
Part 2

Adapting an exemplar apartment design



Introduction

Part 2 is divided into four sections, one for each of the exemplar design options.

Part 2 provides:

- general adaptation guidance for the exemplar designs
- approaches to adapting an exemplar design for different sites and contexts, by illustrating how a designer can manage common design challenges.

This guidance is not exhaustive, and other ideas may be appropriate depending on a development's particular circumstances.

Table 2.1 explains the structure of each section of Part 2.

Table 2.1: Part 2 structure

Item	Content	Purpose
General adaptation guidance	Guidance about how exemplar designs can be adapted to a range of different sites and contexts	• To be used by designers to understand how a plan can successfully adapt to a particular site scenario and maintain the principles and status of a Future Homes exemplar design • To outline approaches to adaptations for different conditions, such as lot sizes and shapes, orientation, topography, surrounding contexts, dwelling mixes and amenity impacts
Exemplar guidance	Guidance relevant to the exemplar design, authored by the architects	• To provide an overview of the designer's thinking and intent for adaptation

Part 2A

Exemplar Design A

Design Strategy Architecture
with IncluDesign



Design Statement

Prepared by Design Strategy Architecture with IncluDesign

Exemplar Design A by Design Strategy Architecture with IncluDesign comprises a series of urban, architectural, landscape, environmentally sustainable design and cost-effective design strategies, that work together to generate high-quality, medium-density living.

The scheme consists of three key design elements: a well-sized *communal courtyard*, a welcoming *threshold garden* and strategically located *communal stairs*. All elements are designed to support interactions between the residents and neighbourhood, and respond to contextual conditions.

Siting strategy

In addition to the three core design elements noted above, this exemplar brings together the following massing considerations to provide a well considered interface to the neighbouring properties, and support high-quality internal amenity for the new apartments.

- The scheme is composed as three separated blocks articulated through the courtyard and the vertical circulation elements. By breaking down the built form, this exemplar allows for high levels of access to daylight and cross ventilation for all apartments. The strategy also speaks to the gentler integration of a new development in a predominantly single-storey context.
- The exemplar is designed to provide sufficient setback and landscape buffers along the boundaries including areas for deep soil. This encourages a greener interface with existing neighbours.
- The massing approach provides a 'corner-lot aspect' to most apartments, ensuring ample access to daylight and cross ventilation for all apartments.
- The design optimises opportunities for passive surveillance and activation through careful placement of openings and 'habitable façade' elements.

Common space

- The communal courtyard has been designed to support daily activities of the residents. It is protected from the street and provides opportunities for the residents and the community to share, meet and interact at different times.
- It is intended to promote the gathering of groups and households with spaces for relaxation, play areas for children, and gardening production and education.
- The building is separated a minimum of 9 metres across the courtyard, to minimise interlooking and maximise solar access.
- Planter boxes and climber guides are designed to be a suitable medium for vegetation and food production.
- The threshold garden is the main pedestrian entry into the heart of the site. Seating elements, mailboxes and planting are integrated into the journey.
- Key design elements in and around the threshold garden in the north-south schemes include a medium tree that can grow to full height, planter boxes with climbers and cascading foliage on balconies, vertical climbers against the wall and a permeable ground surface to promote stormwater filtration.
- The central *communal stairs* are a core architectural element. They are designed to promote passive surveillance, community interaction and intuitive wayfinding.

Design and materiality

The apartments have been carefully designed to maximise internal amenity and take advantage of the 'corner-lot aspect' achieved by the building massing.

- All apartments are dual-facing, with access to light and cross ventilation. Most apartments have a corner aspect, with living areas focused towards the north, east and west.
- The entry doors have an integrated transitional space, heightening the sense of arrival into the apartment and providing utility for storage and hanging.
- The apartment's access to daylight and sunlight is prioritised, including skylights over staircases and on the upper-floor living areas.
- The material strategy focuses on cost-effective and low-maintenance options on the upper levels, balanced with tactility on the lower level. Colorbond of fibre-cement sheet is paired with brick or timber to provide a contrast.
- Environmentally sustainable design initiatives are considered including recycled, locally sourced and high-performance materials, to minimise the carbon impact.

Operations

Further cost and effort minimisations are considered, including the following:

- Maintenance access and safety such as windows are able to be cleaned from the interior, and use of lightweight, durable cladding to reduce the need for scaffolding
- Common areas are proposed to be very durable, consisting of concrete structure, metal handrails and steel mesh
- On-site photovoltaic and rainwater harvesting is prioritised, and there is space allowance for battery storage.

1 Introduction

This chapter guides designers adapting Exemplar Design A for a particular development site. Authored by the architects who designed the exemplar, the chapter is organised according to the six Future Homes objectives that adapted designs need to address: Responsive to Need, Liveable, Good Neighbours, Enduring, Sustainable and Adaptable.

For each objective, the chapter sets out:

- how to adapt the design to fit different sites and contexts
- preferred and discouraged approaches to adaptation
- ideas to adapt the design to suit particular needs such as a different bedroom configuration or a main road location
- ideas to achieve better development and design outcomes by adapting the design if the opportunity arises.

The guidance in this section is not exhaustive, and there is no adaptation guidance for some planning elements. It is up to the designer to process or interpret the exemplars. The assessment process will treat all adaptations on their merits.

2 Responsive to need

2.1 Apartment mix and size

General adaptation guidance

Apartment designs need to respond to the changing patterns of living, including an increasingly diverse household mix and size.

The apartment should be sufficiently adaptable to allow:

- the ability to upsize or downsize: for example, by having the space and services configuration to combine smaller apartments to create a larger apartment and vice versa
- multi-purpose spaces for work and study from home
- internal functions to be rearranged over time: for example, bathrooms, kitchens and laundries that can be reconfigured or be combined differently.

Preferred approaches include:

- the layout is easy to change
- open-plan living spaces cater for flexible furniture arrangements
- floor space is used efficiently.

Discouraged approaches include:

- excessive corridors and passageways
- excessive use of built-in joinery without sacrificing storage.

Exemplar Design A adaptation guidance

This adaptation can accommodate:

- a different mix of apartments based on market demand
- merging apartments to provide different bedroom mixes and configurations.

Figure 2A.1: Examples of internal layout adaptation to suit different apartment mix



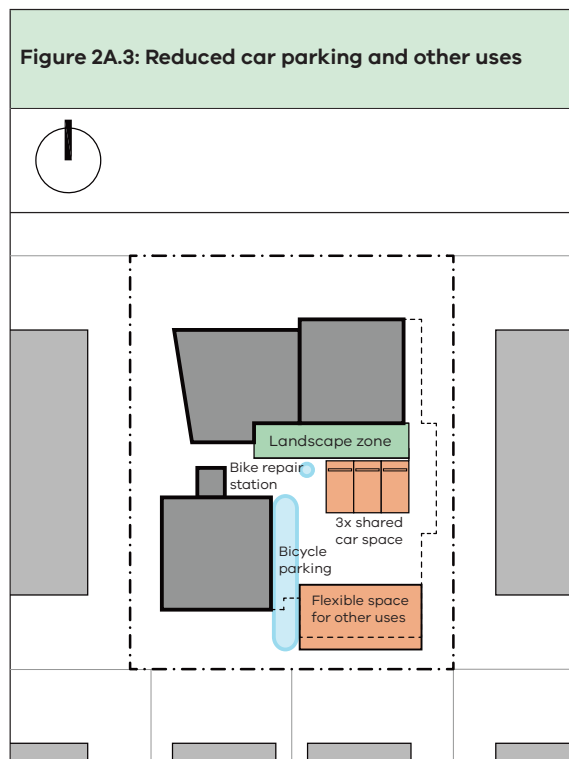
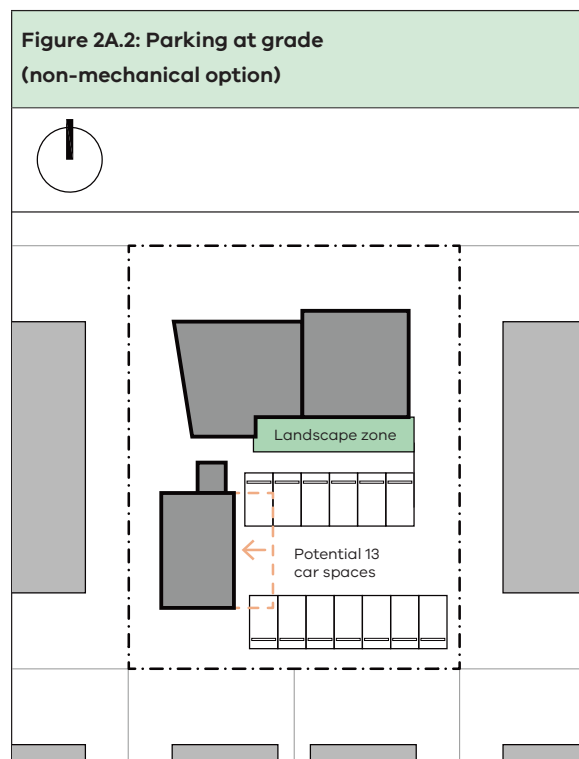
2.2 Parking: cars

General adaptation guidance

If it is acceptable to have fewer car parking spaces, the design should be adapted to avoid the need to use mechanical parking. The development should also allow for future adaptation of car parking spaces to alternative uses to support changes in use, personal preferences and technology over time.

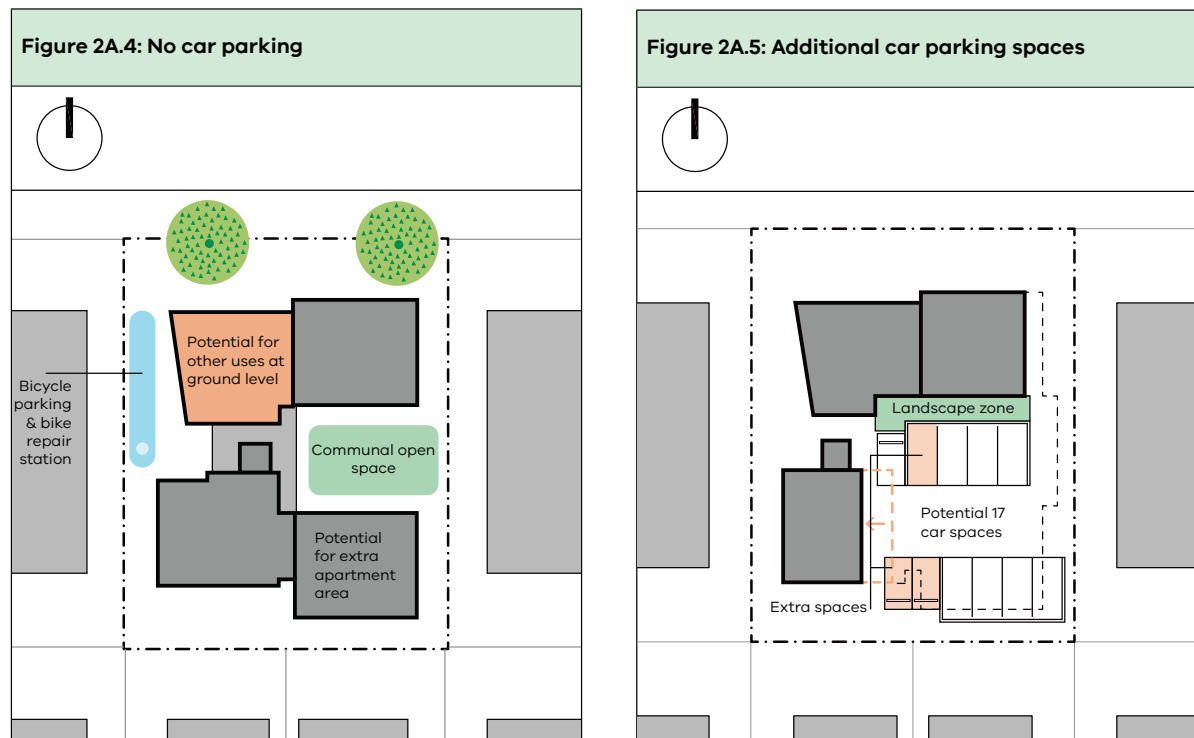
Measures to support future adaptation include sufficient floor-to-ceiling height to allow future habitable spaces to be inserted with access to natural light.

Exemplar Design A adaptation guidance



Note: Potential uses could include workshops or co-working office space.

Figure 2A.4 shows how other uses may emerge on the ground level to activate the street in an adaptation to have no car parking spaces on the site. Figure 2A.5 shows how additional car spaces can be accommodated by mixing at grade car parking with mechanical parking.



2.3 Parking: bicycles

General adaptation guidance

Consider locating bicycle parking within enlarged balconies, without compromising useable space for residents' recreation.

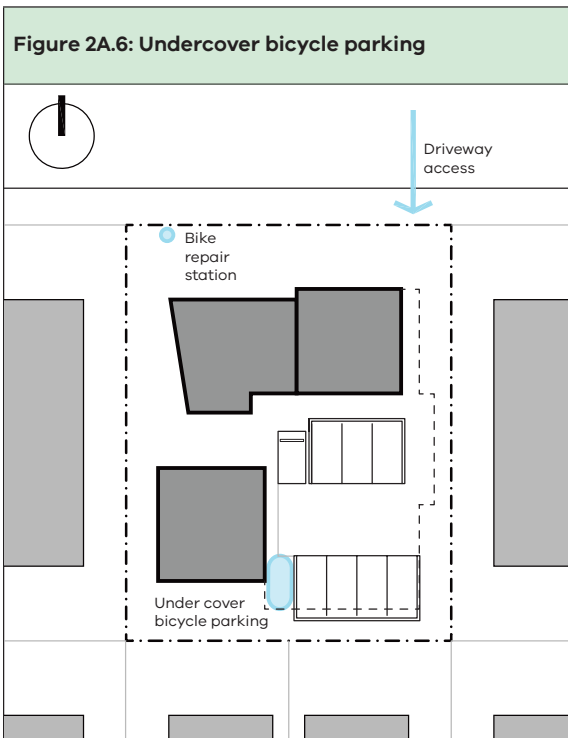
Bicycle parking provided on enlarged balconies will require the provision of a bicycle accessible path from the ground floor. Where bicycle parking is provided on upper floors, lifts and/or stairs should be designed to provide ease of access.

Preferred bicycle parking spaces are those that are covered from the weather and secured.

Exemplar Design A adaptation guidance

Undercover bicycle parking

Figure 2A.6 shows the area designated for bicycle parking, with a vertical, wall-mounted system. More or other bicycle parking spaces could be created by providing fewer or no car parking spaces.



3 Liveable

General adaptation guidance

There is no general adaptation guidance for the Liveable objective, but that does not mean alternative solutions are not acceptable. Where one is proposed, the objectives, principles and mandatory requirements in Part 1 must still be met.

4 Good neighbours

4.1 Front setback

General adaptation guidance

Front setbacks need to be adapted to the street context. The starting point should be the predominant street setback along the length of the street up to 150 metres (or about ten properties) on either side or a minimum of 7 metres, whichever is lesser. Within a site, the building setback may be staggered, forward or behind the predominant street setback having regard to the local context, design outcome and impact on the streetscape.

When determining the front setback or setbacks, the considerations should be:

- the wider streetscape and urban block pattern
- whether an adjoining building sits forward of the predominant street setback
- opportunities to use articulation to transition between neighbouring sites
- whether the approach responds to the emerging or future character of the area
- opportunities to provide suitable canopy tree planting.

Preferred approaches include:

- upper-level projections including balconies that provide weather protection for the spaces below
- where a lesser front setback is appropriate, consider increasing the rear setback and/or providing additional internal breathing space between buildings.

Discouraged approaches include:

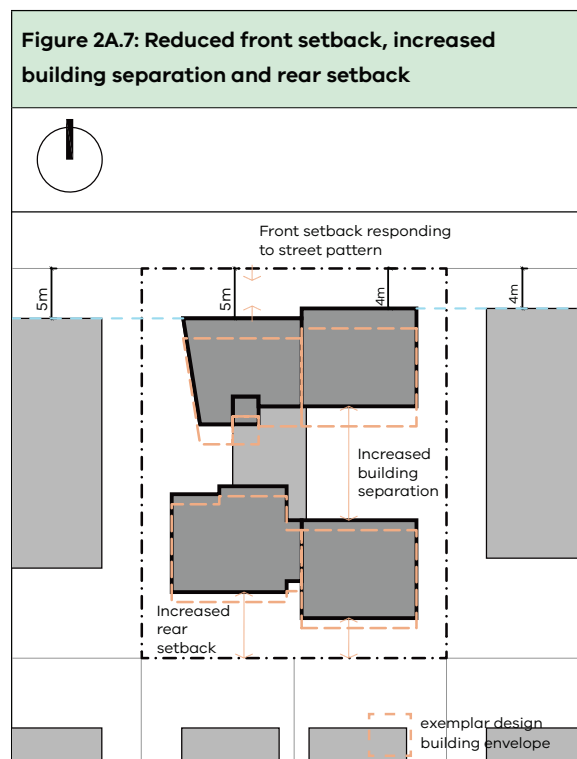
- monolithic setbacks without breaks or variations
- balcony projections that will limit the planting of canopy trees.

Exemplar Design A adaptation guidance

Reduced front setback, increased building separation and rear setback

In this adaptation, the front setback is less than the exemplar design because the wider street character allows for reduced setbacks.

This in turn creates an opportunity to increase building separation and communal open space — a courtyard — in the centre of the site. It also allows for an increased rear setback, as Figure 2A.7.



4.2 Height

General adaptation guidance

Where the responsible authority permits, the exemplar design can be adapted to add another storey. A fourth storey may reinforce the existing character of the wider urban context or respond to the agreed future character of the local area.

An adaptation to increase building height should consider:

- impacts on solar access and articulation to the scale of the specific neighbouring context
- the siting of the additional storey, to minimise overlooking and overshadowing
- transitions to lower, neighbouring built form
- additional fire egress and services requirements
- access and circulation
- additional car and bicycle parking requirements, if the number of apartments is increased
- additional communal open space and landscaping requirements.

Preferred approaches include:

- the use of design techniques to reduce visual bulk and break up the mass of the building such as articulation of built form, creating depth within the façade and the use of materials.

Discouraged approaches include:

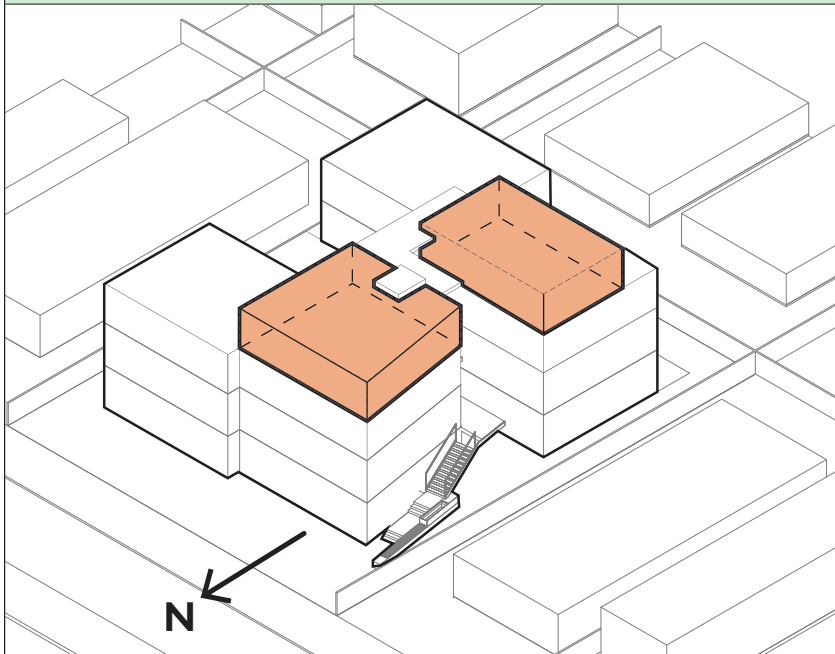
- providing a fourth storey across the whole of the development
- overly dominant built form that does not respect the future character of the area.

Exemplar Design A adaptation guidance

North-south orientation, three and four storeys

This design can be adapted at grade, north-south, with a mixed built form height of three and four storeys, as Figure 2A.8 shows.

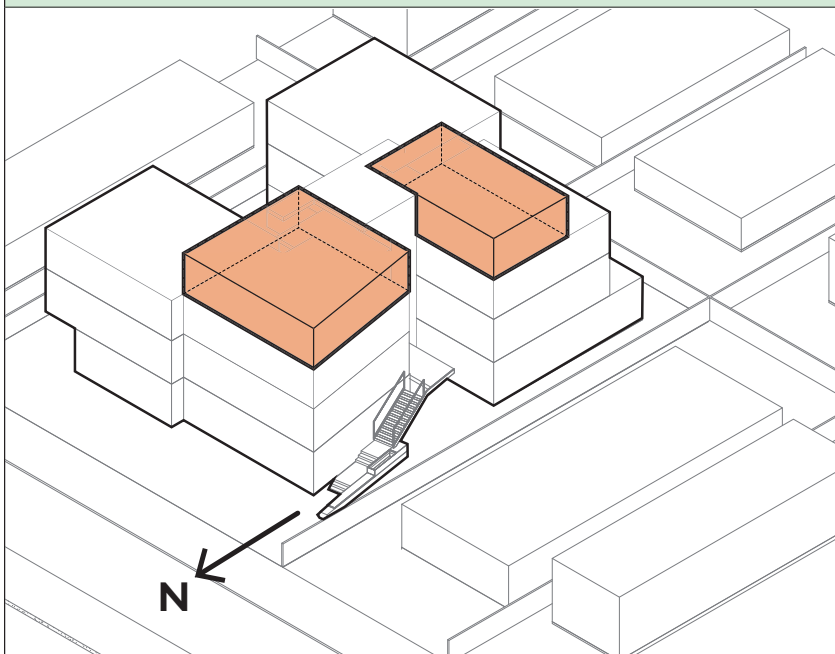
Figure 2A.8: North-south orientation, three and four storeys, 3D representation



North-south orientation, basement, three and four storeys

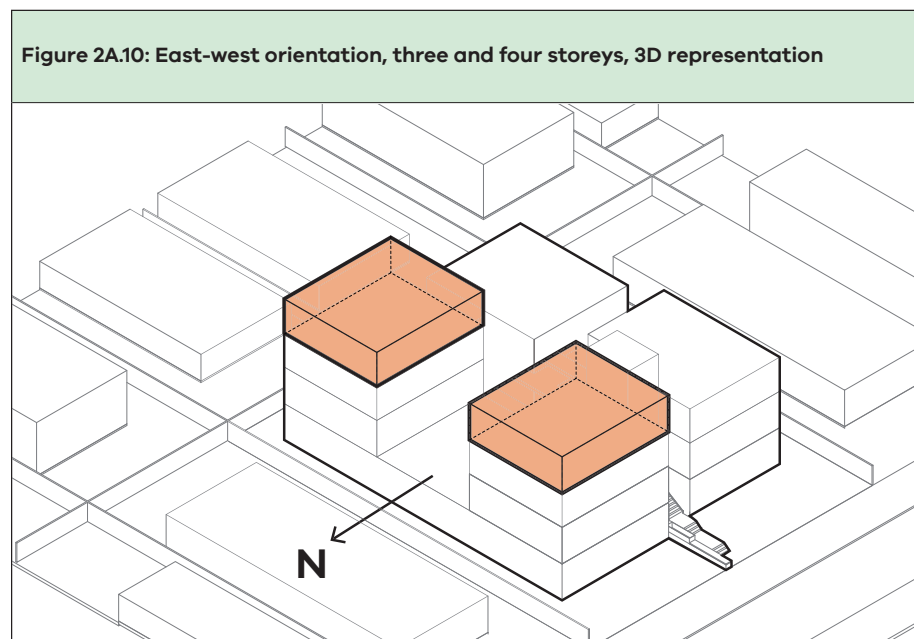
The north-south orientation can be adapted with a mix of three and four storeys, as Figure 2A.9 shows.

Figure 2A.9: North-south orientation, basement, three and four storeys, 3D representation



East–west orientation, at grade

The design can be adapted at grade, east–west, with a mixed built form height of three and four storeys, as Figure 2A.10 shows.



4.3 Walls on a boundary

General adaptation guidance

Building to boundaries should be treated flexibly, depending on the site context and impacts on neighbouring properties.

Walls on a boundary may be appropriate where:

- there is an existing wall on the boundary of similar length and height
- the site abuts a laneway
- they improve the development's character such as by contributing to more landscape and open space opportunities on the site
- there are no sensitive interfaces on the neighbouring property.

Discouraged approaches include a wall on a boundary:

- that significantly exceeds the height or length of neighbouring walls
- if overshadowing, access to sunlight and daylight, noise or loss of vegetation or the visual amenity on the adjoining property cannot be adequately managed
- if there is a clear preference for a landscaped perimeter
- if a site abuts a public park.

Exemplar Design A adaptation guidance

North-south orientation, basement

This design can be adapted for a north-south basement orientation by increasing the area to the southern block, potentially adding about 30 square metres on the ground floor, as Figure 2A.11 and Figure 2A.12 show. This would mean reconfiguring the south-east apartment at the ground-floor level.

This adaptation only applies to the basement scheme, to comply with garden area requirements. On larger sites, there could be walls on the boundary for the at-grade schemes while still complying with garden area requirements.

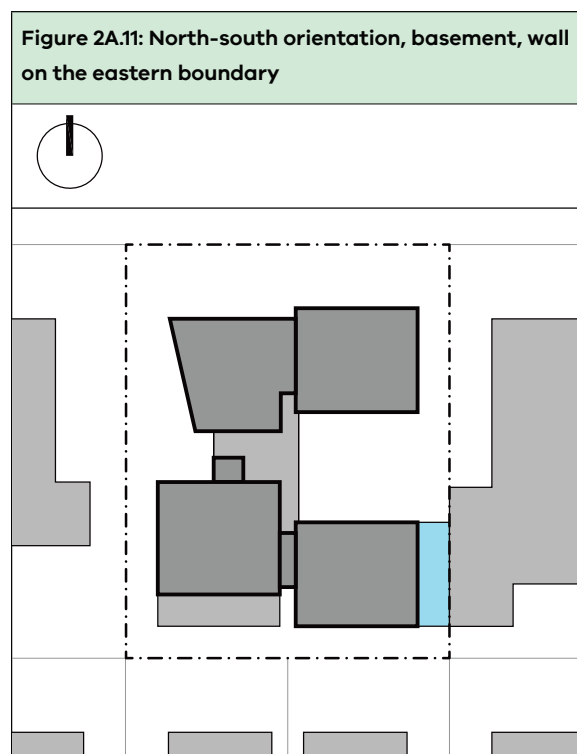
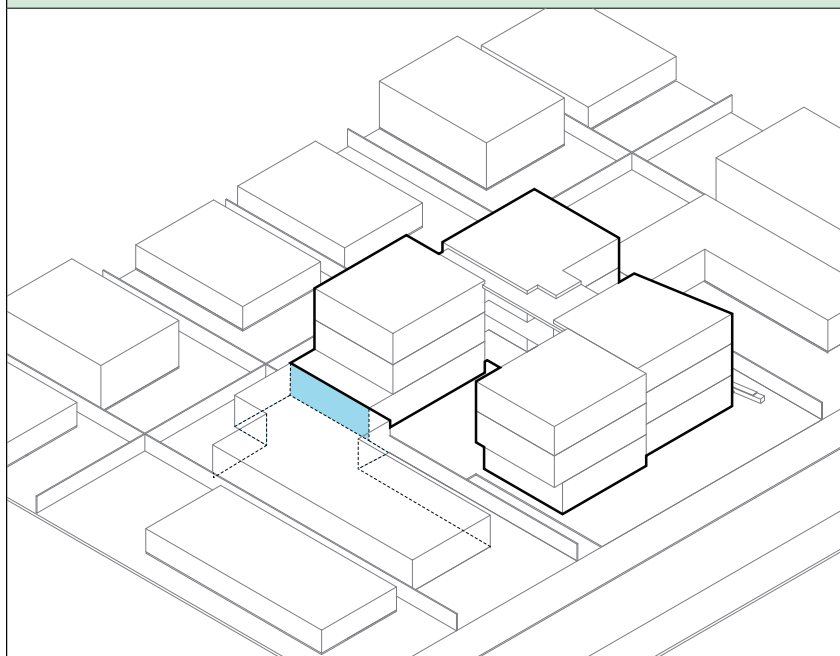


Figure 2A.12: North-south orientation, basement, wall on the eastern boundary, 3D view



4.4 Overlooking

General adaptation guidance

The principles in Part 1 set out general design considerations for this planning element.

The exemplar provides two design strategies to prevent overlooking that respond to the different orientations, while providing amenity to residents, allowing access to external views and daylight.

Adaptations should not hinder the amenity of residents. For example, highlight windows should be avoided as a standalone solution to overlooking.

Exemplar Design A adaptation guidance

Butterfly windows for sensitive interfaces to the north, east and west

The exemplar design uses butterfly windows to limit overlooking into private open space and the windows of neighbours' habitable rooms. Butterfly windows also allow access to external views and daylight. These windows may sometimes need to be supplemented with an additional highlight window to meet daylight requirements.

If overlooking is not an issue, butterfly windows can be replaced with full-length windows with appropriate external shading.

Figure 2A.13 shows how butterfly windows can be used to limit overlooking into the habitable room windows of an adjoining property. Additional measures might be needed if the secluded private open space of the adjoining dwelling is located adjacent to the boundary fence. These measures can include strategic placement of the windows, orientation of the angled wall or adjusted window sill height.

Figure 2A.13: Butterfly windows to limit overlooking

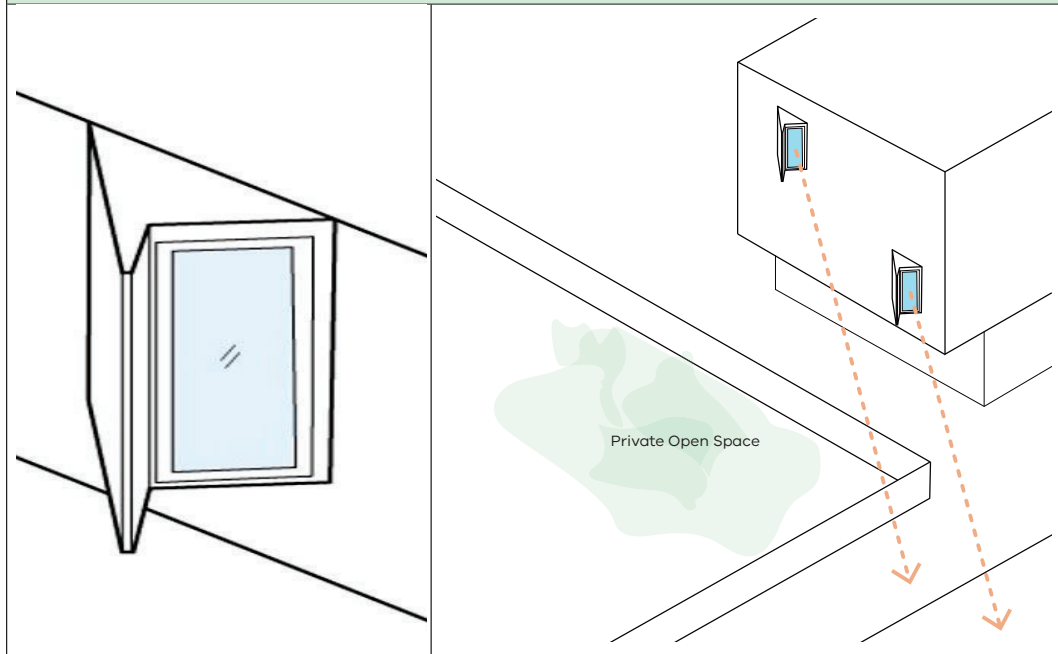
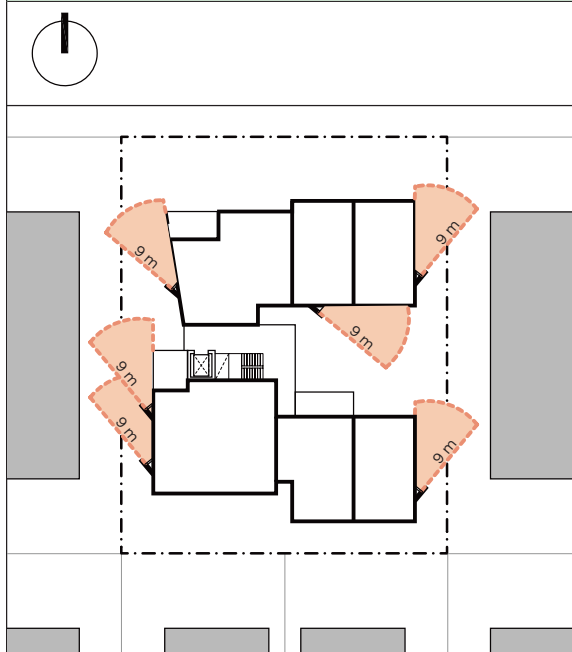


Figure 2A.14: Example of butterfly windows managing views to neighbouring properties

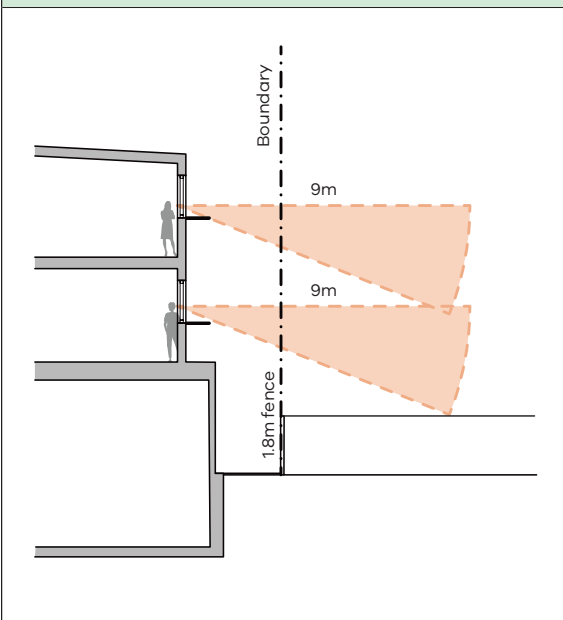


Protruded window sills for sensitive interfaces

Protruded window sills can be used to limit overlooking into sensitive interfaces. Window sills should be no higher than 1.2 metres, to allow residents access to external views and daylight. Figure 2A.15 shows the adaptation.

A protruded window sill is not necessary if overlooking is not a concern.

Figure 2A.15: Protruded window sills to limit overlooking



4.5 Daylight to existing windows

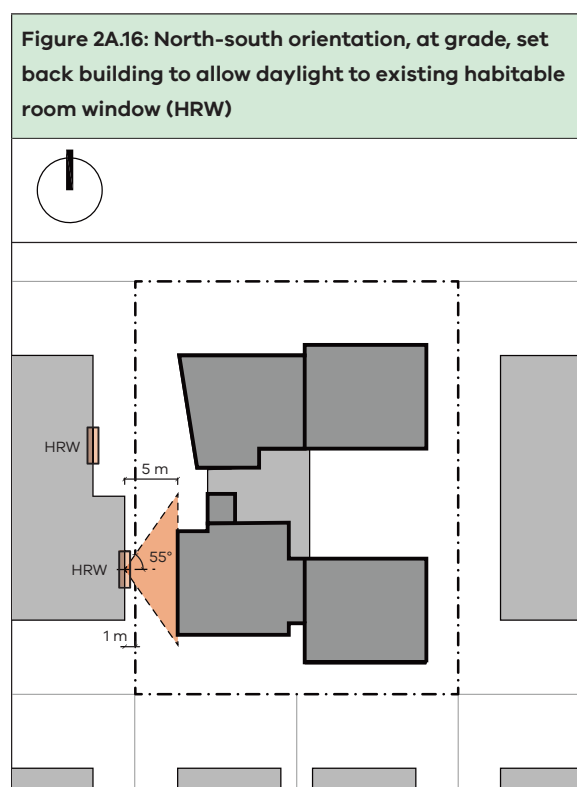
General adaptation guidance

The exemplar design protects solar access to existing habitable room windows without the need for rigid numeric compliance. Designs can be reconfigured to provide adequate daylight through the habitable room windows of existing dwellings located close to the site boundary.

Exemplar Design A adaptation guidance

North-south orientation, at grade

This design can be adapted if there is an existing habitable room window 1 metre from the boundary, by reducing the area of the building, as Figure 2A.16 shows.

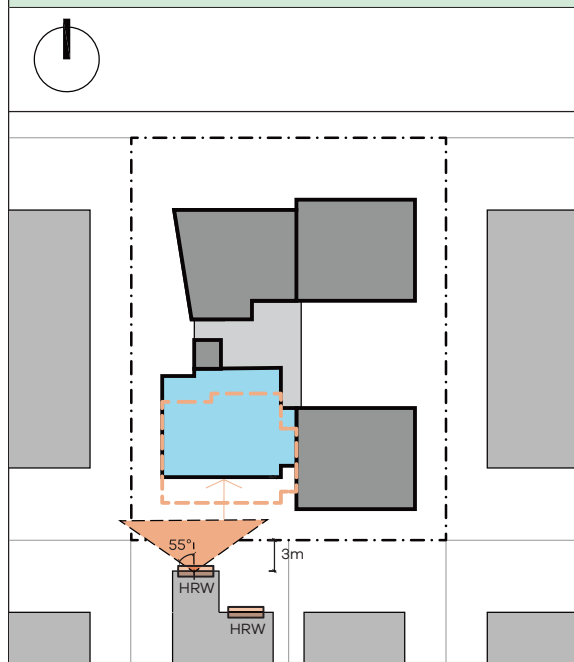


The above adaptation can also be mirrored to adapt to contextual conditions. However, consider the impact of mirroring the design on solar access and environmentally sustainable design modelling.

North-south orientation, at grade

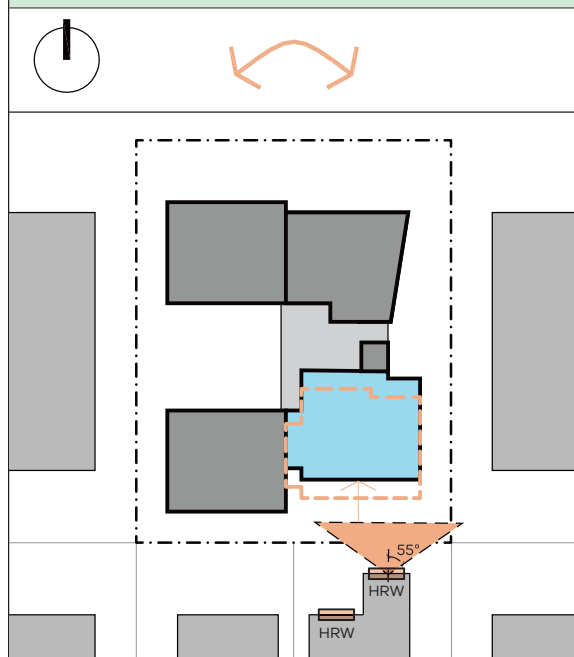
This design can be adapted if there is a north-facing habitable room window located within 3 metres of the boundary by increasing the setback of the building to the existing window. Figure 2A.17 shows how this can be achieved.

Figure 2A.17: North-south orientation, at grade, set back building to allow daylight to existing north facing habitable room window (HRW)



This orientation can also be mirrored to adapt to contextual conditions, as Figure 2A.18 shows. However, consider the impact of mirroring the design on solar access and environmentally sustainable design modelling.

Figure 2A.18: North-south orientation, at grade, daylight to existing north-facing habitable room window (HRW), mirrored design



4.6 Site access

General adaptation guidance

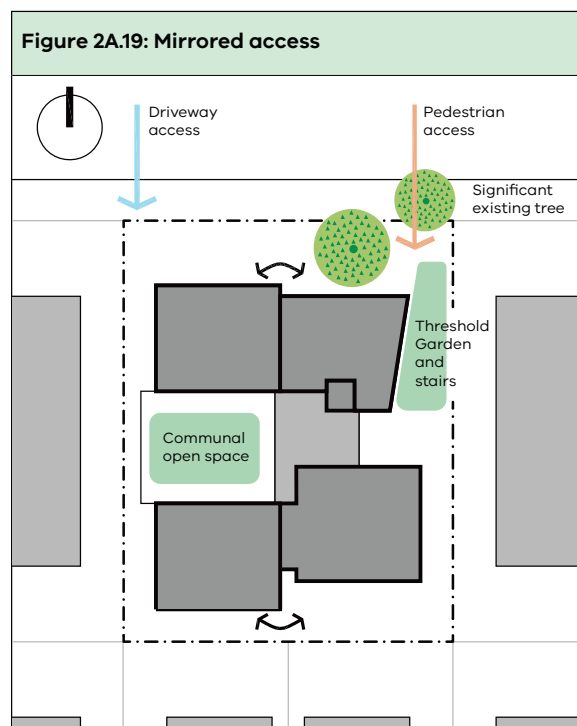
Site access may need to be adapted if:

- street and public transport assets such as street trees, bus shelters, stay wire or electrical poles are located on nature strips
- a rear or side lane access is available and the rights to use the laneway for vehicle access are established.

Exemplar Design A adaptation guidance

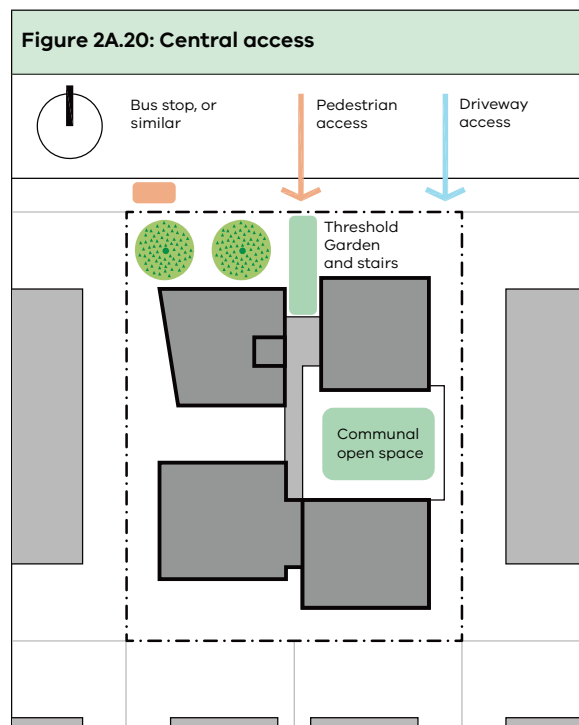
Mirrored access

If there is a significant street tree on the nature strip where the driveway is located, this design can be mirrored to locate the pedestrian access along the eastern boundary and the driveway along the western boundary, as Figure 2A.19 shows.



Central access

Locate the pedestrian access in the centre of the site if street assets on the nature strip or other site conditions do not permit side access. This adaptation would need to consider solar access to all apartments, particularly those in the south-west. Figure 2A.20 shows this adaptation. Note that the east-west exemplar design has pedestrian access in the centre of the site.

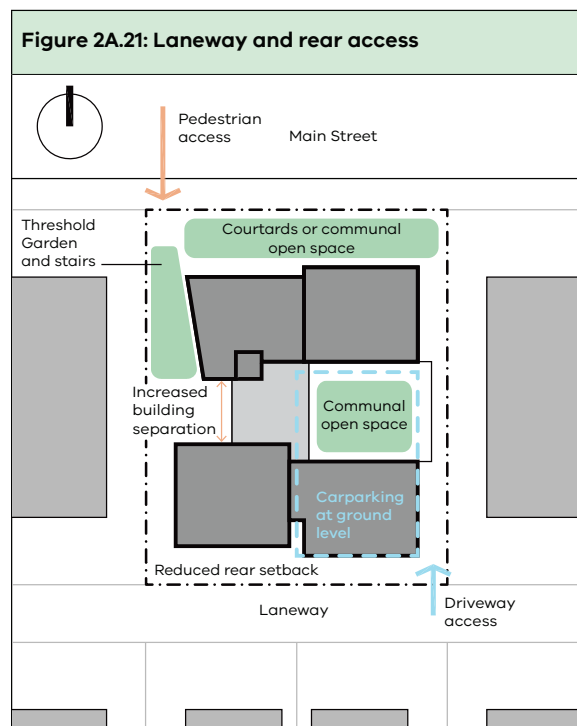


Laneway and rear access

If the site has rear access through a laneway that creates additional separation from neighbouring properties to the south, the design can be adapted by:

- locating the driveway towards the rear laneway
- reducing the rear setback of the south-western block.

This adaptation offers opportunities to increase the separation between the built form, to benefit the northern aspect to apartments in the south-western block and communal open space. Figure 2A.21 shows the adaptation.



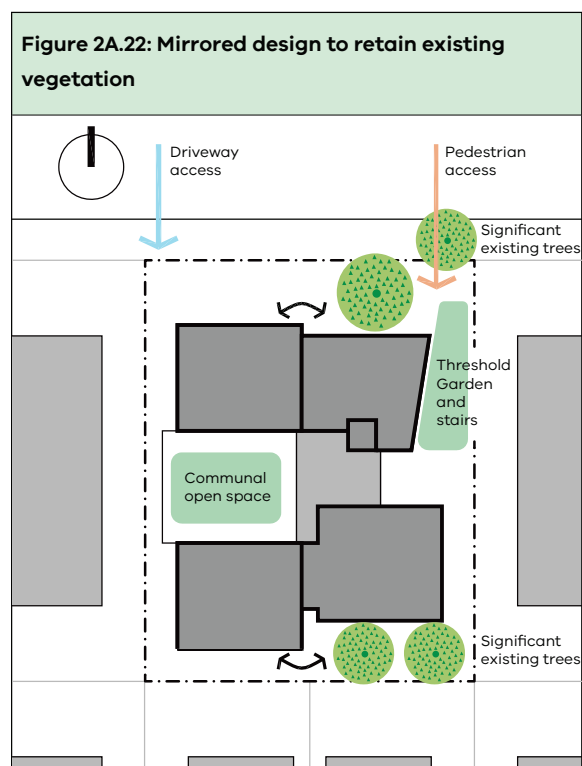
4.7 Existing vegetation

General adaptation guidance

Retain existing significant trees, particularly where they are located within the front and rear gardens. Seek guidance from an arborist, particularly where tree controls apply on site.

Exemplar Design A adaptation guidance

This design considers front and rear setbacks to preserve existing significant trees and vegetation. It can also be mirrored to adapt to the location of existing trees as Figure 2A.22 shows.



5 Enduring

5.1 Greening and landscape

General adaptation guidance

Greening and landscaping could be increased if there is potential to:

- increase setbacks at the front, side or rear if site conditions allow, such as on larger sites and sites without sensitive interfaces or easements
- increase the separation between buildings in the development
- raise private and communal open spaces to the upper levels or create a roof terrace, while meeting the garden area performance targets
- abut an adjoining wall at the boundary
- use low-maintenance climbing plants or alternative planting options to manage privacy and overlooking on walls; such walls must comply with cladding regulations and be drought-tolerant and irrigated.

Preferred approaches include:

- adjusting layouts to integrate existing trees or vegetation
- adjusting layouts to improve access to sunlight throughout the day
- maximising areas of connected deep soil.

Discouraged approaches include:

- ② high-maintenance landscape elements
- ② excessive hard-ground surfaces
- ② excessive use of planter boxes at the expense of deep-soil planting.

Exemplar Design A adaptation guidance

The external landscape is an essential part of the exemplar design and must be coordinated with all architectural components and necessary services to ensure it is well integrated.

A key feature of this design is the main entry space and using planting to lead the pedestrian into the centre of the block. Trees, garden beds, climbers and planters should be provided to enhance this design intent.

Adaptations must integrate contextually appropriate planting to maximise amenity, and they should consider adequate growing mediums, maintenance, pavement treatments and the selection of species, particularly for:

- the communal courtyard
- threshold garden and welcoming stairs
- productive gardens in the courtyard
- climbing vegetation and the necessary architectural elements to support and guide growing
- cascade gardens.

Refer to the Future Homes Landscape Concept Plans for further guidance.

6 Sustainable

General adaptation guidance

There is no general adaptation guidance for the Sustainable objective, but that does not mean alternative solutions are not acceptable. Where one is proposed, the principles and performance targets in Part 1 must still be met.

See Appendix 6: Environmentally Sustainable Design for further information.

7 Adaptable

7.1 Roof terraces

General adaptation guidance

Roof terraces increase communal open space and can be vibrant hubs where residents can socialise and build a sense of community.

Consideration of a roof terrace should include:

- the capacity of the structural system
- the maximum building height requirements, noting that lift and stair overruns and balustrades do not count towards building height.

Preferred approaches include:

- integrating the terrace design with the overall building form
- providing protection from the wind, sun and rain, noting maximum building height requirements
- using opportunities for cooling and greening
- having a well-designed drainage system that minimises unsightly services, staining and damage to the building
- creating a flexible design that caters for a mix of activities including vegetable gardens and hobbies
- providing infrastructure services and facilities such as lighting, barbecues, garden taps, outdoor furniture, sun shades and vegetable gardens
- protecting adjoining properties from noise and overlooking.

Discouraged approaches include:

- exposed, windy terraces
- designs that don't allow for more greenery
- overlooking into existing habitable room windows and private open space.

Exemplar Design A adaptation guidance

There is no specific adaptation guidance for this topic.

7.2 Orientation

General adaptation guidance

There is no general adaptation guidance for this topic.

Adaptations should address site planning requirements including daylight, ventilation and access.

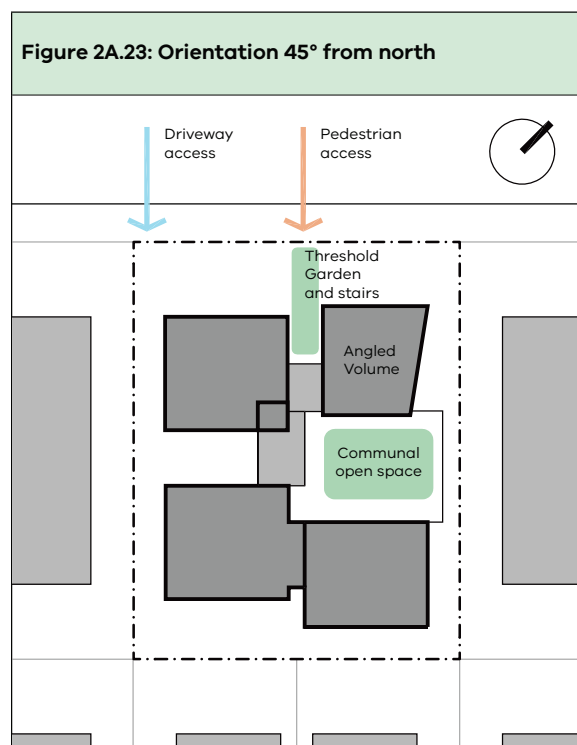
Exemplar Design A adaptation guidance

45-degree orientation from north

For a development oriented 45° from north, the design can be adapted by:

- angling the volume in the north-east area, to maximise solar access to communal open space
- locating pedestrian access and the threshold garden at the middle of the site, to maximise apartments' solar access
- for the south-western apartments, using clerestory windows on the upper levels to maximise solar access in winter.

Figure 2A.23 shows these adaptations.



Irregularly shaped sites

For irregularly shaped sites, the design can be adapted by:

- responding to the site's angle
- enlarging the south-western apartments towards the western boundary, which could increase the floor area by approximately 15 square metres per level
- enlarging the south-eastern apartments towards the southern boundary, which could increase the floor area by approximately 30 square metres per level.

Consideration would need to be given to reconfiguring apartment layouts.

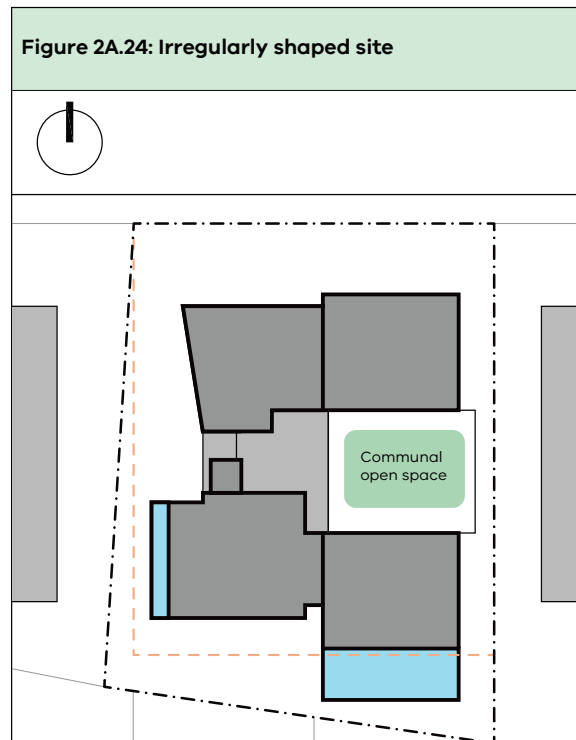
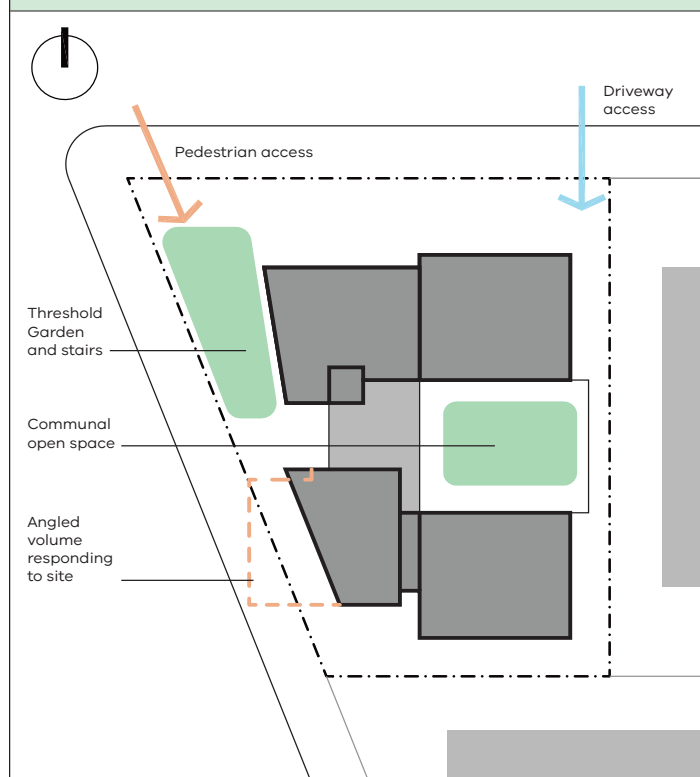


Figure 2A.25: Irregularly shaped site with reduced floor area to accommodate a shorter southern boundary



7.3 Site on a main road

General adaptation guidance

If a site is on a main road, designs should be adapted to address traffic movements, noise, pollution and privacy issues. Main road sites may also need expert advice from acoustic and traffic consultants.

Designs can be adapted:

- with landscape treatments to mitigate noise and soften the harsh road environment
- by building a front fence up to 1.8 metres high
- by positioning the main communal areas away from the main road
- with acoustic treatment such as double-glazed windows
- by providing balconies with solid balustrades
- by providing for a vehicle passing area.

Preferred approaches include:

- a frontage that contributes to the streetscape character, by screening with trees.

Discouraged approaches include:

- long, blank walls with no visual connection to the street.

Transport for Victoria (TfV) requirements for main road sites

TfV requires plans to be prepared in accordance with the following:

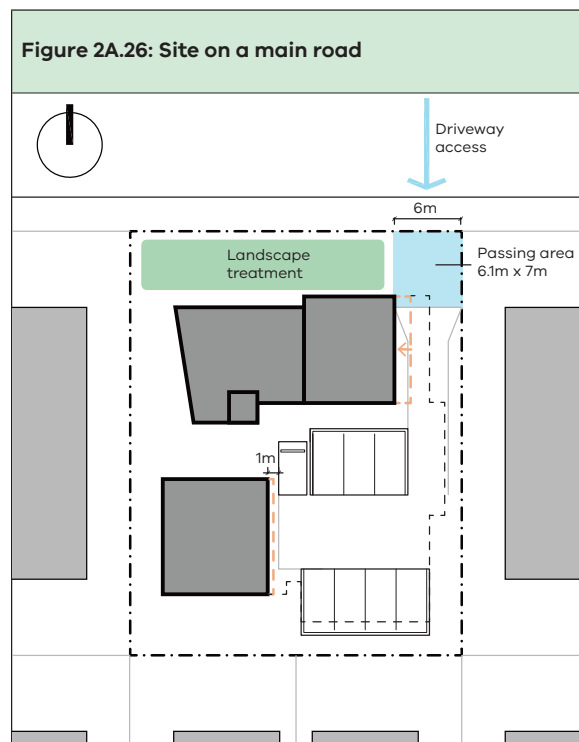
- A feature survey plan must be submitted, showing all features of the road including street trees, utility poles, pits, bus stops, line-markings, slip lanes, medium strips and traffic / pedestrian lights in proximity to the site
- Where tram lines exist, access to the property should be confined to left-in and left-out only arrangements
- Crossovers must be set back:
 - at least 1.5 metres (with no part closer than 1.0 metres) from any public transport assets
 - at least 1.0 metres from infrastructure/ utility poles
 - at least 9 metres from an intersection
- Accessways must:
 - Provide a passing area at the entrance at least 6.1 metres wide and 7 metres long where an accessway serves:
 - 10 or more cars and is more than 50 metres long or
 - connects to a road in a Transport Zone 2 (TRZ2)
 - Be designed so that cars can exit the site in a forward direction, if the accessway serves four or more car spaces or connects to a road in a TRZ2
 - Have a corner splay or area at least 50 per cent clear of visual obstructions extending at least 2 metres along the frontage road from the edge of an exit lane and 2.5 metres along the exit lane from the frontage, to provide a clear view of pedestrians on the footpath of the frontage road. The area clear of visual obstructions may include an adjacent entry or exit lane where more than one lane is provided, or adjacent landscaped areas, provided the landscaping in those areas is less than 900mm in height
 - Be set back a minimum of 7 metres inside the property boundary for any security boom, barrier, gate, or similar device controlling vehicular access to the premises, to allow vehicles to stay clear of the road pavement and footpath
 - Provide clear directional signs on the arterial road frontage if one-way access is proposed
- If an accessway to four or more car parking spaces is from land in a TRZ2, the access to the car spaces must be at least 6 metres from the road carriageway
- If entry to the car space is from a road, the width of the accessway may include the road
- Ensure car parking spaces are in accordance with the dimensions in Table 1.6: Minimum dimensions of car parking spaces and accessways. Where mechanical parking is proposed, refer to **Chapter 2.3 Parking: Cars** for guidance on dimensions and aisle widths.

If a Future Homes adaptation does not address the requirements above, TfV may ask the permit applicant to do so.

Exemplar Design A adaptation guidance

For a site located on a main road, this design can be adapted by:

- reducing the ground-level apartment area to accommodate a passing area for cars
- providing a landscape treatment, to mitigate and soften the main road environment
- secluding the main communal area from the main road
- ensuring appropriate acoustic treatment.



7.4 Corner site

General adaptation guidance

A development on a corner site must locate crossovers in accordance with council and/or TfV requirements and accommodate any existing street services and assets.

Preferred approaches include:

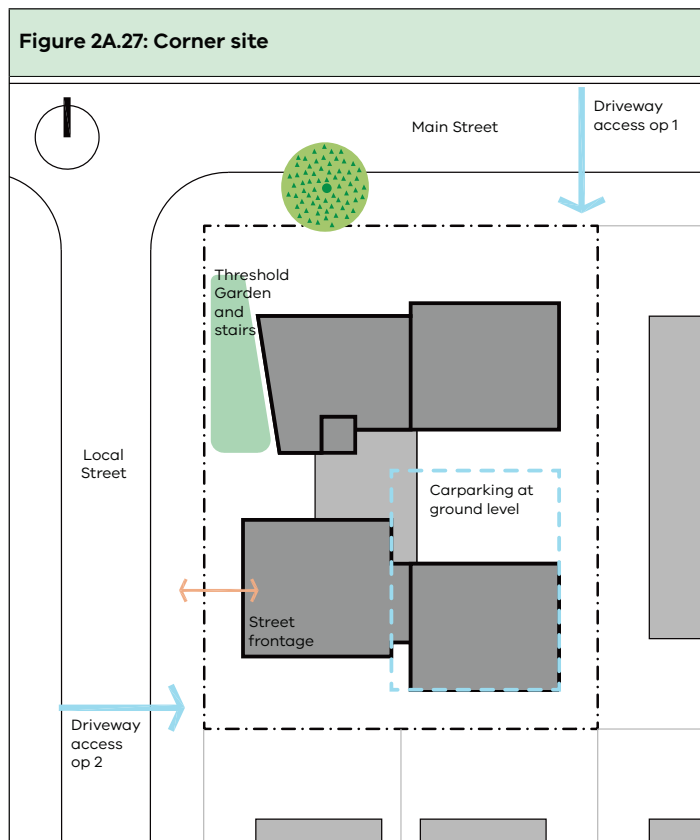
- clear sightlines
- crossovers appropriately set back from street corners, to avoid vehicle conflict
- developments that face the street on both frontages
- buildings that offer passive surveillance of the street
- use of landscape elements to maintain visual permeability
- vehicle access from the local road.

Discouraged approaches include:

- high, long, blank walls at street frontages.

Exemplar Design A adaptation guidance

This design can be adapted by providing driveway access to the south-western corner of the site. Apartments in the south-western block could be rotated or reconfigured to be street-fronting, facilitating passive surveillance. Figure 2A.27 shows the adaptation.



7.5 Varied site dimensions

General adaptation guidance

For a deep site:

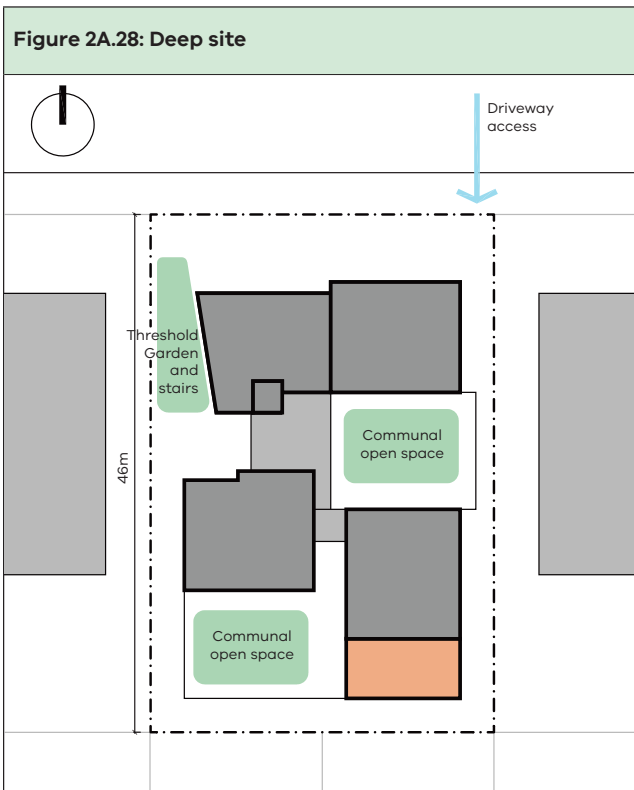
- ensure equitable access to circulation including stairs and lifts
- avoid a long, continuous built form without breaks in the massing.

Exemplar Design A adaptation guidance

For a deep site — a site that is 46 metres or longer — the design can be adapted by:

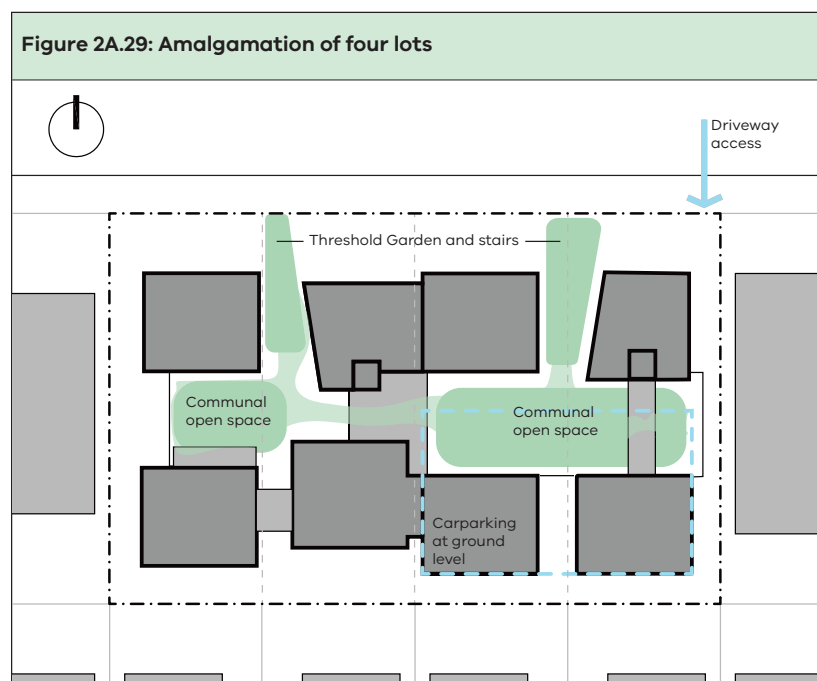
- extending part of the building and providing more communal open space
- locating another module towards the south-east corner, to accommodate two or three more apartments.

This adaptation should consider its impact on other apartments — their solar and daylight access and shading — and comply with the sustainability and good neighbours principles. Additional stairs may also be needed, to comply with the requirements of fire services.



Three and four lot amalgamation

For a site that amalgamates three or four lots, the design can be adapted by creating a continuous linkage of central open space while ensuring there is good north-facing solar access, as Figure 2A.29 shows.



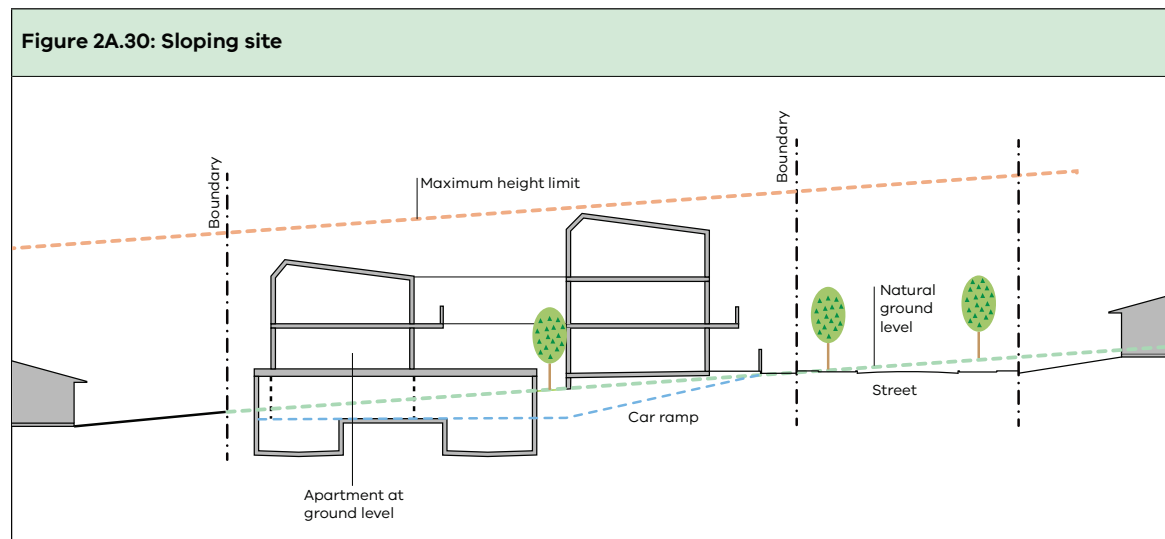
7.6 Sloping site

General adaptation guidance

There is no general adaptation guidance for this topic.

Exemplar Design A adaptation guidance

This design can be adapted for a sloping site, as Figure 2A.30 shows. The figure uses a ground slope of between 1:11 and 1:13 (7.6 percent to 8.7 percent). If the site is steeper than this, the daylight for the courtyard may be compromised in the north-south orientation.



7.7 Floodplain

General adaptation guidance

The development on a site within a flood overlay must be designed in accordance with the relevant floodplain management authority's requirements.

Inappropriate development in flood affected areas can lead to fundamental changes in the nature and impact of flooding. It can also increase the potential for loss of life and flood damages to the community and the environment.

The decisions of floodplain managers are guided by planning policies in the planning scheme. In addition, the floodplain managers assess development applications in accordance with the Victorian Floodplain Management Strategy and the *Guidelines for Development in Flood Affected Areas* (DELWP, 2019). Usually the information in the guidelines is sufficient to guide decision making. However, the guidelines cannot cover all the circumstances and aspects of flood behaviour.

Development in or adjacent to a floodplain will only be acceptable where the new development is protected from flooding (flood levels are constructed to the identified Nominal Flood Protection Level); has safe access to and around the development (in considering site specific flood depths and velocities); and does not interfere with the passage and storage of floodwaters.

Developments in areas affected by flooding must not obstruct the passage of flood flows or reduce floodplain storage as this may cause flood levels and velocities to increase and adversely impact surrounding properties. On sites subject to flooding, imported fill must also be kept to a minimum and used only for sub floor areas of dwellings, garages and driveway ramps. New fencing and decking should also be of an open style of construction (50 per cent permeable/open) to maintain conveyance of flows through floodplains.

All new development should preserve, and if possible enhance, the social and environmental values and benefits of floodplains and waterways and should be sensitively designed and sited to maintain and enhance environmental assets, significant views and landscapes along river corridors and waterways and adjacent to lakes and wetlands. For detail on development setbacks required from waterways, see the *Healthy Waterways Strategy 2018-2028*.

On sites affected by flooding, local floodplain management authorities require the following information to be included on all plans:

- The boundaries and dimensions of the site
- Existing conditions survey and feature plans. Taken by or under the direction and supervision of a licensed land surveyor showing:
 - natural ground level
 - the current Flood Level
 - the dimensions and ground and finished floor levels of any existing buildings, to Australian Height Datum (AHD)
- Proposed architectural plans, elevations and section drawings (1:50 or 1:20). Showing the proposed finished surface levels and finished floor levels and the Nominated Flood Protection Level (NFPL) of all new structures on the land
- All proposed finished floor levels notated on the plans to Australian Height Datum
- A comparative description of the existing and proposed use and development of the site
- Cross-sectional details of any basement entry ramps and other basement entries to Australian Height Datum. Showing floor levels of entry and exit areas and drainage details
- A written assessment against 'Part Three – assessing development proposals' of the *Guidelines for Development in Flood Affected Areas* (DELWP, 2019), and subsequent submission of any associated Flood Risk Management Plan
- Any other application requirements specified in a relevant planning overlay schedule applicable to the site
- Appropriate boundary setbacks to allow for the conveyance of overland flows
- Detailed location of any Melbourne Water asset (including drains, sewers or water mains) within 20 metres of the subject site
- Hydraulic details and associated reporting of all/any existing and proposed earthworks, including details of any cut and fill required for works
- Details of any other known physical features that may affect flows on-site and on adjoining land, such as levees, fences and retaining walls
- A written description of proposed actions, flood risk mitigation strategies or measures required, if any, to the siting and design of the buildings or works, or in association with the use and occupation of all aspects of the proposal in order to reduce the risk to individuals, property, infrastructure and the environment.

Exemplar Design A adaptation guidance

There is no specific adaptation guidance for this topic.

7.8 Easements

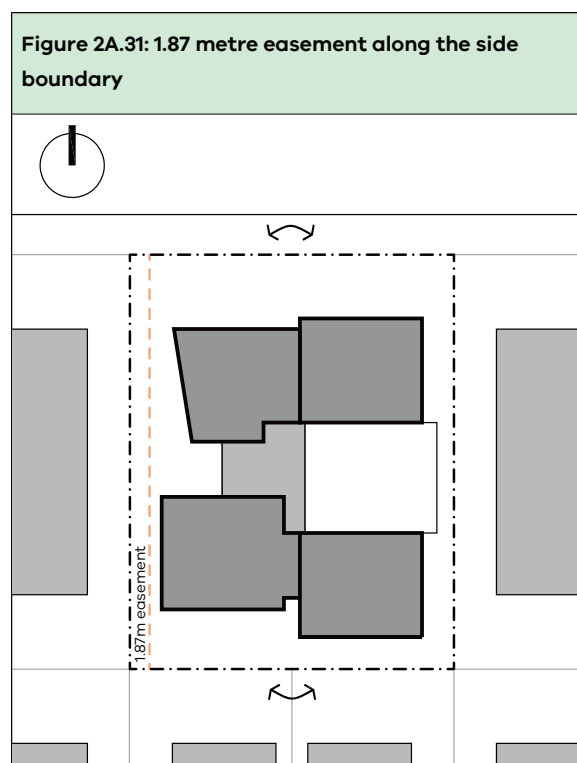
General adaptation guidance

There is no general adaptation guidance for this topic.

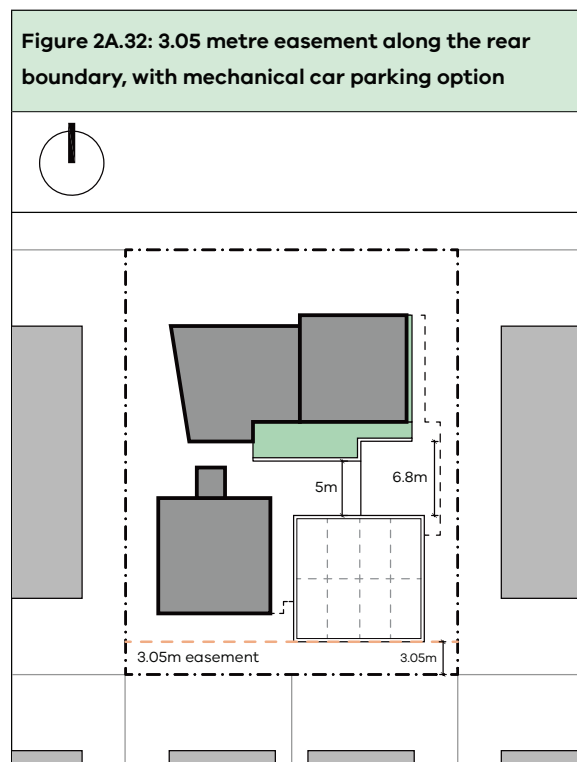
Exemplar Design A adaptation guidance

For illustrative purposes, a nominal 3.05 metre easement along the rear boundary and 1.83 metre easements along the side boundaries have been assumed.

The design can be adapted by detaching buildings from the side boundary, allowing for an easement (assumed as 1.87 metres) along the boundary, as Figure 2A.31 shows.



The design can be adapted by using consolidated car parking (stackers), which allows for an easement (assumed as 3.05 metres) along the rear boundary, as Figure 2A.32 shows.



7.9 Systems and approach

General adaptation guidance

Off-site manufacturing

Off-site construction delivers pre-finished, prefabricated building elements and modules that are assembled on site using efficient construction and manufacturing techniques.

Consider standardisation and repetition of structural framing. It can help to reduce material waste, and prefabrication of structural framing can mean fewer trades and waste on site.

Prefabricated external walls with preassembled windows generally have higher-quality sealing than on-site construction. This method reduces on-site sealing and can reduce the incidence of poor workmanship and defects. Prefabrication also can minimise the construction period; the building can be prefabricated while groundworks and footings are being constructed.

Consider early contractor advice in the design phase if offsite construction is applicable and/or a known builder will construct the development. This way, trades and their supply chains can help coordinate and standardise the design of services, and costs assist to accurately estimate costs.

Future changes in use

Plan for the potential amalgamation of smaller apartments into a larger apartment or vice versa. Such alterations would need room dimensions and optimal locations of wall openings to be considered, to reduce the need for structural adjustments.

Structure

Consider an efficient structural frame that extends in alignment from the ground floor to the top floor such as a lightweight post-and-beam timber, or cross-laminated timber (CLT). This reduces the number of on-site trades and the time needed for coordination and construction. Consider the fire-rating implications of this method of construction.

- Use regular grids and modular components for floors, walls, stairs, roofs and service risers.
- For non-wet areas, consider providing structural flooring that can span between load-bearing walls. This will enable internal walls within a sole occupancy unit to be non-load-bearing and adaptable in the future.
- Consider providing structure and footings for more floors to be added over time, and clearly documenting these for future reference.
- Consider using a structural insulated panel system or sandwich panels.

Car park

- Floor-to-floor height for above-ground car park spaces should allow for other temporary or long-term uses, including conversion to habitable space.
- Aim to provide a minimum of 2.6 metres clear in basement areas, to allow for services to be installed.
- Plan for adequate ventilation and likely service infrastructure needs for future uses.
- Provide adequate drainage at the base of ramps for surface run-off, pits for excess water, and a freeboard threshold at the top of the ramps.

Exemplar Design A adaptation guidance

There is no specific adaptation guidance for this topic.

7.10 Materials and finishes

General adaptation guidance

Future Homes exemplar designs have a materials schedule that includes substitution guidance to suit different contexts, budgets and design preferences.

Exemplar Design A adaptation guidance

Refer to the materials schedule for substitution guidance.

7.11 Fire services

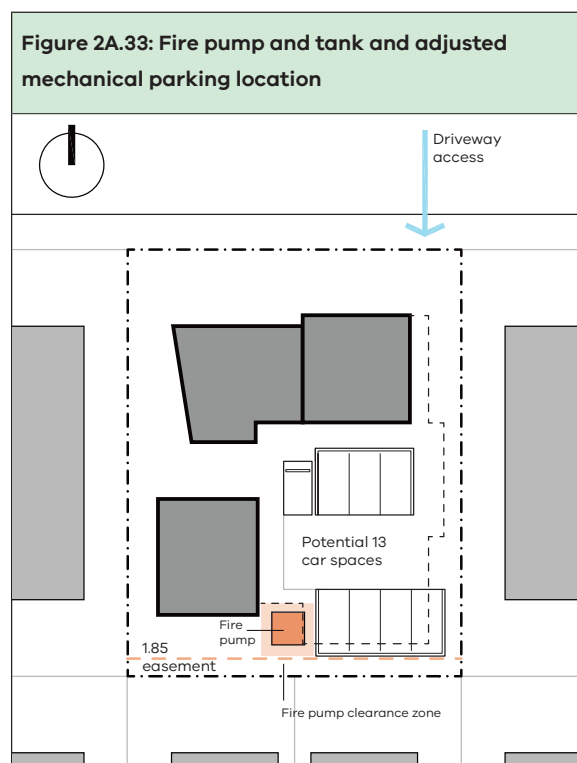
General adaptation guidance

There is no general adaptation guidance for this section.

Exemplar Design A adaptation guidance

Fire pump and tank, north-south orientation, at grade

If a fire pump and tank are needed, the north-south orientation, at grade can be adapted by relocating the mechanical parking towards the eastern boundary to allow space for a fire pump and clearance space, as Figure 2A.33 shows. Consider the structural implications of the mechanical parking alignment.

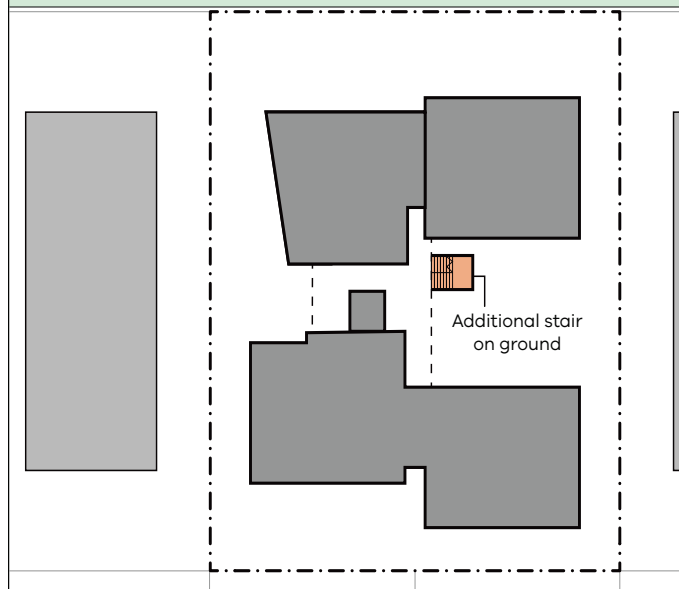


Fire safety

Buildings up to three storeys may not require complete fire sprinkler protection. The exemplar designs address non-compliance with fire protection codes by specifying sprinkler protection throughout.

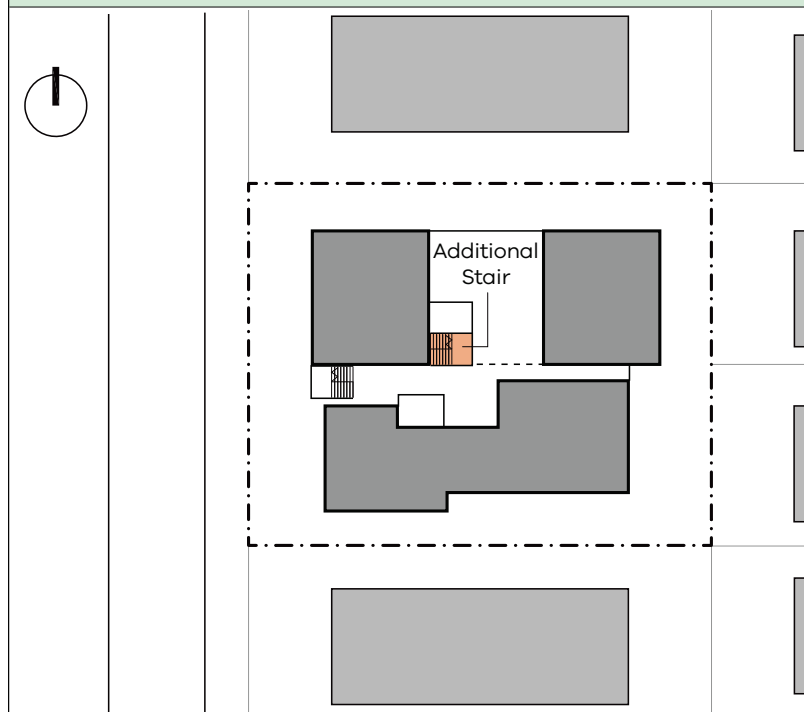
To assist with a deemed-to-satisfy solution and to potentially reduce the extent of fire sprinkler protection, Figure 2A.34 and Figure 2A.35 provide guidance.

Figure 2A.34: North-south orientation, basement, extended courtyard L01 stair to provide direct access to the ground level



Buildings up to three storeys may not require complete fire sprinkler protection. The exemplar designs address non-compliance with fire protection codes by specifying sprinkler protection throughout.

Figure 2A.35: East-west orientation, at grade, with a public stair through the courtyard void to provide direct access to the ground level



These options need to be discussed with a building surveyor, to assess compliance against the overall existing travel distances strategy.

Part 2B

Exemplar Design B
LIAN



Design Statement

Prepared by LIAN

Exemplar Design B by LIAN architects is inspired by the qualities inherent in suburban living and the single-family home. By maximising private amenity with generous space, abundant natural light and seamless connections to large private open spaces, this scheme overlays these qualities into a new denser form.

Siting strategy

The siting strategy prioritises northern aspect and solar gains to living spaces and private outdoor spaces. This is achieved through the formation of two building masses, a north and south building, separated by large, linear, central communal garden.

The northern building consists of double-storey maisonette-style units with dual access from a south-facing entry door, and north-facing private verandas and gardens. Stacked above, are single-storey units featuring north-facing terraces accessed through living spaces with views to sky and horizon.

The southern building is arranged with parking to the rear, under multi-level townhouses with north-facing living/dining spaces that open out to private terraces. In the basement scheme, this building adopts an alternative configuration to take advantage of the western and eastern outlook and access to a perimeter garden space.

Design and materiality

The anatomy of the building aspires to simplicity, rationality and economy. A standardised, linear construction grid enables a range of apartment sizes and configurations which can be readily adapted to a project's specific demographic brief.

The simple well-proportioned form, overlaid with a careful rhythm of openings, pergolas, and planters, provides a timeless quality, intended to transcend architectural trends and retain market value in the long-term.

Volumetric additions of voids and raised ceilings create a more expansive sense of space, abundant light, and room for bikes, surfboards or space to grow.

Dual-aspect apartments with glazed entry doors for light, air and multiple outlooks to greenery, provide glimpses of shifting occupation throughout the day with a seamless connection from living areas to outdoor space.

Lightweight cladding such as fibre-cement sheeting and galvanised metal are proposed as affordable, highly durable materials that need little maintenance.

Varying modular panel breaks create misalignment and sense of movement across the facades, and reduce material wastage. Juliet balconies further animate the side facades of the building.

Common spaces

A minimum proportion of 6 metres to the central space between buildings ensures adequate space for landscape, circulation and opportunities for residents to interact. This allows for a large, central communal garden or 'ferny forest walk' with native trees and low-lying landscaping that links individual ground floor entries with a meandering, floating boardwalk.

The prioritisation of private amenity has been balanced with engaged shared spaces through a careful design approach and siting. Three distinct, connected shared zones aspire to a better community experience of everyday rituals of arrival, departure and dwelling.

Raised communal walkways, and a sculptural external lift and stair, connect the two buildings at upper levels, vertically extending the spatial experience of the garden. Vertical greenery is supported by lattice to the lift and planters and includes hanging plants. Tree canopies between windows at upper levels assist with passive privacy.

Bicycle parking, storage, productive gardens and composting are clustered along the entry path providing opportunity for chance encounters and supporting daily rhythms of interaction.

Landscape

At the neighbourhood scale, street-facing gardens and terraces encourage individualisation, improving the liveliness of the street and promoting passive surveillance. A social street edge with benches integrated into the front fence, provides opportunity for neighbours to interact with residents.

To the southern area of the site an arbour supporting climbers and soft landscape is provided to the vehicle circulation area to soften the interface with neighbouring sites and shade the paving below. Vegetation, shady trees and a central green strip are crucial elements that descale and soften the driveway along the boundary length.

1 Introduction

This chapter guides designers adapting Exemplar Design B for a particular development site. Authored by the architects who designed the exemplar, the chapter is organised according to the six Future Homes objectives that adapted designs need to address: Responsive to Need, Liveable, Good Neighbours, Enduring, Sustainable and Adaptable.

For each objective, the chapter sets out:

- how to adapt the design to fit different sites and contexts
- preferred and discouraged approaches to adaptation
- ideas to adapt the design to suit particular needs such as a different bedroom configuration or a main road location
- ideas to achieve better development and design outcomes by adapting the design if the opportunity arises.

The guidance in this section is not exhaustive, and there is no adaptation guidance for some planning elements. It is up to the designer to process or interpret the exemplars. The assessment process will treat all adaptations on their merits.

2 Responsive to need

2.1 Apartment mix and size

General adaptation guidance

Apartment designs need to respond to the changing patterns of living, including an increasingly diverse household mix and size.

The apartment should be sufficiently adaptable to allow:

- the ability to upsize or downsize: for example, by having the space and services configuration to combine smaller apartments to create a larger apartment and vice versa
- multi-purpose spaces for work and study from home
- internal functions to be rearranged over time: for example, bathrooms, kitchens and laundries that can be reconfigured or be combined differently.

Preferred approaches include:

- the layout is easy to change
- open-plan living spaces cater for flexible furniture arrangements
- floor space is used efficiently.

Discouraged approaches include:

- excessive corridors and passageways
- excessive use of built-in joinery.

Exemplar Design B adaptation guidance

This adaptation can accommodate:

- a different mix of apartments based on market demand
- merging apartments to provide different bedroom mixes and configurations.

Figure 2B.1: Examples of alternative apartment configurations

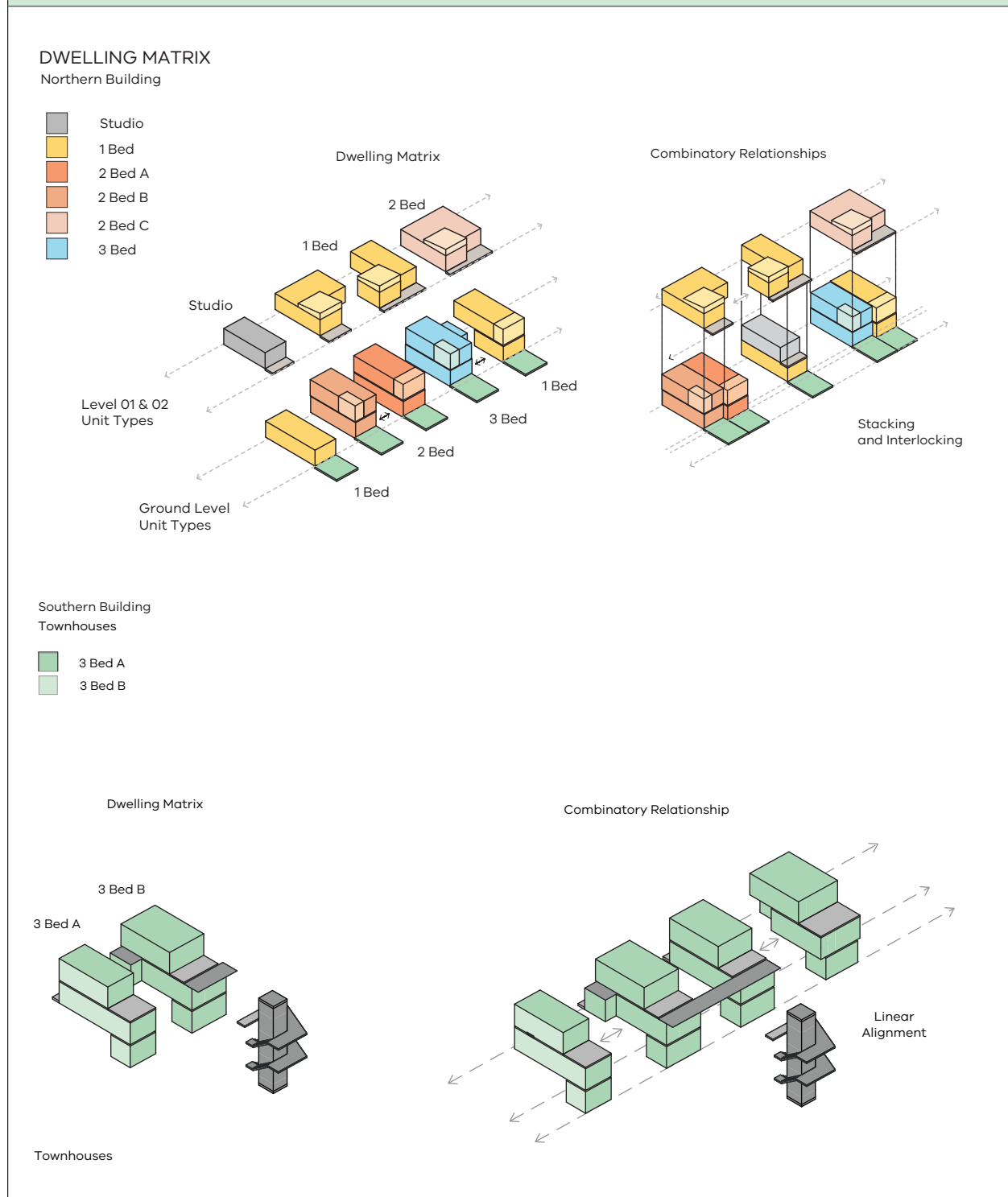
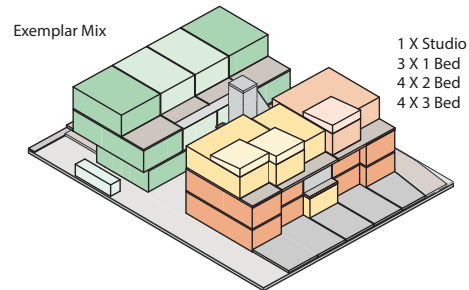
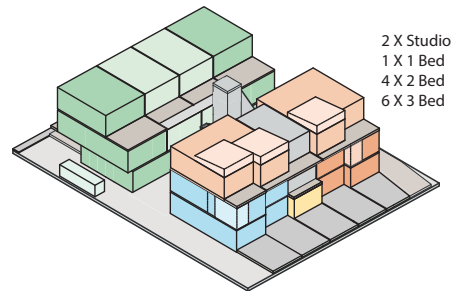
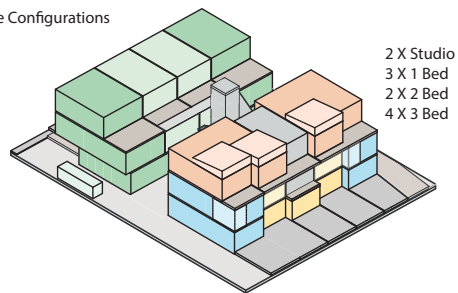


Figure 2B.1: Examples of alternative apartment configurations (continued)

- Studio
- 1 Bed
- 2 Bed A
- 2 Bed B
- 2 Bed C
- 3 Bed
- 3 Bed A
- 3 Bed B



Alternative Configurations



2.2 Parking: cars

General adaptation guidance

If it is acceptable to have fewer car parking spaces, the design should be adapted to avoid the need to use mechanical parking. The development should also allow for future adaptation of car parking spaces to alternative uses to support changes in use, personal preferences and technology over time.

Measures to support future adaptation include sufficient floor-to-ceiling height to allow future habitable spaces to be inserted with access to natural light.

Exemplar Design B adaptation guidance

This adaptation could be used if a lower car parking rate is allowed. It uses a laneway-like condition to pedestrianise the driveway, as Figure 2B.2 shows.



2.3 Parking: bicycles

General adaptation guidance

Consider locating bicycle parking within oversized balconies, while retaining the minimum preferred useable space for residents' recreation.

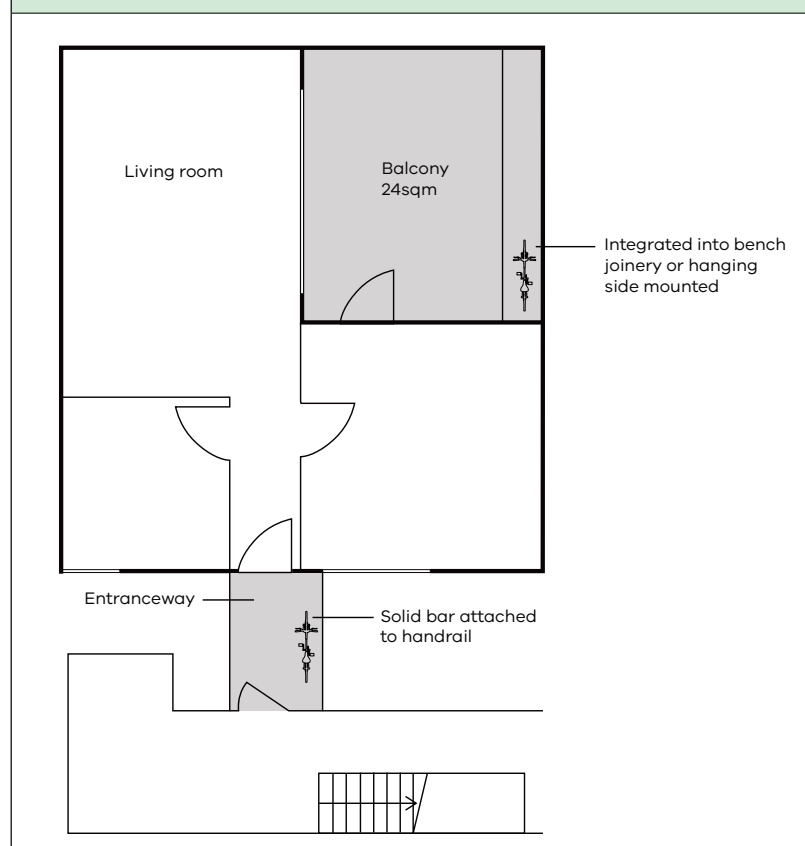
Bicycle parking provided on oversized balconies will require the provision of a bicycle-accessible path from the ground floor. Where bicycle parking is provided on upper floors, lifts and/or stairs should be designed to provide access to upper floors for bicycles.

Preferred bicycle parking spaces are those that are covered from the weather and secured.

Exemplar Design B adaptation guidance

Bicycle parking systems could be located in private open space such as on an oversized balcony or entranceway, as Figure 2B.3 shows.

Figure 2B.3: Bicycle parking in private open space



3 Liveable

General adaptation guidance

There is no general adaptation guidance for the Liveable objective, but that does not mean alternative solutions are not acceptable. Where one is proposed, the objectives, principles and mandatory requirements in Part 1 must still be met.

4 Good neighbours

4.1 Front setback

General adaptation guidance

Front setbacks need to be adapted to the street context. The starting point should be the predominant street setback along the length of the street up to 150 metres (or about ten properties) on either side, or a minimum of 7 metres, whichever is lesser. Within a site, the building setback may be staggered, forward or behind the predominant street setback having regard to the local context, design outcome and impact on the streetscape.

When determining the front setback or setbacks, the considerations should be:

- the wider streetscape and urban block pattern
- whether an adjoining building sits forward of the predominant street setback
- opportunities to use articulation to transition between neighbouring sites
- whether the approach responds to the emerging or future character of the area
- opportunities to provide suitable canopy tree planting.

Preferred approaches include:

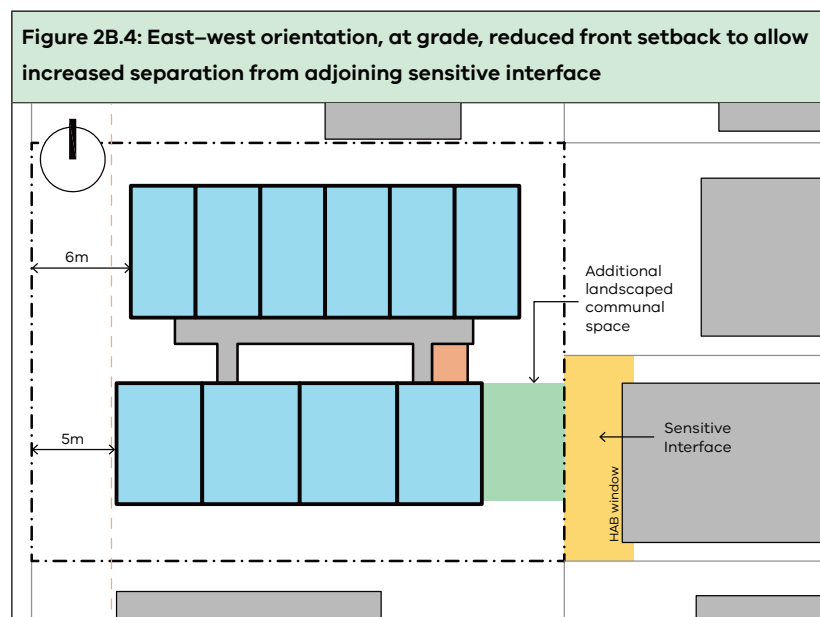
- upper-level projections including balconies that provide weather protection for the spaces below
- where a lesser front setback is appropriate, consider increasing the rear setback and/or providing additional internal breathing space between buildings.

Discouraged approaches include:

- monolithic setbacks without breaks or variations
- balcony projections that will limit the planting of canopy trees.

Exemplar Design B guidance

This adaptation introduces a landscaped common space to create a greater separation from the sensitive interface at the rear, as Figure 2B.4 shows.



4.2 Height

General adaptation guidance

Where the responsible authority permits, the exemplar design can be adapted to add another storey. A fourth storey may reinforce the existing character of the wider urban context or respond to the agreed future character of the local area.

An adaptation to increase building height should consider:

- impacts on solar access and articulation to the scale of the specific neighbouring context
- the siting of the additional storey, to minimise overlooking and overshadowing
- transitions to lower, neighbouring built form
- additional fire egress and services requirements
- access and circulation
- additional car and bicycle parking requirements, if the number of apartments is increased
- additional communal open space and landscaping requirements.

Preferred approaches include:

- The use of design techniques to reduce visual bulk and break up the mass of the building (such as articulation of built form, creating depth within the façade) and the use of materials.

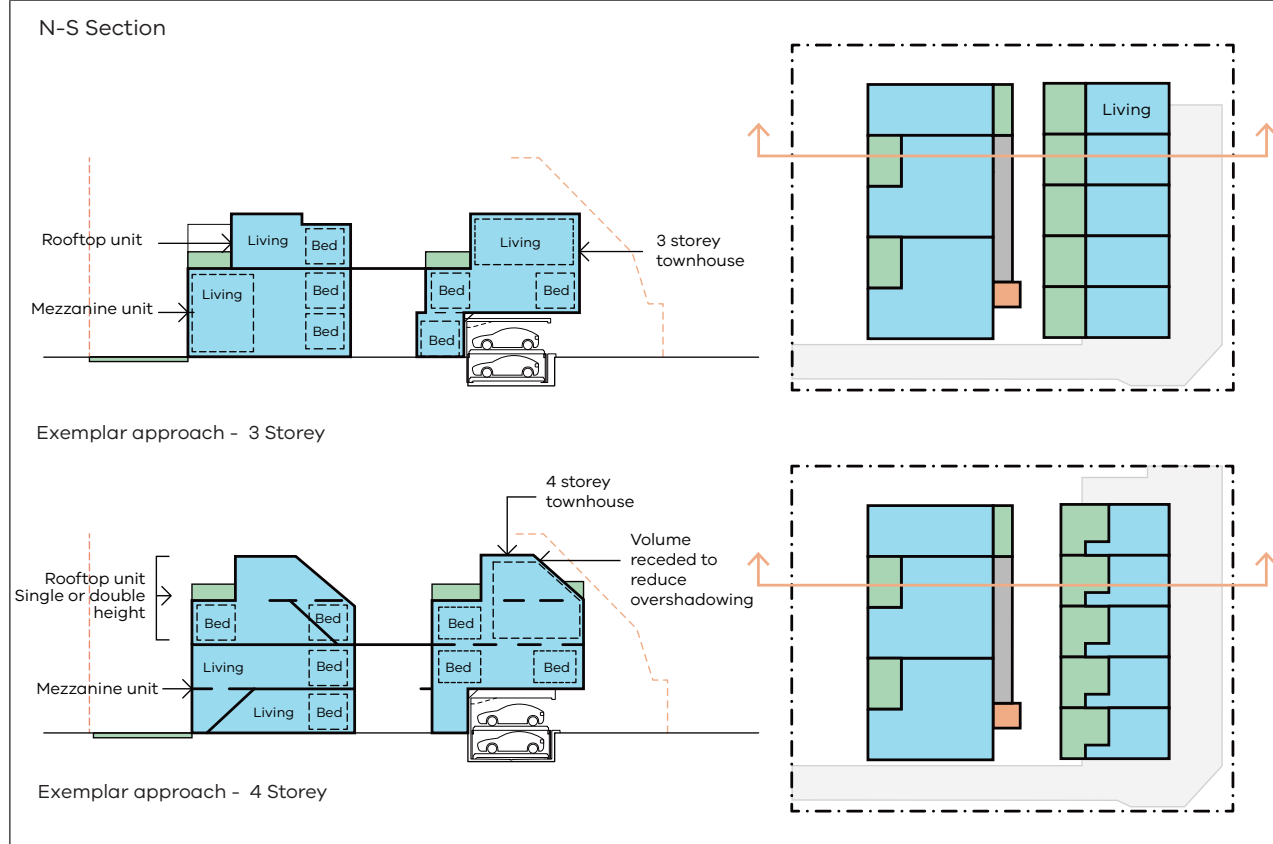
Discouraged approaches include:

- Providing a fourth storey across the whole of the development
- Overly dominant built form that does not respect the future character of the area.

Exemplar Design B guidance

Where additional height is proposed, an adaptation can use techniques such as a mansard roof to reduce the overshadowing impacts to neighbours.

Figure 2B.5: Techniques to introduce an additional storey while protecting the amenity of neighbours



4.3 Walls on boundary

General adaptation guidance

An adaptation to increase building height should consider:

- impacts on solar access and articulation to the scale of the specific neighbouring context
- the siting of the additional storey, to minimise overlooking and overshadowing
- transitions to lower, neighbouring built form
- additional fire egress and services requirements
- access and circulation
- additional car and bicycle parking requirements, if the number of apartments is increased
- additional communal open space and landscaping requirements.

Preferred approaches include:

- A building height that transitions to the scale of adjoining buildings
- The use of design techniques to reduce visual bulk and break up the mass of the building such as articulation of built form, creating depth within the façade and the use of materials.

Discouraged approaches include:

- Providing a fourth storey across the whole of the development
- Overly dominant built form that does not respect the future character of the area.

Exemplar Design B guidance

North-south orientation, at grade

This design can be adapted by reconfiguring the site layout to take advantage of existing blank walls on the boundary and creating a larger, communal open space. The height of any new wall on the boundary will need to respond to neighbouring conditions. Figure 2B.6 shows the adaptation for a north-south orientation.

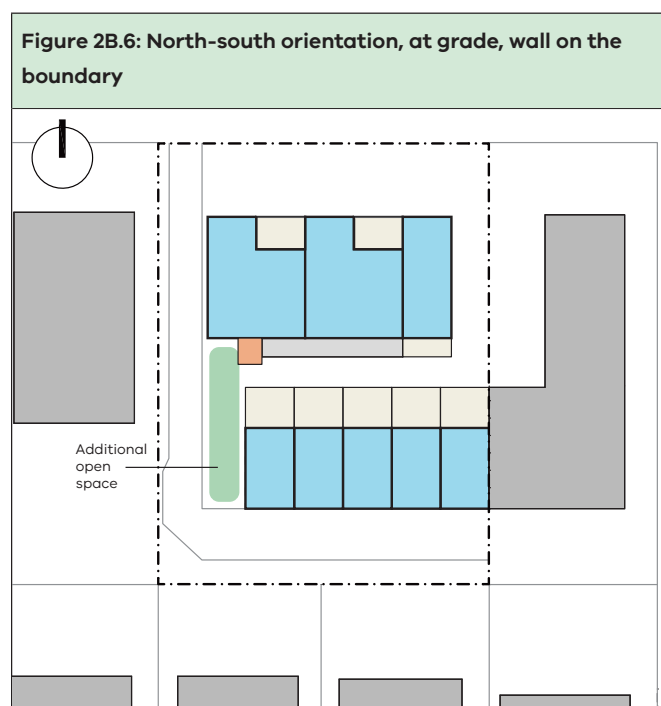


Figure 2B.7 and Figure 2B.8 show the adaptation for an east-west orientation. The reconfiguration provides an opportunity for a raised, open space at the first or second storey, depending on the height of the adjoining boundary wall. The need for screening at the upper levels could also potentially be reduced, depending on the height of the adjoining boundary wall and the location of windows and open space.

Fire services and overlooking requirements would need to be carefully considered in this adaptation.

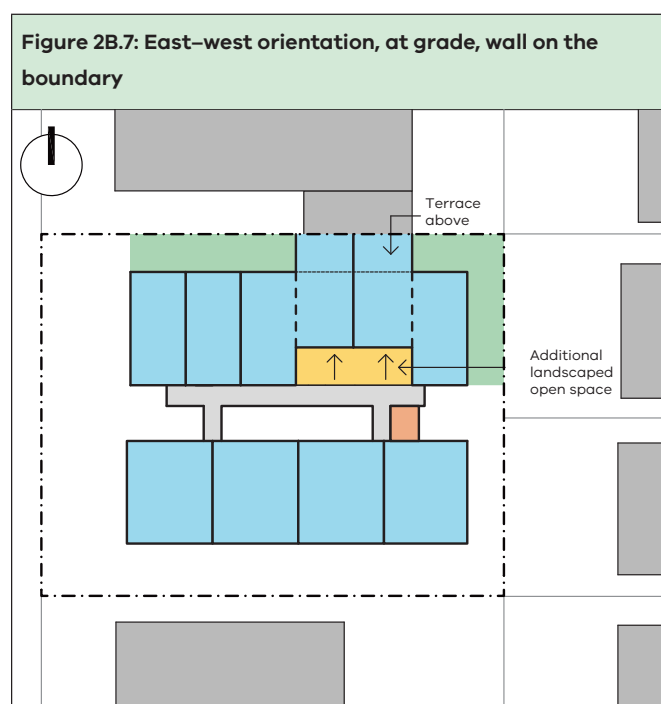
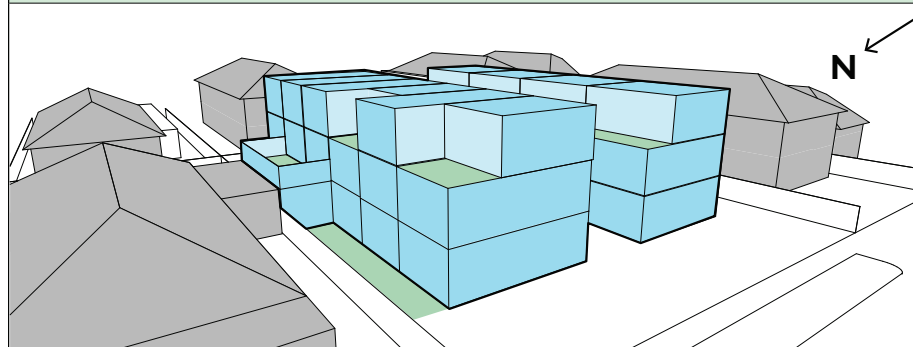


Figure 2B.8: East–west orientation, at grade, wall on the boundary



4.4 Overlooking

General adaptation guidance

The principles in Part 1 set out general design considerations for this planning element.

The exemplar provides two design strategies to prevent overlooking that respond to the different orientations, while providing amenity to residents, allowing access to external views and daylight.

Adaptations should not hinder the amenity of residents. For example, highlight windows should be avoided as a standalone solution to overlooking.

Exemplar Design B adaptation guidance

This design can be adapted by using:

- a Juliette balcony with a 1.7 metre high semi-transparent balustrade, providing access to outdoor space while limiting overlooking
- window sills, planters and fixed joinery to deflect downward views away from private open spaces and neighbouring habitable room windows
- climbers on fixed cables or pergolas for visual screening from internal overlooking.

These adaptations are shown in Figure 2B.9, Figure 2B.10 and Figure 2B.11.

Figure 2B.9: Juliette balcony with 1.7 m, semi-transparent balustrade

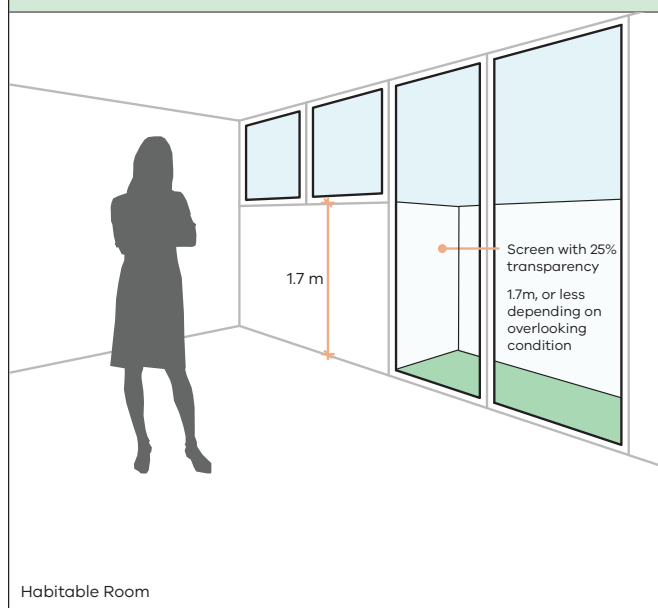
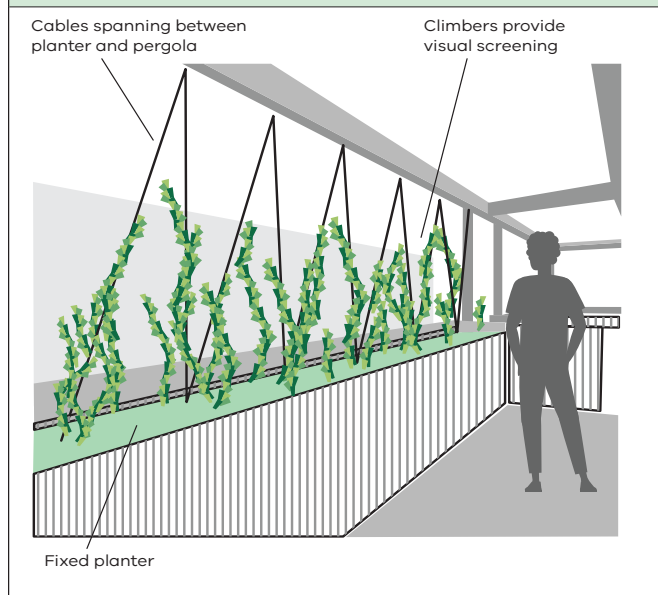


Figure 2B.10: Planters with cables spanning to the pergola to limit internal overlooking



4.5 Daylight to existing windows

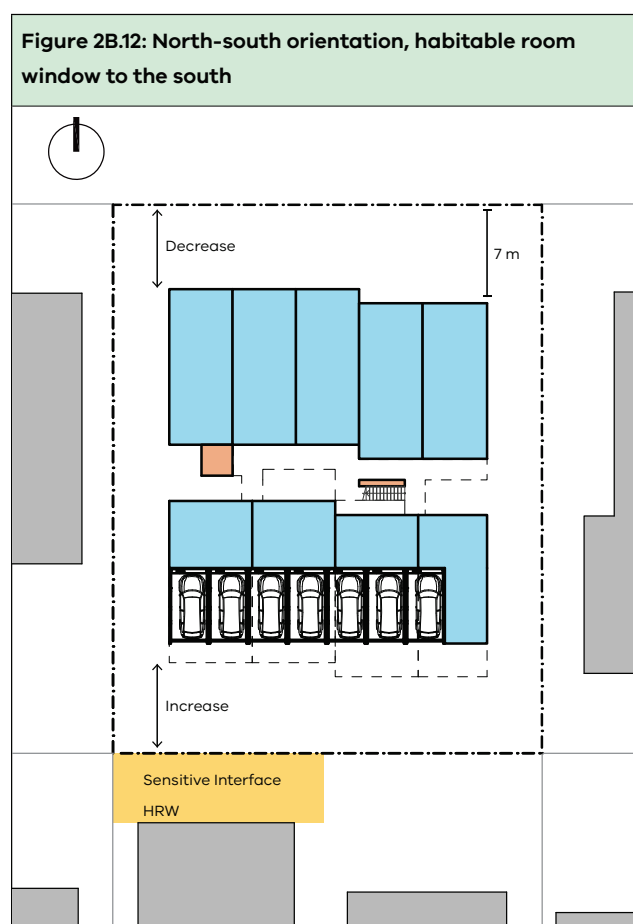
General adaptation guidance

The exemplar design protects solar access to existing habitable room windows without the need for rigid numeric compliance. Designs can be reconfigured to provide adequate daylight through the habitable room windows of existing dwellings located close to the site boundary.

Exemplar Design B adaptation guidance

North-south orientation, at grade – habitable room window to the south

This design can be adapted if there is an existing habitable room window to the south by decreasing the front setback, where appropriate, to increase the distance separation from the window, as Figure 2B.12 shows.



4.6 Site access

General adaptation guidance

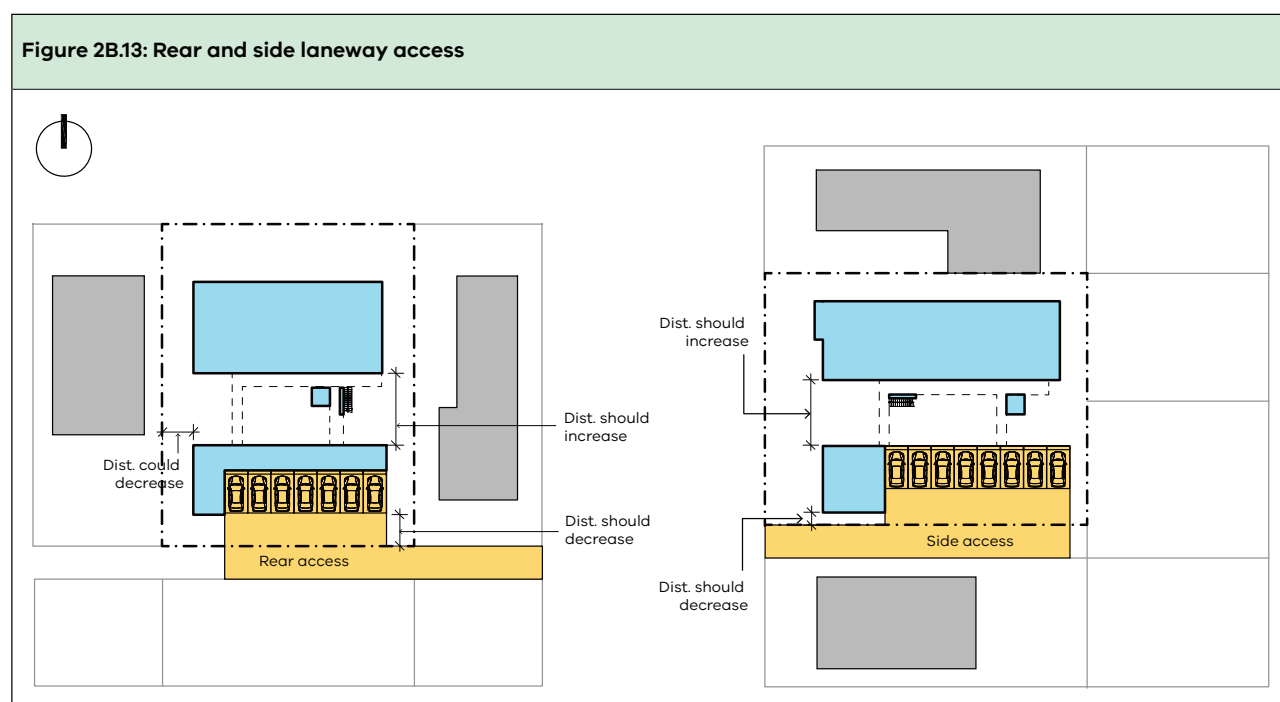
Site access may need to be adapted if:

- street and public transport assets such as street trees, bus shelters, stays or electrical poles are located on nature strips
- a rear or side lane access is available and the rights to use the laneway for vehicle access are established.

Exemplar Design B adaptation guidance

Laneway and rear access

This design can be adapted for rear and side laneway access, as Figure 2B.13 shows.



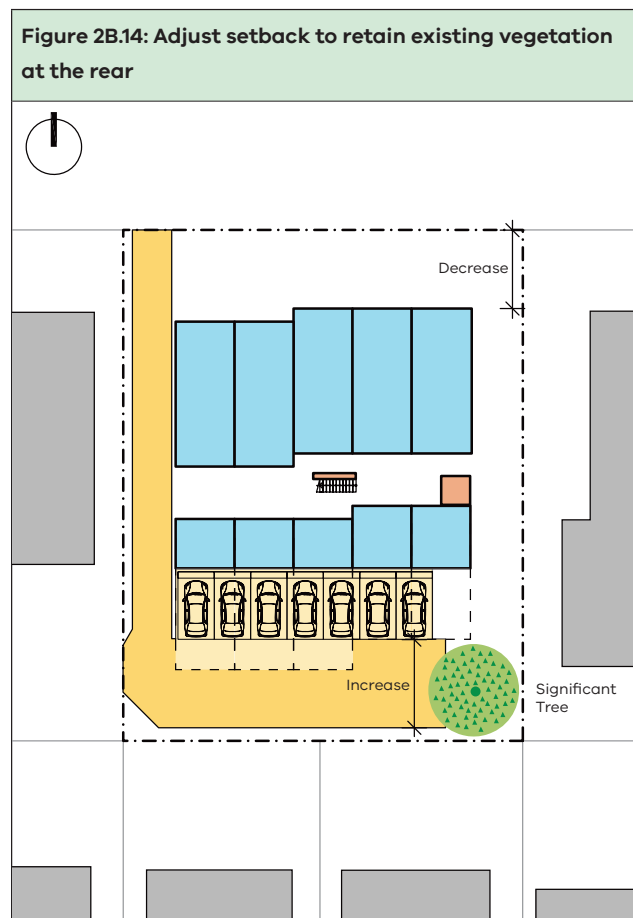
4.7 Existing vegetation

General adaptation guidance

Retain existing significant trees, particularly where they are located within the front and rear gardens. Seek guidance from an arborist, particularly where tree controls apply on site.

Exemplar Design B adaptation guidance

This design can be adapted by shifting apartments forward to retain existing significant vegetation, as Figure 2B.14 shows.



5 Enduring

5.1 Greening and landscape

General adaptation guidance

Greening and landscaping could be increased if there is potential to:

- increase setbacks at the front, side or rear if site conditions allow such as on larger sites and sites without sensitive interfaces or easements)
- increase the separation between buildings in the development
- raise private and communal open spaces to the upper levels or create a roof terrace, while meeting the garden area performance targets
- abut an adjoining wall at the boundary
- use low-maintenance green walls to manage privacy and overlooking; such walls must comply with cladding regulations and be drought-tolerant and irrigated.

Preferred approaches include:

- adjusting layouts to integrate existing trees or vegetation
- adjusting layouts to improve access to sun in the morning and evening
- maximise areas of connected deep soil.

Discouraged approaches include:

- high-maintenance landscape elements including green roofs
- excessive hard ground surfaces
- excessive use of planter boxes at the expense of deep-soil planting.

Exemplar Design B adaptation guidance

Landscape is an essential part of the exemplar, and it needs to be carefully coordinated with architectural components and all the necessary services to ensure it is adequately implemented. This design integrates greening strategies throughout.

The street edge and front garden provides communal space for residents. Consider appropriate design elements to encourage social interaction, and provide comfortable spaces in the context of the street.

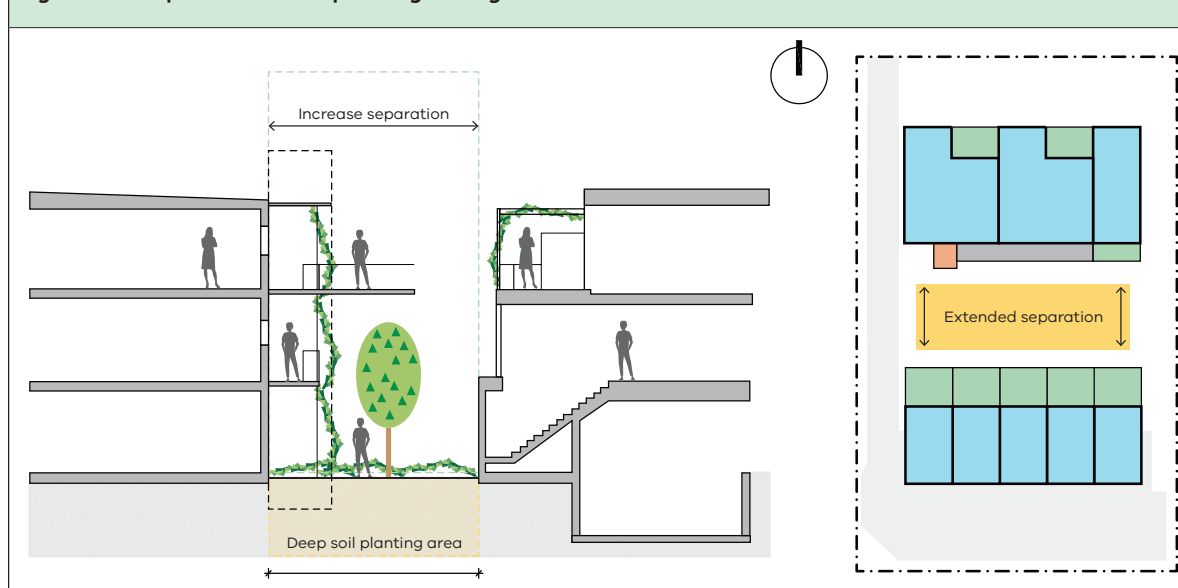
A key feature of the design is the central landscaped area. Maximise the deep-soil area to create optimum growing conditions while allowing good pedestrian access.

Utilise opportunities for enhancing the greening of the rear car park.

On larger sites, the design can be adapted by increasing the separation between the two building forms to enhance the amenity and privacy of habitable rooms and extend the opportunity for deep soil, as Figure 2B.15 shows.

Service risers should be located such that the central garden area is left as clear as possible, whilst meeting the requirements for ongoing maintenance access. The exemplar design locates hydraulic service risers adjacent to lift doors, with narrower electrical risers to the side of the lift, minimising the impact on the central void and apartment facades.

Figure 2B.15: Optimise landscape and greening



6 Sustainable

General adaptation guidance

There is no general adaptation guidance for the Sustainable objective, but that does not mean alternative solutions are not acceptable. Where one is proposed, the principles and performance targets in Part 1 must still be met.

See Appendix 6:
Environmentally
Sustainable Design
for more information.

7 Adaptable

7.1 Roof terraces

General adaptation guidance

Roof terraces increase communal open space and can be vibrant hubs where residents can socialise and build a sense of community.

Consideration of a roof terrace should include:

- the capacity of the structural system
- access, circulation, fire and balustrading safety
- the maximum building height requirements, noting that lift and stair overruns and balustrades do not count toward the building height.

Preferred approaches include:

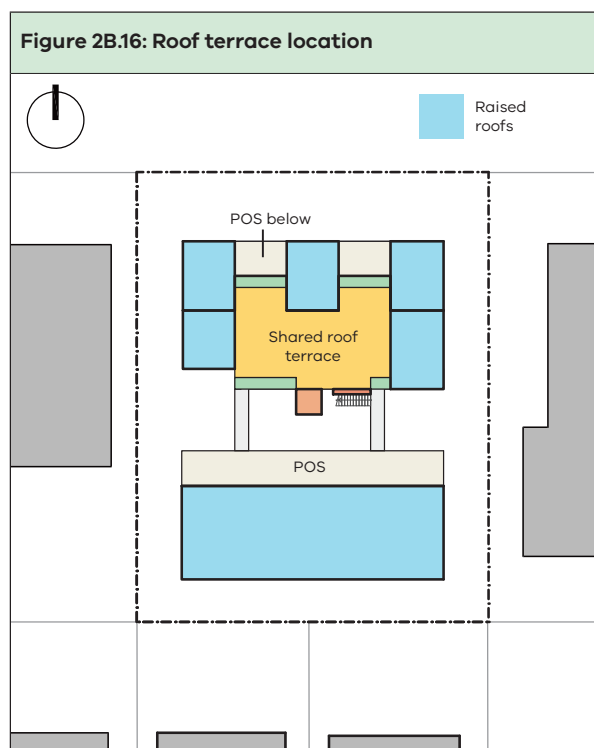
- integrating the terrace design with the overall building form
- providing protection from the wind, sun and rain, noting maximum building height requirements
- using opportunities for cooling and greening
- having a well-designed drainage system that minimise unsightly services, staining and damage to the building
- creating a flexible design that caters for a mix of activities including vegetable gardens and hobbies
- providing infrastructure services and facilities (such as lighting, barbecues, garden taps, outdoor furniture, sun shades and vegetable gardens)
- protecting adjoining properties from noise and overlooking.

Discouraged approaches include:

- exposed, windy terraces
- designs that don't allow for more greenery
- overlooking into existing habitable room windows and private open space.

Exemplar Design B adaptation guidance

This design can be adapted by locating the roof terrace above the front apartment block to minimise potential overlooking and overshadowing of neighbouring properties, as Figure 2B.16 shows.



7.2 Orientation

General adaptation guidance

There is no general adaptation guidance for this topic.

Adaptations should address site planning requirements including daylight, ventilation and access.

Exemplar Design B adaptation guidance

There is no specific adaptation guidance for this design.

7.3 Site on a main road

General adaptation guidance

If a site is on a main road, designs should be adapted to address traffic movements, noise, pollution and privacy issues. Main road sites may also need expert advice from acoustic and traffic consultants.

Designs can be adapted:

- with landscape treatments to mitigate noise and soften the harsh road environment
- by building a front fence up to 1.8 metres high
- by positioning the main communal areas away from the main road
- with acoustic treatment such as double-glazed windows
- by providing balconies with solid balustrades
- by providing for a vehicle passing area.

Preferred approaches include:

- a frontage that contributes to the streetscape character, by screening with trees.

Discouraged approaches include:

- long, blank walls with no visual connection to the street.

Transport for Victoria (TfV) requirements for main road sites

TfV requires plans to be prepared in accordance with the following:

- A feature survey plan must be submitted, showing all features of the road including street trees, utility poles, pits, bus stops, line-markings, slip lanes, medium strips and traffic / pedestrian lights in proximity to the site
- Where tram lines exist, access to the property should be confined to left-in and left-out only arrangements
- Crossovers must be set back:
 - at least 1.5 metres (with no part closer than 1.0 metres) from any public transport assets
 - at least 1.0 metres from infrastructure/ utility poles
 - at least 9 metres from an intersection

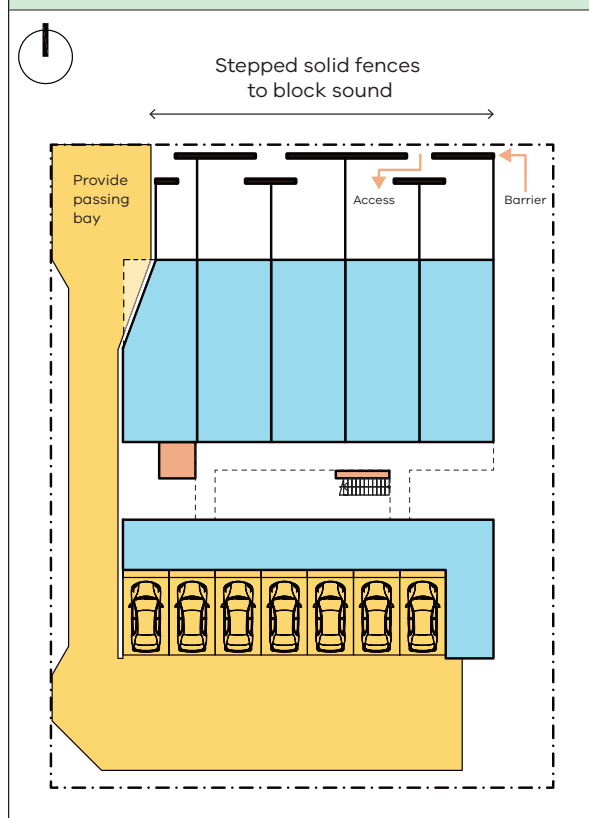
- Accessways must:
 - Provide a passing area at the entrance at least 6.1 metres wide and 7 metres long where an accessway serves:
 - 10 or more cars and is more than 50 metres long or
 - connects to a road in a Transport Zone 2 (TRZ2)
 - Be designed so that cars can exit the site in a forward direction, if the accessway serves four or more car spaces or connects to a road in a TRZ2
 - Have a corner splay or area at least 50 per cent clear of visual obstructions extending at least 2 metres along the frontage road from the edge of an exit lane and 2.5 metres along the exit lane from the frontage, to provide a clear view of pedestrians on the footpath of the frontage road. The area clear of visual obstructions may include an adjacent entry or exit lane where more than one lane is provided, or adjacent landscaped areas, provided the landscaping in those areas is less than 900mm in height
 - Be set back a minimum of 7 metres inside the property boundary for any security boom, barrier, gate, or similar device controlling vehicular access to the premises, to allow vehicles to stay clear of the road pavement and footpath
 - Provide clear directional signs on the arterial road frontage if one-way access is proposed
- If an accessway to four or more car parking spaces is from land in a TRZ2, the access to the car spaces must be at least 6 metres from the road carriageway
- If entry to the car space is from a road, the width of the accessway may include the road
- Ensure car parking spaces are in accordance with the dimensions in Table 1.6: Minimum dimensions of car parking spaces and accessways. Where mechanical parking is proposed, refer to **Chapter 2.3 Parking: Cars** for guidance on dimensions and aisle widths
- If a Future Homes adaptation does not address the requirements above, TfV may ask the permit applicant to do so.

Exemplar Design B adaptation guidance

For a site located on a main road, this design can be adapted by:

- reducing the ground-level apartment area to accommodate a car-passing area and designing the front fence to mitigate noise, as Figure 2B.17 shows
- using overlapping fencing sections to provide access without compromising acoustic protection, as Figure 2B.18 shows.

Figure 2B.17: Main road site



7.4 Corner site

General adaptation guidance

A development on a corner site must locate crossovers in accordance with council and/or TfV requirements and accommodate any existing street services and assets.

Preferred approaches include:

- clear sightlines
- crossovers appropriately set back from street corners, to avoid vehicle conflict
- developments that face the street on both frontages
- buildings that offers passive surveillance of the street
- use of landscape elements to maintain visual permeability
- vehicle access from the local road.

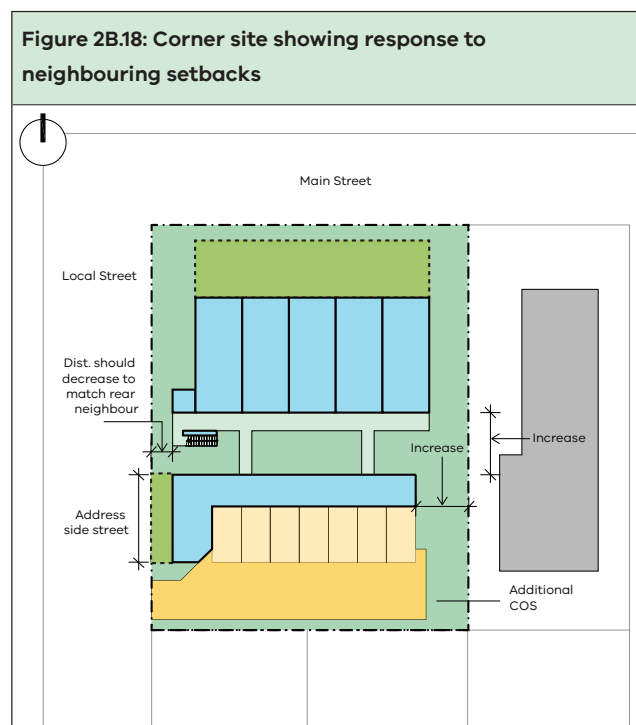
Discouraged approaches include:

- high, long, blank walls at street frontages.

Exemplar Design B adaptation guidance

This design can be adapted by:

- reducing the side setback to match that of the neighbours on the local street
- increasing separation between the front and rear blocks.



7.5 Varied site dimensions

General adaptation guidance

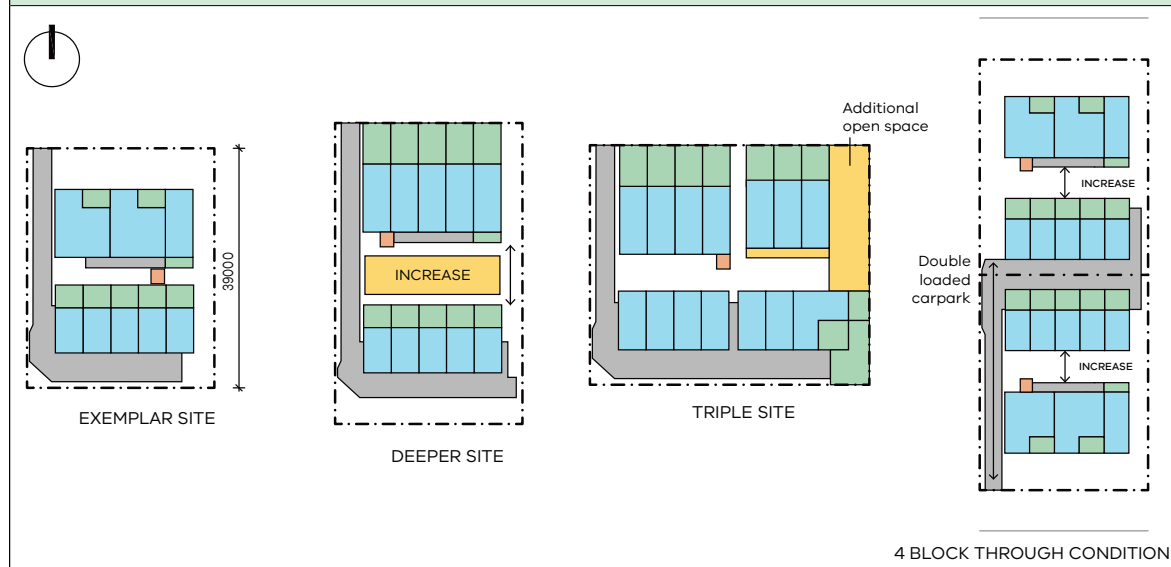
For a deep site:

- ensure equitable access to circulation including stairs and lifts
- avoid a long, continuous built form without breaks in the massing.

Exemplar Design B adaptation guidance

This design can be adapted for deep blocks and multiple blocks in the ways shown in Figure 2B.19.

Figure 2B.19: Large-block site configurations



7.6 Sloping site

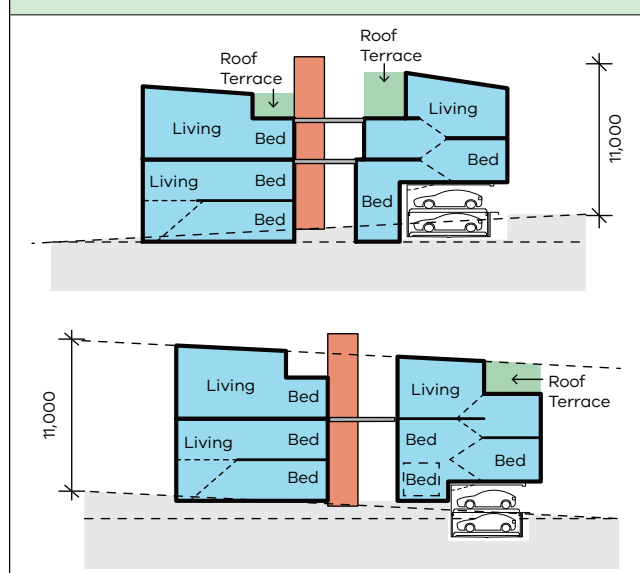
General adaptation guidance

There is no general adaptation guidance for this element.

Exemplar Design B adaptation guidance

This design can be adapted to utilise split-level arrangements and may result in additional roof terraces being provided to the northern apartments, as Figure 2B.20 shows. When designing split-level arrangements, ensure the maximum building height and storey requirements under the zone are met.

Figure 2B.20: Sloping site



7.7 Floodplain

General adaptation guidance

A development on a site within a flood overlay must be designed in accordance with Melbourne Water's requirements.

Inappropriate development in flood affected areas can lead to fundamental changes in the nature and impact of flooding. It can also increase the potential for loss of life and flood damages to the community and the environment.

Melbourne Water decisions are guided by planning policies in the planning scheme. In addition, Melbourne Water assesses development applications in accordance with the *Guidelines for Development in Flood Affected Areas* (DELWP, 2019). Usually the information in the guidelines is sufficient to guide decision making. However, the guidelines cannot cover all the circumstances and aspects of flood behaviour.

Development in or adjacent to a floodplain will only be acceptable where the new development is protected from flooding (flood levels are constructed to the identified Nominal Flood Protection Level); has safe access to and around the development (in considering site specific flood depths and velocities); and does not interfere with the passage and storage of floodwaters.

Developments in areas affected by flooding must not obstruct the passage of flood flows or reduce floodplain storage as this may cause flood levels and velocities to increase and adversely impact surrounding properties. On sites subject to flooding, imported fill must also be kept to a minimum and used only for sub floor areas of dwellings, garages and driveway ramps. New fencing and decking should also be of an open style of construction (50 per cent permeable/open) to maintain conveyance of flows through floodplains.

All new development should preserve, and if possible enhance, the social and environmental values and benefits of floodplains and waterways and should be sensitively designed and sited to maintain and enhance environmental assets, significant views and landscapes along river corridors and waterways and adjacent to lakes and wetlands. For detail on development setbacks required from waterways, see the *Healthy Waterways Strategy 2018-2028*.

On sites affected by flooding, Melbourne Water requires the following information to be included on all plans:

- The boundaries and dimensions of the site
- Existing conditions survey and feature plans. Taken by or under the direction and supervision of a licensed land surveyor showing:
 - natural ground level
 - the current Flood Level
 - the dimensions and ground and finished floor levels of any existing buildings, to Australian Height Datum (AHD)
- Proposed architectural plans, elevations and section drawings (1:50 or 1:20). Showing the proposed finished surface levels and finished floor levels and the Nominated Flood Protection Level (NFPL) of all new structures on the land
- All proposed finished floor levels notated on the plans to Australian Height Datum
- A comparative description of the existing and proposed use and development of the site
- Cross-sectional details of any basement entry ramps and other basement entries to Australian Height Datum. Showing floor levels of entry and exit areas and drainage details

- A written assessment against 'Part Three – assessing development proposals' of the *Guidelines for Development in Flood Affected Areas* (DELWP, 2019), and subsequent submission of any associated Flood Risk Management Plan
- Any other application requirements specified in a relevant planning Overlay schedule applicable to the site
- Appropriate boundary setbacks to allow for the conveyance of overland flows
- Detailed location of any Melbourne Water asset (including drains, sewers or water mains) within 20 metres of the subject site
- Hydraulic details and associated reporting of all/any existing and proposed earthworks, including details of any cut and fill required for works
- Details of any other known physical features that may affect flows on-site and on adjoining land, such as levees, fences and retaining walls
- A written description of proposed actions, flood risk mitigation strategies or measures required, if any, to the siting and design of the buildings or works, or in association with the use and occupation of all aspects of the proposal in order to reduce the risk to individuals, property, infrastructure and the environment.

Exemplar Design B adaptation guidance

There is no adaptation guidance for this design.

7.8 Easements

General adaptation guidance

There is no general adaptation guidance for this topic.

Exemplar Design B adaptation guidance

This design can be adapted by accommodating a 3.05 metre rear easement in the north-south or east-west orientations. A 1.83 metre side easement would only affect the east-west orientation if columns and beams along the boundary are required to pick up the volume overhanging the driveway.

7.9 Systems and approach

General adaptation guidance

Off-site manufacturing

Off-site construction delivers pre-finished, prefabricated building elements and modules that are assembled on site using efficient construction and manufacturing techniques.

Consider standardisation and repetition of structural framing. It can help to reduce material waste, and prefabrication of structural framing can mean fewer trades and waste on site.

Prefabricated external walls with preassembled windows generally have higher-quality sealing than on-site construction. This method reduces on-site sealing and can reduce the incidence of poor workmanship and defects. Prefabrication also can minimise the construction period; the building can be prefabricated while groundworks and footings are being constructed.

Consider early contractor advice in the design phase if offsite construction is applicable and/or a known builder will construct the development. This way, trades and their supply chains can help coordinate and standardise the design of services, and costs assist to accurately estimate costs.

Future changes in use

Plan for the potential amalgamation of smaller apartments into a larger apartment or vice versa. Such alterations would need room dimensions and optimal locations of wall openings to be considered, to reduce the need for structural adjustments.

Structure

Consider an efficient structural frame that extends in alignment from the ground floor to the top floor such as a lightweight post-and-beam timber, or cross-laminated timber (CLT). This reduces the number of on-site trades and the time needed for coordination and construction. Consider the fire-rating implications of this method of construction.

- Use regular grids and modular components for floors, walls, stairs, roofs and service risers.
- For non-wet areas, consider providing structural flooring that can span between load-bearing walls. This will enable internal walls within a sole occupancy unit to be non-load-bearing and adaptable in the future.
- Consider providing structure and footings for more floors to be added over time and clearly documenting these for future reference.
- Consider using a structural insulated panel system or sandwich panels.

Car park

- Floor-to-floor height for above-ground car park spaces should allow for other temporary or long-term uses, including conversion to habitable space.
- Aim to provide a minimum of 2.6 metres clear in basement areas, to allow for services to be installed.
- Plan for adequate ventilation and likely service infrastructure needs for future uses.
- Provide adequate drainage at the base of ramps for surface run-off, pits for excess water and a freeboard threshold at the top of the ramps.

Exemplar Design B adaptation guidance

There is no specific adaptation guidance for this topic.

7.10 Materials and finishes

General adaptation guidance

Future Homes exemplar designs have a materials schedule that includes substitution guidance to suit different contexts or design preferences.

Exemplar Design B adaptation guidance

Refer to the materials schedule for substitution guidance.

7.11 Fire services

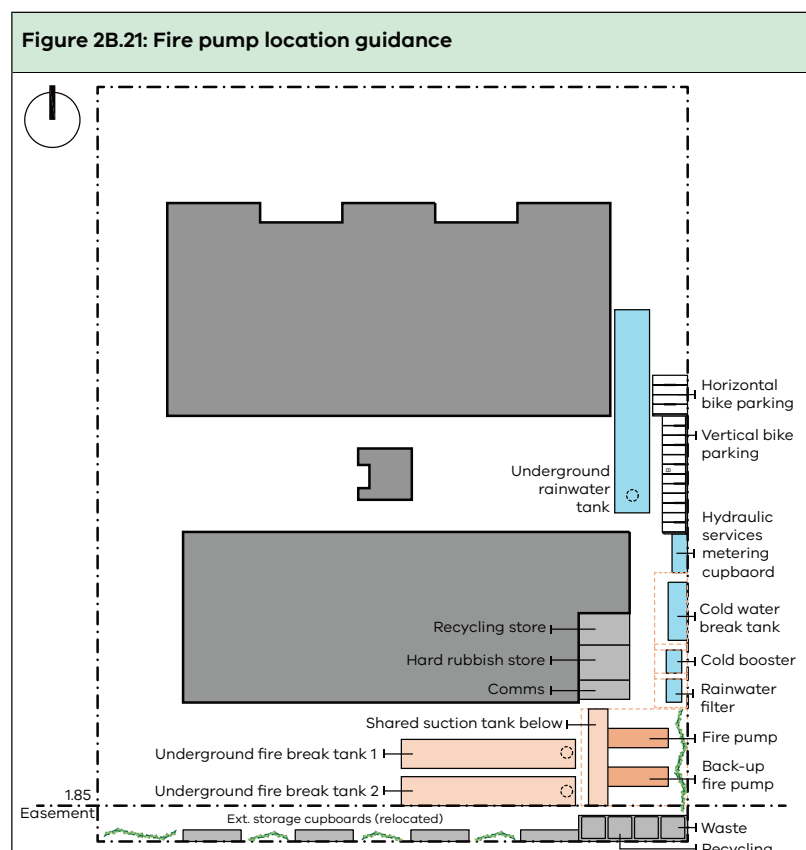
General adaptation guidance

There is no general adaptation guidance for this topic.

Exemplar Design B adaptation guidance

If a fire pump and tank are needed, the design can be adapted by:

- locating the fire pump in the south-east corner of the site
- locating the break tank under the parking aisle
- relocating the waste storage within the exterior storage rooms
- relocating and reconfiguring the storage to the southern boundary
- relocating the rainwater tank to the eastern edge.



Part 2C

Exemplar Design C

McGregor Westlake Architecture



Design Statement

Prepared by McGregor Westlake Architecture

Exemplar Design C by McGregor Westlake Architecture has been designed to consolidate and minimise its footprint, to maximise the surrounding deep soil, landscape and open space. The layout of apartments has focused on capturing northern light and prioritising the outlook for the maximum number of apartments, with an open-air 'gallery' circulation strategy encouraging interaction between residents. The rear yard is intended to create an indigenous forest and landscape corridor, when combined with neighbouring yards, to promote tree cover and bird life.

Siting and Layout Strategy

- The driveway and carpark are contained within and under the building footprint, and the compacted building form articulated by the common open-air 'gallery' access. The consolidated form enables increased separation from neighbours, especially to the rear. The open-air 'gallery' creates a clear punctuation in the form, with its more transparent balustrades and minimal materials.
- The built form is characterised by solid corner elements that frame more open and semi-recessed balconies. Within the frontage balconies cantilever towards the street.
- In section and elevation, the ground floor is designed as a plinth, absorbing all the services, car parking and pedestrian entry.
- Apartments typically have living areas opening northwards onto balconies. All balconies have a street outlook or look towards the street, and all north-facing openings are protected by balconies, awnings or hoods.

Materiality

- The ground floor consists of masonry cladding, with an expressed concrete column structure and recycled brick infill from demolished houses. Where recycled brick is unavailable, off-site brick can be brought in.
- The materiality of the upper-level cladding consists of factory-finished panels, which are available in a broad range of colours and profiles. This includes profiled metal or fibre-cement sheets. The key is their vertical arrangement to create a unified double-order (two-level expression) above the ground-floor plinth. The panels are available from a range of manufacturers and are framed and protected by a neatly turned down flashing, eliminating the need for scaffold finishing.
- Windows are typical off-the-shelf units and inset, creating a calm elevation. A polychrome spandrel panel creates identity and delight to the façade.

Common Space

- Large front gardens enable communal open space to be adjacent to the street, creating a more socially connected and engaged project.
- Common circulation is via outdoor stairs and 'gallery' access, promoting a more open-air and landscape quality for everyday life within the project.
- The circulation gallery is 3 metres wide and open at either end, providing views out to landscape on both sides and a safe and easily understood passage. It is generous, yet efficient in providing space for social interaction.

Landscape

- The design provides a continuous perimeter of landscape, allowing the development to feel surrounded by planting. The front garden provides a social street edge with lawn and planting.
- Entry paths are surrounded by planting. The pathway weaves to provide more space for tree planting and accentuate the feeling of being within planting.
- Varied, colourful planting provides a feeling of wilderness. Climbing plants along the facades and fences increase the sense of green.

1 Introduction

This chapter guides designers adapting Exemplar Design C for a particular development site. Authored by the architects who designed the exemplar, the chapter is organised according to the six Future Homes objectives that adapted designs need to address: Responsive to Need, Liveable, Good Neighbours, Enduring, Sustainable and Adaptable.

For each objective, the chapter sets out:

- how to adapt the design to fit different sites and contexts
- preferred and discouraged approaches to adaptation
- ideas to adapt the design to suit particular needs (such as a different bedroom configuration or a main road location)
- ideas to achieve better development and design outcomes by adapting the design if the opportunity arises.

The guidance in this section is not exhaustive, and there is no adaptation guidance for some planning elements. It is up to the designer to process or interpret the exemplars. The assessment process will treat all adaptations on their merits.

2 Responsive to need

2.1 Apartment mix and size

General adaptation guidance

Apartment designs need to respond to the changing patterns of living, including an increasingly diverse household mix and size.

The apartment should be sufficiently adaptable to allow:

- the ability to upsize or downsize: for example, by having the space and services configuration to combine smaller apartments to create a larger apartment and vice versa
- multi-purpose spaces for work and study from home
- internal functions to be rearranged over time (for example, bathrooms, kitchens and laundries that can be reconfigured or be combined differently).

Preferred approaches include:

- the layout is easy to change
- open-plan living spaces cater for flexible furniture arrangements
- floor space is used efficiently.

Discouraged approaches include:

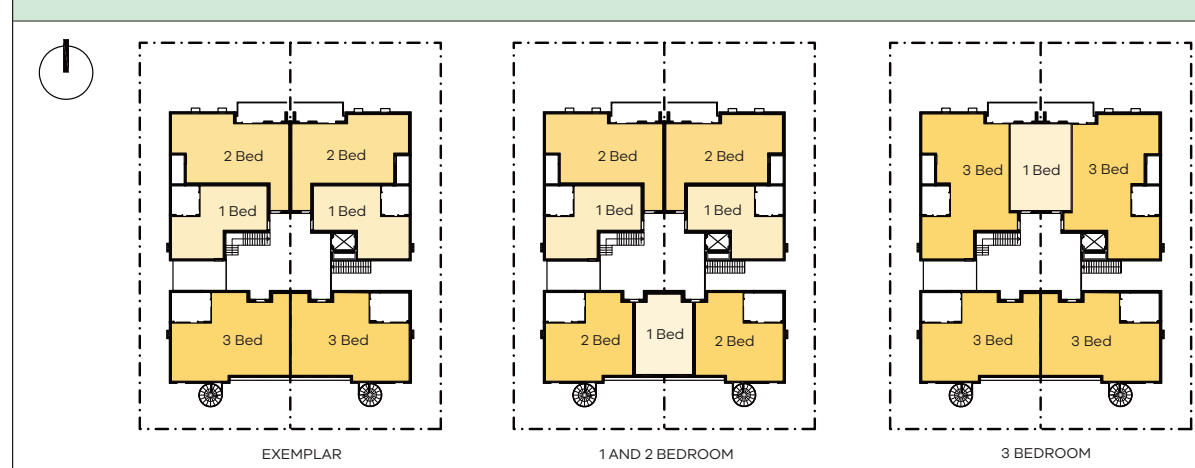
- excessive corridors and passageways
- excessive use of built-in joinery.

Exemplar Design C adaptation guidance

This adaptation can accommodate:

- a different mix of apartments based on market demand
- merging apartments to provide different bedroom mixes and configurations.

Figure 2C.1: North-south orientation, internal layout adaptation to suit different apartment mix



2.2 Parking: cars

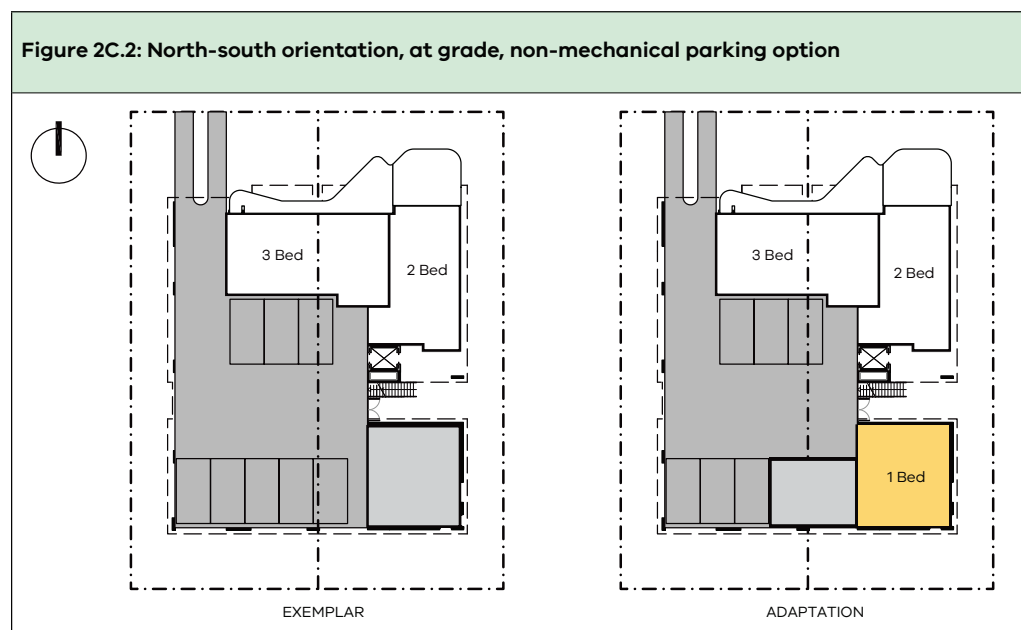
General adaptation guidance

If it is acceptable to have fewer car parking spaces, the design should be adapted to avoid the need to use mechanical parking. The development should also allow for future adaptation of car parking spaces to alternative uses to support changes in use, personal preferences and technology over time.

Measures to support future adaptation include sufficient floor-to-ceiling height to allow future habitable spaces to be inserted with access to natural light.

Exemplar Design C adaptation guidance

If a lower car parking rate is allowed, all parking could be provided on-grade, without mechanical parking. If the car parking requirement is further reduced, additional ground-floor apartments are possible.



2.3 Parking: bicycles

General adaptation guidance

Consider locating bicycle parking within oversized balconies, while retaining the minimum preferred useable space for residents' recreation.

Bicycle parking provided on oversized balconies will require the provision of a bicycle accessible path from the ground floor. Where bicycle parking is provided on upper floors, lifts and/or stairs should be designed to provide access to upper floors for bicycles.

Preferred bicycle parking spaces are those that are covered from the weather and secured.

Exemplar Design C adaptation guidance

Bicycle parking is provided on all levels, so residents and visitors can conveniently access their bicycles.

3 Liveable

General adaptation guidance

There is no general adaptation guidance for the Liveable objective, but that does not mean alternative solutions are not acceptable. Where one is proposed, the objectives, principles and mandatory requirements in Part 1 must still be met.

4 Good neighbours

4.1 Front setback

General adaptation guidance

Front setbacks need to be adapted to the street context. The starting point should be the predominant street setback along the length of the street up to 150 metres (or about ten properties) on either side, or a minimum of 7 metres, whichever is lesser. Within a site, the building setback may be staggered, forward or behind the predominant street setback having regard to the local context, design outcome and impact on the streetscape.

When determining the front setback or setbacks, the considerations should be:

- the wider streetscape and urban block pattern
- whether an adjoining building sits forward of the predominant street setback
- opportunities to use articulation to transition between neighbouring sites
- whether the approach responds to the emerging or future character of the area
- opportunities to provide suitable canopy tree planting.

Preferred approaches include:

- upper-level projections including balconies that provide weather protection for the spaces below
- where a lesser front setback is appropriate, consider increasing the rear setback and/or providing additional internal breathing space between buildings.

Discouraged approaches include:

- monolithic setbacks without breaks or variations
- balcony projections that will limit the planting of canopy trees.

Exemplar Design C adaptation guidance

This design has side and rear setbacks that provide transitional spaces between existing neighbouring dwellings. Balconies, circulation and fences that have different setbacks can be adjusted to further respond to neighbouring conditions and create an articulated street front.

Streets gain character by having existing buildings with different setbacks. However, if lesser setbacks dominate, the development can be moved forward to create a larger backyard.

4.2 Height

General adaptation guidance

Where the responsible authority permits, the exemplar design can be adapted to add another storey. A fourth storey may reinforce the existing character of the wider urban context or respond to the agreed future character of the local area.

An adaptation to increase building height should consider:

- impacts on solar access and articulation to the scale of the specific neighbouring context
- the siting of the additional storey, to minimise overlooking and overshadowing
- transitions to lower, neighbouring built form
- additional fire egress and services requirements
- access and circulation
- additional car and bicycle parking requirements, if the number of apartments is increased
- additional communal open space and landscaping requirements.

Preferred approaches include:

- the use of design techniques to reduce visual bulk and break up the mass of the building such as articulation of built form, creating depth within the façade and the use of materials.

Discouraged approaches include:

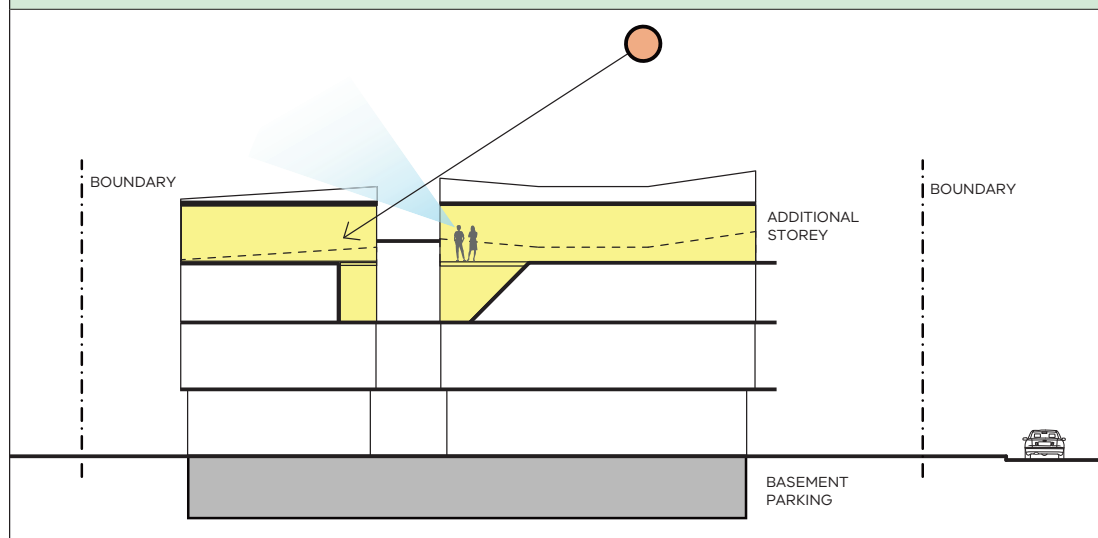
- providing a fourth storey across the whole of the development
- overly dominant built form that does not respect the future character of the area.

Exemplar Design C adaptation guidance

Where a fourth storey is possible:

- access to top-floor apartments can be located on the second floor, potentially avoiding the need for additional fire stairs; access to all other parts of the building can remain as per the exemplar design, as Figure 2C.3 shows
- the roof over the circulation area can be lowered to the sill of the upper apartment windows, to enable additional outlook and sunlight.

Figure 2C.3: Additional (fourth) storey with access via Level 2



4.3 Walls on a boundary

General adaptation guidance

Building to boundaries should be treated flexibly, depending on the site context and impacts on neighbouring properties.

Walls on a boundary may be appropriate where:

- there is an existing wall on the boundary of similar length and height
- the site abuts a laneway
- they improve the development's character such as by contributing to more landscape and open space opportunities on the site
- there are no sensitive interfaces on the neighbouring property.

Discouraged approaches include a wall on a boundary:

- that significantly exceeds the height or length of neighbouring walls
- if overshadowing, access to sunlight and daylight, noise or loss of vegetation or the visual amenity on the adjoining property cannot be adequately managed
- if there is a clear preference for a landscaped perimeter
- if a site abuts a public park.

Exemplar Design C adaptation guidance

This design does not recommend walls on boundaries as strong perimeter landscaping is a core feature.

If there is an adjoining wall on the boundary:

- a landscaped courtyard could be created
- a ground-floor apartment could have its solar amenity compromised.

4.4 Overlooking

General adaptation guidance

The principles in Part 1 set out general design considerations for this topic.

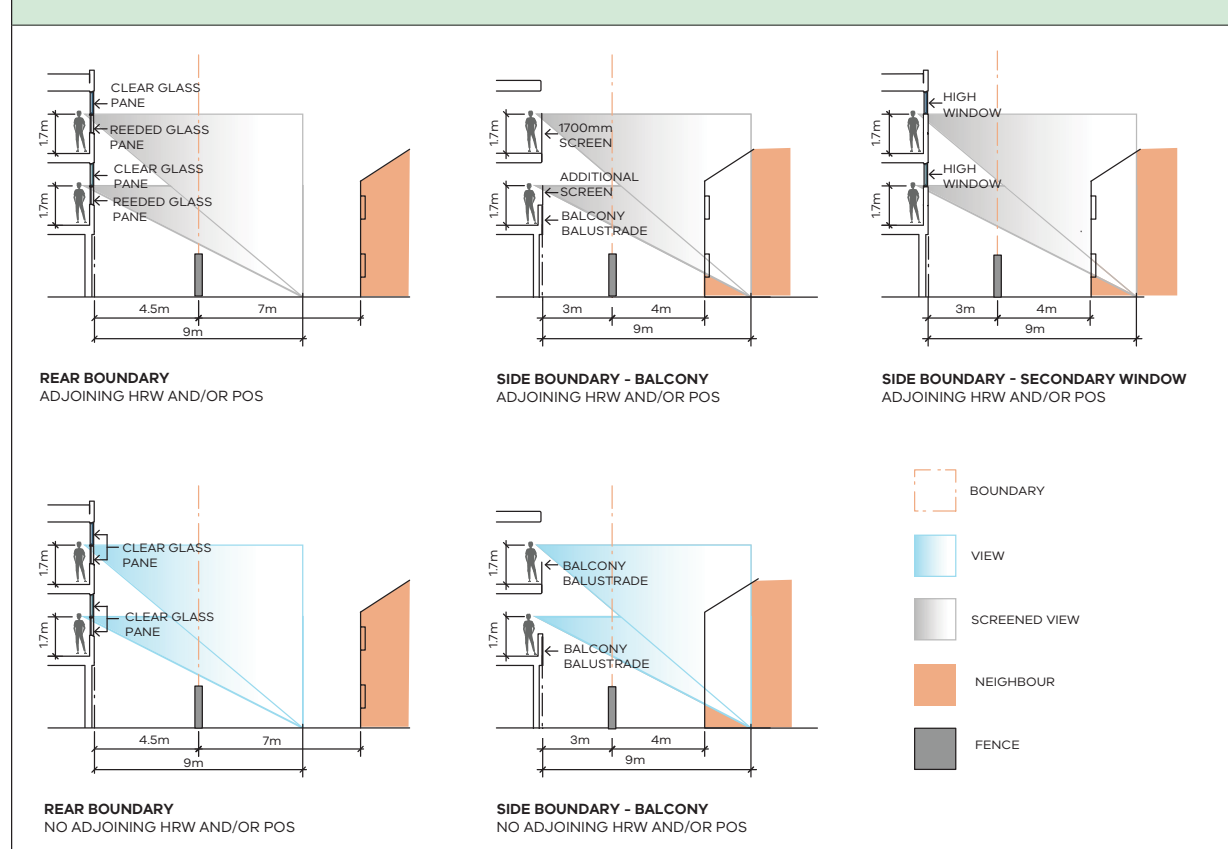
The exemplar provides two design strategies to prevent overlooking that respond to the different orientations, while providing amenity to residents, allowing access to external views and daylight.

Adaptations should not hinder the amenity of residents. For example, highlight windows should be avoided as a standalone solution to overlooking.

Exemplar Design C adaptation guidance

Design for strategic placement of windows and appropriate sill heights within habitable rooms, to limit overlooking.

Figure 2C.4: Managing views



4.5 Daylight to existing windows

General adaptation guidance

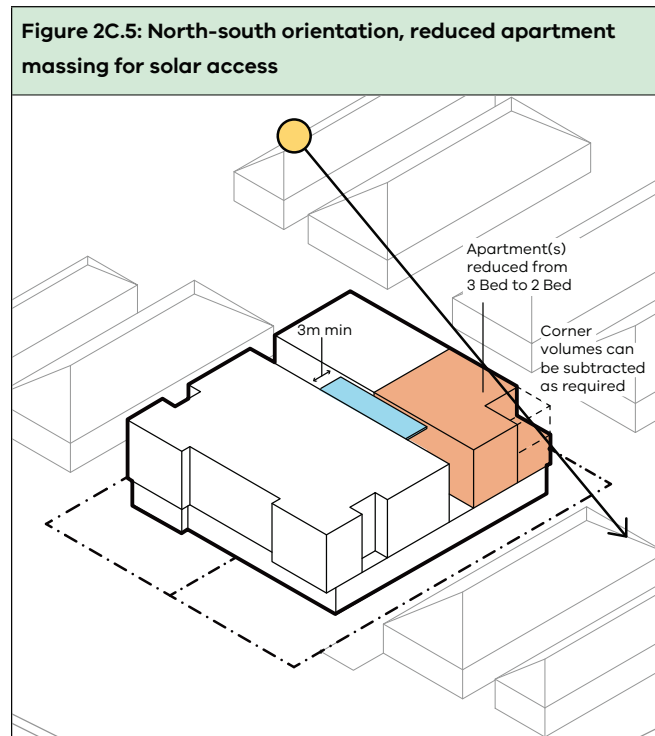
The exemplar design protects solar access to existing habitable room windows without the need for rigid numeric compliance. Designs can be reconfigured to provide adequate daylight through the habitable room windows of existing dwellings located close to the site boundary.

Exemplar Design C adaptation guidance

This design can be adapted by:

- reducing massing to comply with the performance targets for daylight to existing windows and by relocating windows as appropriate
- the circulation area is to be no less than 3 metres wide. If necessary, the rear apartments can be adjusted, as Figure 2C.5 shows.

The apartment mix may be adapted to suit development requirements.



4.6 Site access

General adaptation guidance

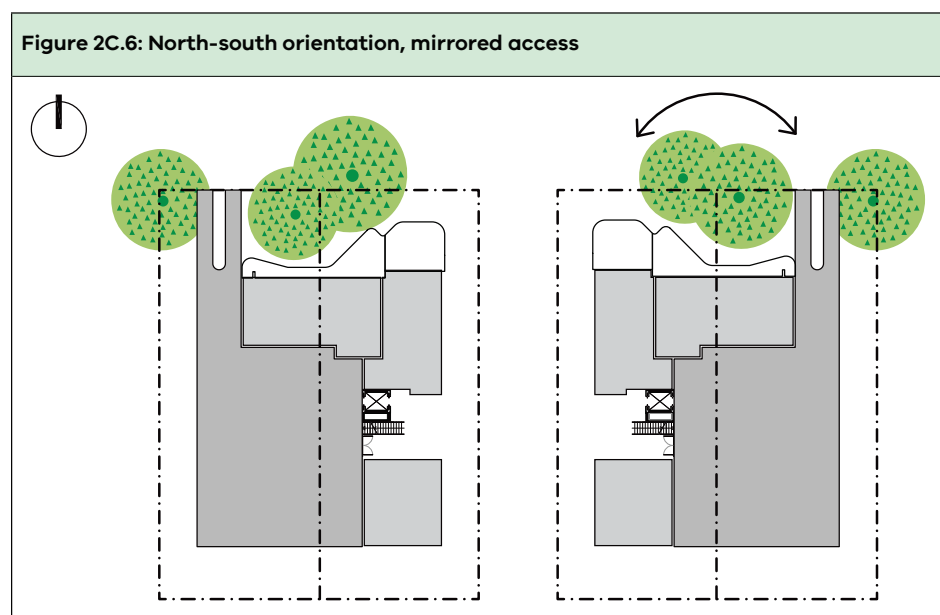
Site access may need to be adapted if:

- street and public transport assets such as street trees, bus shelters, stays or electrical poles are located on nature strips
- a rear or side lane access is available and the rights to use the laneway for vehicle access are established.

Exemplar Design C adaptation guidance

Mirrored access

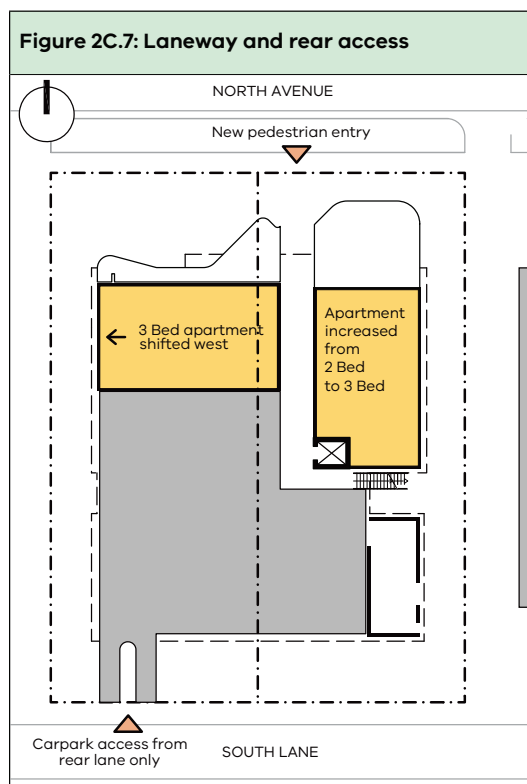
This design can be adapted by mirroring the plan in the event of a conflict with the driveway and street assets, as Figure 2C.6 shows. The mirror-image adaptation enables the carpark and aisle to be relocated.



Laneway and rear access

The design can be adapted for rear laneway access by:

- adjusting the ground-floor plan to increase the street frontage of apartments on the ground level
- having a single entry from the laneway with car parking remaining under the building.



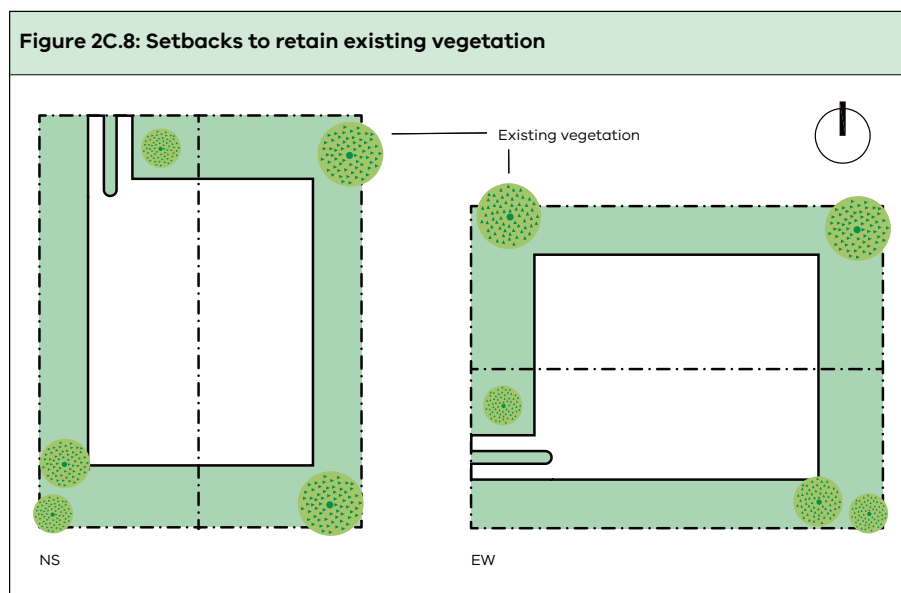
4.7 Existing vegetation

General adaptation guidance

Retain existing significant trees, particularly where they are located within the front and rear gardens. Seek guidance from an arborist, particularly where tree controls apply on site.

Exemplar Design C adaptation guidance

Side and rear setbacks should be maximised, to retain existing vegetation. Figure 2C.8 shows the adaptation.



5 Enduring

5.1 Greening and landscape

General adaptation guidance

Greening and landscaping could be increased if there is potential to:

- increase setbacks at the front, side or rear if site conditions allow such as on larger sites and sites without sensitive interfaces or easements
- increase the separation between buildings in the development
- raise private and communal open spaces to the upper levels or create a roof terrace, while meeting the garden area performance targets
- abut an adjoining wall at the boundary
- use low-maintenance green walls to manage privacy and overlooking; such walls must comply with cladding regulations and be drought-tolerant and irrigated.

Preferred approaches include:

- adjusting layouts to integrate existing trees or vegetation
- adjusting layouts to improve access to sunshine in the morning and evening
- maximising areas of connected deep soil.

Discouraged approaches include:

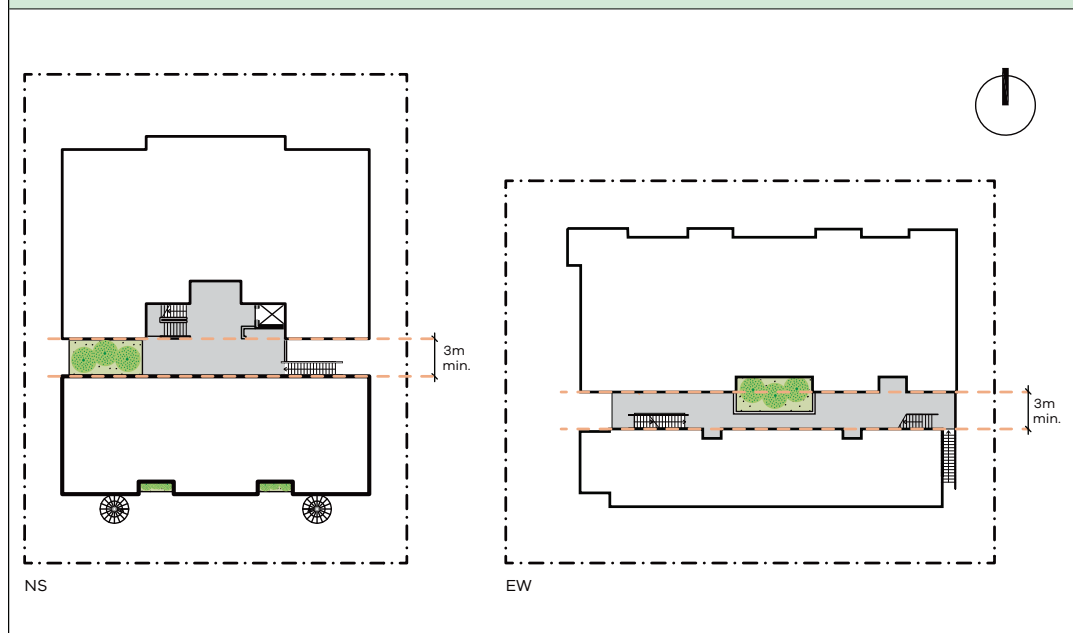
- high-maintenance landscape elements including green roofs
- excessive hard-ground surfaces
- excessive use of planter boxes at the expense of deep-soil planting.

Exemplar Design C adaptation guidance

This design is centred on a landscape response, and the landscape area is maximised by a consolidated built form, including by having the car park completely within the building footprint. The layout enables a ring of connected deep soil around the entire perimeter of the site. Planting is incorporated into the circulation areas, creating a consolidated and prominent landscape.

The central circulation area should be no less than 3 metres wide to maintain access to daylight and sunlight for residents and vegetation.

Figure 2C.9: Greening the building separation



6 Sustainable

General adaptation guidance

There is no general adaptation guidance for the Sustainable objective, but that does not mean alternative solutions are not acceptable. Where one is proposed, the principles and performance targets in Part 1 must still be met.

See Appendix 6:
Environmentally
Sustainable
Design for further
information.

7 Adaptable

7.1 Roof terraces

General adaptation guidance

Roof terraces increase communal open space and can be vibrant hubs where residents can socialise and build a sense of community.

Consideration of a roof terrace should include:

- the capacity of the structural system
- access, circulation, fire and balustrading safety
- the maximum building height requirements, noting that lift and stair overruns and balustrades do not count towards building height.

Preferred approaches include:

- integrating the terrace design with the overall building form
- providing protection from the wind, sun and rain, noting maximum building height requirements
- using opportunities for cooling and greening
- having a well-designed drainage system that minimises unsightly services, staining and damage to the building
- creating a flexible design that caters for a mix of activities including vegetable gardens and hobbies
- providing infrastructure services and facilities such as lighting, barbecues, garden taps, outdoor furniture, sun shades and vegetable gardens
- protecting adjoining properties from noise and overlooking.

Discouraged approaches include:

- exposed, windy terraces
- designs that don't allow for more greenery
- overlooking into existing habitable room windows and private open space.

Exemplar C adaptation guidance

There is no specific adaptation guidance for this topic.

7.2 Orientation

General adaptation guidance

There is no general adaptation guidance for this topic.

Adaptations should address site planning requirements including daylight, ventilation and access.

Exemplar Design C adaptation guidance

There is no specific adaptation guidance for this topic.

7.3 Site on a main road

General adaptation guidance

If a site is on a main road, designs should be adapted to address traffic movements, noise, pollution and privacy issues. Main road sites may also need expert advice from acoustic and traffic consultants.

Designs can be adapted:

- with landscape treatments to mitigate noise and soften the harsh road environment
- by building a front fence up to 1.8 metres high
- by positioning the main communal areas away from the main road
- with acoustic treatment such as double-glazed windows
- by providing balconies with solid balustrades
- by providing for a vehicle passing area.

Preferred approaches include:

- a frontage that contributes to the streetscape character, by screening with trees.

Discouraged approaches include:

- long, blank walls with no visual connection to the street.

Transport for Victoria (TfV) requirements for main road sites

TfV requires plans to be prepared in accordance with the following:

- A feature survey plan must be submitted, showing all features of the road including street trees, utility poles, pits, bus stops, line-markings, slip lanes, medium strips and traffic / pedestrian lights in proximity to the site
- Where tram lines exist, access to the property should be confined to left-in and left-out only arrangements
- Crossovers must be set back:
 - at least 1.5 metres (with no part closer than 1.0 metres) from any public transport assets
 - at least 1.0 metres from infrastructure/ utility poles
 - at least 9 metres from an intersection
- Accessways must:
 - Provide a passing area at the entrance at least 6.1 metres wide and 7 metres long where an accessway serves:
 - 10 or more cars and is more than 50 metres long or
 - connects to a road in a Transport Zone 2 (TRZ2)
 - Be designed so that cars can exit the site in a forward direction, if the accessway serves four or more car spaces or connects to a road in a TRZ2
 - Have a corner splay or area at least 50 per cent clear of visual obstructions extending at least 2 metres along the frontage road from the edge of an exit lane and 2.5 metres along the exit lane from the frontage, to provide a clear view of pedestrians on the footpath of the frontage road. The area clear of visual obstructions may include an adjacent entry or exit lane where more than one lane is provided, or adjacent landscaped areas, provided the landscaping in those areas is less than 900mm in height
 - Be set back a minimum of 7 metres inside the property boundary for any security boom, barrier, gate, or similar device controlling vehicular access to the premises, to allow vehicles to stay clear of the road pavement and footpath
 - Provide clear directional signs on the arterial road frontage if one-way access is proposed
- If an accessway to four or more car parking spaces is from land in a TRZ2, the access to the car spaces must be at least 6 metres from the road carriageway
- If entry to the car space is from a road, the width of the accessway may include the road
- Ensure car parking spaces are in accordance with the dimensions in Table 1.6: Minimum dimensions of car parking spaces and accessways. Where mechanical parking is proposed, refer to **Chapter 2.3 Parking: Cars** for guidance on dimensions and aisle widths.

If a Future Homes adaptation does not address the requirements above, TfV may ask the permit applicant to do so.

Exemplar Design C adaptation guidance

There is no specific adaptation guidance for this topic.

7.4 Corner site

General adaptation guidance

A development on a corner site must locate crossovers in accordance with council and/or TfV requirements and accommodate any existing street services and assets.

Preferred approaches include:

- clear sightlines
- crossovers appropriately set back from street corners, to avoid vehicle conflict
- developments that face the street on both frontages
- buildings that offer passive surveillance of the street
- use of landscape elements to maintain visual permeability
- vehicle access from the local road.

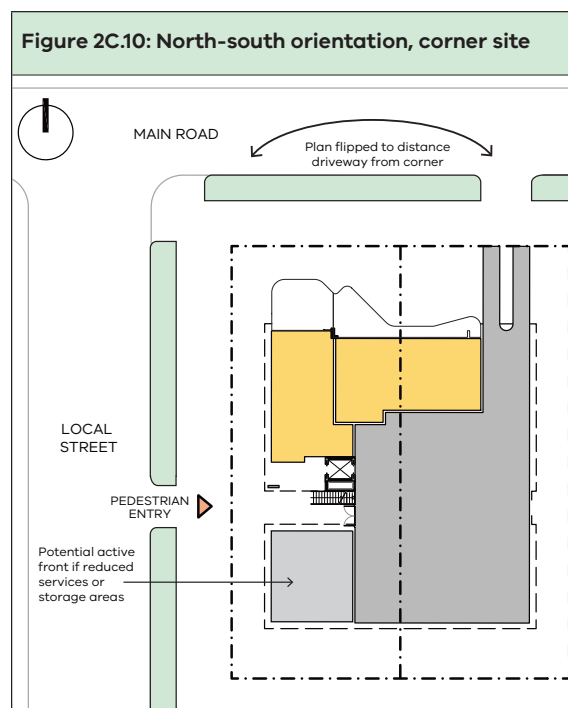
Discouraged approaches include:

- high, long, blank walls at street frontages.

Exemplar Design C adaptation guidance

This design can be adapted by:

- locating the driveway entry away from the corner and positioning it to comply with TfV's 9 metre intersection offset requirement
- orientating apartments to address both streets
- encouraging active uses along both street frontages.



7.5 Varied site dimensions

General adaptation guidance

For a deep site:

- ensure equitable access to circulation including stairs and lifts
- avoid a long, continuous built form without breaks in the massing.

Exemplar Design C adaptation guidance

There is no specific adaptation guidance for this topic.

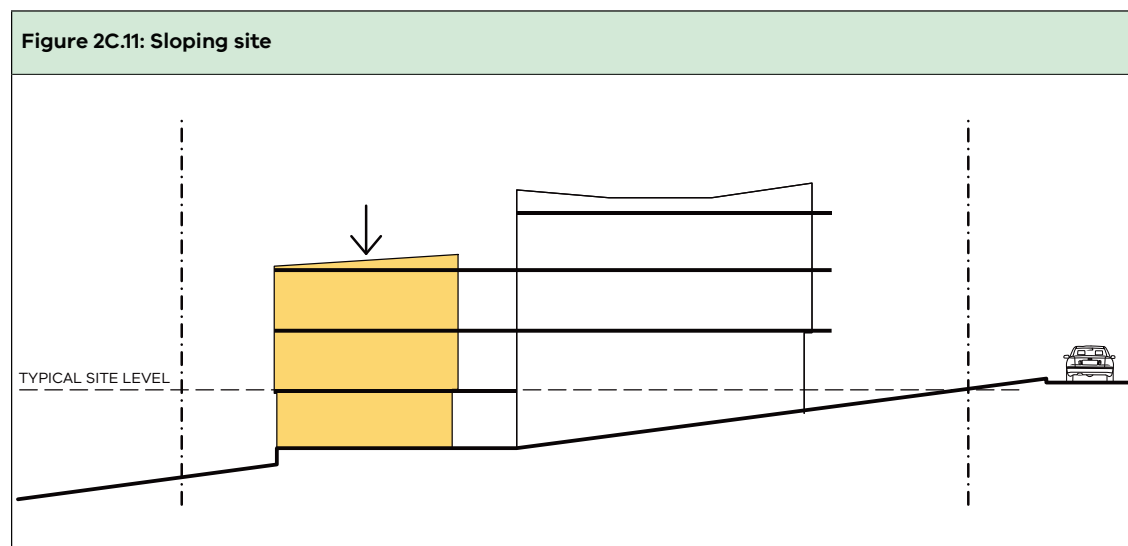
7.6 Sloping site

General adaptation guidance

There is no general adaptation guidance for this topic.

Exemplar Design C adaptation guidance

This design can be adapted by dropping the front or rear block of the building by one level to accommodate a sloping site. The corridor and stairs would need to be reconfigured: the apartment floorplates would be unchanged. Figure 2C.11 shows the adaptation.



7.7 Floodplain

General adaptation guidance

A development on a site within a flood overlay must be designed in accordance with Melbourne Water's requirements.

Inappropriate development in flood affected areas can lead to fundamental changes in the nature and impact of flooding. It can also increase the potential for loss of life and flood damages to the community and the environment.

Melbourne Water decisions are guided by planning policies in the planning scheme. In addition, Melbourne Water assesses development applications in accordance with the *Guidelines for Development in Flood Affected Areas* (DELWP, 2019). Usually the information in the guidelines is sufficient to guide decision making. However, the guidelines cannot cover all the circumstances and aspects of flood behaviour.

Development in or adjacent to a floodplain will only be acceptable where the new development is protected from flooding (flood levels are constructed to the identified Nominal Flood Protection Level); has safe access to and around the development (in considering site specific flood depths and velocities); and does not interfere with the passage and storage of floodwaters.

Developments in areas affected by flooding must not obstruct the passage of flood flows or reduce floodplain storage as this may cause flood levels and velocities to increase and adversely impact surrounding properties. On sites subject to flooding, imported fill must also be kept to a minimum and used only for sub floor areas of dwellings, garages and driveway ramps. New fencing and decking should also be of an open style of construction (50 per cent permeable/open) to maintain conveyance of flows through floodplains.

All new development should preserve, and if possible enhance, the social and environmental values and benefits of floodplains and waterways and should be sensitively designed and sited to maintain and enhance environmental assets, significant views and landscapes along river corridors and waterways and adjacent to lakes and wetlands. For detail on development setbacks required from waterways, see the *Healthy Waterways Strategy 2018-2028*.

On sites affected by flooding, Melbourne Water requires the following information to be included on all plans:

- The boundaries and dimensions of the site
- Existing conditions survey and feature plans. Taken by or under the direction and supervision of a licensed land surveyor showing:
 - natural ground level
 - the current Flood Level
 - the dimensions and ground and finished floor levels of any existing buildings, to Australian Height Datum (AHD)
- Proposed architectural plans, elevations and section drawings (1:50 or 1:20). Showing the proposed finished surface levels and finished floor levels and the Nominated Flood Protection Level (NFPL) of all new structures on the land
- All proposed finished floor levels notated on the plans to Australian Height Datum
- A comparative description of the existing and proposed use and development of the site

- Cross-sectional details of any basement entry ramps and other basement entries to Australian Height Datum. Showing floor levels of entry and exit areas and drainage details
- A written assessment against 'Part Three – assessing development proposals' of the Guidelines for Development in Flood Affected Areas (DELWP, 2019), and subsequent submission of any associated Flood Risk Management Plan
- Any other application requirements specified in a relevant planning Overlay schedule applicable to the site
- Appropriate boundary setbacks to allow for the conveyance of overland flows
- Detailed location of any Melbourne Water asset (including drains, sewers or water mains) within 20 metres of the subject site
- Hydraulic details and associated reporting of all/any existing and proposed earthworks, including details of any cut and fill required for works
- Details of any other known physical features that may affect flows on-site and on adjoining land, such as levees, fences and retaining walls
- A written description of proposed actions, flood risk mitigation strategies or measures required, if any, to the siting and design of the buildings or works, or in association with the use and occupation of all aspects of the proposal in order to reduce the risk to individuals, property, infrastructure and the environment.

Exemplar Design C adaptation guidance

There is no specific adaptation guidance for this topic.

7.8 Easements

General adaptation guidance

There is no general adaptation guidance for this topic.

Exemplar Design C adaptation guidance

This design has sufficient setbacks to accommodate different sizes and locations of easements.

7.9 Systems and approach

General adaptation guidance

Off-site manufacturing

Off-site construction delivers pre-finished, prefabricated building elements and modules that are assembled on site using efficient construction and manufacturing techniques.

Consider standardisation and repetition of structural framing. It can help to reduce material waste, and prefabrication of structural framing can mean fewer trades and waste on site.

Prefabricated external walls with preassembled windows generally have higher-quality sealing than on-site construction. This method reduces on-site sealing and can reduce the incidence of poor workmanship and defects. Prefabrication also can minimise the construction period; the building can be prefabricated while groundworks and footings are being constructed.

Consider early contractor advice in the design phase if offsite construction is applicable and/or a known builder will construct the development. This way, trades and their supply chains can help coordinate and standardise the design of services, and assist to accurately estimate costs.

Future changes in use

Plan for the potential amalgamation of smaller apartments into a larger apartment or vice versa. Such alterations would need room dimensions and optimal locations of wall openings to be considered, to reduce the need for structural adjustments.

Structure

Consider an efficient structural frame that extends in alignment from the ground floor to the top floor such as a lightweight post-and-beam timber, or cross-laminated timber (CLT). This reduces the number of on-site trades and the time needed for coordination and construction. Consider the fire-rating implications of this method of construction.

- Use regular grids and modular components for floors, walls, stairs, roofs and service risers.
- For non-wet areas, consider providing structural flooring that can span between load-bearing walls. This will enable internal walls within a sole occupancy unit to be non-load-bearing and adaptable in the future.
- Consider providing structure and footings for more floors to be added over time and clearly documenting these for future reference.
- Consider using a structural insulated panel system or sandwich panels.

Car park

- Floor-to-floor height for above-ground car park spaces should allow for other temporary or long-term uses, including conversion to habitable space.
- Aim to provide a minimum of 2.6 metres clear in basement areas, to allow for services to be installed.
- Plan for adequate ventilation and likely service infrastructure needs for future uses.
- Provide adequate drainage at the base of ramps for surface run-off, pits for excess water and a freeboard threshold at the top of the ramps.

Exemplar Design C adaptation guidance

There is no specific adaptation guidance for this topic.

7.10 Materials and finishes

General adaptation guidance

Future Homes exemplar designs have a materials schedule that includes substitution guidance to suit different contexts or design preferences.

Exemplar Design C adaptation guidance

Refer to the materials schedule for substitution guidance.

7.11 Fire services

General adaptation guidance

There is no general adaptation guidance for this section.

Exemplar Design C adaptation guidance

Should a fire pump room not be required, the area in the exemplar design set aside for a fire pump could be converted to additional indoor or outdoor communal space.

Part 2D

Exemplar Design D
Spiral Architects Lab



Design Statement

Prepared by Spiral Architects Lab

Exemplar Design D by Spiral Architects Lab is a design inspired by 'atomic structures'. Modular buildings, arranged in clusters, create a system that adapts to reflect the place and unique conditions of each site. This is supported by an internal and compositional logic that can scale up and down, from local site amalgamation to neighbourhood urban planning; the larger the site, the greener and denser a scheme can become.

Module strategy

- There are two scales of modules: a larger module that measures 9 metres by 9 metres, and a smaller module that measures 7.5 metres by 7.5 metres. They are further broken down into quarters named 'atoms', which are roughly the size of a habitable room.
- Apartments can be stacked in different configurations using the typical apartment floor plans provided, either with interlocking or repeated spaces. They should be oriented towards desirable elements such as private open space, the street, northerly aspect, or communal open space. The stacking enables adaptation of a single-bedroom home up to a five-bedroom home.
- 'Atoms' can be double-height, providing either clerestory windows, private open space or double-height living areas.
- The perimeter of the module blocks contains most of the load-bearing elements, to maximise the flexibility of the interior space and to create connections through façades and flow through ceilings.
- The arrangement of modules on site should be informed by preferencing access to northern light, cross-ventilation for apartments, and views across the site. The displacement or staggering should be informed by typical material dimensions, to reduce material wastage and on site handling.

Expression and materiality

- The strategy for external finishes is driven by the module of the blocks/volumes. The exterior walls of each module block can be wrapped in a single cladding material reinforcing its shape, which gives the designer the freedom for each block to be read as an individual entity or part of a whole: either a unified or village-like feeling.
- The selection of finishes is guided by the material schedule and should be informed by the local context.

Common Space

- Each project should be composed of modular blocks arranged in clusters, connected by external common corridors and vertical circulation.
- The strategy of displacing modules allows for interconnected permeable green spaces, wide corridors, and open covered communal spaces at all levels.

Landscape

- Three or more displaced modules can be grouped to create a shared landscaped zone.
- The landscape experience of the entry sequence is key for the scheme. Planting of feature trees at the end of the main entry path creates long views through the building to greenery at each end. Climbing plants on the fence provide additional green backdrop.
- The entry courtyard with seats and feature trees provides a social street edge.
- Productive gardens provide a communal social space on the ground level.
- Shade-tolerant climbers and groundcover provide a forest feel to the courtyard.

1 Introduction

This chapter guides designers adapting Exemplar Design D for a particular development site. Authored by the architects who designed the exemplar, the chapter is organised according to the six Future Homes objectives that adapted designs need to address: Responsive to Need, Liveable, Good Neighbours, Enduring, Sustainable and Adaptable.

For each objective, the chapter sets out:

- how to adapt the design to fit different sites and contexts
- preferred and discouraged approaches to adaptation
- ideas to adapt the design to suit particular needs such as a different bedroom configuration or a main road location
- ideas to achieve better development and design outcomes by adapting the design if the opportunity arises.

The guidance in this section is not exhaustive, and there is no adaptation guidance for some planning elements. It is up to the designer to process or interpret the exemplars. The assessment process will treat all adaptations on their merits.

2 Responsive to need

2.1 Apartment mix and size

General adaptation guidance

Apartment designs need to respond to the changing patterns of living, including an increasingly diverse household mix and size.

The apartment should be sufficiently adaptable to allow:

- the ability to upsize or downsize: for example, by having the space and services configuration to combine smaller apartments to create a larger apartment and vice versa
- multi-purpose spaces for work and study from home
- internal functions to be rearranged over time (for example, bathrooms, kitchens and laundries that can be reconfigured or be combined differently).

Preferred approaches include:

- the layout is easy to change
- open-plan living spaces cater for flexible furniture arrangements
- floor space is used efficiently.

Discouraged approaches include:

- excessive corridors and passageways
- excessive use of built-in joinery.

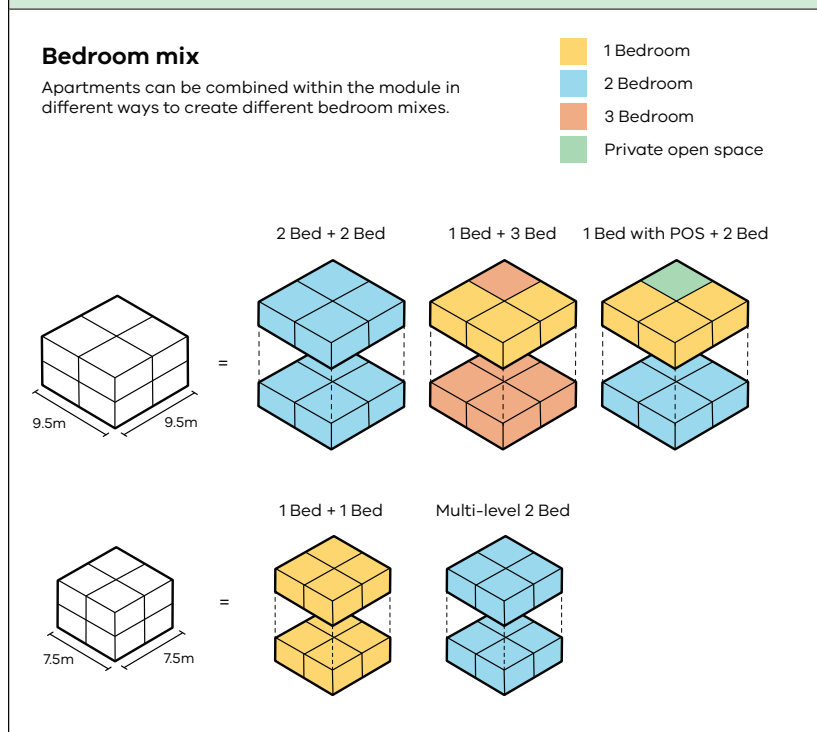
Exemplar Design D adaptation guidance

This adaptation can accommodate:

- a different mix of apartments based on market demand
- merging apartments to provide different bedroom mixes and configurations
- smaller modules if the site is constrained.

Figure 2D.1 shows this adaptation.

Figure 2D.1: Alternative apartment mix options



2.2 Parking: cars

General adaptation guidance

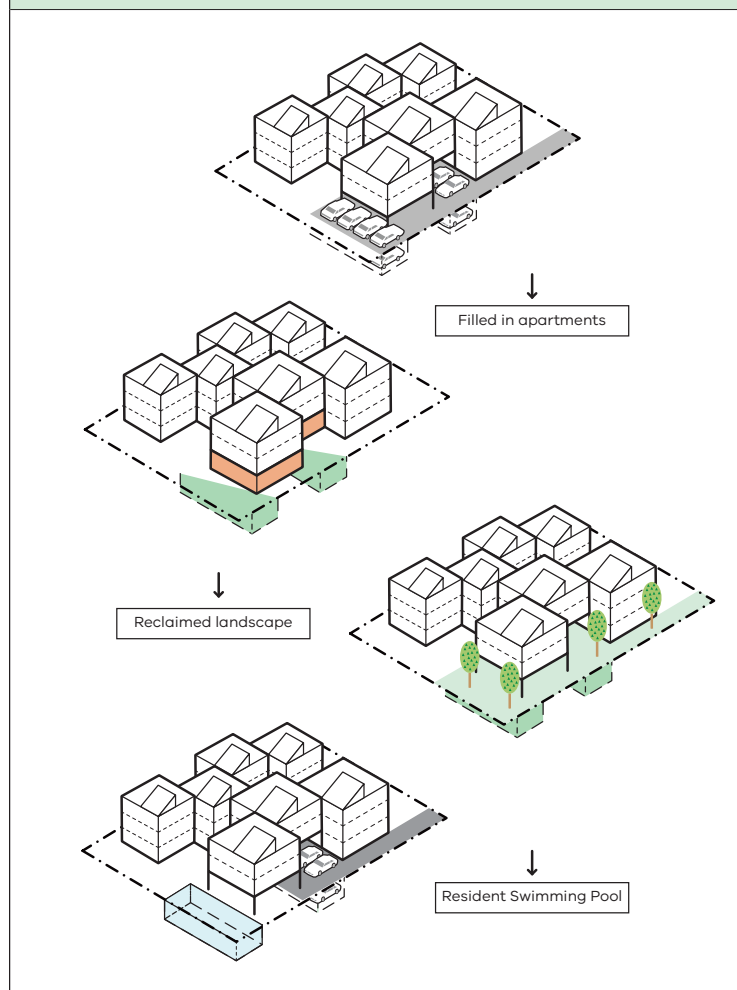
If it is acceptable to have fewer car parking spaces, the design should be adapted to avoid the need to use mechanical parking. The development should also allow for future adaptation of car parking spaces to alternative uses to support changes in use, personal preferences and technology over time.

Measures to support future adaptation include sufficient floor-to-ceiling height to allow future habitable spaces to be inserted with access to natural light.

Exemplar Design D adaptation guidance

If a lower car parking rate is allowed, car parking spaces could be converted to accommodate other uses — for example, uncovered car spaces could become landscape, communal areas and covered car spaces removed to increase the number of units or covered communal areas — as Figure 2D.2 shows.

Figure 2D.2: Adaptive re-use of car parking spaces, 3D view



2.3 Parking: bicycles

General adaptation guidance

Consider locating bicycle parking within oversized balconies, while retaining the minimum preferred useable space for residents' recreation.

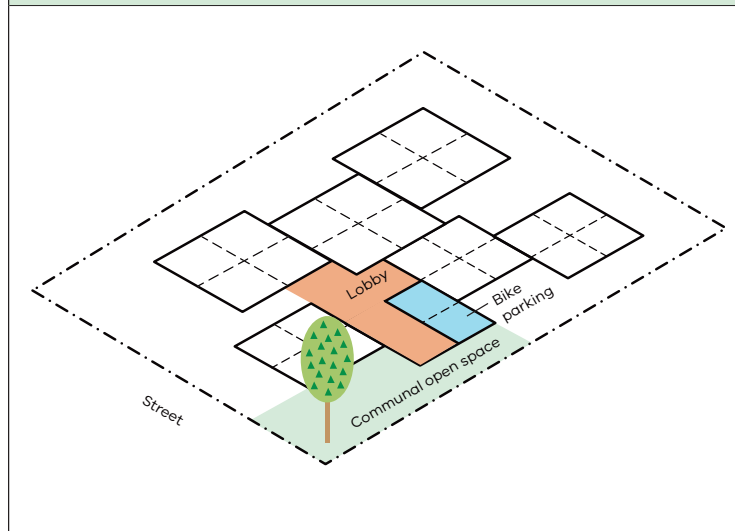
Bicycle parking provided on oversized balconies will require the provision of a bicycle accessible path from the ground floor. Where bicycle parking is provided on upper floors, lifts and/or stairs should be designed to provide access to upper floors for bicycles.

Preferred bicycle parking spaces are those that are covered from the weather and secured.

Exemplar Design D adaptation guidance

Bicycle parking should be located between the lobby and communal open space, to activate both locations and encourage neighbour interaction, as Figure 2D.3 shows.

Figure 2D.3: Bicycle parking



3 Liveable

General adaptation guidance

There is no general adaptation guidance for the Liveable objective, but that does not mean alternative solutions are not acceptable. Where one is proposed, the objectives, principles and mandatory requirements in Part 1 must still be met.

4 Good neighbours

4.1 Front setback

General adaptation guidance

Front setbacks need to be adapted to the street context. The starting point should be the predominant street setback along the length of the street up to 150 metres (or about ten properties) on either side, or a minimum of 7 metres, whichever is lesser. Within a site, the building setback may be staggered, forward or behind the predominant street setback having regard to the local context, design outcome and impact on the streetscape.

When determining the front setback or setbacks, the considerations should be:

- the wider streetscape and urban block pattern
- whether an adjoining building sits forward of the predominant street setback
- opportunities to use articulation to transition between neighbouring sites
- whether the approach responds to the emerging or future character of the area
- opportunities to provide suitable canopy tree planting.

Preferred approaches include:

- upper-level projections including balconies that provide weather protection for the spaces below
- where a lesser front setback is appropriate, consider increasing the rear setback and/or providing additional internal breathing space between buildings.

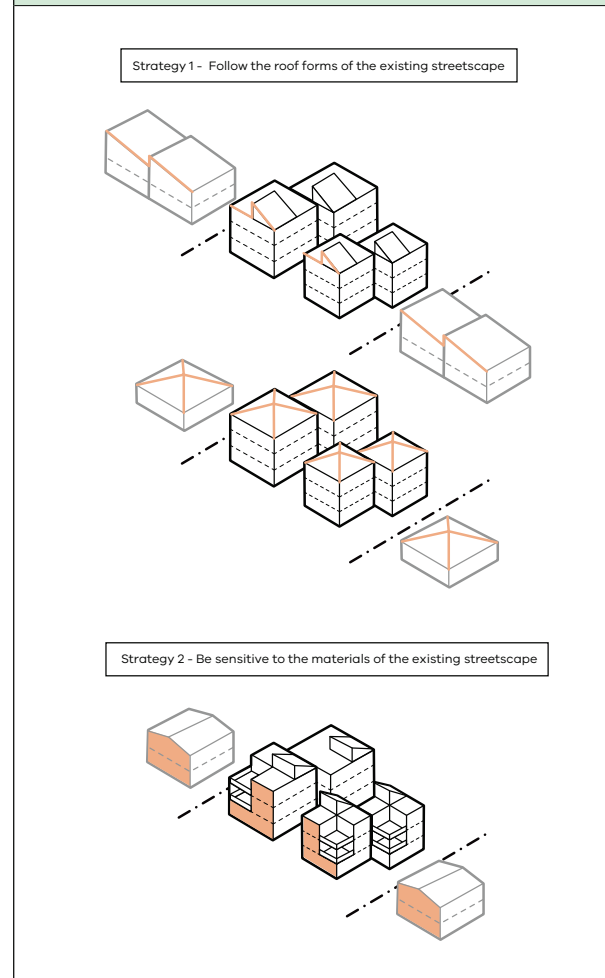
Discouraged approaches include:

- monolithic setbacks without breaks or variations
- balcony projections that will limit the planting of canopy trees.

Exemplar Design D adaptation guidance

There are multiple techniques to approach streetscape character, as Figure 2D.4 shows.

Figure 2D.4: Following the neighbourhood's street character



4.2 Height

General adaptation guidance

Where the responsible authority permits, the exemplar design can be adapted to add another storey. A fourth storey may reinforce the existing character of the wider urban context or respond to the agreed future character of the local area.

An adaptation to increase building height should consider:

- impacts on solar access and articulation to the scale of the specific neighbouring context
- the siting of the additional storey, to minimise overlooking and overshadowing
- transitions to lower, neighbouring built form
- additional fire egress and services requirements
- access and circulation
- additional car and bicycle parking requirements, if the number of apartments is increased
- additional communal open space and landscaping requirements.

Preferred approaches include:

- the use of design techniques to reduce visual bulk and break up the mass of the building such as articulation of built form, creating depth within the façade and the use of materials.

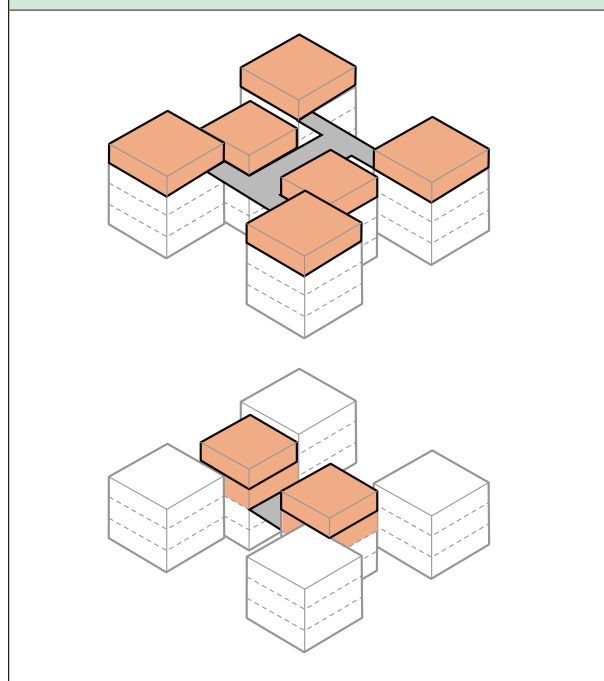
Discouraged approaches include:

- providing a fourth storey across the whole of the development
- overly dominant built form that does not respect the future character of the area.

Exemplar Design D adaptation guidance

If an additional storey is permitted, the storey can utilise a centralised circulation access. If circulation space is not possible from the fourth level, two-storey modules can be used, as Figure 2D.5 shows.

Figure 2D.5: Provision of an additional storey showing access options



4.3 Walls on a boundary

General adaptation guidance

Building to boundaries should be treated flexibly, depending on the site context and impacts on neighbouring properties.

Walls on a boundary may be appropriate where:

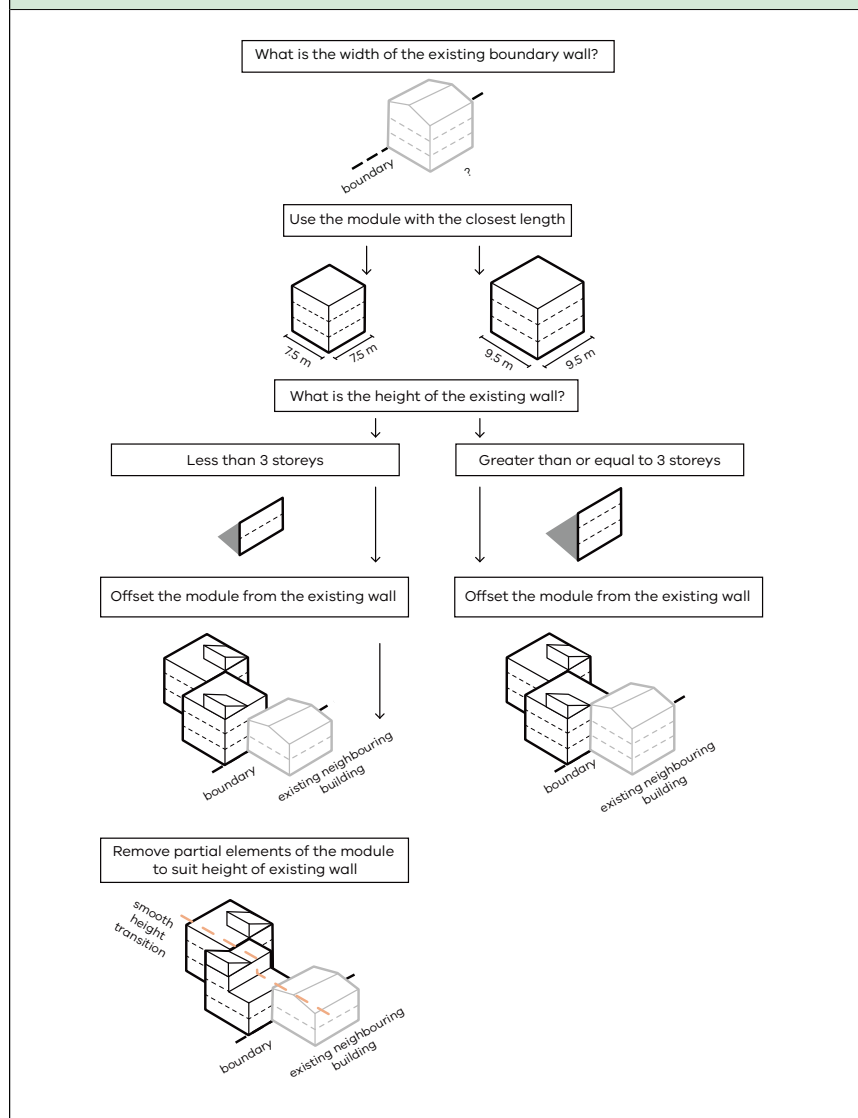
- there is an existing wall on the boundary of similar length and height
- the site abuts a laneway
- they improve the development's character such as by contributing to more landscape and open space opportunities on the site
- there are no sensitive interfaces on the neighbouring property.

Discouraged approaches include a wall on a boundary:

- that significantly exceeds the height or length of neighbouring walls
- if overshadowing, access to sunlight and daylight, noise or loss of vegetation or the visual amenity on the adjoining property cannot be adequately managed
- if there is a clear preference for a landscaped perimeter
- if a site abuts a public park.

Exemplar Design D adaptation guidance

There are multiple techniques to adapt a design if there is a wall on the boundary, as Figure 2D.6 shows.

Figure 2D.6: Adaptations to suit length and height of an existing adjoining wall

4.4 Overlooking

General adaptation guidance

The principles in Part 1 set out general design considerations for this topic.

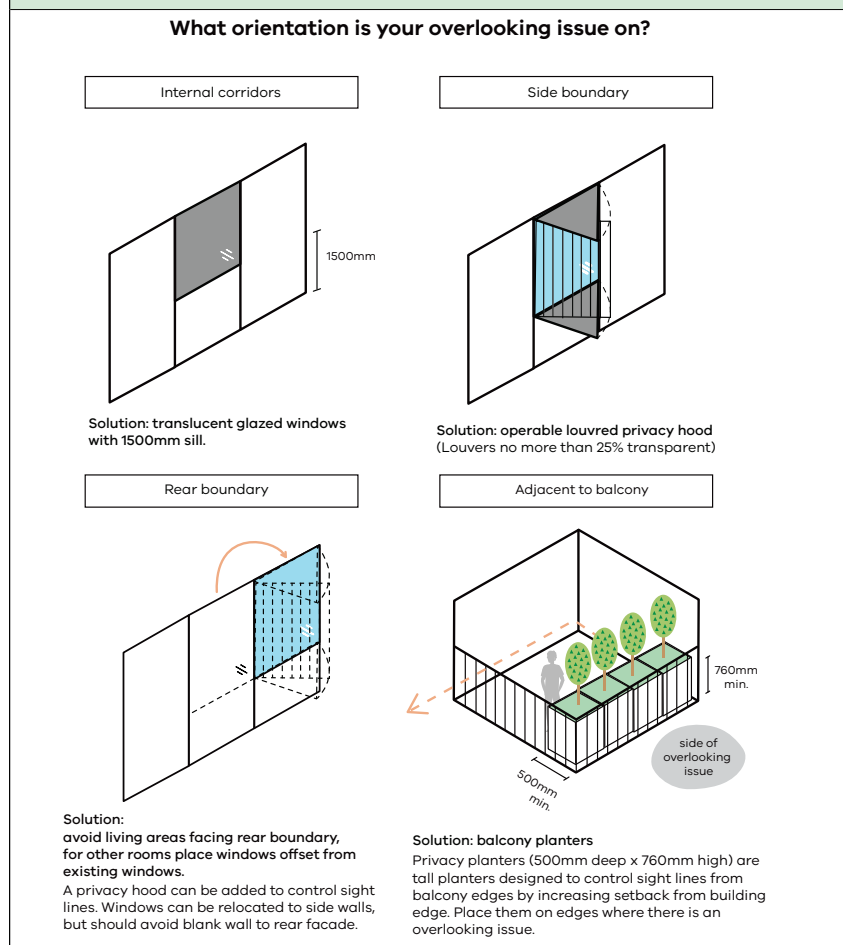
The exemplar provides two design strategies to prevent overlooking that respond to the different orientations, while providing amenity to residents, allowing access to external views and daylight.

Adaptations should not hinder the amenity of residents. For example, highlight windows should be avoided as a standalone solution to overlooking.

Exemplar Design D adaptation guidance

There are multiple techniques to limit overlooking, as Figure 2D.7 shows.

Figure 2D.7: Techniques to limit views



4.5 Daylight to existing windows

General adaptation guidance

The exemplar design protects solar access to existing habitable room windows without the need for rigid numeric compliance. Designs can be reconfigured to provide adequate daylight through the habitable room windows of existing dwellings located close to the site boundary.

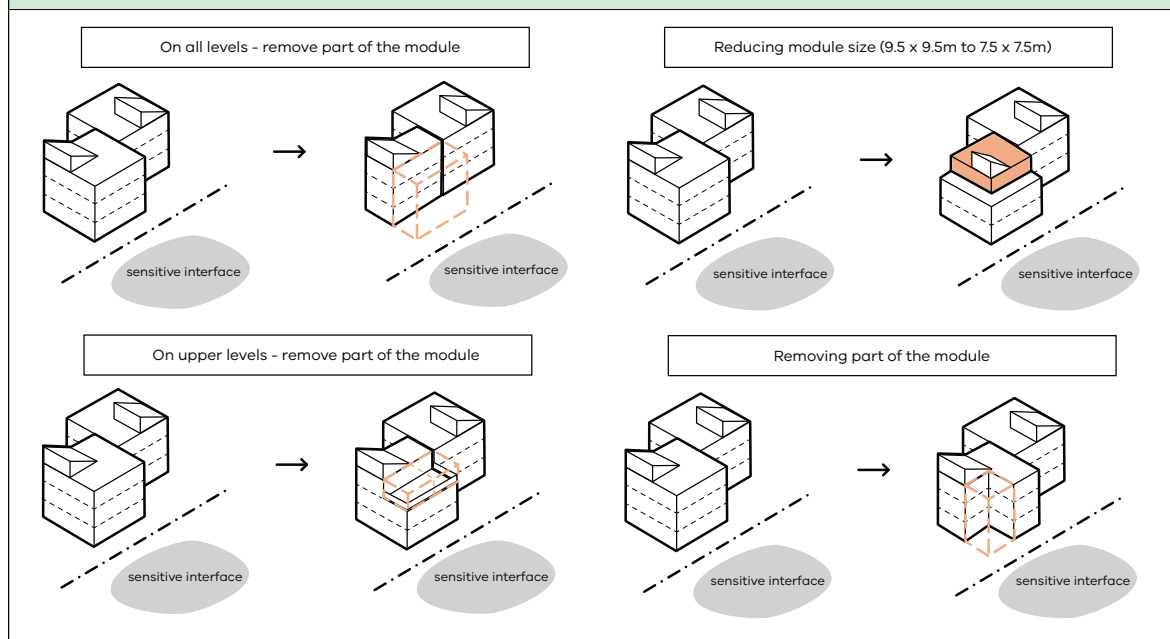
Exemplar Design D adaptation guidance

This design can be adapted by:

- reducing modules from 9.5 metres by 9.5 metres to 7.5 metres by 7.5 metres, to allow light to remain for existing habitable room windows
- removing modules, which would reduce the overall footprint.

Figure 2D.8 shows these and other adaptations to address a sensitive interface.

Figure 2D.8: Addressing sensitive interfaces



4.6 Site access

General adaptation guidance

Site access may need to be adapted if:

- street and public transport assets such as street trees, bus shelters, stays or electrical poles are located on nature strips
- a rear or side lane access is available and the rights to use the laneway for vehicle access are established.

Exemplar Design D adaptation guidance

There are multiple techniques to adapt vehicular access, as shown in Figure 2D.9 to Figure 2D.12.

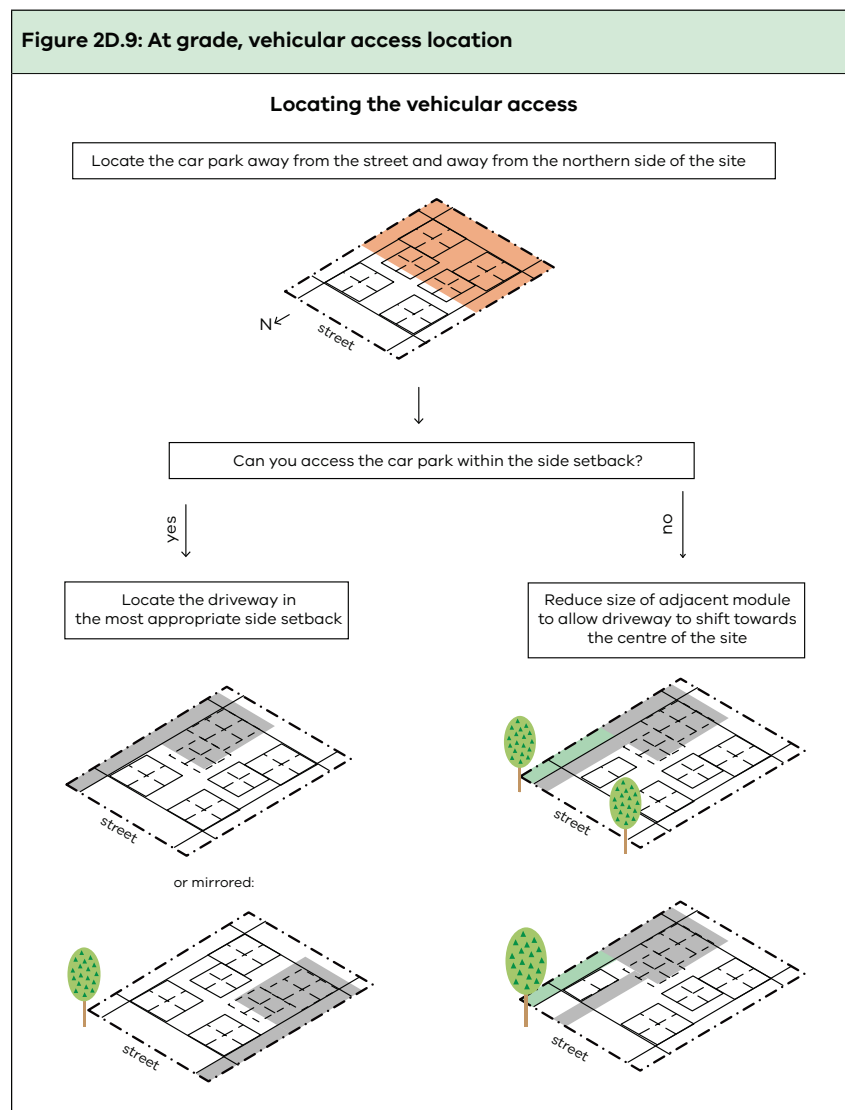


Figure 2D.10: Locating pedestrian access

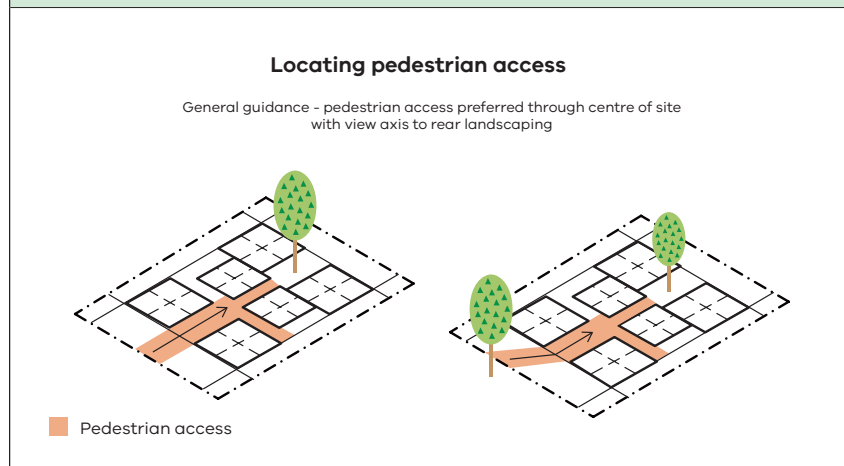


Figure 2D.11: Access from a rear lane

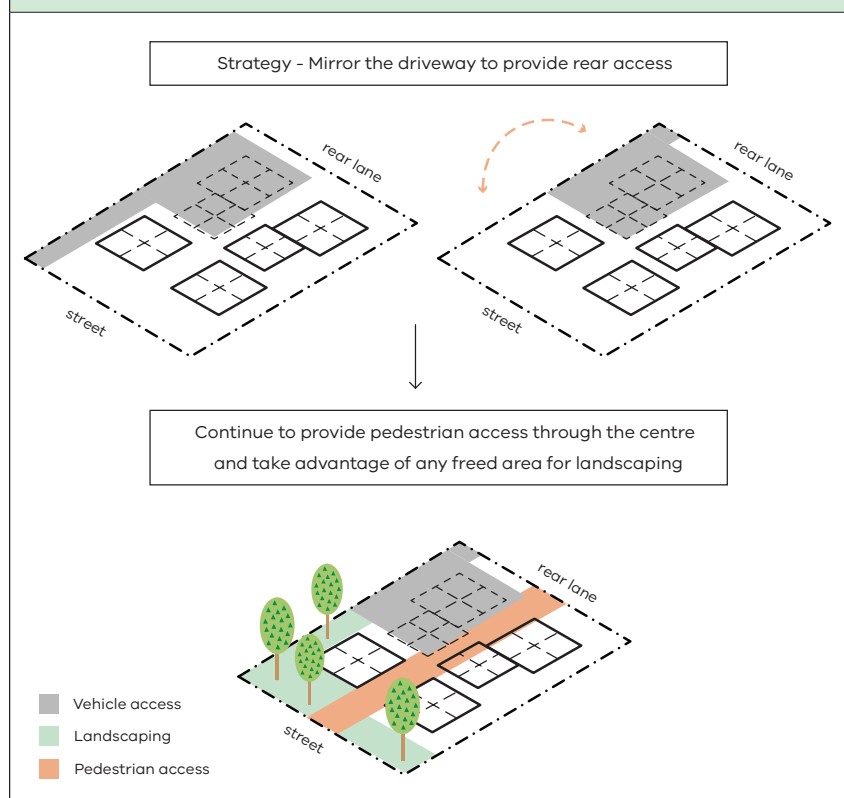
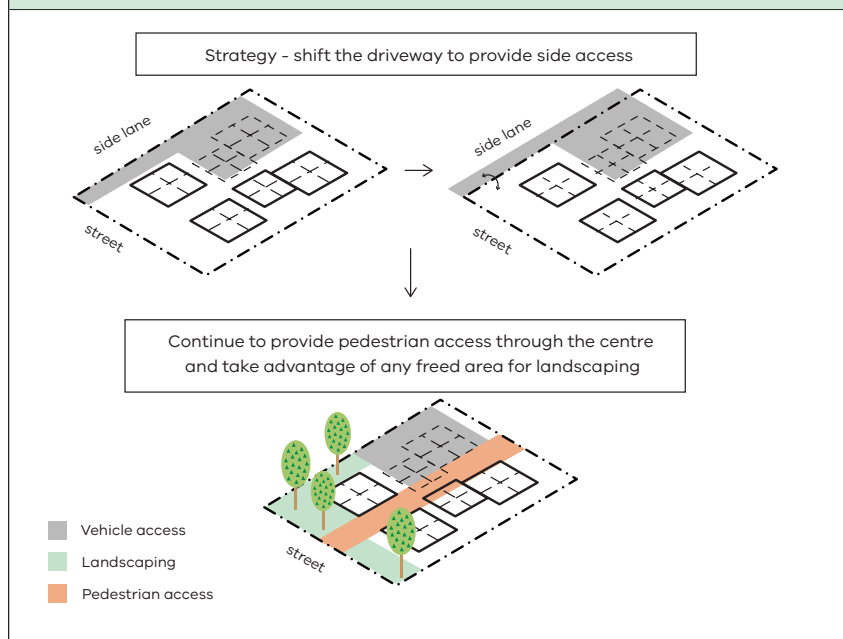


Figure 2D.12: Access from a side lane

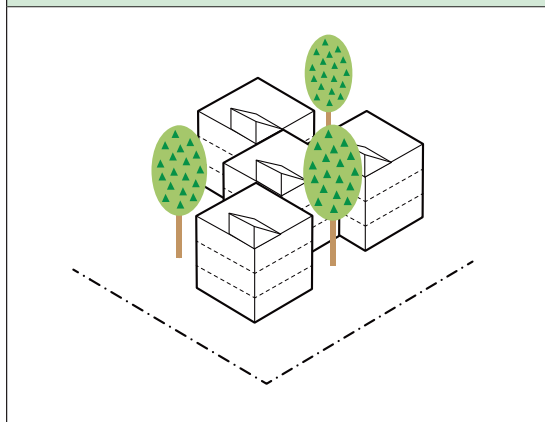
4.7 Existing vegetation

General adaptation guidance

Retain existing significant trees, particularly where they are located within the front and rear gardens. Seek guidance from an arborist, particularly where tree controls apply on site.

Exemplar Design D adaptation guidance

This design can be adapted by arranging modules to embrace and retain existing significant vegetation, as Figure 2D.13 shows.

Figure 2D.13: Cluster arrangement to retain existing significant vegetation

5 Enduring

5.1 Greening and landscape

General adaptation guidance

Greening and landscaping could be increased if there is potential to:

- increase setbacks at the front, side or rear if site conditions allow such as on larger sites and sites without sensitive interfaces or easements
- increase the separation between buildings in the development
- raise private and communal open spaces to the upper levels or create a roof terrace, while meeting the garden area performance targets
- abut an adjoining wall at the boundary
- use low-maintenance green walls to manage privacy and overlooking; such walls must comply with cladding regulations and be drought-tolerant and irrigated.

Preferred approaches include:

- adjusting layouts to integrate existing trees or vegetation
- adjusting layouts to improve access to sunshine in the morning and evening
- maximising areas of connected deep soil.

Discouraged approaches include:

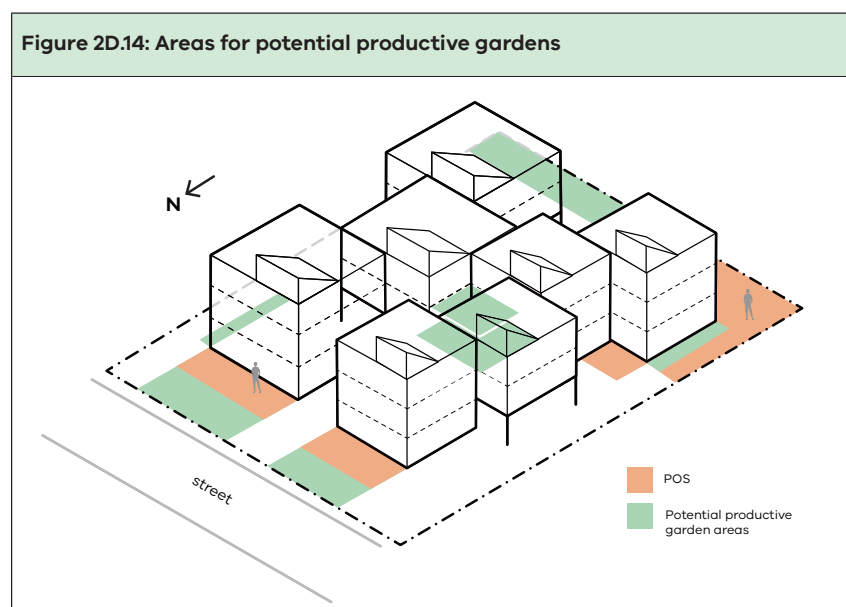
- high-maintenance landscape elements including green roofs
- excessive hard-ground surfaces
- excessive use of planter boxes at the expense of deep-soil planting.

Exemplar Design D adaptation guidance

Landscape is an essential part of the design and needs to be carefully coordinated with architectural components and all services to ensure it is well integrated. When adapting this design, consider:

- arranging the module layout to retain any existing site trees
- prioritising light access and deep soil to communal spaces
- providing access from the street into the centre of the block. The layout should provide access to light for the garden beds, and use trees, climbers and planters to create a green walkway. Consider the view through to the rear of the site and position vertical planting such as trees and climbers to provide a prominent outlook of greenery
- consider the front garden's interface with the street. Consider the design of the garden's edge and provide seats and planting to facilitate social connection
- the communal open space provides a connection to the street. Consider the scale and function of the space in the context of the street to enhance the social life of residents and the community

- utilising the ground-floor private open space as an opportunity for gardens and deep-soil planting
- the inclusion of roof gardens where possible as additional private or communal open space
- using in-built planters to limit overlooking from balconies and terraces
- locating productive gardens in easily accessible, shared spaces between apartments, ideally in north-facing spaces, as Figure 2D.14 shows
- planting climbers where appropriate to green interfaces
- locating raingardens in the natural drainage points of the site.



6 Sustainable

General adaptation guidance

There is no general adaptation guidance for the Sustainable objective, but that does not mean alternative solutions are not acceptable. Where one is proposed, the principles and performance targets in Part 1 must still be met.

See Appendix 6:
Environmentally
Sustainable Design
for more information.

7 Adaptable

7.1 Roof terraces

General adaptation guidance

Roof terraces increase communal open space and can be vibrant hubs where residents can socialise and build a sense of community.

Consideration of a roof terrace should include:

- the capacity of the structural system
- access, circulation, fire and balustrading safety
- the maximum building height requirements, noting that lift and stair overruns and balustrades do not count towards building height.

Preferred approaches include:

- integrating the terrace design with the overall building form
- providing protection from the wind, sun and rain, noting maximum building height requirements
- using opportunities for cooling and greening
- having a well-designed drainage system that minimises unsightly services, staining and damage to the building
- creating a flexible design that caters for a mix of activities including vegetable gardens and hobbies
- providing infrastructure services and facilities such as lighting, barbecues, garden taps, outdoor furniture, sun shades and vegetable gardens
- protecting adjoining properties from noise and overlooking.

Discouraged approaches include:

- exposed, windy terraces
- designs that don't allow for more greenery
- overlooking into existing habitable room windows and private open space.

Exemplar Design D adaptation guidance

This design can be adapted by:

- providing lift access to roof terraces
- locating roof terraces to the north of the site, where possible for solar access
- visually connecting roof terrace to other communal open space areas on the site.

Where a roof terrace is proposed, ensure any overlooking concerns are mitigated.

Figure 2D.15: Rooftop communal open space

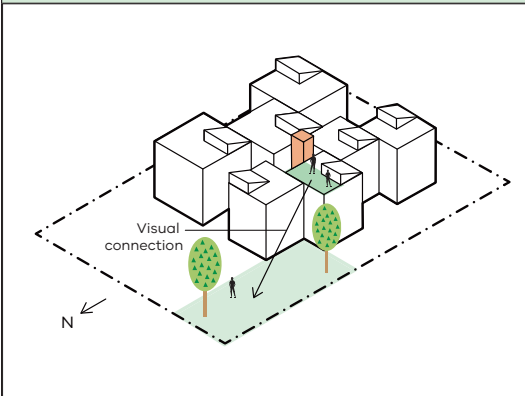
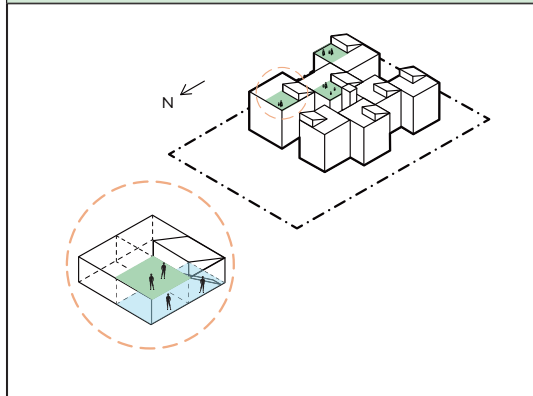


Figure 2D.16: Rooftop private open space



7.2 Orientation

General adaptation guidance

There is no general adaptation guidance for this topic.

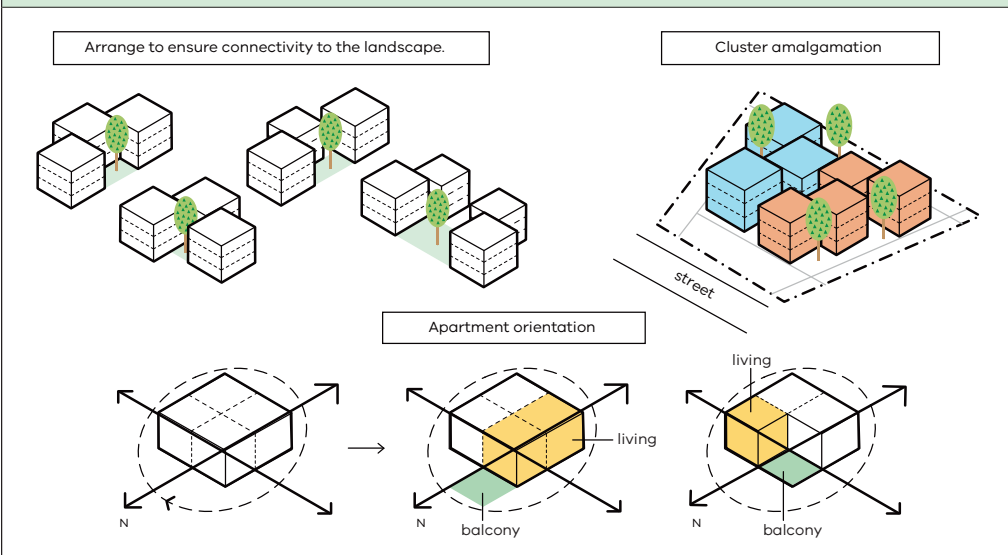
Adaptations should address site planning requirements including daylight, ventilation and access.

Exemplar Design D adaptation guidance

This design can be adapted by:

- 'growing' the design by clusters, for example by grouping three modules to ensure connectivity to the landscape
- rotating or mirroring the modules to locate private open space and living areas towards the north.

Figure 2D.17: Adapting to different site orientations and conditions



7.3 Site on a main road

General adaptation guidance

If a site is on a main road, designs should be adapted to address traffic movements, noise, pollution and privacy issues. Main road sites may also need expert advice from acoustic and traffic consultants.

Designs can be adapted:

- with landscape treatments to mitigate noise and soften the harsh road environment
- by building a front fence up to 1.8 metres high
- by positioning the main communal areas away from the main road
- with acoustic treatment such as double-glazed windows
- by providing balconies with solid balustrades
- by providing for a vehicle passing area.

Preferred approaches include:

- a frontage that contributes to the streetscape character, by screening with trees.

Discouraged approaches include:

- long, blank walls with no visual connection to the street.

Transport for Victoria (TfV) requirements for main road sites

TfV requires plans to be prepared in accordance with the following:

- A feature survey plan must be submitted, showing all features of the road including street trees, utility poles, pits, bus stops, line-markings, slip lanes, medium strips and traffic / pedestrian lights in proximity to the site
- Where tram lines exist, access to the property should be confined to left-in and left-out only arrangements
- Crossovers must be set back:
 - at least 1.5 metres (with no part closer than 1.0 metres) from any public transport assets
 - at least 1.0 metres from infrastructure/ utility poles
 - at least 9 metres from an intersection
- Accessways must:
 - Provide a passing area at the entrance at least 6.1 metres wide and 7 metres long where an accessway serves:
 - 10 or more cars and is more than 50 metres long or
 - connects to a road in a Transport Zone 2 (TRZ2)
 - Be designed so that cars can exit the site in a forward direction, if the accessway serves four or more car spaces or connects to a road in a TRZ2

- Have a corner splay or area at least 50 per cent clear of visual obstructions extending at least 2 metres along the frontage road from the edge of an exit lane and 2.5 metres along the exit lane from the frontage, to provide a clear view of pedestrians on the footpath of the frontage road. The area clear of visual obstructions may include an adjacent entry or exit lane where more than one lane is provided, or adjacent landscaped areas, provided the landscaping in those areas is less than 900mm in height
- Be set back a minimum of 7 metres inside the property boundary for any security boom, barrier, gate, or similar device controlling vehicular access to the premises, to allow vehicles to stay clear of the road pavement and footpath
- Provide clear directional signs on the arterial road frontage if one-way access is proposed
- If an accessway to four or more car parking spaces is from land in a TRZ2, the access to the car spaces must be at least 6 metres from the road carriageway
- If entry to the car space is from a road, the width of the accessway may include the road
- Ensure car parking spaces are in accordance with the dimensions in Table 1.6: Minimum dimensions of car parking spaces and accessways. Where mechanical parking is proposed, refer to **Chapter 2.3 Parking: Cars** for guidance on dimensions and aisle widths.

If a Future Homes adaptation does not address the requirements above, TfV may ask the permit applicant to do so.

Exemplar Design D adaptation guidance

This design can be adapted by:

- increasing the driveway entry area to meet TfV requirements, as Figure 2D.18 shows
- increasing the front setback, and providing more landscape treatments with consideration to impacts to the rear, as Figure 2D.19 shows.

Figure 2D.18: Increase driveway width to meet Transport for Victoria's requirements

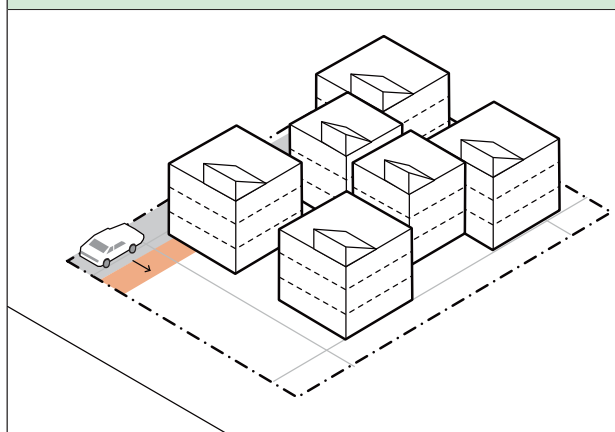
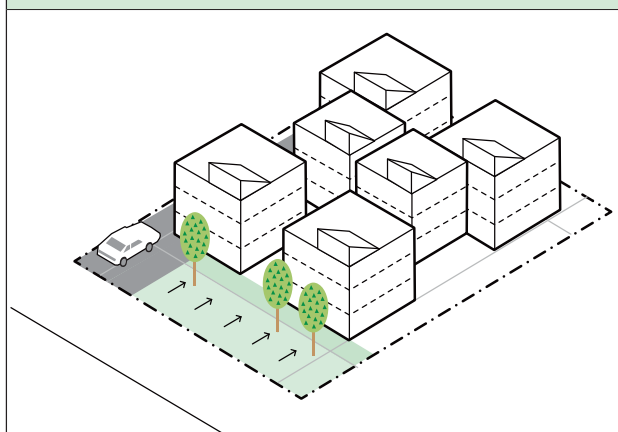


Figure 2D.19: Main road, increase landscaped setback but consider neighbours' amenity



7.4 Corner site

General adaptation guidance

A development on a corner site must locate crossovers in accordance with council and/or TfV requirements and accommodate any existing street services and assets.

Preferred approaches include:

- clear sightlines
- crossovers appropriately set back from street corners, to avoid vehicle conflict
- developments that face the street on both frontages
- buildings that offer passive surveillance of the street
- use of landscape elements to maintain visual permeability
- vehicle access from the local road.

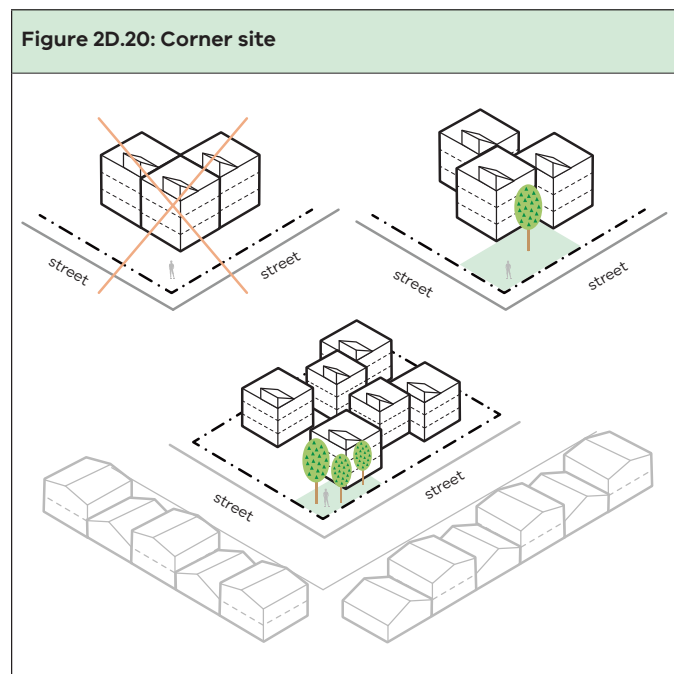
Discouraged approaches include:

- high, long, blank walls at street frontages.

Exemplar Design D adaptation guidance

This design can be adapted by:

- providing a landscaped area at the corner, to add visual interest and act as a buffer to soften the scale and appearance of the development and function as communal open space
- articulating the façade and orientating modules to address both streets.



7.5 Varied site dimensions

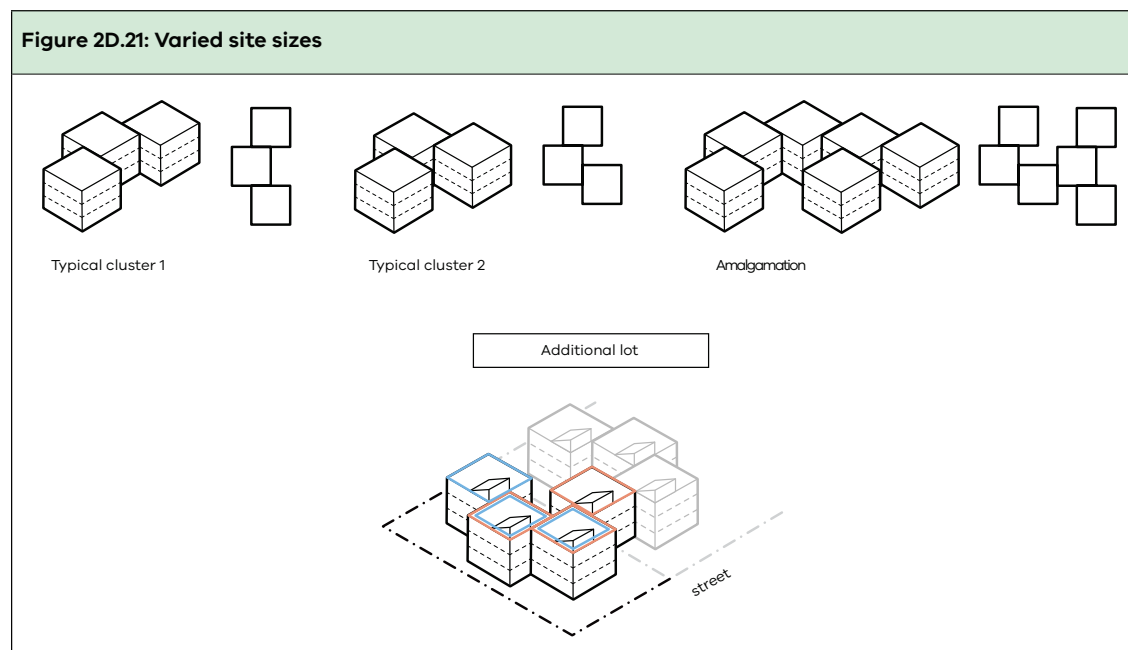
General adaptation guidance

For a deep site:

- ensure equitable access to circulation including stairs and lifts
- avoid a long, continuous built form without breaks in the massing.

Exemplar Design D adaptation guidance

There are multiple techniques to address varied site dimensions, as Figure 2D.21 shows. The design grows by clusters, so modules should be arranged to ensure solar access, cross ventilation and neighbours' connectivity.



7.6 Sloping site

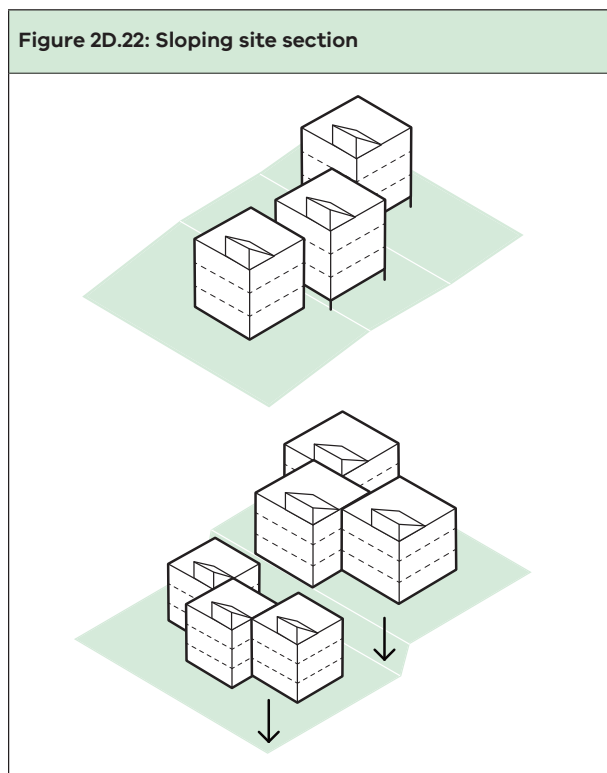
General adaptation guidance

There is no general adaptation guidance for this topic.

Exemplar Design D adaptation guidance

Step modules up by one level in line with site slope or break the development into clusters if there are two primary levels for ease of circulation.

Figure 2D.22: Sloping site section



7.7 Floodplain

General adaptation guidance

A development on a site within a flood overlay must be designed in accordance with Melbourne Water's requirements.

Inappropriate development in flood affected areas can lead to fundamental changes in the nature and impact of flooding. It can also increase the potential for loss of life and flood damages to the community and the environment.

Melbourne Water decisions are guided by planning policies in the planning scheme. In addition, Melbourne Water assesses development applications in accordance with the *Guidelines for Development in Flood Affected Areas* (DELWP, 2019). Usually the information in the guidelines is sufficient to guide decision making. However, the guidelines cannot cover all the circumstances and aspects of flood behaviour.

Development in or adjacent to a floodplain will only be acceptable where the new development is protected from flooding (flood levels are constructed to the identified Nominal Flood Protection Level); has safe access to and around the development (in considering site specific flood depths and velocities); and does not interfere with the passage and storage of floodwaters.

Developments in areas affected by flooding must not obstruct the passage of flood flows or reduce floodplain storage as this may cause flood levels and velocities to increase and adversely impact surrounding properties. On sites subject to flooding, imported fill must also be kept to a minimum and used only for sub floor areas of dwellings, garages and driveway ramps. New fencing and decking should also be of an open style of construction (50 per cent permeable/open) to maintain conveyance of flows through floodplains.

All new development should preserve, and if possible enhance, the social and environmental values and benefits of floodplains and waterways and should be sensitively designed and sited to maintain and enhance environmental assets, significant views and landscapes along river corridors and waterways and adjacent to lakes and wetlands. For detail on development setbacks required from waterways, see the *Healthy Waterways Strategy 2018-2028*.

On sites affected by flooding, Melbourne Water requires the following information to be included on all plans:

- The boundaries and dimensions of the site
- Existing conditions survey and feature plans. Taken by or under the direction and supervision of a licensed land surveyor showing:
 - natural ground level
 - the current Flood Level
 - the dimensions and ground and finished floor levels of any existing buildings, to Australian Height Datum (AHD)
- Proposed architectural plans, elevations and section drawings (1:50 or 1:20). Showing the proposed finished surface levels and finished floor levels and the Nominated Flood Protection Level (NFPL) of all new structures on the land
- All proposed finished floor levels notated on the plans to Australian Height Datum
- A comparative description of the existing and proposed use and development of the site
- Cross-sectional details of any basement entry ramps and other basement entries to Australian Height Datum. Showing floor levels of entry and exit areas and drainage details
- A written assessment against 'Part Three – assessing development proposals' of the *Guidelines for Development in Flood Affected Areas (DELWP, 2019)*, and subsequent submission of any associated Flood Risk Management Plan
- Any other application requirements specified in a relevant planning Overlay schedule applicable to the site
- Appropriate boundary setbacks to allow for the conveyance of overland flows
- Detailed location of any Melbourne Water asset (including drains, sewers or water mains) within 20 metres of the subject site
- Hydraulic details and associated reporting of all/any existing and proposed earthworks, including details of any cut and fill required for works
- Details of any other known physical features that may affect flows on-site and on adjoining land, such as levees, fences and retaining walls
- A written description of proposed actions, flood risk mitigation strategies or measures required, if any, to the siting and design of the buildings or works, or in association with the use and occupation of all aspects of the proposal in order to reduce the risk to individuals, property, infrastructure and the environment.

Exemplar Design D adaptation guidance

The design can be adapted by raising the ground floor above the floodplain and designing in access ramps.

7.8 Easements

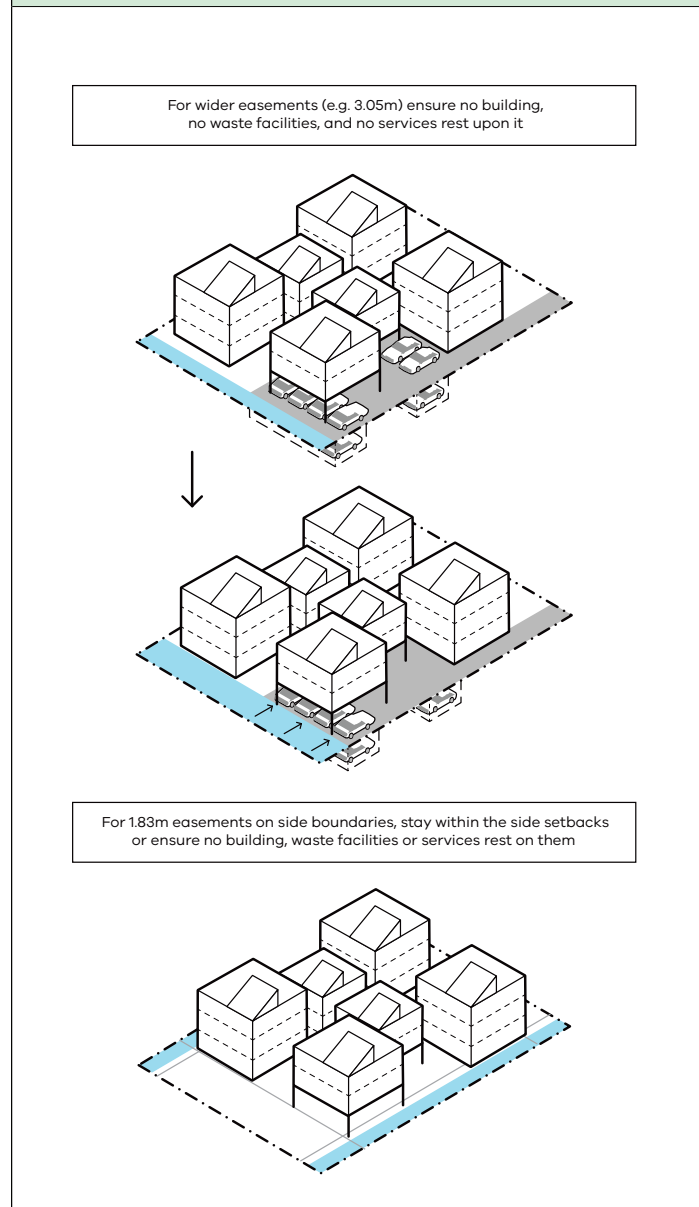
General adaptation guidance

There is no general adaptation guidance for this topic.

Exemplar Design D adaptation guidance

This design includes sufficient setbacks to accommodate different sizes and locations of easements. Where mechanical parking is proposed, consideration should be given to clearance and height requirements, as Figure 2D.23 shows.

Figure 2D.23: Adapting to different easements



7.9 Systems and approach

Off-site manufacturing

Off-site construction delivers pre-finished, prefabricated building elements and modules that are assembled on site using efficient construction and manufacturing techniques.

Consider standardisation and repetition of structural framing. It can help to reduce material waste, and prefabrication of structural framing can mean fewer trades and waste on site.

Prefabricated external walls with preassembled windows generally have higher-quality sealing than on-site construction. This method reduces on-site sealing and can reduce the incidence of poor workmanship and defects. Prefabrication also can minimise the construction period; the building can be prefabricated while groundworks and footings are being constructed.

Consider early contractor advice in the design phase if offsite construction is applicable and/or a known builder will construct the development. This way, trades and their supply chains can help coordinate and standardise the design of services, and costs assist to accurately estimate costs.

Future changes in use

Plan for the potential amalgamation of smaller apartments into a larger apartment or vice versa. Such alterations would need room dimensions and optimal locations of wall openings to be considered, to reduce the need for structural adjustments.

Structure

Consider an efficient structural frame that extends in alignment from the ground floor to the top floor such as a lightweight post-and-beam timber, or cross-laminated timber (CLT). This reduces the number of on-site trades and the time needed for coordination and construction. Consider the fire-rating implications of this method of construction.

- Use regular grids and modular components for floors, walls, stairs, roofs and service risers.
- For non-wet areas, consider providing structural flooring that can span between load-bearing walls. This will enable internal walls within a sole occupancy unit to be non-load-bearing and adaptable in the future.
- Consider providing structure and footings for more floors to be added over time and clearly documenting these for future reference.
- Consider using a structural insulated panel system or sandwich panels.

Car park

- Floor-to-floor height for above-ground car park spaces should allow for other temporary or long-term uses, including conversion to habitable space.
- Aim to provide a minimum of 2.6 metres clear in basement areas, to allow for services to be installed.
- Plan for adequate ventilation and likely service infrastructure needs for future uses.
- Provide adequate drainage at the base of ramps for surface run-off, pits for excess water and a freeboard threshold at the top of the ramps.

Exemplar Design D adaptation guidance

There is no specific adaptation guidance for this topic.

7.10 Materials and finishes

General adaptation guidance

Future Homes exemplar designs have a materials schedule that includes substitution guidance to suit different contexts or design preferences.

Exemplar Design D adaptation guidance

Refer to the materials schedule for substitution guidance.

7.11 Fire services

General adaptation guidance

There is no general adaptation guidance for this section.

Exemplar Design D adaptation guidance

There is no specific adaptation guidance for this topic.