 71: When private courtyards are located along the side or rear of the dwelling, higher fencing can improve privacy and allow for floor to ceiling operable doors.

Habitat on Terrace, Toowong, Brisbane QLD. Architect: Refresh Studio for Architecture. Photograph: Christopher Frederick Jones

DESIGN ELEMENT:

6.3 DIVERSE HOUSING CHOICE AND OCCUPANT AMENITY

A range of sizes and types of housing encourages mixed neighbourhoods and diverse living opportunities that consider social and affordable demand and the needs of different life stages and socioeconomic groups.

Providing diverse housing choice is paramount to fostering inclusive, resilient and vibrant communities. Balancing community needs with appropriate housing options is essential in creating communities that are socially and economically balanced, where individuals and families can find suitable and affordable homes at different stages of their lives. A mix of housing typologies will enhance social cohesion and foster a sense of community.

DESIGN GUIDANCE

6.3A HOUSING MIX

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

ii. Include dual occupancy and/or attached housing for developments in a low-density context. These developments can be designed to mediate between low-density detached housing and medium-density apartment buildings.

iii. Use different types of housing to create articulation and a mixture of scale in building forms. Use the spaces between different buildings or housing types to provide private or communal open space and landscape areas.

iv. Design for flexible configurations to support diverse household types and stages of life including single person households, families, multi-generational families and group households.

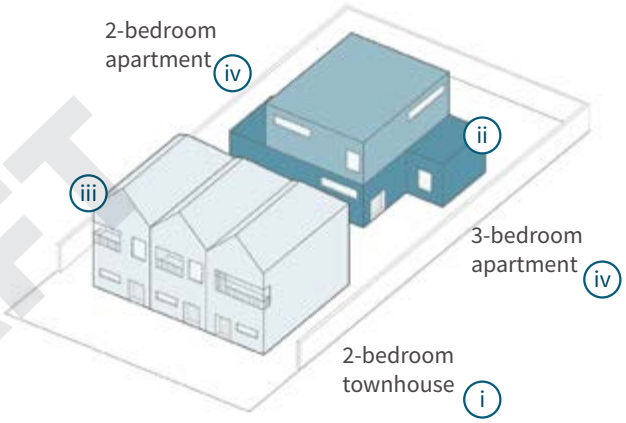


Figure 86: Developments should provide an appropriate mix of typologies and dwelling sizes to support a diverse range of households.

Additional guidance:

→ For information on the different housing typologies, see 3.4 Typologies of the Missing Middle Housing Design Guide.

Exemplar:

Cohaus is a modern co-living community comprising diverse living options including a two-storey terrace building and three-storey apartment building centred around a communal shared courtyard.

Cohaus, NZ. Architect: Studio Nord. Photograph: Adam Luxton

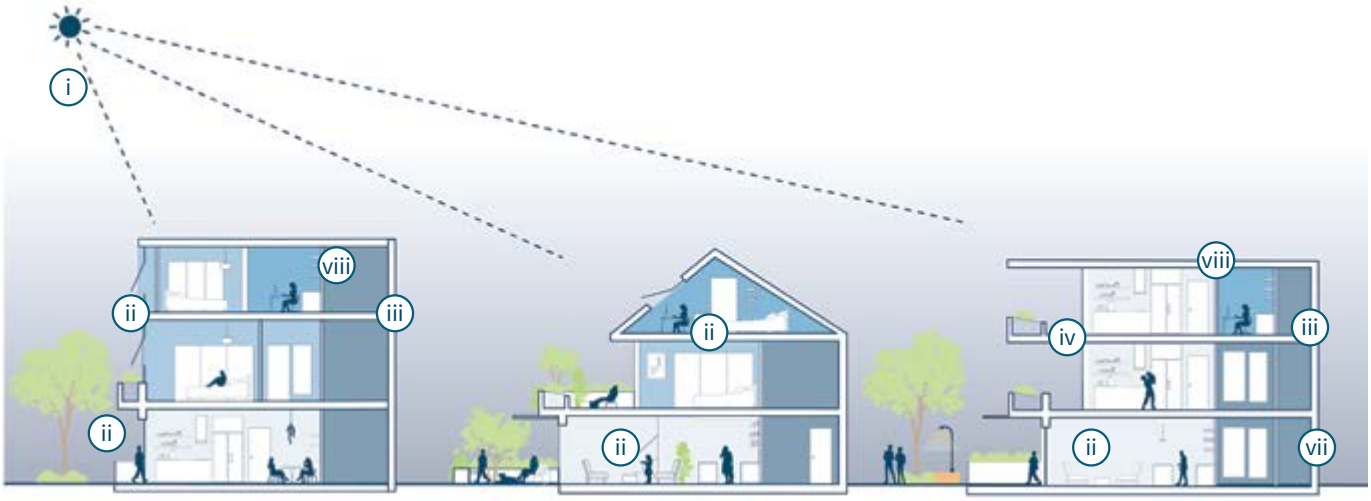


Figure 87: Varying internal sizes and layouts across different missing middle housing typologies designed to cater to the needs of all residents as in 6.3B Size and layout below.

6.3B SIZE, LAYOUT AND CONSTRUCTION COSTS

i. Prioritise north-facing dwellings and actively minimise south-facing dwellings.

ii. Locate all living areas and bedrooms on the external perimeter of the building. (Also see 7.2D)

iii. Minimise and combine circulation space with study nooks and storage areas to efficiently use internal spaces.

iv. Design flexible interiors that can accommodate changing household needs, such as spaces that transition between living, working, and sleeping areas.

v. Utilise roof space as an attic, ancillary to the floor below that provides an additional flexible space.

vi. Include provisions for future modifications, such as non-load bearing walls or convertible layouts, to adapt to residents' evolving lifestyles

vii. Consider innovative options which allows garaging to provide additional high-quality living space where residents do not require car ownership.

viii. Consider strategies for reducing construction costs such as efficient design, cost-effective materials and minimising the size of dwellings, and modern methods of construction.

Additional guidance: Low-rise apartments

ix. Include a range of dwellings sizes in all new apartment buildings, ranging from studio apartments to larger family homes, to encourage a diverse mix of residents.

x. Design floor plates so dwelling types are mixed throughout the apartment development. This will mean dwelling types can also enjoy the best outlook and view while some larger apartments can be more affordable due to a less premium location.

xi. Prioritise larger apartments on the ground floor or roof level where there is the potential for more open space.

Additional guidance: Family-sized apartments

xii. Consider locating family-sizes apartments adjacent to potential shared open space and play space.

xiii. Consider grouping family-friendly dwellings together to encourage social interaction and sense of community between families and children.

xiv. Provide bedrooms that allow for a range of configurations including bunk beds, space for study desks and play space.

xv. Consider additional storage spaces within the dwelling for storing larger items such as prams, scooters and toys. Provide the opportunity to convert storage areas to a study in the future.

xvi. Provide for generous floor space in living areas for play activities.

xvii. Consider generous circulation areas to facilitate residents social interaction.

Related planning strategies and tools:

→ LHA Liveable Housing Design Guidelines

→ NSW Healthy Higher Density Living for Families with Children

→ National Construction Code

6.3C HOUSING ACCESSIBILITY

i. Design new developments to be accessible to people of all ages and abilities, to promote inclusivity and attract more diverse residents.

ii. Apply Liveable Housing Australia (LHA) Universal Design principles to a LHA Silver standard in 100% of dwellings.

iii. Provide generous clearances in corridors, kitchens, laundries and bathrooms and make provision for grab rails and stair adaptation to ensure varying levels of accessibility.

Tip: Liveable Housing Australia (LHA) provides detailed guidance on accessibility standards for new housing. In the ACT, the LHA Silver level is a recognised benchmark for new dwellings. Incorporating age-friendly and dementia-friendly design features can support residents with physical or cognitive impairments, enabling ageing in place and enhancing quality of life while avoiding premature admission to residential aged care. .

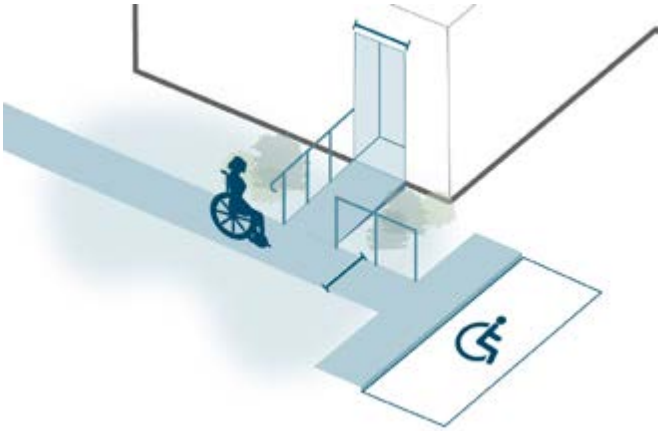


Figure 88: Universal design includes the use of grab rails, ramps and flat entrances to dwellings and communal facilities and access to amenities and accessible carparks.

Related planning strategies and tools:

→ Municipal Infrastructure Design Standards (MIS)

6.3D CEILING HEIGHTS

i. Design ceiling heights to have good access to daylight and natural cross ventilation.

ii. In lower-level apartments, consider greater height than the required minimum to allow for better access to daylight and natural cross ventilation.

iii. Design ceiling heights to allow for sufficient daylight penetration into the room. Where room depth exceeds ceiling height by 2.5 times, increases in ceiling height and window height can increase daylight access.

iv. Allow for ceiling heights that are proportional to room size. Smaller rooms can feel more spacious with higher ceilings.

v. Provide sufficient ceiling heights that create high quality spatial experiences and enable flexibility of use.

vi. Where reductions in ceiling heights are required to accommodate services such as drainage and mechanical ventilation, ensure steps are localised and relate to internal planning considerations.

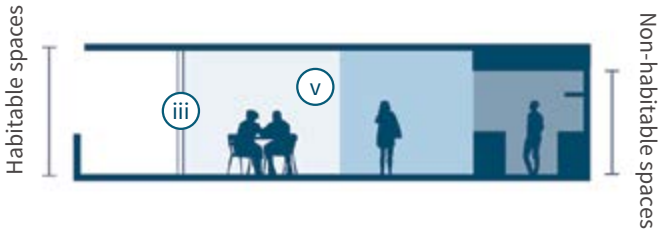


Figure 89: Determine ceiling heights in consideration of the depth and function of the space

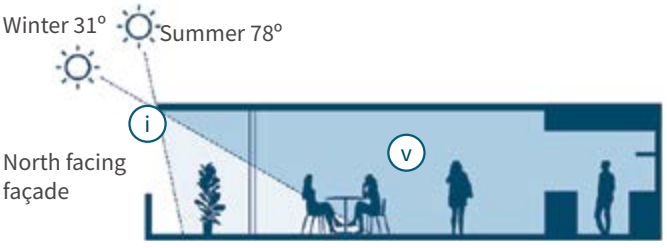


Figure 90: Design apartments with appropriate ceiling heights to ensure good access to daylight

Why this is important:

Higher ceilings can indirectly improve airflow, allowing hot air to rise and enhancing thermal comfort. Ceiling height impacts on ventilation and plays a supporting role.

Additional guidance:

→ For information on the different housing typologies, see 7.2 Natural cross ventilation of the Missing Middle Housing Design Guide.

Tip:

Utilise the opportunity to include higher ceilings in key spaces throughout the dwelling. This will increase the feeling of generosity in the space and increase the daylight.

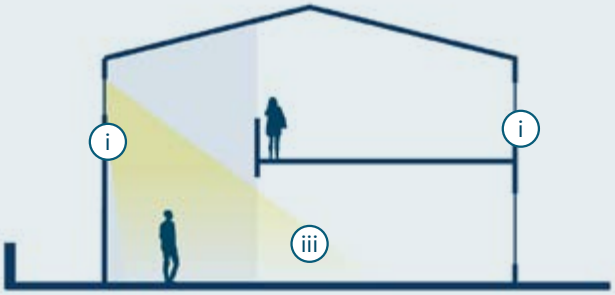


Figure 91: High placement of windows in double-height spaces can provide daylight deep into the building, and provide outlook from the upper level but privacy at the lower level.

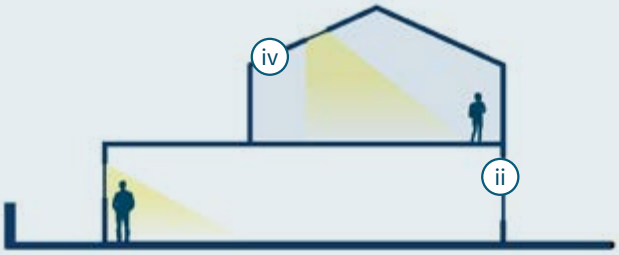


Figure 92: Skylight in cathedral ceilings can provide good daylight conditions when outlook from upper levels is compromised.

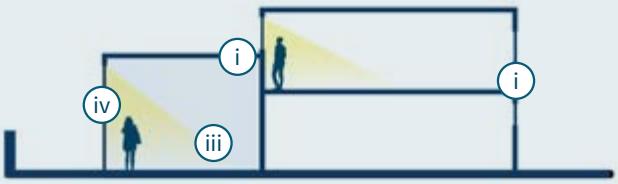


Figure 93: Introducing floor-to-ceiling windows with an increased ceiling height to the living space can provide daylight deep into the building while retaining outlook from upper levels.

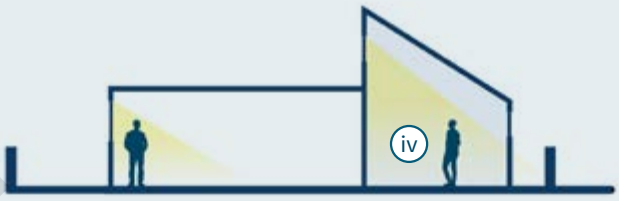


Figure 94: Raked ceilings with windows can provide spaciousness, daylight and sky views in spaces with confined outlook.

Exemplar: You can draw additional daylight into a space with a saw-tooth roof.

Terracotta House, Melbourne VIC. Architect: Austin Maynard Architects. Photograph: Derek Swalwell

Exemplar: You can increase the spaciousness of a dwelling from a double-height ceiling to the living room and the opportunity for a mezzanine level.

Hope Street Housing, White Gum Valley, WA. Architect: OWA Architects and MDC Architects. Photo: Robert Frith

DESIGN ELEMENT:

6.4 STORAGE

It is important to provide adequate and generous storage to maximise usability of living spaces in higher density living environments.

Storage should be provided proportionately to the size of the dwelling and should be for both small and large items. Storage should be provided both internally within the dwellings, as well as externally within the garage or common car parking areas for multi-unit dwellings. Storage provides convenience and allows residents to live more comfortably.

DESIGN GUIDANCE

6.4A WITHIN DWELLINGS

i. Provide wardrobes, linen and broom cupboards as essential elements of liveable housing at practical sizes for all dwelling types.

ii. Provide appropriate storage for household goods in kitchens and laundries.

iii. Use the height of rooms for elevated storage above wardrobes for such things as blankets, suitcases and seasonal items. This minimises floor area impact of practical storage.

iv. Consider at least 50% of dedicated storage space to be located within the dwelling, accessed from either circulation or living areas.

v. Any storage located on balconies, or in courtyards / rear gardens, is additional to the minimum private open space and should be integrated into the design of the building, be weather-proof and screened from the street.

Why this is important:
Convenient storage is often one of the main challenges to overcome in the perceived desirability of apartment living. Adequate storage for activity-based equipment such as bicycles, golf clubs or kayaks encourages active lifestyles and improves resident wellbeing .

Additional guidance:

→ For information on storage outside the dwelling, see 4.3C External storage and bulky items of the Missing Middle Housing Design Guide.

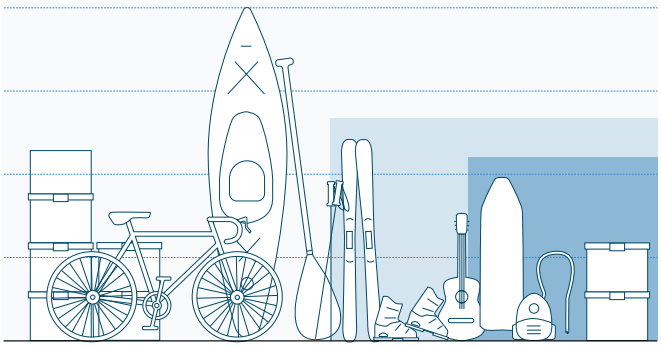


Figure 95: Suitable storage should be provided to meet the needs of residents and increase to reflect the size of the apartment.

Anne Street Garden Villas, Southport QLD
Architect: Anna O'Gorman Architects
Photograph: Christopher Frederick Jones

SUSTAINABILITY AND ENVIRONMENT

Create healthy and sustainable communities that are resilient, adaptable and minimise resource consumption.

Existing and new development should be designed to respond to Canberra's climate and integrate sustainable building technologies. Buildings should be designed for a long lifespan to spread their embodied energy over a longer time, and be adaptable, consume less energy, produce less waste and manage water responsibly. Modernising and re-purposing existing assets to achieve better environmental outcomes should be a priority.

DESIGN ELEMENTS

7.1 TREES, LANDSCAPING AND NATURAL FEATURES

7.1A Planting areas

7.1B Tree planting and tree canopy

7.1C Plant selection

7.1D Integrated green infrastructure

7.1E Reduced hardstand

7.2 BUILDING DESIGN PERFORMANCE

7.2A Solar access, shading and thermal performance

7.2B Natural cross ventilation

7.2C Noise and acoustic comfort

7.2D Air tightness of building envelope

7.2E Embodied carbon

7.3 NATURAL RESOURCE CAPTURE AND MANAGEMENT

7.3A Water sensitive urban design

7.3B Electrification

7.4 CLIMATE CHANGE RESILIENCE

7.4A Flood resilience

7.4B Urban heat island

7.4C Robust, low maintenance materials and planting

7

St Georges Grove, Parkville VIC
Architect: Fieldwork
Photograph: Peter Clarke

DESIGN ELEMENT:

7.1 TREES, LANDSCAPING AND NATURAL FEATURES

Reduce the impact of urban heat island effects, maintain ecosystem health and minimise stormwater runoff by providing sufficient planting areas and large canopy trees.

Deep soil planting zones and canopy cover support healthy tree growth, enhance urban greenery and provide essential shade, reducing urban heat island effects and improving comfort and energy usage. Selecting climate-specific plant species that thrive in Canberra conditions creates resilient and water-sensitive gardens. The integration of landscaping will foster healthier, more resilient urban communities, contribute to resident's well-being, and create a more sustainable community.

DESIGN GUIDANCE

7.1A PLANTING AREAS

i. Planting areas must be free of structures such as retaining walls, vehicle parking or manoeuvring areas.

ii. Create consolidated garden areas where possible, to maximise amenity benefits and ecological health.

iii. Provide additional planting areas in side yards, along building frontages, and between car parking and structures to provide visual relief from hard surfaces across and contribute to biodiversity and permeability.

iv. Avoid planting larger vegetation within easements to ensure maintenance access and avoid damaging infrastructure. For planting opportunities within easements, refer to asset owner's guidance.

v. Consider the location of planting areas and the location of trees and planting to contribute visual amenity from inside the building and provide shade during summer months.

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

vii. Consider access requirements for persons with a disability when designing communal open space planting areas in multi-dwelling developments.

viii. Exclude any areas under roofs or impermeable surfaces such as driveways, decks and protruding balconies when calculating planting areas.

Figure 96: Landscaping should maximise planting areas and tree canopy while avoiding areas required for hardscaping, and allowing access to easements for maintenance.

ix. The use of plastic turf is discouraged. Plastic turf falls under contamination of the environment due to microplastics entering the environment and eventually shifting a permeable surface into a non-permeable surface.

Additional guidance: Deep soil

x. Provide deep soil planting zones to maximise tree canopy coverage of larger, long-lived shade trees as per Living Infrastructure Plan targets.

xi. Prioritise deep soil planting over surface soil planting and planting on buildings to benefit ecological health.

Photo 72: Planting between building structures can help create high quality spaces in modest garden areas.
Throsby Court, Narrabundah ACT. Photograph: Will Neill

Photo 73: Narrow side yards can be vibrant additional planting areas.
Northcote House, Northcote, VIC. Architect: MA+Co. Photograph: Tom Ross

Figure 97: Deep soil planting is most viable in the front and rear yards and verges and ensures healthier trees.

Why this is important:
Deep soil zones are areas of soil not covered by buildings or structures within a development. Deep soil zones exclude basements, services, swimming pools, tennis courts and impervious surfaces including car parks, driveways, podium, and roof areas.

Key advantages of deep soil include:

→ Allowing water to enter the wider landscape and drain to water tables.

→ Vegetation in deep soil doesn't need ongoing supplemental watering after establishment.

7.1B TREE PLANTING AND TREE CANOPY

i. Plant treees that meet the requirements of the zone technical specification and block size, at a minimum.

ii. Ensure planting zones provide the minimum soil volumes for different tree sizes at maturity to support the growth of healthy trees.

iii. Employ appropriate planting setbacks and species selection, such as low-rise planting and amenity features such as seating, to minimise conflict with both underground and overhead infrastructure such as powerlines, sewage pipes and water mains.

iv. Retain existing mature trees to contribute to tree canopy coverage requirements for the specified zone (see tip box on opposite page).

v. Where space allows, choose larger trees over multiple smaller trees as larger trees typically have much greater canopy volume, providing more shade and cooling per square meter of canopy cover.

vi. An appropriately qualified person should determine that retained existing trees are in good health, are protected during construction works and proposed structures are appropriately sited in relation to the tree.

vii. Set back all trees / shrubs proposed within the block boundary adequately from the public realm so that they won't encroach beyond the boundary and create obstruction for pedestrians.

viii. Utilise permeable paving near tree pits and planting zones to protect tree roots and support tree growth.

Figure 98: Ensure that the amount and size of tree canopy is proportionate to the size of the block that is being developed.

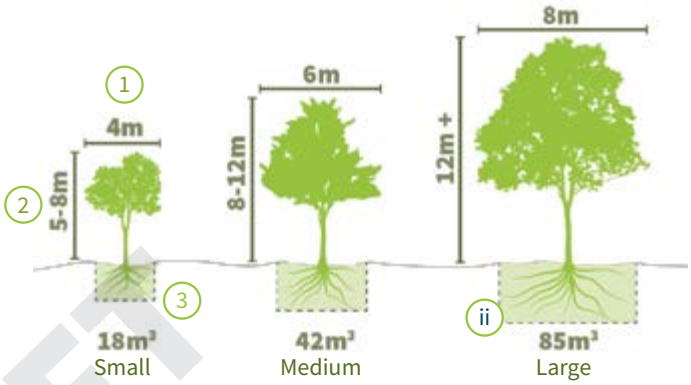


Figure 99:Approximate tree (1) canopy widths, (2) heights and (3) soil volumes for different sized trees are shown in the figure above.

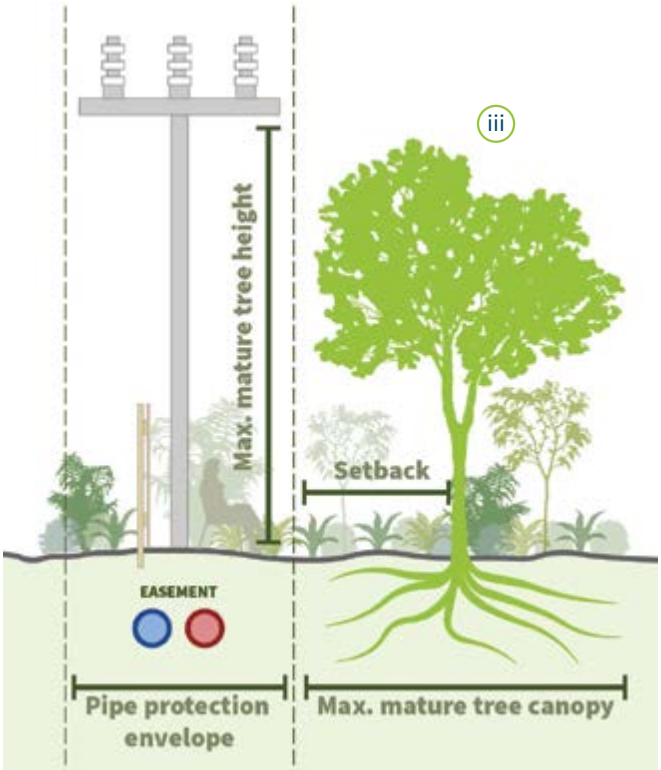


Figure 100: Considerations for tree planting adjacent to infrastructure easements are shown above, including the use of low planting, seating and fencing within the easement.

Why is this important:
Tree canopy cover is the spread of shading on the ground formed from the leaves, branches and crowns of trees. Tree canopy cover in urban settings provides environmental benefits including reduced urban heat island effect and storm water runoff, and enhanced habitats and air quality. Additionally, social benefits include supporting community health and wellbeing and providing positive visual amenity. Retaining existing trees, planting new trees (with considered species selection and placement) and ongoing care to improving tree health can all contribute to enhancing tree canopy cover. Increasing tree canopy cover can take some time as newer, smaller trees establish themselves on a site.

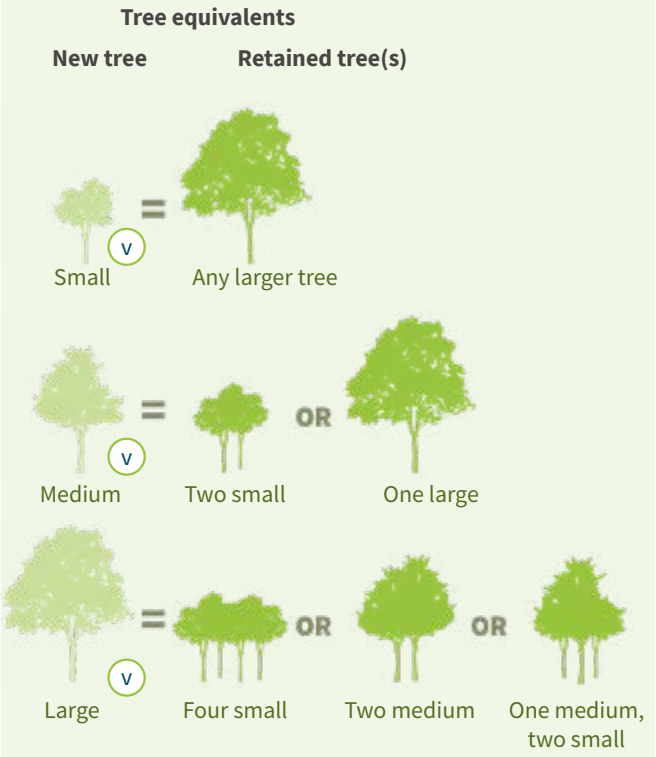
Photo 74: Permeable paving adjacent to trees can help to protect tree roots and support tree growth

Tip:
Retained trees provide value from day 1, while new trees take time to grow. This means that they provide the following advantages:

- → Improved ecological outcomes, as retained trees preserve existing ecosystems.
- → Improved amenity outcomes, as retained trees provide immediate canopy cover and shade.
- → Reduced maintenance, as retained trees do not require establishment.

These benefits also tend to increase relative to the size of the retained trees.

The retention of existing trees can contribute to tree planting requirements, with larger trees valued higher due to their enhanced benefits.



Related planning strategies and tools:

- → Urban Forest Strategy
- → Canberra's Living Infrastructure Plan: Cooling the city
- → The ACT Government must approve any activity to a protected tree through a tree activity application, available on the ACT City Services website.

7.1C PLANT SELECTION

i. Plant a diverse range of endemic and native species to reduce maintenance and support biodiversity in the ACT's changing climate.

ii. Prioritise preserving existing endemic and native trees, especially mature and hollow-bearing ones to support their role in the ecosystems in urban areas.

iii. Layer planting to enhance vegetation complexity and maximise the value of habitats for biodiversity.

iv. Choose tree species that provide dense, continuous canopy coverage in summer to reduce the urban heat island effect.

v. Consider planting deciduous trees close to window openings in buildings for summer shading and access to winter sun light.

vi. Use the Canberra Plant Selector Tool to choose plants based on sun/shade tolerance, frost tolerance, water needs, fire resistance, and endemic and native status.

Related planning strategies and tools:

→ ACT Government Canberra Plant selector Website: actsmart-plantselector.com.au

7.1D INTEGRATED GREEN INFRASTRUCTURE

i. Utilise permeable pavements and green parking areas to manage stormwater runoff and reduce urban heat island effect.

ii. Incorporate planting and greenery on podium spaces and car parking basements, to capture stormwater runoff and for aesthetic benefit.

iii. Include planter beds with visible greenery on communal balconies, shared spaces and entries facing the street to enhance the urban landscape.

iv. Incorporate productive gardens and urban farming in communal areas and rooftops to enhance urban resilience, reduce waste, and foster social connections among neighbours.

v. Where possible, embed sustainable planting elements into the built form, such as rooftop gardens, to enhance building insulation, manage stormwater, and provide urban green spaces.

vi. Consider incorporating living walls and façades to improve air quality, reduce building temperatures, support biodiversity and add aesthetic value.

Related planning strategies and tools:

→ Canberra's Living Infrastructure Plan: Cooling the city

Photo 75:Vegetated buffers provide additional green space and tree canopy.

Hope Street Housing, White Gum Valley WA. Architect: Officer Woods Architects and MDC Architects. Photograph: Robert Firth

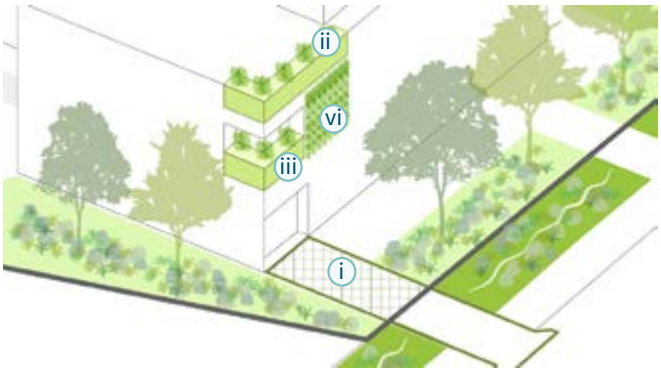


Figure 101: A mix of green infrastructure helps to enhance sustainability outcomes and add amenity value.

7.1E REDUCED HARD SURFACES

i. Minimise hard surfaces to reduce the urban heat island effect by using permeable materials like mulch, gravel, permeable pavers, and grass in driveways and landscaped areas, as per Living Infrastructure Plan targets.

ii. Use building setbacks and separation to reduce the urban heat island effect by incorporating permeable surfaces, minimising hard surface areas, and limiting driveways and vehicle circulation spaces

iii. Incorporate sustainable planting elements like rooftop gardens, living walls, ground-level gardens, and balcony planters to mitigate the urban heat island effect and add greenery to urban areas.

Photo 76: Using a mix of permeable pavement types allows soil penetration, creates visual interest and a natural finish.
Landscape design: Dinah Meagher of Canberra Gardens. Photograph: Nick Burrows

Photo 77: Native grasses or lawn can be an excellent alternative to hard surface pavement.
Cohaus, Auckland NZ. Architect: Westergaard Gill Architecture. Photograph: Adam Luxton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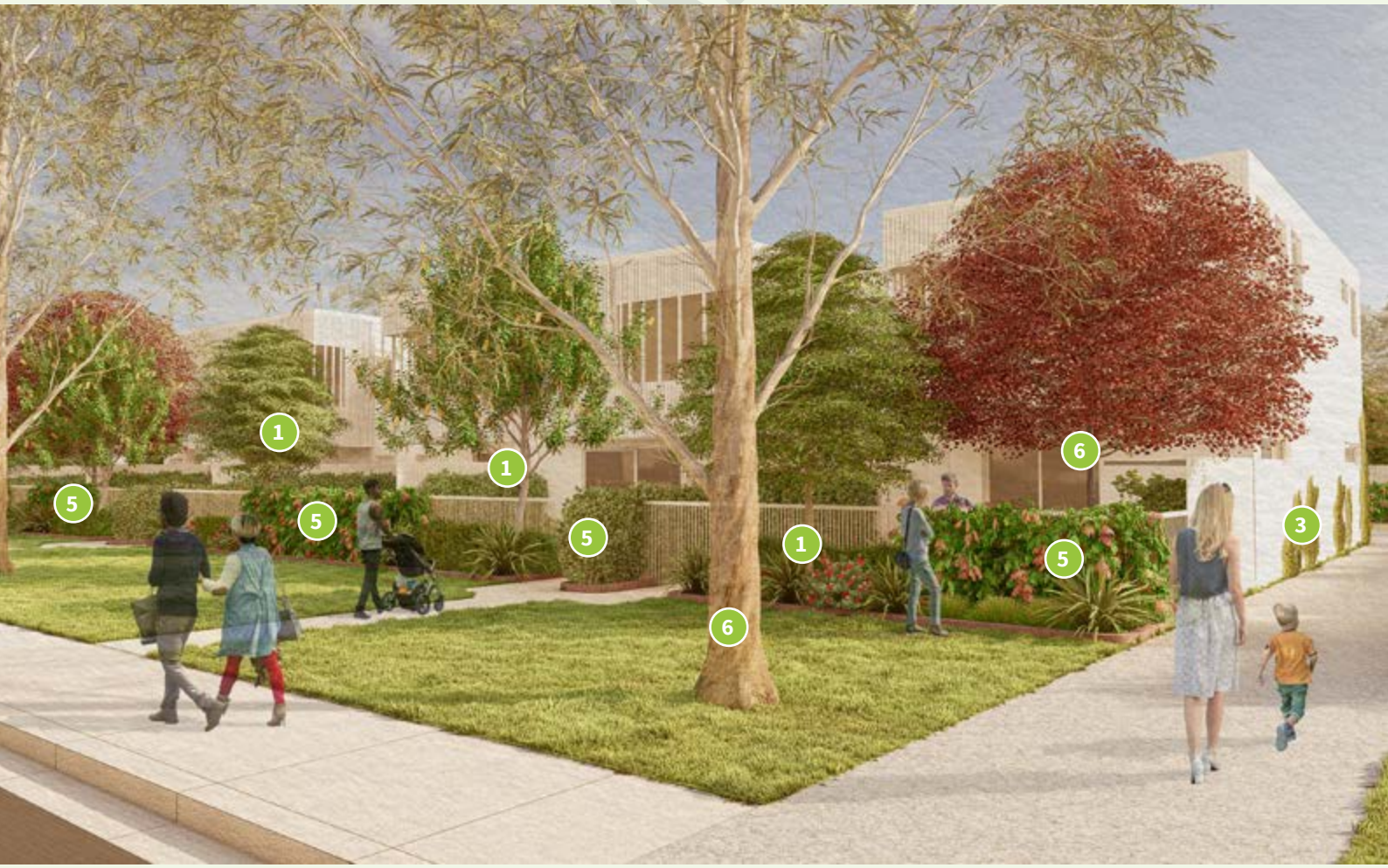
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OPPORTUNITIES FOR LIVING INFRASTRUCTURE IN YOUR DEVELOPMENT

1. Trees adjacent to private open spaces, driveways, parking areas and streets improve visual amenity and generate shade, reducing the urban heat island effect.
2. Ground level planting and smaller shrubs soften the appearance of parking areas and driveways and reduce stormwater runoff.
3. Climbers and other green infrastructure on buildings, particularly where visible to residents and the public, improve amenity and biodiversity.
4. Permeable paving and materials are an attractive and functional alternative to hardscaping that can improve biodiversity and stormwater outcomes.
5. Smaller shrubs planted along boundaries, between the public and private realm, allow for resident privacy while allowing for passive surveillance of the street.
6. Large feature trees in backyards, front yard setbacks and street verges create a strong landscape character and generate shade.
7. Private open spaces located and designed around green space have a high level of residential amenity and privacy.
8. Shrubs and small trees that do not grow in conflict with powerlines ensure safety in proximity to infrastructure.
9. Shrubs along side and rear boundaries soften the edges of development and create a pleasant transition between properties.
10. Low groundcover and lawns, particularly native and indigenous species, provide space for socialising and recreation in deep soil zones.

DESIGN ELEMENT:

7.2 BUILDING DESIGN PERFORMANCE

Create spaces that provide residents with access to light, air, and passive living conditions without compromising privacy.

Access to natural light is essential to support a healthy lifestyle, provide comfortable living conditions and reduce the energy demands for artificial lighting. Natural cross-ventilation allows for the circulation and exchange of fresh air which contributes to thermal comfort, passive cooling and a comfortable and healthy indoor environment. Reducing the impacts of noise and sound from neighbouring properties also improves the overall functionality, comfort, and liveability of a community.

DESIGN GUIDANCE

7.2A SOLAR ACCESS, SHADING AND THERMAL PERFORMANCE

i. A building's orientation should maximise and capture the use of prevailing breezes for natural cross ventilation of habitable rooms.

ii. Optimise thermal mass in building materials, such as concrete or brick, to store and release heat, balancing Canberra's warm days and cool nights.

iii. Include effective thermal breaks in construction, particularly around windows, balconies, and roofing, to reduce heat transfer and enhance energy efficiency.

iv. Combine thermal mass with passive solar design, utilising orientation and shading to regulate indoor temperatures year-round.

v. Introduce slab breaks to mitigate thermal bridging, improving the energy performance of the building envelope.

vi. Orient living spaces and bedrooms towards the north wherever possible to allow for direct solar access in winter, with shaded glazing in summer.

vii. Minimise direct sunlight to the interior during summer to reduce energy required for cooling.

viii. Allow direct sunlight access to the interior during winter to reduce energy required for heating.

ix. Increase the height of windows for deeper floor plates to allow more daylight into dwellings.

x. Provide all habitable rooms with operable windows with sufficient area of glazing to allow for quality of light and natural ventilation.

xi. Consider using architectural elements such as protruding balconies, lintels, columns and window recesses to create self-shading elements appropriate to the façade orientation to reduce unwanted heat gains from direct sunlight.

xii. Locate balconies, windows and sun shading devices to capture sunlight through the winter, and temper sunlight in the summer, to maintain a comfortable living environment.

xiii. Use horizontal shading elements on northern facing elevations and vertical or adjustable elements to the east and west facing elevations to temper direct sunlight throughout the day.

xiv. Include heavier materials in floors and walls reached by direct sunlight in winter to create thermal mass that can store and release warmth after the sun sets.

xv. Create spaces that provide residents with access to light, air, and energy efficient living conditions without compromising privacy.

xvi. Introduce operable shading (e.g. window coverings, external shading) to maximise comfort and energy efficiency by dynamically controlling sunlight, heat, and glare based on seasonal and directional needs.

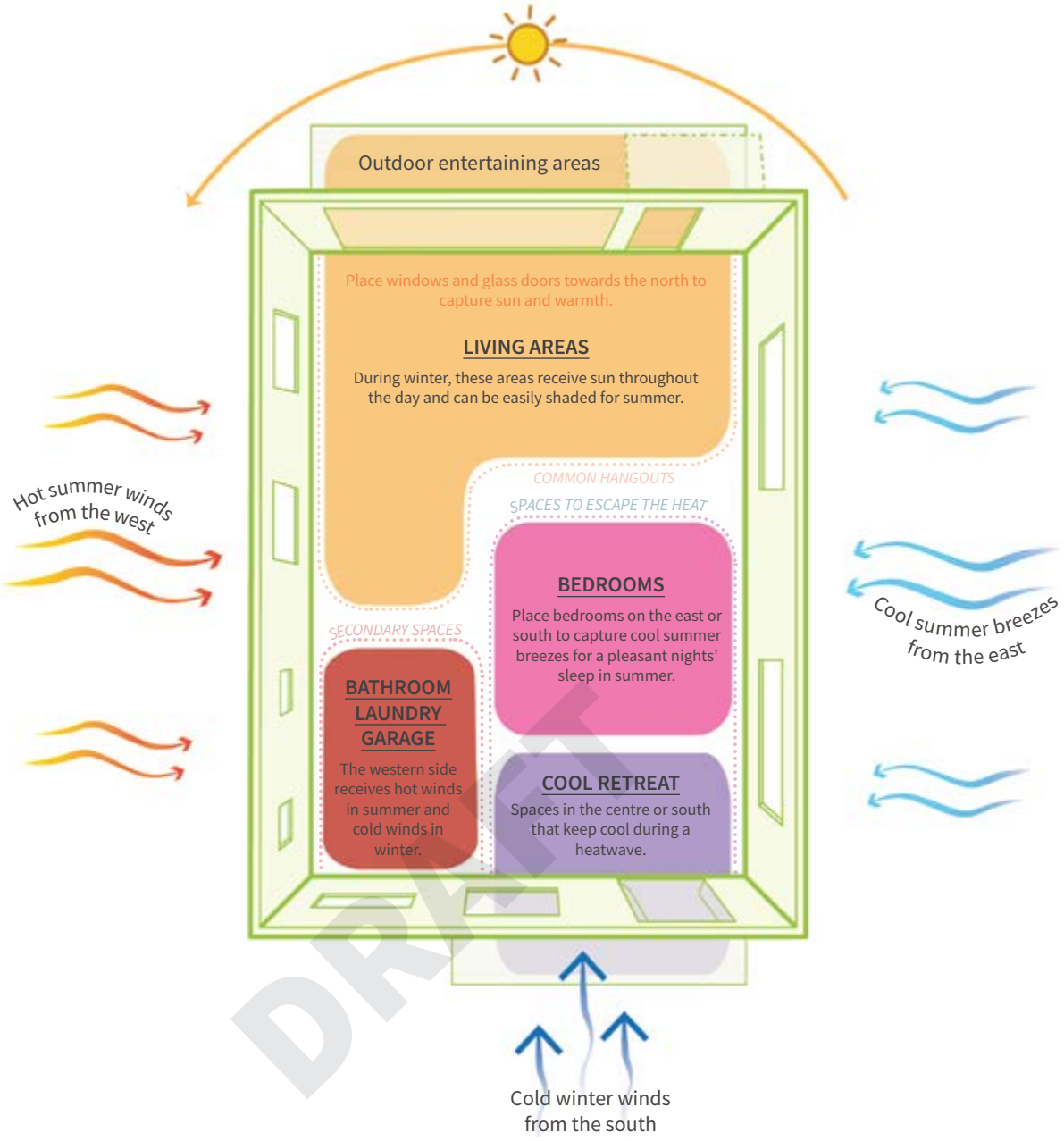


Figure 102: Strategic placement of living spaces, bedrooms and secondary spaces to maximise airflow through all seasons.

Photo 78: Architectural elements can be used to produce shade.
Charles House, Melbourne VIC. Architect: Austin Maynard Architects.
Photograph: Peter Bennetts

Why is this important:
The biggest carbon and cost savings are in designing and building smaller. Engaging design professionals helps to achieve efficient floor plan designs on a smaller footprint with efficient use of space and climatically responsive layout.

7.2B NATURAL CROSS VENTILATION

i. Consider the direction of prevailing breezes and provide openings configured to create natural cross ventilation and air movement between different rooms and through buildings.

ii. Include dual aspect dwellings, cross-through dwellings, corner dwellings and limited dwelling depths to allow for natural cross ventilation.

iii. Provide natural cross ventilation between rooms for the benefit of the entire dwelling. Ventilation between openings within a single room does not meet the definition of natural cross ventilation.

iv. Design buildings so that windows can be left partially open and secure during rainy weather to allow for maximum airflow and ventilation.

v. Make sure enclosed balconies do not obstruct airflow to a degree that prevents natural cross ventilation within the dwelling.

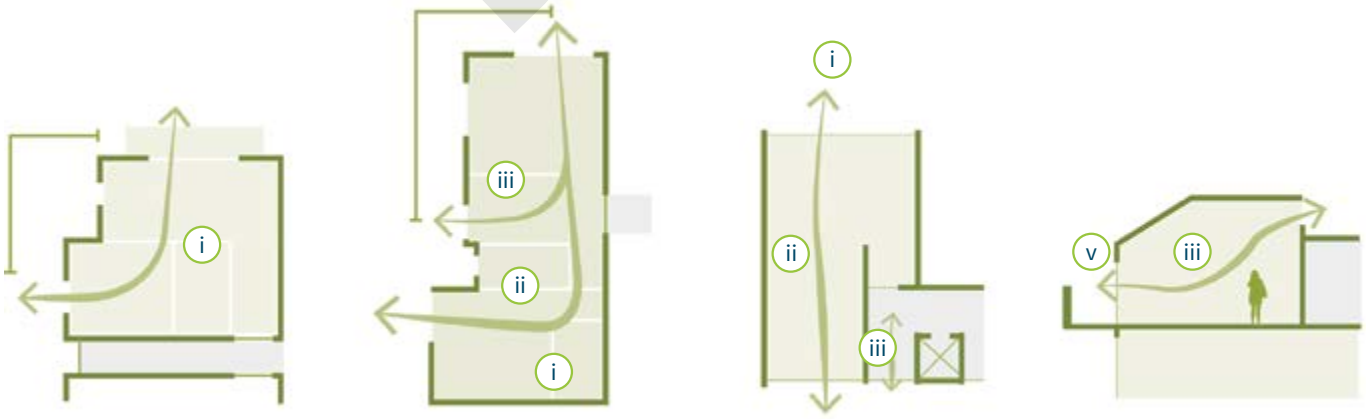
vi. Install ceiling fans to help create and assist air movement.

Why is this important:

Natural cross ventilation is when building openings are arranged on adjacent or opposite walls, encouraging air to enter and exit by flowing through the space. Maximising natural cross ventilation allows bringing outdoor air in and distributing throughout the home. This is crucial for creating a comfortable internal environment and constant air renewal, improving air quality, removing moisture, and naturally reducing the internal temperature of the dwelling. As a result, this reduces energy consumption and promotes a more sustainably-designed dwelling all year round.

Additional guidance:

→ For more information, the Suburban Land Agency has developed a climate-resilient home design guide Your Resilient Home Guide.



Cross-ventilation on corner dwelling

Dwelling with cross-through ventilation

Cross-ventilation on corner dwelling

Dwelling with cross-ventilation through high window

Figure 103: Examples of cross ventilation.

7.2C NOISE AND ACOUSTIC COMFORT

i. Undertake a noise management plan for vehicle road noise, prepared by a suitably qualified consultant, on sites adjacent to a road carrying high volumes of traffic (12,000 vehicles per day) or affected by other significant noise sources to ensure comfort, health and compliance with planning and building regulations .

ii. Design party and fin walls between adjacent attached housing or apartments to reduce noise and including low frequency by utilising masonry or equivalent elements to mitigate noise impacts between adjacent dwellings.

iii. Use winter gardens with noise reducing design for private outdoor space instead of open balconies in noisy locations to ensure compliance with planning and building regulations.

iv. Orient windows and door openings away from noise sources.

v. Balance ventilation requirements with acoustic privacy, including considering the placement of electric heat pumps to minimise noise impacts on bedrooms, including on neighbouring sites.

vi. Placement of mechanical equipment, such as heating and cooling appliances, should consider the operating decibel level. Locate and screen mechanical equipment that produces noise to ensure compliance with noise regulations at the property boundary to minimise negative noise and visual impacts on site and to adjacent properties.

vii. Locate noise sensitive areas, such as bedrooms and living rooms, away from noise sources such as garage doors, driveways, service areas, plant rooms, building services, mechanical equipment (including heat pumps provided the location complies with the noise regulations at the property boundary), active communal open spaces and circulation areas.

viii. The internal dwelling layout should be designed to separate noisy spaces from quiet spaces.

ix. Provide landscaping to improve visual amenity reduce the perception of noise and act as a filter for air pollution generated by traffic and industry.

Why is this important:

The perception of noise and acoustic comfort differs from person to person, making conscious design decisions crucial for providing a balanced and comfortable living experience that is adaptable to diverse needs. A dwelling with good acoustics minimises echo, allows for private conversations and controls excess noise from both outside and within. Improved acoustic design can enhance mental wellbeing by creating peaceful living environments, reducing stress and promoting relaxation. Incorporating soundproofing materials and strategic layout choices maintains privacy between neighbours, ensuring residents can enjoy their personal sanctuary without disruption. Acoustic comfort can boost productivity levels, particularly as work-from-home offices and study spaces become more common and important multi-functional living spaces.

Related planning strategies and tools:

→ For further information refer to the Environment Protection Regulation 2005.

Exemplar:

Acoustic design is utilised in this dwelling, including insulated glass and sound-proof materials, to mitigate noise pollution from an adjacent railway station. This ensures that a high level of internal amenity is achieved while being in close proximity to transport infrastructure.

Passive Pleat, Melbourne VIC. Architect: Studiofang. Photograph: Marnie Hawson

7.2D AIRTIGHTNESS OF BUILDING ENVELOPE

i. Controlling buildings air tightness, measured in air changes per hour is one of the most effective ways of decreasing energy consumption and increasing comfort and indoor air quality.

ii. Air tightness levels should be measured and verified using a blower door test at project completion.

iii. If buildings are designed and shown to be airtight then they must also ensure adequate air flow is maintained through use of an active ventilation system Buildings that are too airtight risk the health of their occupants.

Related planning strategies and tools:

→ Green Building Council of Australia's Building Air Tightness resource

→ Suburban Land Agency's Your Resilient Home Guide

Tip:

The NCC requires a maximum air permeability of 10 m3/hr.m2 (@50Pa). With external wrapping and high construction quality to avoid air leakages, conventional construction techniques can readily achieve an air permeability of 5 air changes per hour (ACH).

For <5 m3/hr.m2 (@50Pa), the NCC requires active ventilation for Passive House requirements of <2 m3/hr.m2 (@50Pa), balanced ventilation is required to ensure all rooms get enough fresh air.

Upfront Embodied Carbon		Material Use / Replacement	Demolition / Disposal
			
A1 - A3 Product	**A4 - A5 Construction**	**B1 - B7 Use**	**C1 - C4 End of life**
Raw material sourcing	Transport to site	Building maintenance	Demolition
Transport	Installation	Repairs	Transport
Manufacture		Replacement	Waste
		Refurbishment	Processing
			Disposal

Source: Based on Standard EN 15978

ACT Sustainable Buildings Pathway (2024)

7.2E EMBODIED CARBON

i. Consider engaging design professionals to achieve floorplans that make efficient use of materials and provide flexible designs for multi-purpose spaces.

ii. Choose building materials and design that reduce embodied carbon, are long lasting, reusable or recyclable, such as:
   - Using void-forming systems beneath slabs made from recycled materials to reduce transport impacts and associated emissions.
   - Choosing lightweight cladding with a high proportion of sustainably sourced timber and minimal use of synthetic additives or harmful chemicals.
   - Specifying resilient flooring made predominantly from natural, renewable raw materials with a low-carbon lifecycle.
   - Selecting kitchen and laundry benchtops and substrates made from responsibly sourced timber products.
   - Installing carpets manufactured from natural, renewable and/or recyclable fibres.

iii. Prioritise products with a verified carbon footprint such as an Environmental Product Declaration (EPD) or Product Carbon Footprint (PCF) to enable transparent, comparable, and lower carbon material selection.

Related planning strategies and tools:

→ The ACT Sustainable Buildings Pathway. For further information on measuring embodied carbon, see the NABERS Embodied Carbon framework and the AIA Embodied Carbon Curriculum.

→ Examples of Life Cycle Assessment tools to decarbonise buildings include *Cerclos eTool* and *eToolglobal.com*

Tip:

Modern methods of construction (MMC), including prefabricated and modular building technologies, have the potential to support the delivery of higher quality buildings as they are assembled in an off-site environment, or on-site using advanced methods such as additive manufacturing like 3D printing concrete. They have the potential to increase productivity in the construction sector by producing buildings with greater speed and accuracy.

Further information on materials, construction and compliance can be found in the ABCB Prefabricated, modular, and off-site construction handbook.

DESIGN ELEMENT:

7.3 NATURAL RESOURCE CAPTURE AND MANAGEMENT

The urban and built environment offers opportunities to implement sustainable resources and energy production to improve the resilience and longevity of our human environments. Integrating renewable energy technologies will improve building performance.

DESIGN GUIDANCE

7.3A WATER SENSITIVE URBAN DESIGN

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

ii. Incorporate rainwater reuse into ancillary functions that do not require potable water such as toilets and washing machines. Use grey water to irrigate landscaped areas and bio-sensitively treat before discharging from a development site.

iii. Equip all new dwellings with water-efficient fixtures and fittings, such as low-flow toilets, shower heads, and faucets to reduce water consumption.

iv. Provide on-site water storage of roof harvesting in accordance with the zone specifications.

v. Where appropriate, use captured rainwater for individual use, such as watering plants, cleaning or for use in laundries and toilets.

vi. Incorporate drought tolerant, low water plants to minimise water requirements.

vii. Use permeable systems and materials in shared spaces such as car parks and open space.

References:

→ Development complies with the *ACT Practice Guidelines for Water Sensitive Urban Design Module 2: Designing Successful WSUD Solutions in the ACT*

Related planning strategies and tools:

→ Renewable Energy Transformation Agreement (RETA)

→ ACT 2024-2030 Integrated Energy Plan: Our Pathway to Electrification

→ Powering Canberra: Our pathway to electrification and Make Your Next Choice Electric web tool

7.3B ELECTRIFICATION

i. De-carbonise buildings' energy usage by deploying renewable energy technology and using all-electric systems and appliances such as induction cook-tops.

ii. Do not include a natural gas distribution network connection. For blocks with an existing gas connection, abolish the gas connection.

iii. Ensure electrical infrastructure has sufficient capacity for all-electric heating and cooling load, future electric vehicle uptake and solar panel uptake.

iv. Connect solar panels to each individual dwelling's power meter to enable greater flexibility and discretion in utilising solar power.

v. Orient solar panels to maximise efficiency while mitigating any negative impact from overshadowing and glare.

vi. Residents' parking spaces in shared basements and garages should be 'EV ready'. Dwellings with a private garage with power supply through the dwelling's meter don't need 'EV ready' provision.

vii. Install energy-efficient lighting systems and appliances, including LED lighting, smart thermostats, and Energy Star-rated appliances to reduce energy consumption and emissions.

viii. Where battery storage is incorporated, establish energy demand management systems, including grid-integrated battery storage, to allow batteries to feed excess energy back into the grid. Battery storage must also consider fire safety and noise requirements.

The Village, Three Homes, Three Generations, Rivett ACT
Architect: Light House ArchiScience
Photograph: Ben Wrigley

DESIGN ELEMENT:

7.4 CLIMATE CHANGE RESILIENCE

Prepare for climate instability by designing dwellings to withstand extreme weather events such as floods, droughts, bushfires and heatwaves.

Incorporating climate change resilience into the design of housing creates sustainable and liveable communities. With the impacts of climate change becoming more severe and frequent, homes must be able to withstand extreme weather events such as floods, droughts, bushfires and heatwaves. Building resilience into housing can also reduce the environmental impact of homes and lower energy costs, while ensuring that homes are able to serve as a long-term investment for homeowners.

DESIGN GUIDANCE

7.4A FLOOD RESILIENCE

i. Provide a stormwater retention management report undertaken by a suitably qualified person on large sites where a stormwater regime is altered (above 2,000 sqm).

ii. Design buildings with elevated habitable rooms, using elements such as raised floors to help keep living spaces above projected flood prone levels.

iii. Consider using flood resistant materials for exterior walls, such as brick or stone, that can help reduce the risk of permanent flood damage in flood prone areas.

iv. Detail façades with multiple, physical fail-safes in flood prone areas to prevent water ingress.

v. Incorporate waterproof coatings and sealants to vulnerable exterior roofs, walls and foundations to prevent staining of surfaces.

vi. Elevate electrical utilities and heating ventilation and air conditioning (HVAC systems) above projected flood levels to prevent damage to critical systems infrastructure during a flood.

vii. Install high-capacity drainage systems such as gutters and downpipes to divert water away from the building and reduce the risk of flooding during a heavy rain event.

viii. Maximise site permeability through use of permeable materials to reduce the impact of flood and water run-off.

7.4B URBAN HEAT ISLAND

The following hierarchy of urban heat mitigation measures should be used to design an urban heat approach. Where high reliance is placed on medium and low value measures, more of these measures should be undertaken.

i. Best
   - Retained trees – large and medium
   - New large trees
   - New medium trees - with irrigated underplanting or dense underplanting of tall shrubs

ii. High
   - Retained trees – small (4m+ in height)
   - New medium trees
   - New small trees and tall shrubs – irrigated, dense plantings that are 4m+ in height
   - ‘Cool’/reflective roof materials with a high Solar Reflectance Index or low Solar Absorptance

iii. Medium
   - New small trees and tall shrubs
   - Grass, ground covers and low shrubs – irrigated
   - Green roofs and green walls
   - Water features such as small ponds or fountains

iv. Low
   - Grass, ground covers and low shrubs - unirrigated
   - Permeable paving or decking
   - ‘Cool’ paving (low heat capacity and/or high solar reflectance)

v. Minimise
   - Artificial grass
   - Dark coloured, impermeable paving (e.g. standard asphalt)
   - Unwanted solar gain in buildings, through the use of light-coloured, reflective materials with a high Solar Reflectance Index (SRI) to reduce heat absorption and improve energy efficiency

Photo 79: Shading devices help to reduce heat in the courtyard and in the adjacent home.
Anne Street Garden Villas, Southport QLD. Architect: Anna O'Gorman Architects. Photograph: Christopher Frederick Jones

Why is this important:
The urban heat island effect is heat accumulation within an urban area caused by surfaces that absorb and retain heat and a lack of plants and water to enable cooling. The urban heat island effect can exacerbate the health impacts of heatwaves, increase cooling costs and make outdoor activities more unpleasant or even a risk to health in hot weather.

Exemplar:
The design and development of six townhouses includes private gardens that are comprised of native, drought-resistant plants. Using endemic and native plants creates a high-level amenity, stronger resilience and reduced water consumption, as well as supporting local biodiversity.

57 Martin Street, Thornbury VIC. Architect: Common Ground. Photograph: Derek Swalwell.

Related planning strategies and tools:

- → ACT Climate Change Strategy 2019-2025
- → ACT Government 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
- → ACT Well being Framework 2020
- → ACT Regional Fire Management Plan 2019-2028
- → ACT Strategic Bushfire Management Plan and Standards
- → ACT Flood Sub-Plan 2023

Tip: Climate modeling
The ACT is included in the NSW Government's NARCLiM regional climate modeling. The ACT Government recommends you use NARCLiM when considering the ACT's future climate in engineering, urban design and planning projects.

7.4C ROBUST, LOW MAINTENANCE MATERIALS AND PLANTING

i. Use resilient and durable elements and materials that reflect quality, performance, permanence and have visual and functional quality over time, while considering ongoing maintenance costs.

ii. Re-use and recycle materials where possible and appropriate.

iii. Choose building materials that have high insulation properties and are sustainable and attractive, while still creating individuality in design.

iv. Incorporate modular pavement that is easy to install, adapt and maintain, allowing paths and access ways to evolve, while reducing ongoing installation and maintenance costs.

v. Design buildings, streets and spaces to be resource efficient, durable and low maintenance to reduce energy consumption and construction and maintenance costs.

vi. When selecting exterior materials, consider the maintenance and climate to ensure they can withstand natural elements and age well in terms of aesthetics.

vii. When specifying window framing, consider materials that are sustainable, low maintenance, durable, energy-efficient, resistant to corrosion and available in a broad range of colours.

viii. Consider choice of materials and finishes throughout which align with total maintenance life of interrelated components to avoid unnecessary or repetitive replacement of materials.

ix. During material specification, consider the entire material life cycle and circular economy processes to reduce embodied carbon emissions.

x. Choose building materials to ensure that development is resilient to higher winds and more intense downpours anticipated from climate change events.

Exemplar:
The adaptive reuse of an existing mid-century apartment block into a new community meant that embodied carbon was minimised and the existing character of the neighbourhood was enhanced.

Park Street, Brunswick VIC. Architect: Breathe Architecture. Photograph: Tom Ross

TIP: Circular economy principles for the built environment in ACT Circular Economy Strategy and Action Plan 2023-2030

Creating a circular economy goes beyond waste to embed 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.

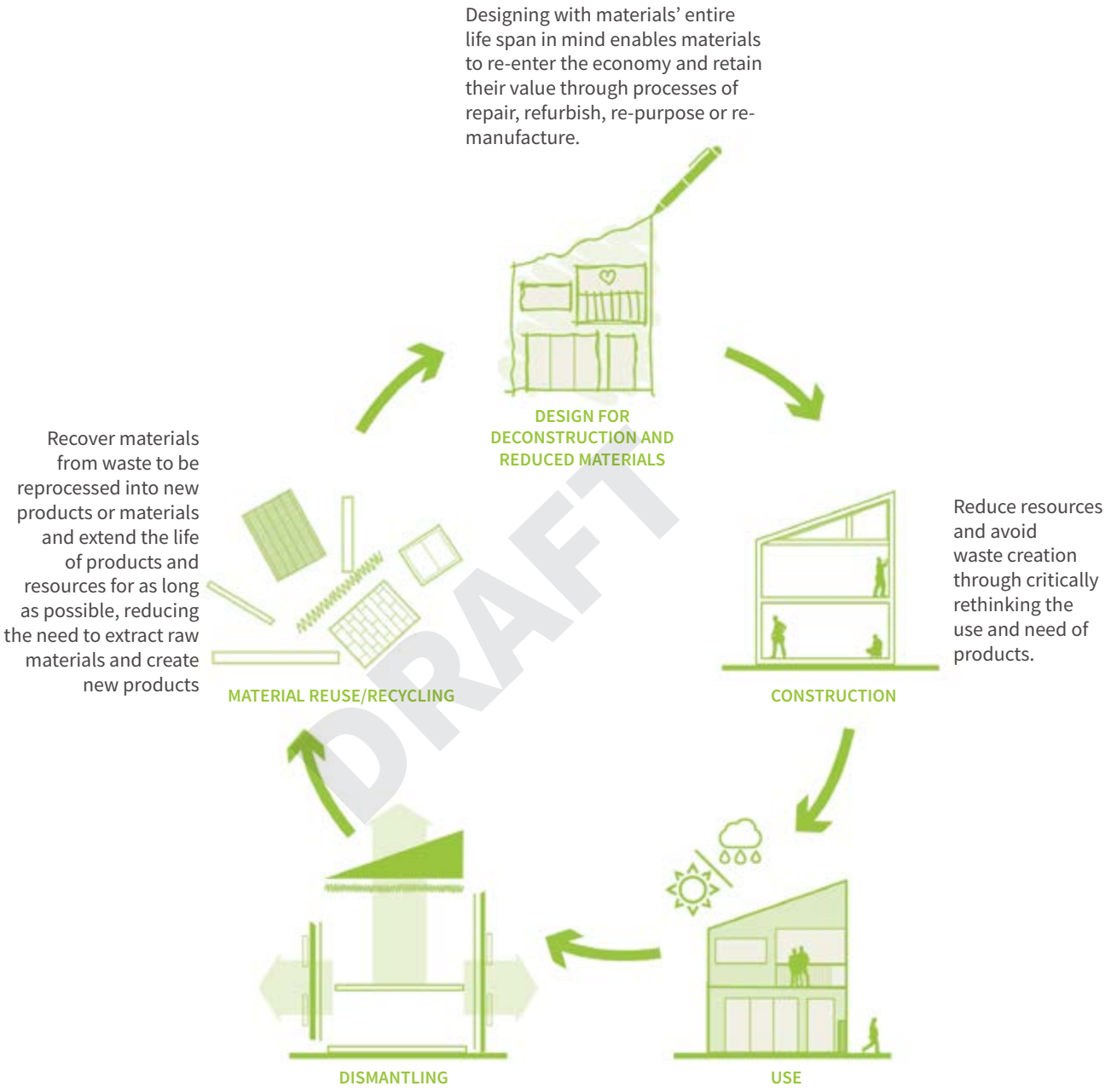


Figure 104: Up-cycling and circular economy processes

Related planning strategies and tools:

- → ACT Circular Economy Strategy and Action Plan 2023-2030
- → ACT Climate Change Strategy 2019-2025
- → ACT Sustainable Building Pathway

Turner Townhouses, Turner. ACT
Architect: de Rome Architects

Part Four: Appendices

MISSING MIDDLE HOUSING 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 could be used at several stages throughout a project, from early design concepts, to detailed proposals and completed works.

SITE AND LAND USE	NOTES

This theme supports the interpretation, application and assessment of the following assessment outcomes as outlined in the Territory Plan.

- → The functionality and usability of the development is appropriate for its intended purpose/use.
- → The proposed use and scale of development are appropriate to the site and zone.
- → Adverse impacts of development on surrounding uses (both within a site and on adjoining sites) is minimised and residential amenity protected. This includes between residential uses and between non-residential and residential uses.

3.1 TYPOLOGIES	
3.1A Siting	☐
3.1B Multi-occupancy	☐
3.1C Townhouses	☐
3.1D Terrace houses	☐
3.1E Low-rise apartments	☐

3.2 CONTEXT AND CHARACTER	
3.2A Canberra Character	☐

3.3 UNDERSTANDING YOUR SITE	
3.3A Site conditions	☐
3.3B Slope and topography	☐
3.3C Water drainage	☐
3.3D Tree retention	☐
3.3E Prevailing winds and cross ventilation	☐

3.4 LAND USES	
3.4A Residential use	☐
3.4B Non-residential uses	☐
3.4C Block consolidation and sub-division	☐

3.5 BUILDING ENVELOPE	
3.5A Height and transitions	☐
3.5B Orientation and outlook	☐
3.5C Overshadowing	☐

ACCESS, MOVEMENT AND PLACE	NOTES

This theme supports the interpretation, application and assessment of the following assessment outcomes as outlined in the Territory Plan.

- → The functionality and layout of the development is accessible and adaptable, while achieving good connections with the surrounding area. This includes consideration of passive surveillance.
- → The development encourages active travel through safe and convenient access to the active travel network.
- → The development provides electric vehicle parking and access to charging locations in multi-unit housing.
- → The development provides appropriate end-of-trip facilities in multi-unit housing which includes secure bicycle parking.
- → The site is appropriately serviced in terms of infrastructure and utility services and any associated amenity impacts are minimised.

4.1 SITE ACCESS AND CONNECTIVITY	
4.1A Vehicle access, driveways and laneways	☐
4.1B Safe pedestrian and cycle access	☐
4.1C Cross-block links	☐

4.2 RESIDENT AND VISITOR CAR PARKING	
4.2A Off-street and surface car parking	☐
4.2B Garages and carports	☐
4.2C Basement and sleeved podium car parking	☐

4.3 INTEGRATED SERVICES	
4.3A Waste collection, loading and delivery areas	☐
4.3B Ground floor services and infrastructure	☐
4.3C External storage and bulky items	☐

PUBLIC SPACE AND AMENITY	NOTES

This theme supports the interpretation, application and assessment of the following assessment outcomes as outlined in the Territory Plan:

- → The development achieves reasonable solar access and microclimate conditions to public areas and streets to support their use by the community.
- → Private open space and communal open space provides sufficient space and facilities for residents and visitors to recreate and relax, as well as providing area for service functions. Spaces are readily accessible for a range of activities.
- → Reasonable levels of active ground floor interface and passive surveillance to public spaces and streets is achieved.
- → Any advertising or signs are suitable for their context and do not have a detrimental impact on the surrounding area (for instance due to size or light emission).

5.1 COMMUNAL OPEN SPACE	
5.1A Use, size and location	☐
5.1B Integrated landscaping	☐

5.2 PRIVATE OPEN SPACE AND BALCONIES	
5.2A Principal private open space	☐
5.2B Public realm interface and passive surveillance	☐
5.2C Privacy and outlook	☐

5.3 GENERAL LANDSCAPING	
5.3A Deep soil planting and canopy cover	☐
5.3B Plant selection	☐
5.3C Integrated green infrastructure	☐
5.3D Reduced hardstand	☐

BUILDING DESIGN AND BUILT FORM NOTES

This theme supports the interpretation, application and assessment of the following assessment outcomes as outlined in the Territory Plan.

- → The height, bulk and scale of the development is appropriate, noting the desired zone policy outcomes and the streetscape. This includes consideration of building envelope and setbacks.
- → Reasonable solar access to dwellings and private open space within a block and on adjoining residential blocks is achieved. This includes solar access into main living spaces within a dwelling.
- → Reasonable levels of privacy to dwellings and private open space within a block and on adjoining residential blocks is achieved.
- → The dwelling mix and the internal size, scale and layout of dwellings in multi-unit housing provide for a comfortable living environment that meets the changing needs of residents.
- → Courtyard walls and fences do not have an adverse impact on the streetscape.
- → Vehicle and bicycle parking, access and egress sufficiently caters for the development while permitting safe and legible movement for all users (including pedestrians) and minimising visual impacts from the street or public space. This includes consideration of parking dimensions, the number of spaces provided, vehicle manoeuvrability and access routes.

6.1 SCALE AND BUILDING FORM	
6.1A Building heights and scale	☐
6.1B Building visual form and appearance	☐

6.2 ORIENTATION AND STREET INTERFACE	
6.2A Setbacks and separation	☐
6.2B Building entries	☐
6.2C Building to street interface	☐
6.2D Ground floor edge conditions	☐

6.3 DIVERSE HOUSING CHOICE AND OCCUPANT AMENITY	
6.3A Housing mix	☐
6.3B Size and layout	☐
6.3C Housing accessibility	☐
6.3D Ceiling heights	☐

6.4 STORAGE	
6.4A Within dwellings	☐

SUSTAINABILITY AND ENVIRONMENT NOTES

This theme supports the interpretation, application and assessment of the following assessment outcomes as outlined in the Territory Plan:

- → Sufficient planting area and canopy trees are provided, and roofed areas and hard surfaces limited, to reduce urban heat island effects, minimise stormwater run-off and maintain ecosystem services. This includes consideration of water sensitive urban design measures.
- → Deep soil zones are provided to support healthy tree growth and provide adequate room for canopy trees.
- → Threats to biodiversity such as noise, light pollution, invasive species incursion or establishment, chemical pollution, or site disturbance are avoided or minimised through good design.
- → Minimise cut and fill to protect natural hydrological function and limit soil erosion and site disturbance.
- → The development considers, addresses and mitigates site constraints and environmental risks, including natural features, topography, noise, bushfire, flooding, contamination, air quality or hazardous materials are appropriately considered for the site.
- → Waste is appropriately managed on site without having a detrimental impact on residents and the surrounding area.

7.1 TREES, LANDSCAPING AND NATURAL FEATURES

7.1A Planting areas	☐
7.1B Tree planting and tree canopy	☐

7.2 BUILDING DESIGN PERFORMANCE

7.2A Solar access, shading and thermal performance	☐
7.2B Natural cross ventilation	☐
7.2C Noise and acoustic comfort	☐
7.2D Air tightness of building envelope	☐
7.2E Embodied carbon	☐

7.3 NATURAL RESOURCE CAPTURE AND MANAGEMENT

7.3A Water sensitive urban design	☐
7.3B District energy system	☐

7.4 CLIMATE CHANGE RESILIENCE

7.4A Flood resilience	☐
7.4B Heatwave and urban heat island resistance	☐
7.4C 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 System Review and Reform Project provided a clear baseline for what constitutes good design.

POLICY

Territory Plan

Residential zone policy

Planning 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

- 2022 draft planning strategies for each of the ACT districts: East Canberra, Belconnen, Gungahlin, Inner North and City, Inner South, Molonglo Valley, Tuggeranong, Weston Creek, and Woden

ACT Planning Strategy 2018

ACT Transport Strategy 2020

ACT Climate Change Strategy 2019-2025

ACT Digital Strategy 2020

ACT Water Strategy

ACT Sustainable Building Pathway

ACT Urban Forest Strategy

ACT City Plan

ACT Nature Conservation Strategy 2012-2023

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

ACT Circular Economy Strategy and Action Plan 2023-2030; and

ACT Waste Management Strategy 2011 - 2025

GUIDES

Gawari Ngilanmanyin. Remembering the Bush.
A Climate-wise Landscape Guide for the ACT

ACT Microclimate Assessment Guide (Forthcoming)

ACT Practice Guidelines for Ecologically Sensitive Urban Design (to be developed)

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

ACT National Capital Design Review Panel: Design Principles for the ACT

Practitioner's guide, Preparing for design review

A practical guide to electrification for new buildings

Green Building Council Australia

Bringing embodied carbon upfront

World Green Building Council

FRAMEWORKS

ACT Wellbeing Framework

ACT Economic Development Priorities 2022-2025: CBR Switched on

ACT Gender Sensitive Urban Design Framework

City Gateway Urban Design Framework

City Centre Urban Design Framework

ACT Gender Sensitive Urban Design Framework

ACT Living Infrastructure Plan

The Griffin Legacy

HISTORIC HOUSING PRECIDENTS FOR GOOD MEDIUM DENSITY DEVELOPMENT

Canberra is home to several notable examples of historical medium-density housing that demonstrate enduring principles of good residential design. These developments show how thoughtful planning can create homes that are both liveable and community oriented.

Key features include access to natural light, well-integrated private and communal open spaces, and layouts that support social interaction while maintaining privacy. Importantly, these designs also allow for flexibility over time, enabling residents to age in place comfortably. By referencing these examples, we highlight design approaches that balance amenity, functionality, and adaptability—principles that remain essential for creating sustainable, inclusive, and vibrant neighbourhoods today.

MEDIUM DENSITY HOUSING REGISTERED ON THE ACT HERITAGE REGISTER

Swinger Hill Cluster Housing, Philip

Campbell Housing Apartments by Harry Seidler.

Northbourne Housing Precinct (now representative samples) by Sydney Ancher

Griffith Flats

MEDIUM DENSITY HOUSING NOMINATED TO THE ACT HERITAGE REGISTER

Forrest Townhouses by Roy Grounds

Urambi Cooperative Housing, Kambah by Michael Dysart

Wybalena Grove, Aranda by Michael Dysart

INDIVIDUAL (PROVISIONALLY) LISTED PLACES DEMONSTRATING SECONDARY RESIDENCES OR INCREASED DENSITY

McKeown House, Watson by Enrico Taglietti (secondary residence 1996)

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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.

Activation – 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 – 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 – Primarily the stepping and recessing of external walls on visible frontages but also includes expression of horizontal elements and variation in the roof form. This includes porticos, balconies, bay windows, decks, patios, pergolas, terraces, verandahs, window box treatments, window bays, awnings and sun-shading features.

Attached housing – any dwelling, within a building containing two or more dwellings, which has within its curtilage open space at ground level and separate private access for each dwelling for the exclusive use of the occupants of the dwelling. Attached housing may incorporate communal basement car parking. Attached housing includes row house, semi-detached house, terrace house, townhouse.

Battle-axe block – A rear block with no street interface other than for a vehicle access/driveway, creating a 'battle-axe'-like shape.

Block ratio – The gross floor area in a building divided by the area of the site.

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 which faces the outer perimeter of a site.

Building envelope – The maximum three-dimensional space a building can occupy on a site, determined by planning controls such as height limits, setbacks, site coverage, and solar access requirements.

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).

CED – City and Environment Directorate

Community garden – The use of land for the cultivation of produce primarily for personal use by those people undertaking the gardening, including demonstration gardening or other environmental activities which encourage the involvement of schools, youth groups and citizens in gardening activities.

Communal open space – 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 an 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.

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 3 or more sides.

CRA – City Renewal Authority

Cross-through apartment – A cross ventilating apartment on one level with two opposite aspects

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 planting 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 - 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.

Detached dwelling - A dwelling that does not share any walls with any abutting dwelling.

Dual aspect dwelling – Apartments which have at least 2 major external walls facing in different directions, including corner, cross-over and cross-through apartments, which provide for and improve ventilation.

Dual occupancy – The use of land that was originally used or leased for the purposes of single dwelling housing for two dwellings.

Embodied carbon – 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 – A screened and secure structure designed to contain waste, recycling, or service equipment.

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.

GBCA – Green Building Council of Australia

Good design – Architectural and urban design outcomes are expected to comply with good practice design principles as a minimum ambition.

GLOSSARY

Continued from previous page

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 – A room within a dwelling capable of being lawfully used for the normal domestic activities of living, sleeping, cooking, or eating, and:

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 or for extended periods.

Habitable Spaces – Comfortable external spaces and places for people to spend time.

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

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– 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 is subject to change over time.

Micro-mobility – Refers to a wide range of lightweight movement options, including bicycles and powered options such as electric scooters and e-bikes.

Missing middle – An umbrella term that is used to describe housing types that fall between single dwellings and apartments. Dwelling types within this category are generally low rise, missing middle, 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 manor houses.

Mixed-use – Mixing residential, commercial, retail, entertainment and community uses in same building, site or precinct.

Natural cross ventilation – Wind-driven ventilation that provides ventilation rates at least 7 times greater than a single-aspect apartment in the same location, due to 2 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.

Performance glass – Typically referring to windows. Glass with high thermal performance due to double or triple glazing.

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).

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:
development on land that forms part of a centre – group centre, town centre, local centre development that forms part of a corridor

Primary private open space (PPOS) – means private open space that is directly accessible from a habitable room other than a bedroom.

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. 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.

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.

Storey – 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 or a basement or a space that contains only a lift shaft or stairway.

Street setback – The horizontal distance between a block boundary and the outside face of any building or structure on the block.

Studio apartment – A small dwelling unit with no separate bedroom from the living area.

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

TP / Territory Plan – Provides statutory planning guidance for development in the ACT.

Universal design – A design approach that aims to create buildings and environments that can be used by all people of all ages, abilities and backgrounds, without the need for adaptation or specialised design.

Urban design development – Urban design development is defined as:

iii. development on land that is not in an industrial zone that has a site area greater than 1 hectare; or

iv. 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.

In an industrial zone this only applies to a development that has a capital investment value of $30 million or more and a site area of greater than 1 hectare.

Urban Fabric – The make-up of an urban area. Refers to characteristics such as movement network, block structure, building heights and grain.

Typology – Means types of development, including multi-occupancy, townhouses, terraces and low-rise apartments.

Winter gardens – An enclosed balcony attached to a dwellings unit.