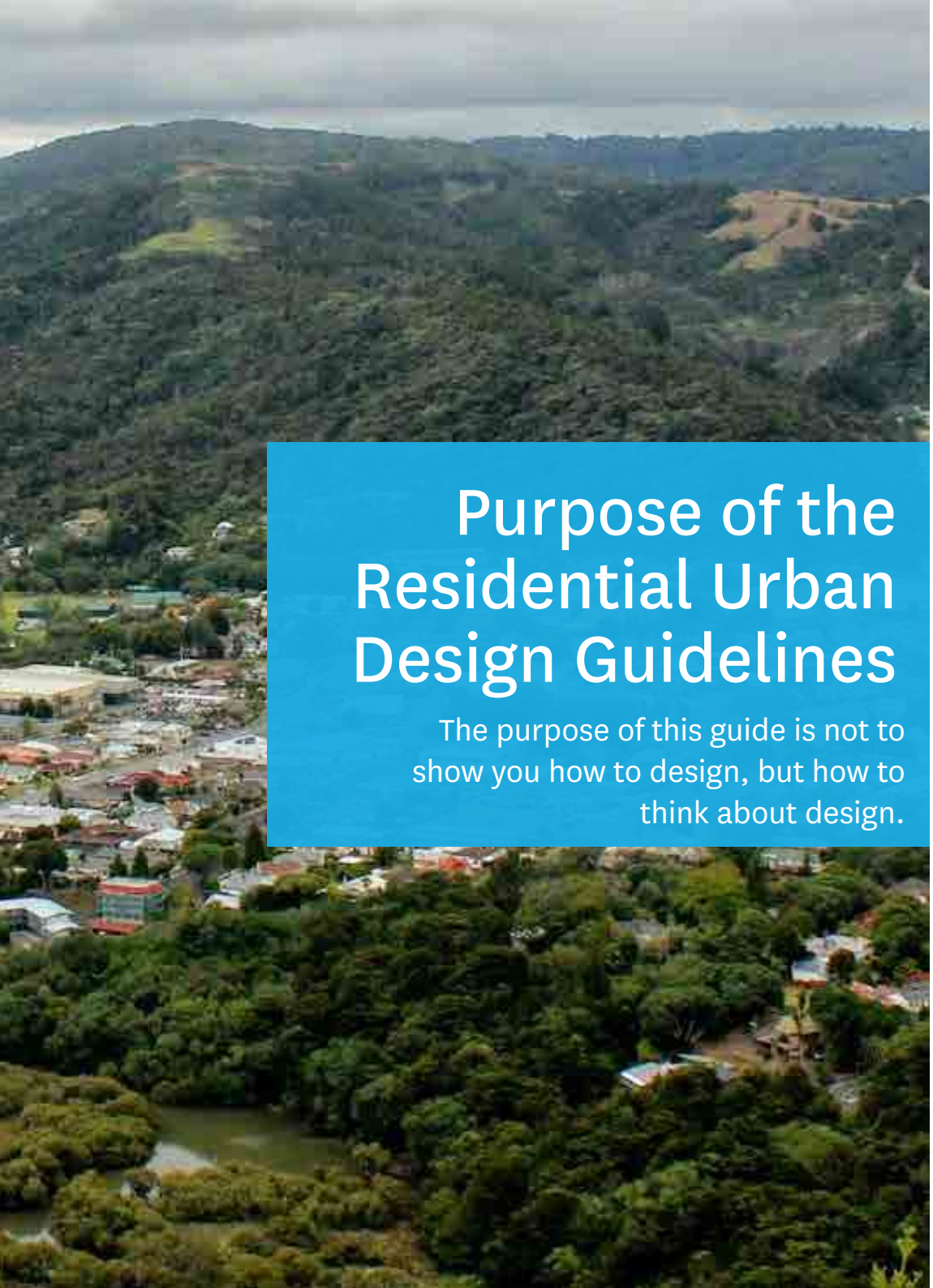
URBAN DESIGN GUIDELINES

For Residential Development

Whangarei District Council



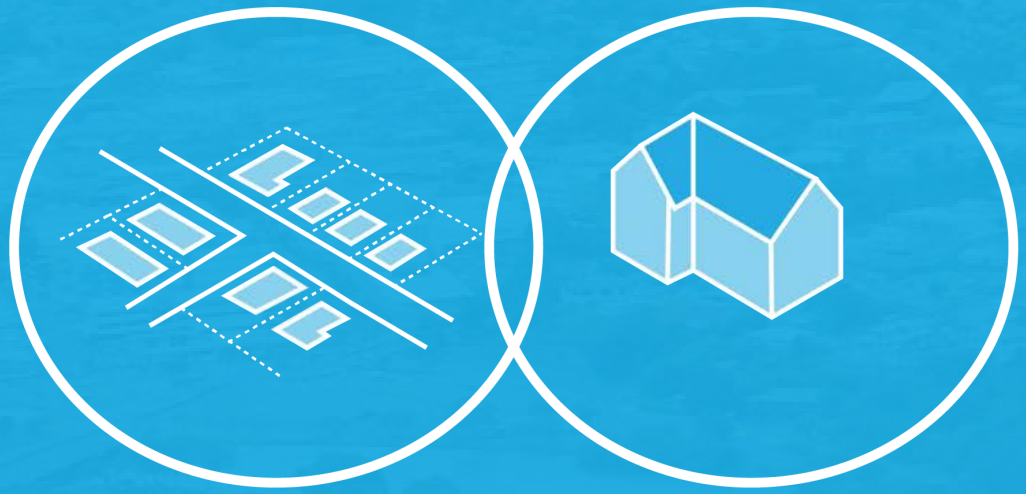
Purpose of the Residential Urban Design Guidelines

The purpose of this guide is not to show you how to design, but how to think about design.

The residential urban design guide aims to improve the quality of residential development in Whangarei. It provides a set of outcomes and best-practice urban design guidelines and illustrates their application. It includes guidance for subdivisions as well as medium- and high-density housing development. This includes detached dwelling, semi-detached dwellings, terraced housing and apartments.

This document is intended to assist developers, landowners, Council staff and the wider community toward best practice urban design. It aims to encourage developers and designers to look beyond the minimum standards and consent requirements of the District Plan and engineering standards to explore opportunities that will create a better quality urban environment.

Residential Urban Design Guidelines



The residential urban design guidelines cover subdivision and medium-to-high density urban design guidance.

The principles and guidance within this document can be applied to lower density housing, but are primarily focused on higher density residential development where everything and everyone is in closer proximity, therefore quality design becomes more important.

Commercial Urban Design Guidelines

The commercial urban design guidelines cover commercial development.

For mixed use development (which contains residential and commercial land uses) both documents should be considered.

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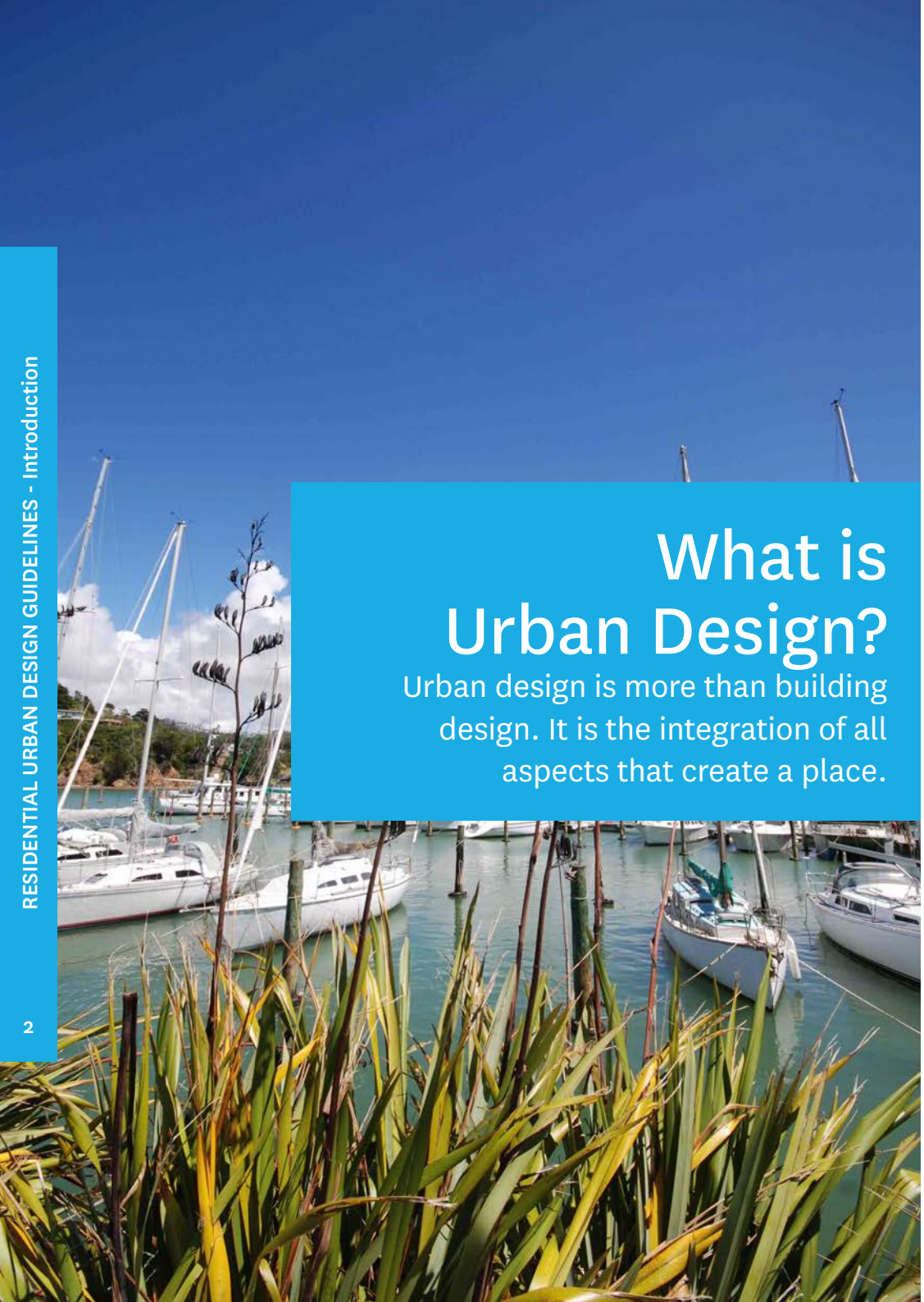


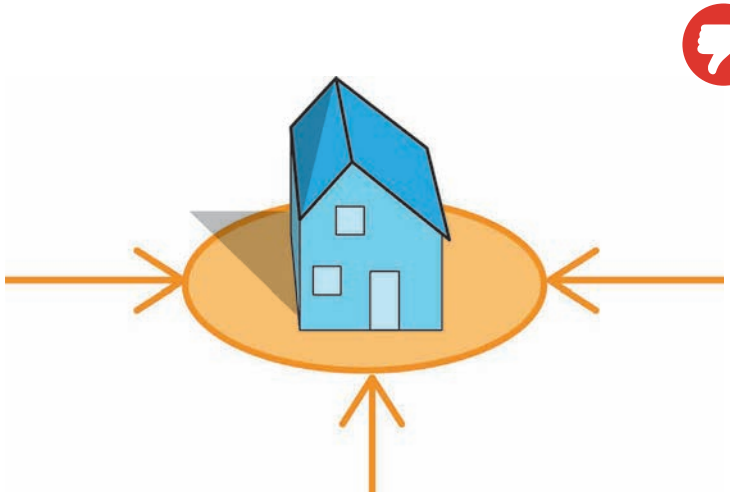
What is Urban Design?

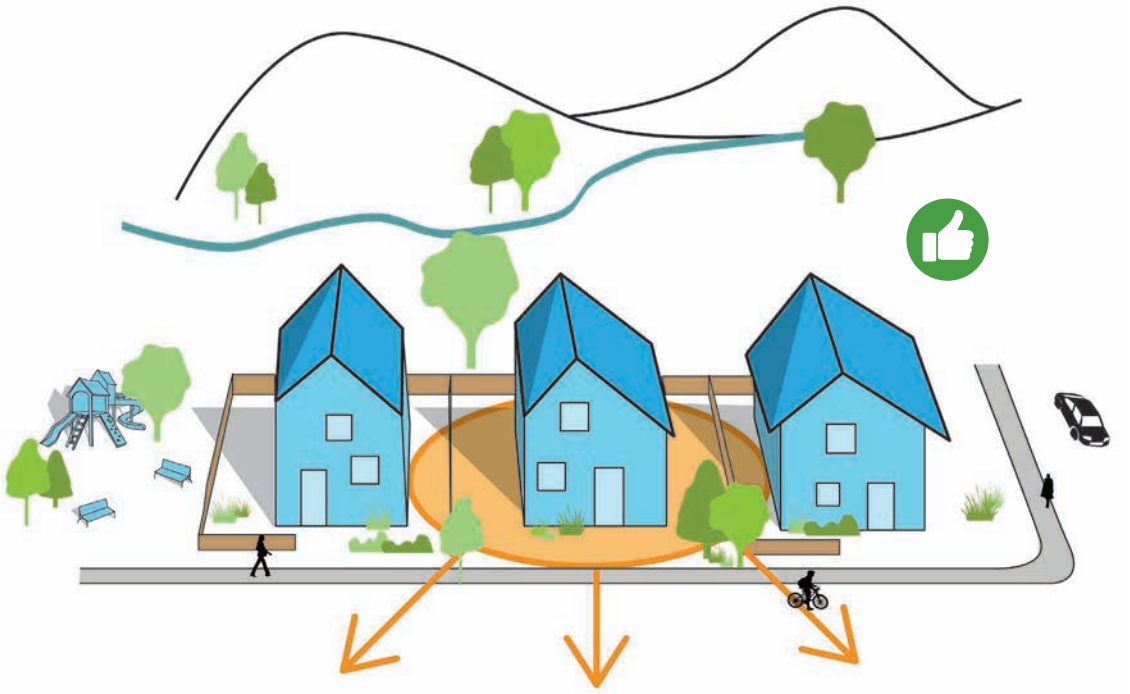
Urban design is more than building design. It is the integration of all aspects that create a place.

There is often the perception that urban design is about aesthetics. Although aesthetics are a part of it, urban design is about creating functional and attractive places and creating positive outcomes socially, environmentally, economically and culturally for people and their surroundings.

A well designed place is unlikely to be achieved by focusing only on the appearance of buildings. A place is more complex than a building; it is made up of the context, spaces, buildings, networks and communities. It is the setting for a diverse range of uses and activities and is experienced by people of many ages and abilities in different ways.

Consideration of urban design at an early stage within subdivision and residential development is important when creating quality places.





Building Design vs. Urban Design

Urban design is not just about the appearance of the building.

Urban design is the integration and relationship between all the different aspects that make up a place.

The benefits of good Urban Design

Whangarei's increase in population is leading to questions on how best to accommodate this growth. Like most cities, the traditional approach to housing has been to expand outwards, extending the city boundaries and converting rural and coastal land into residential areas.

While this helps with the demand for housing, as Whangarei expands several shortcomings come with it:

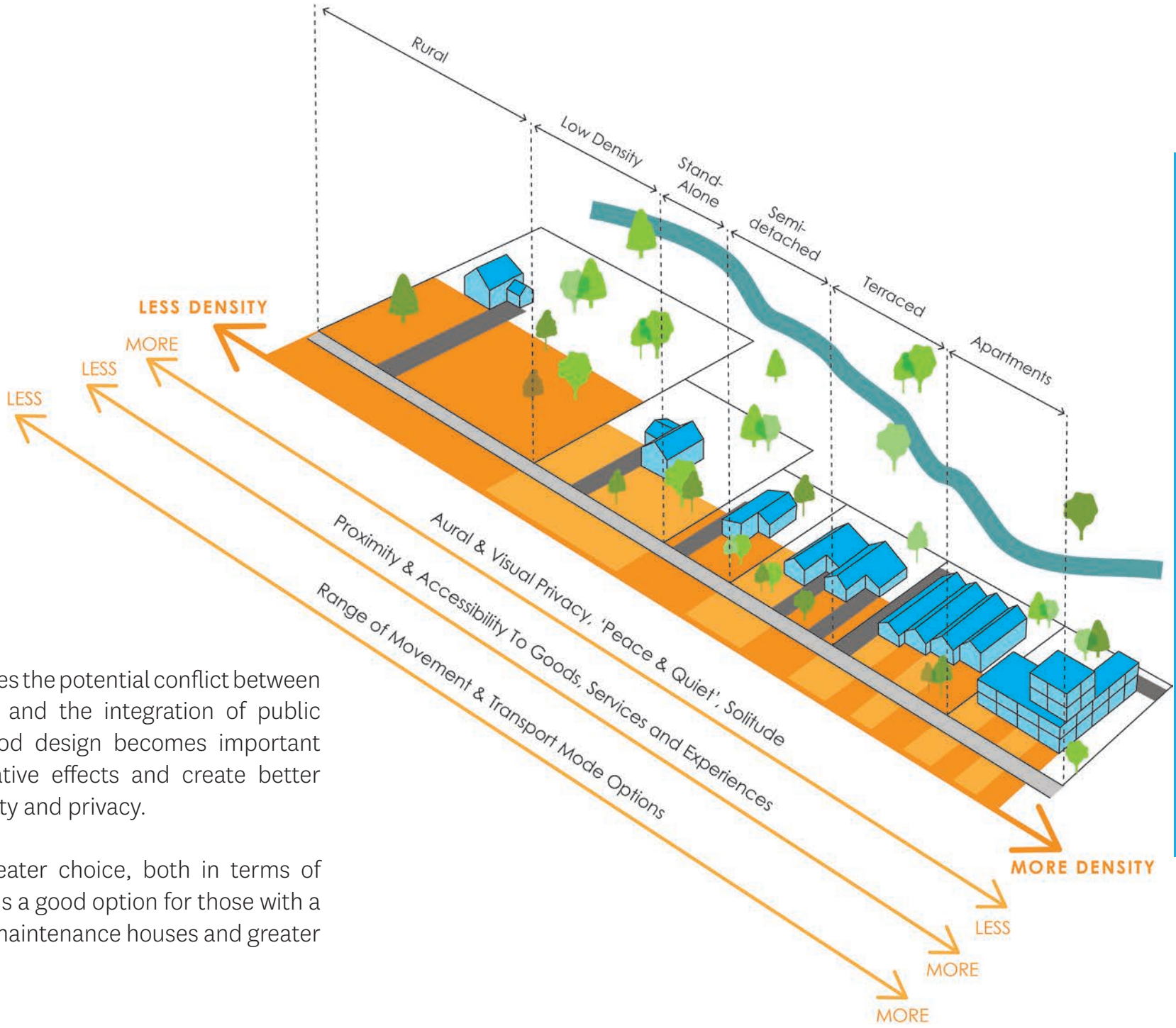
- The loss of unique rural and coastal landscapes.
- An increased dependency on private motor vehicles as the only form of transport. This leads to an increase in commuting times, fuel costs and pollution from vehicle emissions, and many people driving contributes to the increasing congestion in the commercial centres.
- An increase in cost to Council and the ratepayer from the continued stretching and maintaining of the essential infrastructure.

An alternative to growing outwards is to encourage a more compact model. Many sites within Whangarei's residential areas can accommodate more density. This presents an opportunity to build more houses without pushing the regions and neighbourhoods out further.

When designed well there are many advantages to higher density living:

- It provides choice and a practical and affordable alternative for those who do not need or can't afford a large family home.
- Uses land more efficiently.
- Creates higher returns on investment and rentals.
- Can reduce management and maintenance costs.
- Enhances a place's image and creates a more attractive and vibrant place for people to live and visit.
- Enhances public safety and reduces crime and fear of crime.
- Enhance energy efficiency.
- Creates more opportunities for recreation and social interactions and a sense of community.
- Improves visual and pedestrian connections between places which helps support local shops and services.
- Promotes walking, cycling and use of public transport, and lowers vehicle emissions.

Good design does not need to cost more but can add to the overall value of the development in the short and longer term, as well as contributing positively to the wider environment.

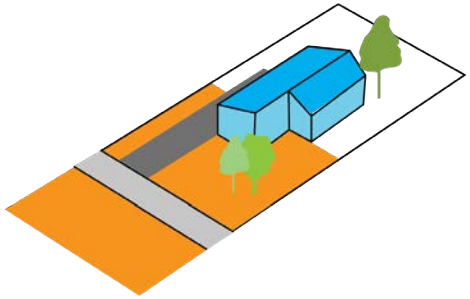


Housing Spectrum

As densities increase, so does the potential conflict between people, the use of space and the integration of public and private amenity. Good design becomes important to address potential negative effects and create better outcomes for visual, amenity and privacy.

Higher density creates greater choice, both in terms of housing and movement. It is a good option for those with a preference towards lower maintenance houses and greater access to amenities.

Where can these guidelines be applied?



Detached (Standalone) Houses

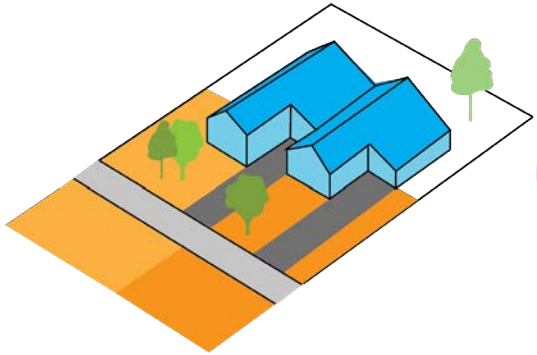
Detached or freestanding houses on a small lot. Neighbouring buildings are closer than a traditional, low density, standalone house.

Advantages:

- A conventional house form and is more common in New Zealand.
- Can easily be integrated into most urban areas.
- Avoids complexities that come with shared walls and spaces of semi-detached or attached dwellings.

Disadvantages

- Depending on dwelling size, the outdoor spaces can become narrow and unusable.
- Neighbouring houses in close proximity can lead to issues with outlook, privacy and access to daylight and sunlight for both parties.



Semi-detached (duplex) Houses

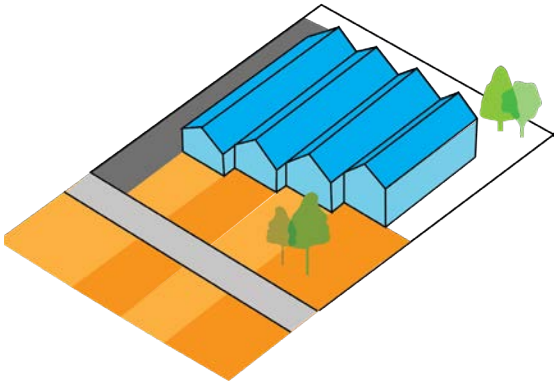
Two side-by-side dwellings which still act as individual houses but have a shared wall. Maintains separate accessways, entrances, and outdoor space.

Advantages:

- Can be accommodated on smaller, more constrained sites.
- Has a stronger street edge than detached houses as such typologies have well-defined frontages.
- A good option when transitioning from lower density environments to medium density environments.

Disadvantages

- Views into the backs or sides of neighbouring properties can compromise privacy.



Terraced (Row) Housing

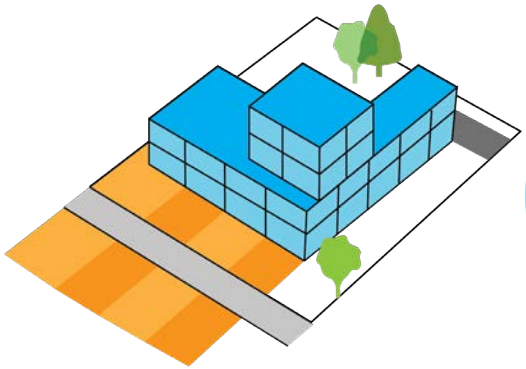
Identical or similar dwellings which are joined together in a row on one or both sides. They still maintain individual entrances and private outdoor spaces.

Advantages:

- Easy to heat and cool due to less external facing walls.
- Creates consistency in front facade, building line and skyline but still offers opportunities to personalise.
- Clearly defined public fronts and private back yards, which creates quality street presence but maintain privacy.

Disadvantages

- On larger sites with more units, terraced houses can appear repetitive and unattractive.
- Careful consideration of carparking and driveways is required.



Apartments

Medium density apartments are usually low rise (max. 4 storeys) and can be single or two storey units contained within a larger building. There is usually common access through corridors, stairwells or lifts. They can also be mixed use meaning they contain a mixture of residential and commercial activities.

Advantages:

- Creates opportunities for increased residential densities which in turn reduces distances between residential and commercial uses and places people within easy walking distance of services and amenities.
- Increases the activity and vibrancy of streets and contributes to safety and the feeling of safety.

Disadvantages

- If not mixed-use, residential units at ground floor can compromise street activity and residents' privacy.
- Limitations in outlook, sunlight, daylight and privacy.

Purpose of the Guidelines

The residential urban design guidelines are intended to:

- Be educational and informative, providing a toolkit for best practice residential design.
- Complement the Whangarei District Plan. They can be used to assist in the interpretation of the provisions (objectives, policies, rules and assessment matters) relating to urban development which require a resource consent.
- Be a visual document that is easy to follow and easy to understand to help ensure it is an accessible tool for all.
- Encourage early engagement with Whangarei District Council.
- Set a baseline for good quality design while still encouraging innovative and creative solutions to meet the desired outcomes.

Relationship to District Plan

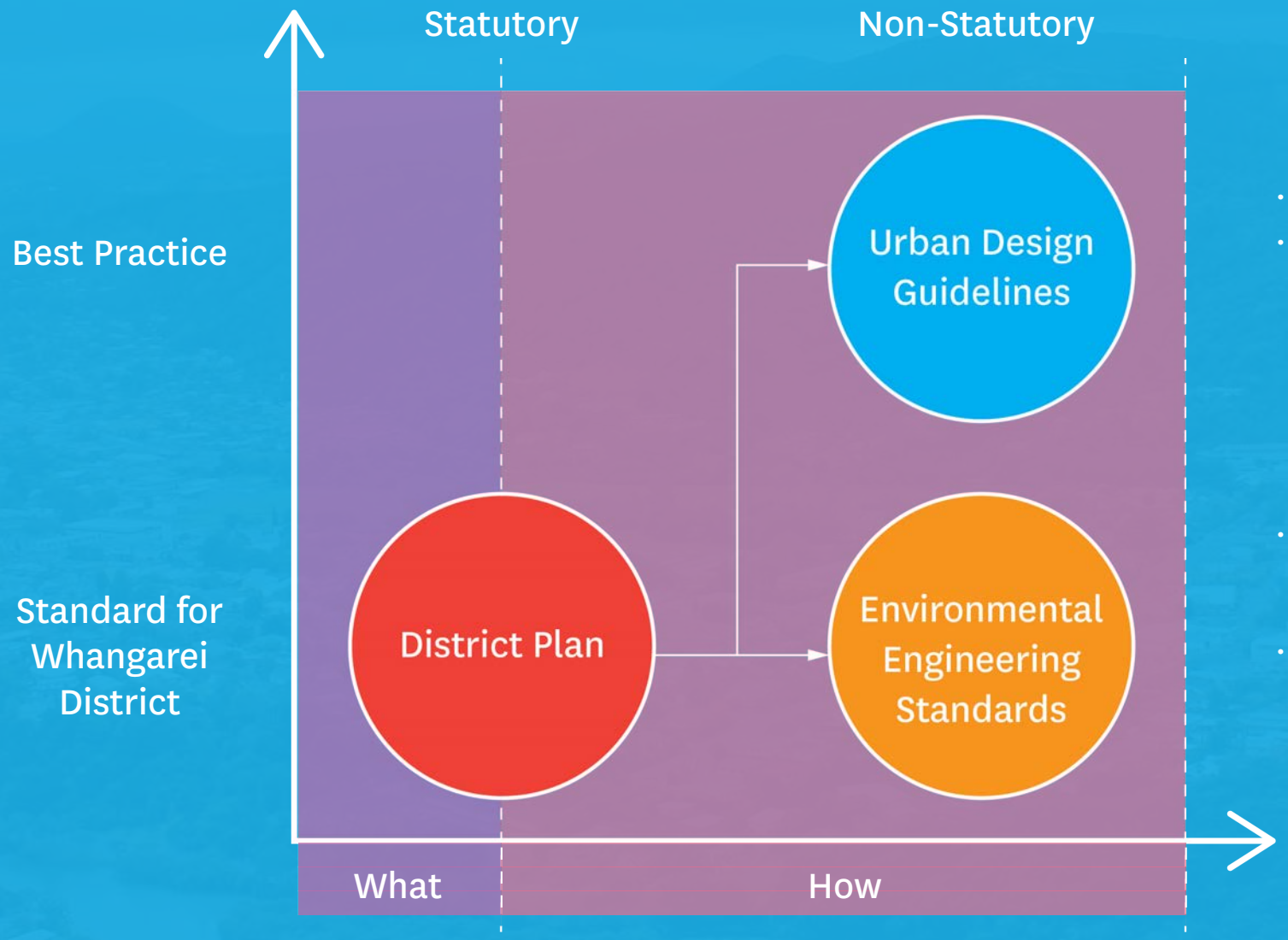
The guidelines are a non-statutory document, which means they do not have legal weight under the Resource Management Act. This has both advantages and disadvantages. The advantages of this approach include:

- The guidelines can be easily changed or updated if required.
- They are easier to read as they do not have to be drafted in a language or style that would be expected from a statutory document.
- They are not subject to what can be lengthy and costly RMA processes.
- There is flexibility in how the guidelines are used and interpreted.

The main disadvantage is that, because the guidelines are not statutory under the Resource Management Act, there is limited ability to use them to support decision making through the resource consent process.

In balance, a non-statutory approach was considered to give a better opportunity to positively influence the design of new development. The guidelines are not intended to inform just the consent process, but should be used at the earliest stage of the design process to capture the strategically important aspects of a development's design (see design guideline structure).

Certain principles within the design guidance are proposed to be incorporated into the District Plan objectives, policies and rules through the plan change process. This means certain aspects relating to amenity will trigger a resource consent and encourage people to use the design guidelines to better understand how certain policies and rules can be achieved. They will also help inform future changes, urban design and amenity principles, policies and rules within future plan changes.



- Urban form
- Integration between public and private land to protect amenity.

- Standards for engineering, design and construction in Whangarei District.
- Typically involves water supply, sewerage, stormwater, road, public open space assets.

- Objectives and policies for sustainably managing landuse and development.

- Rules for sustainably managing landuse and development.

Early Engagement

There are tight processing timeframes on consent applications for both Council and applicants. Normally there is a limited time for being able to change a consent application once it has been lodged, and Council wishes to make the process more efficient by encouraging pre-lodgement meetings. Pre-lodgement meetings are important in making the consent process faster and cheaper for applicants. They allow Council to make sure that development applications are complete and respond positively to this guide and to their urban context.

Prior to any design work, applicants should meet and discuss the proposal with planning staff. Being able to provide information about the site and its surrounding context is important. This helps officers to quickly understand what is being proposed and allows them to make recommendations under the guidelines.

By the time a formal application is lodged there will ideally be a high degree of agreement between planning staff and the applicant regarding the site's context and the design proposal. The intention is to avoid the need for additional information to be sought on the proposal once the application has been lodged.

Engagement with Tangata Whenua

Whangarei District Council encourages engagement with Tangata Whenua and hāpu early on in the design process, working collaboratively to develop a response to māori cultural values and narratives. Council is committed to working with hāpu to develop more formalised hāpu design guidelines which will work alongside and be complimentary to this document. In the absence of these we recommend using the Te Aranga Māori Design Principles.

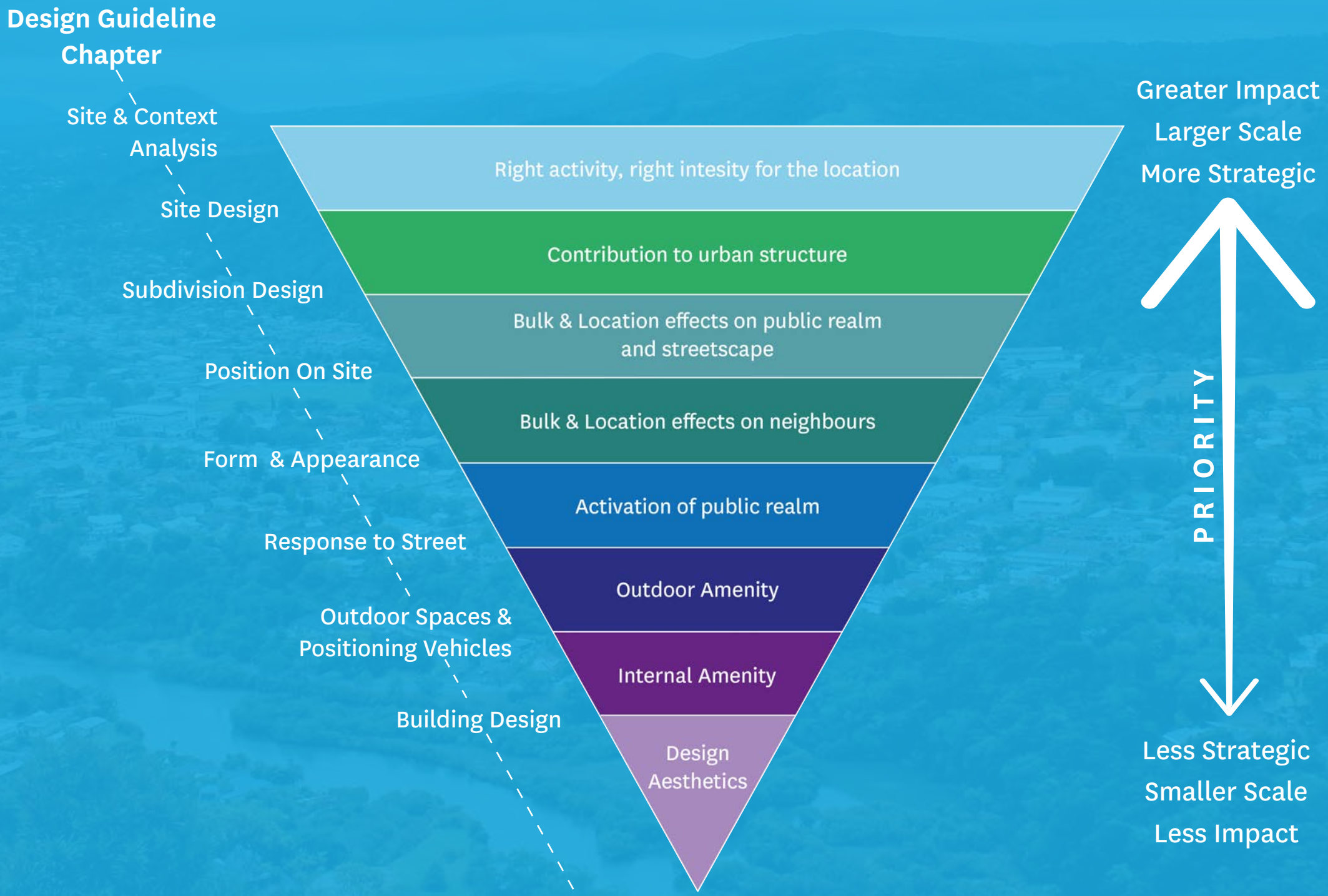
How to use the Residential Urban Design Guidelines

Development should focus on what has the greatest impact and achieves the key outcomes.

This document recognises that within the step-by-step guidance there may be contradicting and varying concepts which when put into practice can work against one another.

It is hard to achieve residential development which is entirely best practice design and it can be difficult to understand what principles and concepts should be prioritised.

The residential urban design guidelines have been structured around this inverted triangle to encourage prioritisation of aspects that are larger scale, more strategic and create the greatest impact.

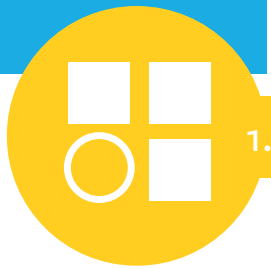

Design Guideline Chapter
Site & Context Analysis
Site Design
Subdivision Design
Position On Site
Form & Appearance
Response to Street
Outdoor Spaces & Positioning Vehicles
Building Design
Right activity, right intesity for the location
Contribution to urban structure
Bulk & Location effects on public realm and streetscape
Bulk & Location effects on neighbours
Activation of public realm
Outdoor Amenity
Internal Amenity
Design Aesthetics
Greater Impact
Larger Scale
More Strategic
PRIORITY
Less Strategic
Smaller Scale
Less Impact

Key Outcomes

Understanding and achieving the desired outcomes is key to good residential development.

This document recognises that design is subjective and there are various design solutions that can be applied to residential development. The residential urban design guidelines set a baseline for good quality design. They do not aim to impose rules on new development or prescribe specific design solutions.

Achieving the outcomes set out in this plan is more important than following the step-by-step guidance. However, departure from these guidelines will require a demonstration that the proposal achieves the following desired outcomes.

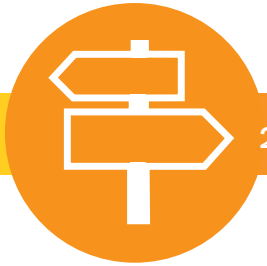


1. DISTINCTIVE

A distinctive place is compatible with, reflects and enhances its individual character. It celebrates the people, heritage and landscapes that distinguish it from other places. Within urban design it is important to recognise that character is dynamic and evolving, not static.

Benefits

- Buildings and public spaces are unique, appropriate to their location, and add value to the community.
- Protection and enhancement of heritage (buildings, places, stories and history).
- Protection and enhancement of distinctive landforms, water bodies, habitats and ecologies.
- Communities connect both physically and visually to natural features.
- Local identity is preserved and treasured by the community.
- Celebration of Whangarei's rich Maori and European history uncovered and given meaning.
- Avoids standard solutions and encourages creativity and innovation through design.



2. CONNECTED

Connectivity creates places that are easy to get to and move through for all, regardless of age and/or ability. Well connected places have a clear image, are easy to understand, promote safety and create vibrant, healthy communities and environments.

Benefits

- Safe, clear and easily navigable routes that are accessible for all.
- Facilitates movement and therefore exchange of people, goods and services.
- Facilitates public transport and more active modes of transport such as walking and cycling. Reduces dependence on cars and thereby reduces air pollution.
- Increases pedestrian activity between adjacent buildings, streets and public spaces, making them safe and feel safer.
- Increases choice in terms of travel route and modes of travel.
- Increases productivity due to savings in travel time, cost and improved health.
- Creates connections to our environment, both physically and visually, through landmarks, focal points and walking tracks.

3. ATTRACTIVE

A place that is well designed and attractive creates public spaces and routes that are vibrant, functional, pleasant to use and well looked after. Attractive places encourage creativity, socialisation, experience, economic exchange and are inclusive.

Benefits

- Creates a feeling of safety and security.
- Well designed, functional and easy to maintain.
- Fosters creativity and innovation in the design of public spaces, art works, buildings and landscapes.
- Creates a vibrancy and increases economic viability of urban development.
- Creates a strong sense of place.
- Helps attract people to live, work and play in our urban environments.
- Incorporates the natural, historical and cultural values of the community.

4. INCLUSIVE

A place that is inclusive allows everyone to participate in public life regardless of age, ability or background. It is considerate of change across a person's lifespan, offering choice and providing options when it comes to where they shop, what they do and where they live. It allows everyone to establish a sense of belonging to a place.

Benefits

- Places are physically accessible to everyone regardless of age, ability or background.
- The creation of focal points for activation, social interaction and diverse communities and cultures.
- Creates a place that is comfortable for everyone to navigate, use and enjoy.
- Creates a mix of uses, things to do and see which are suited to the needs of everyone and accessible to all.
- Creates a safe environment which is vibrant and activated throughout the day, night and year.
- Provides access to a mix of lifestyle choices and amenities, and a variety of layout, building form and architectural styles.

5. SUSTAINABLE

Sustainable design seeks to reduce the negative impacts on the environment and improve the comfort of people through the creation of healthy and productive environments. Buildings and spaces should be flexible and enduring, and the natural environment should be enhanced and protected.

Benefits

- Creates low cost, low impact development, waste minimisation and lower maintenance costs.
- Protects and enhances the natural environment, habitats and ecological systems.
- Creates increase in active modes of transport and reduction in traffic congestion and improvements in air quality with less dependence on vehicles.
- Connects people back to the environment to foster a sense of place and protection.
- Provides relief from hard urban spaces.
- Improves the comfort and productivity of people and users.
- Creates buildings and spaces that are adaptable to a variety of present and future uses and users.

1 SITE AND CONTEXT

Before the development of a residential building begins, it is important to consider not only the site, but its wider context. This includes the place, street, neighbourhood and wider city. New development will always bring changes, and how well a development considers, fits in, or betters its surroundings will have an impact of the quality of the wider environment and the well-being of people.

Whangarei District Council recognises that the one-size-fits-all approach is not the best for a district with a wide variety of environments.

Each site has its own distinctive set of qualities that give it its own unique character, constraints, qualities in need of protection and opportunities that can help shape a development for the better.

When analysing a site and its context it is important to consider the aspects that make up a place. Therefore, as well as an understanding of the tangible characteristics of a place, it is important to consider the people, their history, their diversities, and their needs.

Effective placemaking maximises local assets, inspiration and potential and results in the creation of quality public spaces that contribute to people's health, happiness and well-being.

Development that is place-led should:

- Respond to the character of a place - its natural features, land use patterns, built form, history and heritage and its views and gateways.
- Be meaningful to people – emotionally and spiritually.
- Consider the needs of the community and provide adequate demand for proposed uses.
- Be attractive to people through quality design, art and choice of experiences.

It's important to consider these aspects through a thorough analysis of the site.

Site and Context Analysis

Before the design work begins it is important to prepare a thorough analysis of the site and its context. This analysis can be a useful tool to identify the natural, cultural and urban features of a site and its surrounds, recognise the site's limitations as well as building on its potential contribution to sense of place.

A site analysis helps the applicant consider what kind of design might work for the site, as well as showing Council planning staff that the proposal has been carefully thought through.

At a minimum, consider the area within 400m (five minute walk) of the site. Analysis could, however, go beyond this to a city or district-wide level.

Within a context and site analysis consider the following:

Community and demographics:

- An analysis of the community, demographics and economic viability of the proposed commercial use. Good outcomes cannot be achieved if the site is not appropriate for the proposed use.

Connections and movement:

- Location of roads, walking and cycling routes.
- Traffic flow (arterial or local roads, traffic volumes).
- Public transport routes and locations.
- Access points to site for vehicles, pedestrians and cyclists.
- Pedestrian desire lines through the site.
- Key links to surrounding destinations and amenities.
- Views from the site as well as views to the site that are a potential privacy issue.

Land uses:

- Surrounding land uses (commercial, residential, open space etc.).
- Density and typologies.
- Incompatible uses, or areas of reverse sensitivity.

Place and character:

- Heritage building and other culturally significant sites.
- Surrounding amenities, attractions such as public space and public buildings.
- Future development areas.
- Existing buildings on site and on-site features.
- Surrounding built form (e.g. is there a consistent building line, style of building or architectural feature's).
- Surrounding active edges.
- Existing infrastructure.
- Private open space of surrounding sites.

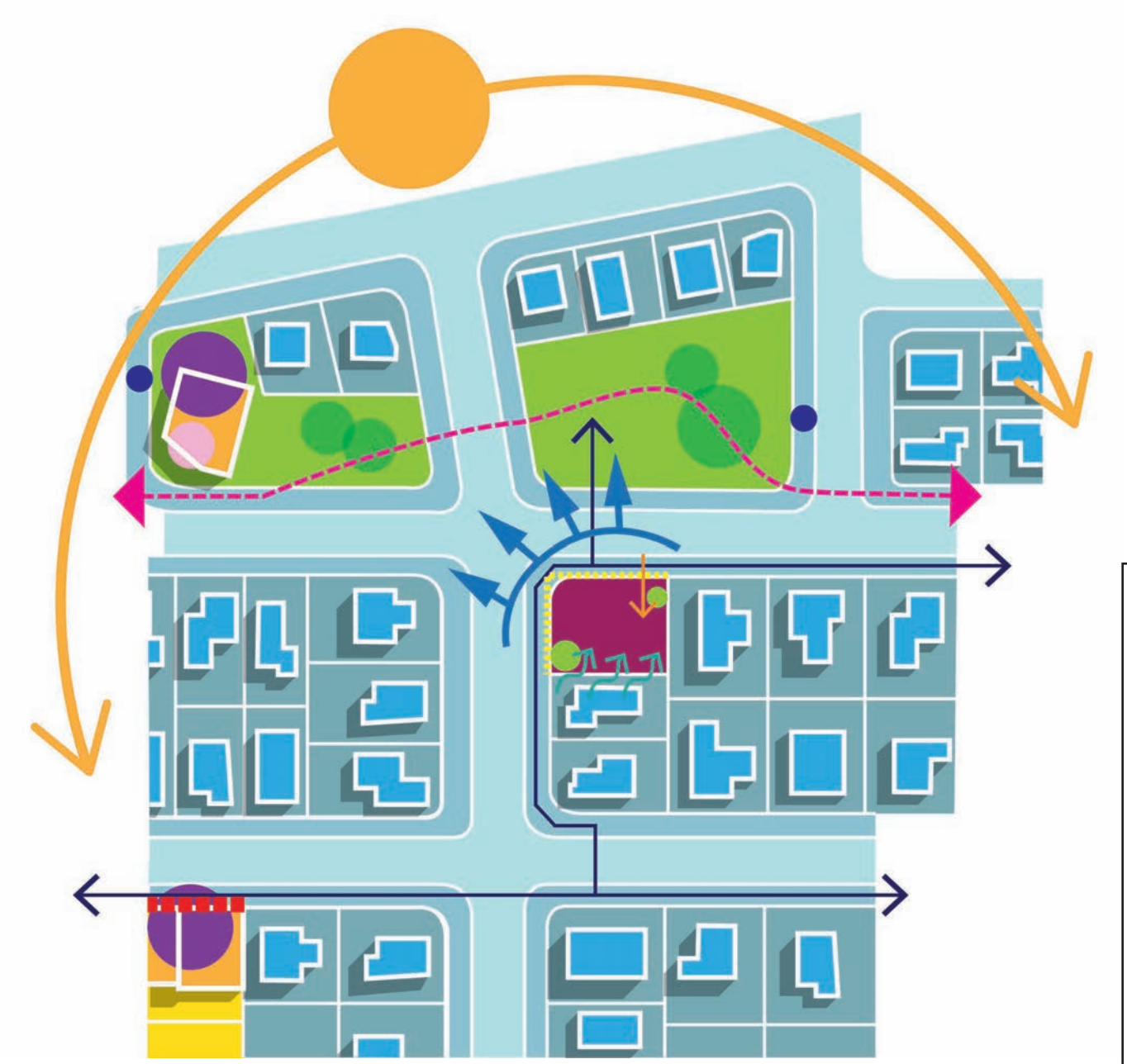
Natural features:

- Site topography.
- Significant vegetation.
- Solar orientation and prevailing winds.
- Note relevant natural hazards such as flooding, erosion, ground contamination.

The analysis could include illustrated, photographic and written material to explain the physical influences and constraints of the site and show how this informs the design response.

Engage tangata whenua at the beginning of the project for guidance on how to appropriately respond to Maori cultural values. This response should be demonstrated.

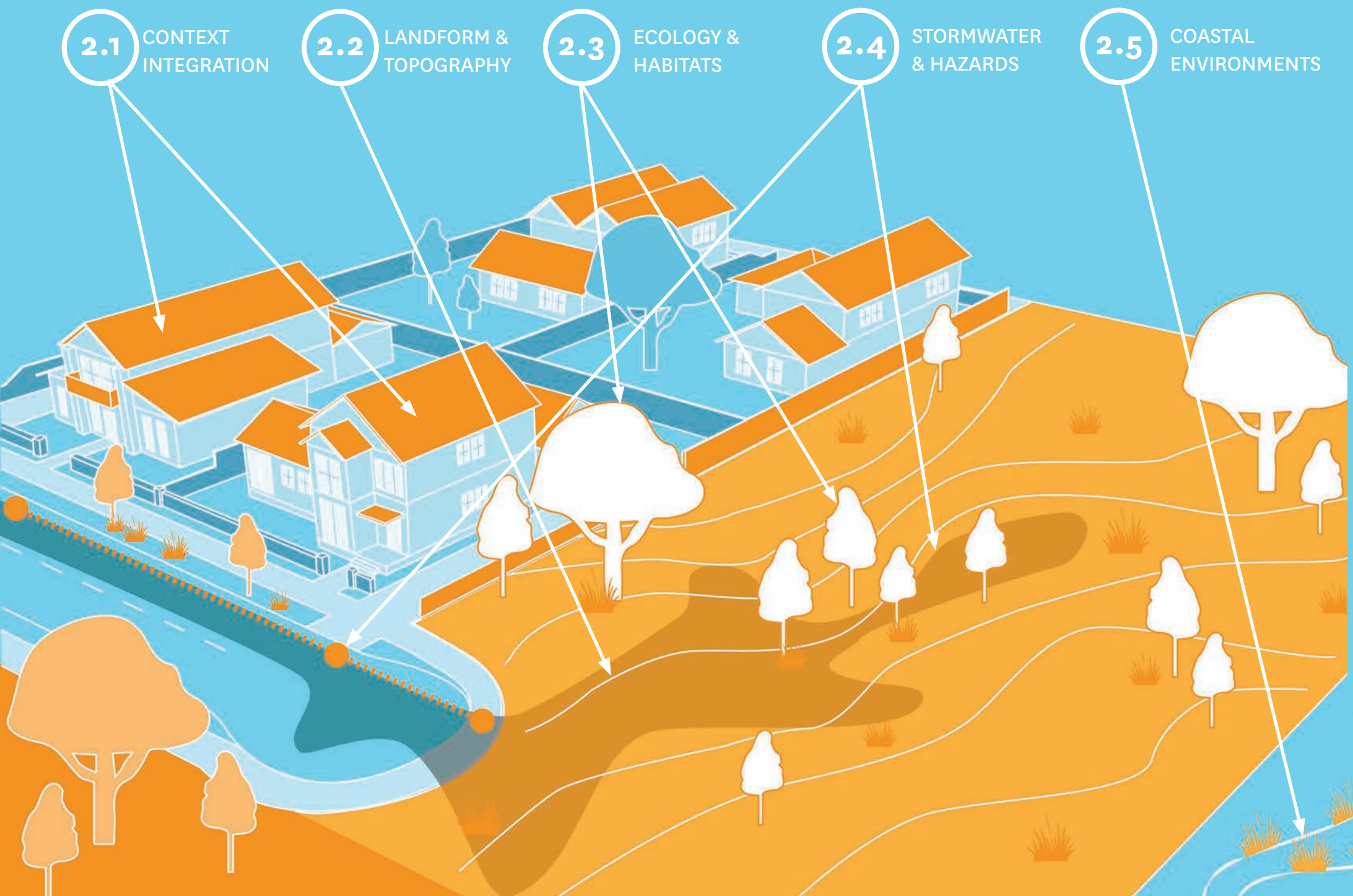
Context Analysis (Neighbourhood Analysis)



Site Analysis (direct surroundings and site considerations)

2 SITE DESIGN

Once the site analysis is complete, it is important to consider the existing site conditions including the topography, ecology and orientation of neighbouring properties and associated open spaces. The development should be designed to work with the site to create character, value and a good quality design.


2.1
CONTEXT
INTEGRATION
2.2
LANDFORM &
TOPOGRAPHY
2.3
ECOLOGY &
HABITATS
2.4
STORMWATER
& HAZARDS
2.5
COASTAL
ENVIRONMENTS

2.1 CONTEXT INTEGRATION

A lack of investigation into the current and future context can lead to a building appearing out of place and disconnected from its surroundings. Use the findings from the site and context analysis to help the development integrate and connect to its surroundings physically, visually and through design. If the existing context lacks character and amenity, the new development should aim to set a new standard of design.

- Distinctive
- Connected
- Attractive
- Inclusive
- Sustainable

Chapter Objectives

- Relate the development to the surrounding context including buildings, streets, public spaces and future development.
- The activity within the development is compatible with the surrounding land uses to ensure they benefit from each other and the surrounding area.
- Where diverse uses are placed in close proximity, reverse sensitivity issues have been considered for all users.

RESIDENTIAL DESIGN GUIDELINES

Guideline 1

Aim to take a place-based approach to the development, responding to both the current and future context and the authentic characteristics of the specific site location and its surroundings.

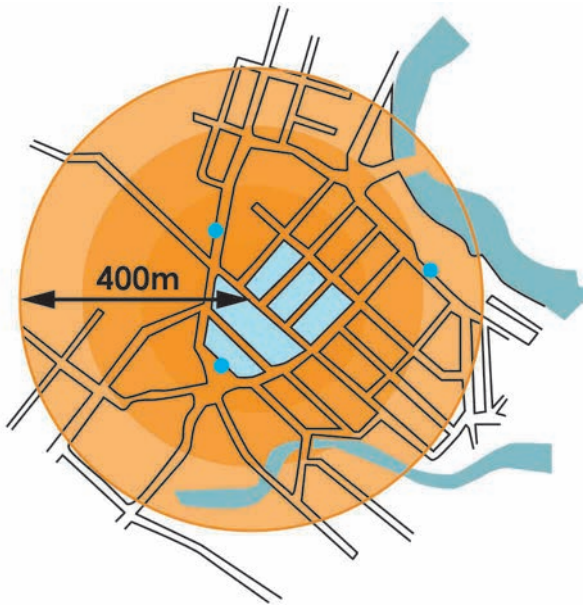
Rules of Thumb

- Assess what aspects of the current character should be protected and enhanced. Where character within the area is limited, set a precedent for future development.

Guideline 2

Consider establishing medium density residential development in a location which is:

- Inside, or within a walkable catchment of, the Whangarei city centre or Whangarei's neighbourhood centres; or,
- Within a walkable catchment of public transport, local shops, community and recreation facilities and/or local schools.



Guideline 2 A walkable catchment is generally regarded as being within 400-800m of a destination which is equivalent to a 5 - 10 minute walk.

Guideline 3

Consider the surrounding land uses and whether they are compatible with residential development. For example, building beside or above areas of high noise levels, vibrations and odours should be avoided.

Rules of Thumb

- Commercial and neighbourhood centres, busy roadways and public areas generally have higher levels of noise than suburban areas.

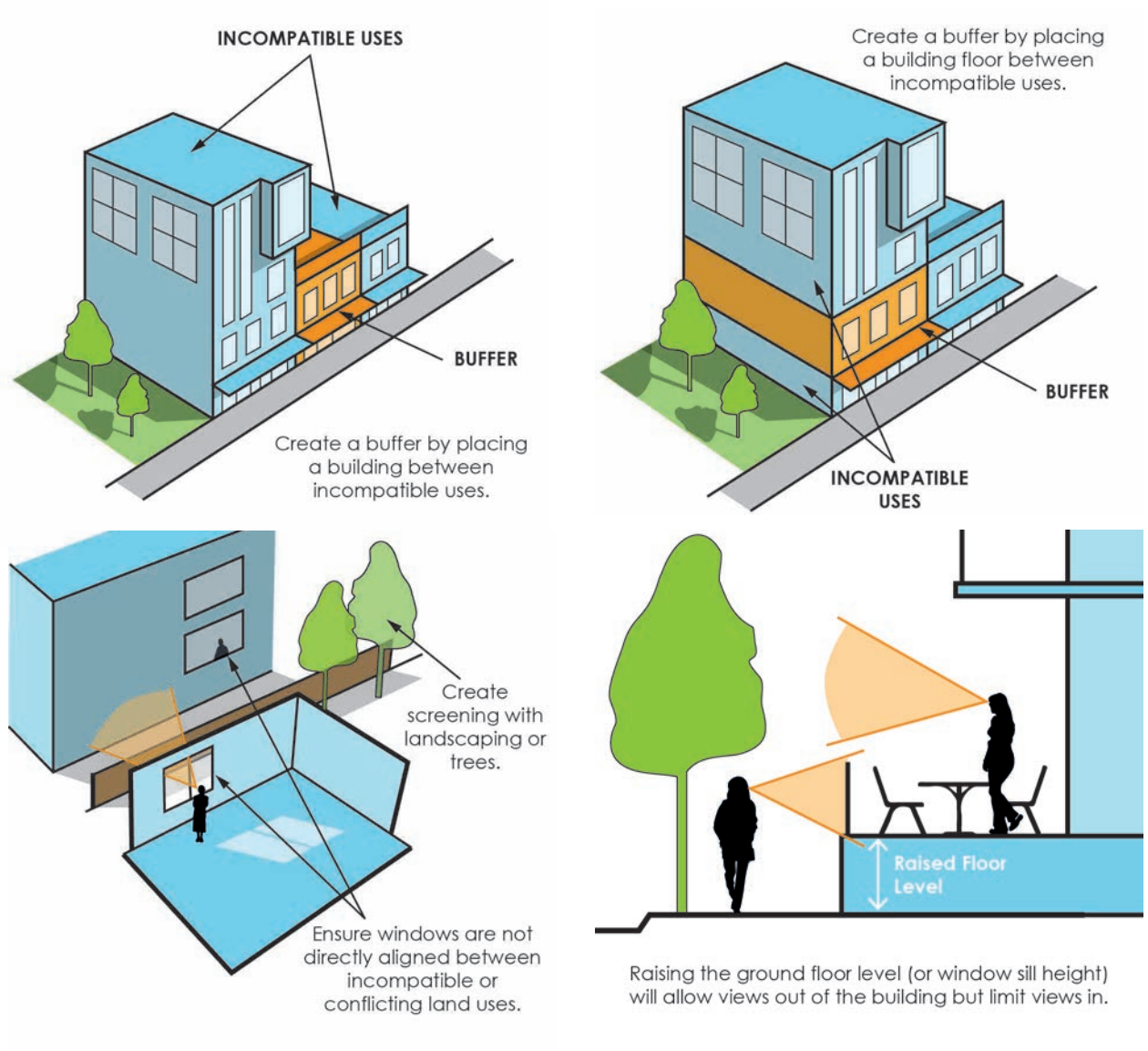
Guideline 3 Consider surrounding land uses prior to building residential development.

Guideline 4

When building next to an incompatible use can't be avoided, consider providing a buffer in the form of:

- Placing a building between incompatible uses.
- A separating floor for incompatible uses within the same building.
- Building elements such as well insulated exterior walls, or double glazed windows.
- Creating distance through communal outdoor spaces.
- Landscape features such as trees.
- Strategically locating windows and doors away from incompatible uses.
- Changes in ground level within the development.
- Specialised building materials and methods to reduce effects of noise, vibration, odour or dust.

Within city and commercial centres there is likely to be some conflict between quiet, private residential uses and louder, more active uses such as restaurants and bars. In this case consider the techniques listed above.



Guideline 4 Diagrammes showing buffers to separate incompatible uses. Incompatible uses can include different activities as well as public and private use.

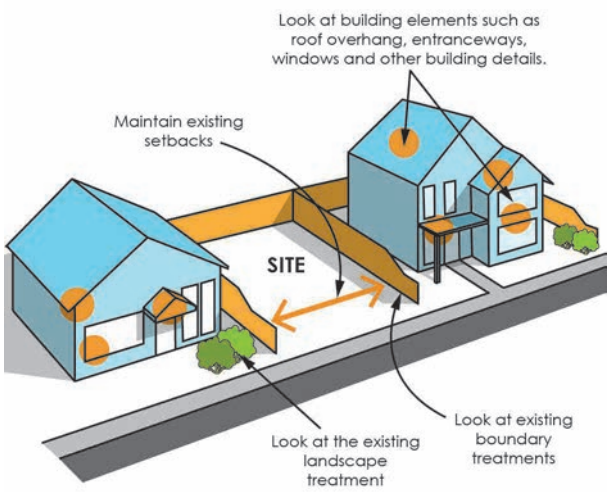
RESIDENTIAL DESIGN GUIDELINES

Guideline 5

Consider aspects of neighbouring buildings and sites to help a development fit into the area and reinforce a sense of place. These could include:

- The height, mass, scale, building line and orientation of surrounding buildings. Avoid creating a significant contrast in scale between the building and its neighbours.
- The setback of existing houses from front and side boundaries.
- The types of boundary treatments including fencing and landscaping which have been used along the street.
- Building elements and built features such as entranceways, roof shape and overhang, verandahs, balconies, porches, window and door details.
- Heritage buildings or heritage character.
- Historical or cultural narrative of the area.
- Natural features on or around the site.

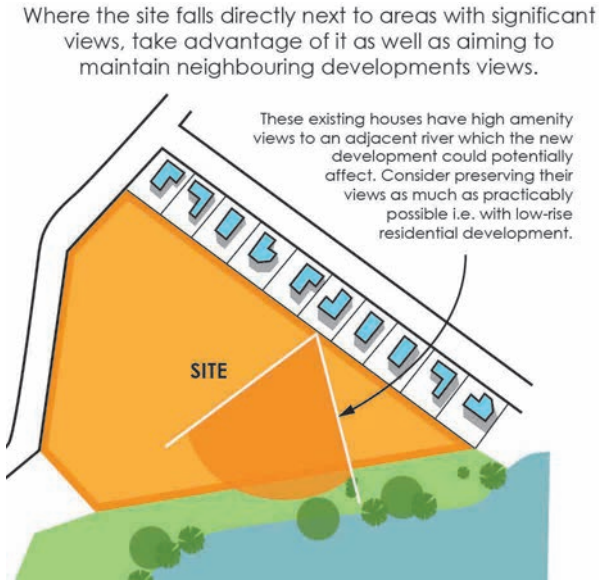
Guideline 5 *(right)*
DANIEL MARSHALL ARCHITECTS - Remuera, Auckland 2006. A good example of a building which takes aspects of the neighbourhood character to help it fit into its context while maintaining its own distinct style.



Guideline 5 Look at the positive aspects of neighbouring houses to establish design cues to help the development fit into the area.

Guideline 6

Consider significant views from the site, and protect views or connections from the wider neighbourhood to or past the site.



Guideline 6 Take advantage of significant views while aiming to protect the neighbouring building's right to the same amenity.

RESIDENTIAL DESIGN GUIDELINES

Guideline 7

The development should respond positively to existing public spaces, streets and other outdoor spaces. Aim to physically and visually connect to existing streets and public spaces, where possible.

Guideline 7 *(above right)*
b9 ARCHITECTS - Eastlake Rowhouses, Seattle.
This building positively addresses the public street.

Guideline 7 *(below right)*
SCAPE STUDIO - Copper Building Plaza, Manhattan.
These apartment buildings physically connect to, as well as overlook, this public space adjacent to the development.

Guideline 8

Design residential neighbourhoods to take advantage of visual and physical connections to existing features (such as rivers, water bodies, hills, coast, significant vegetation, public spaces, important buildings, or public art) to create landmarks, aid legibility and add to the neighbourhood's character.

Guideline 8 The coastal and landscape features in Whangarei should be taken advantage of to aid legibility and add to the neighbourhood character.

2.2 LANDFORM & TOPOGRAPHY

Whangarei's unique setting comes with a diverse topography which, if worked with, can add character and amenity to a building as well as save on associated earthworks and construction costs. When working with the topography, it is important to consider the impact on the appearance of the development, street presence as well as the placement and design of associated infrastructure such as parking and retaining walls.

- Distinctive
- Connected
- Attractive
- Inclusive
- Sustainable

Chapter Objectives

- The design and layout of the residential development responds to the existing landform and minimises any changes or earthworks needed.
- Retaining elements are designed to respond to the natural topography, appearing as natural as possible and reducing earthworks.

RESIDENTIAL DESIGN GUIDELINES

Guideline 1

Avoid major changes to existing natural landforms. Significant changes should only be created when necessary to protect human health and safety, or when works will be better for the environment, overall.

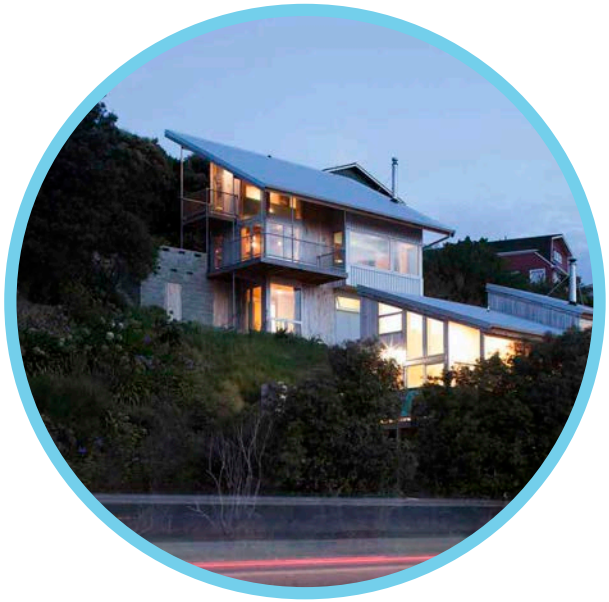
Guideline 1 Large scale earthworks wipe the slate clean but can disrupt and destroy the natural environment.

Guideline 2

Where possible, work with the existing landform and take advantage of the slope of the land by utilising the slope:

- For basement parking.
- To capture significant views.
- To capture more natural light and sunlight.

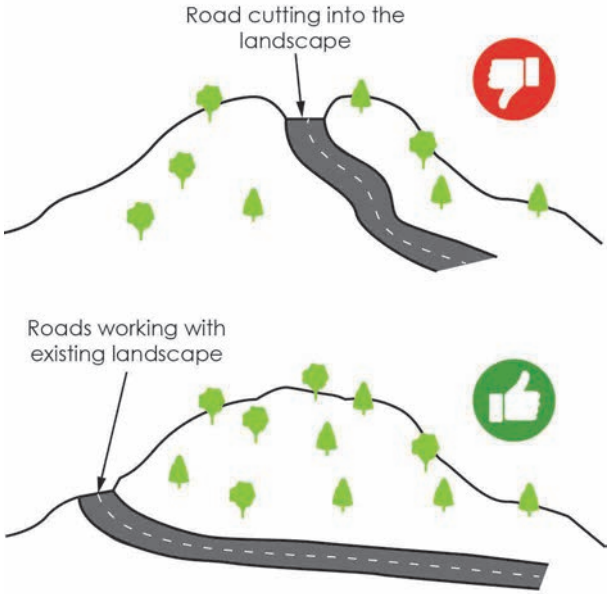
This will reduce the need for extensive earthworks.



Guideline 2 *SPACE CRAFT ARCHITECTS - Wellington, 2017.* This house worked with the steep topography to make the most of views and light.

Guideline 3

Design the layout of roads and lots to work with the natural characteristics of the site. Avoid unnecessarily cutting into the landform.

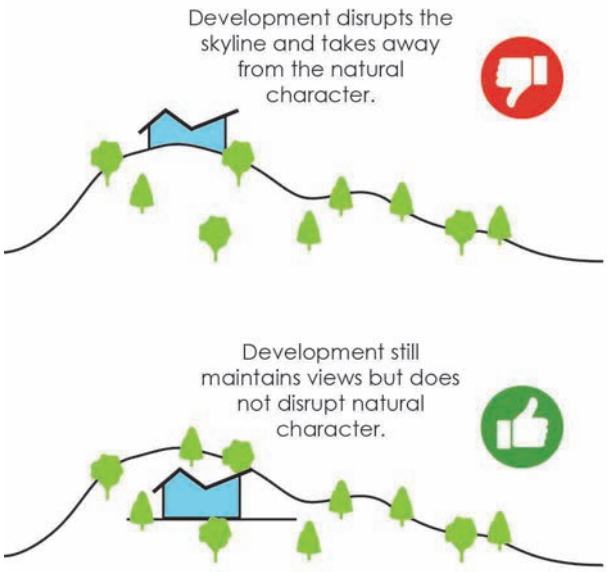


Guideline 3 Avoid unnecessarily cutting into the land, but rather move with existing landforms.

RESIDENTIAL DESIGN GUIDELINES

Guideline 4

On elevated sites, avoid developing on ridgelines by positioning buildings below the ridgeline to ensure the building can be absorbed into the landscape and the landform character is maintained.



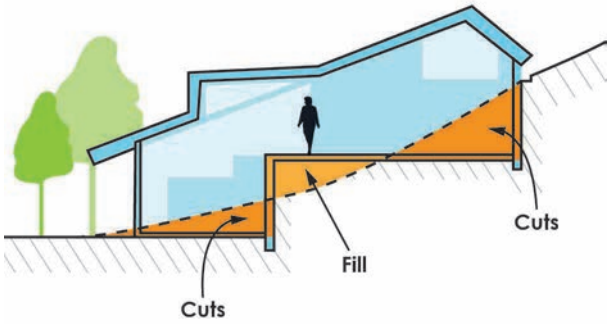
Guideline 4 Building on a ridgeline disrupts the natural character and draws attention to the development.

Guideline 5

Aim for any changes to sloping land to appear as natural as possible by:

- Avoiding straight, vertical or horizontal planes that would stand out when looking at the site.
- Balancing cuts into the land with fills, instead of using cuts and fills alone.
- Minimising the use of large retaining walls. If they are over a metre in height, consider creating stepped retaining walls to reduce the visual impact and create areas for landscaping.
- Allowing space for planting and vegetation to soften the view of large retaining structures.

This diagramme of a split level house shows a mixture of cuts and fills to create a more natural topography.



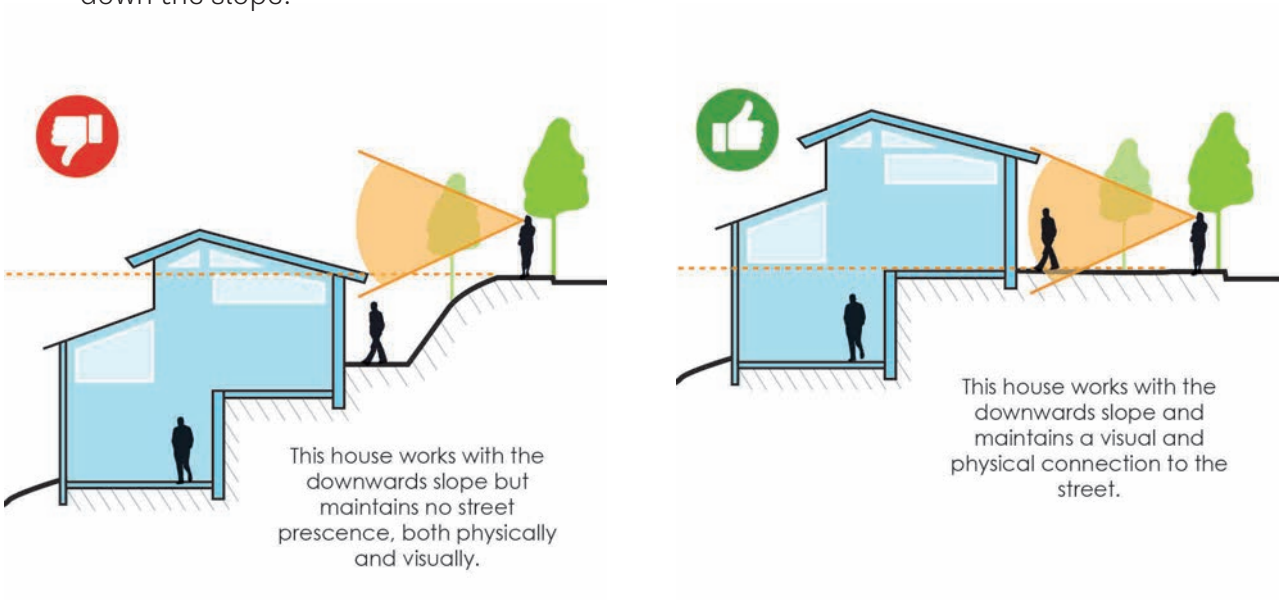
Guideline 5 *(above right)*
When building a residential development on steep topography, use a mixture of cuts and fills to make it appear more natural.

Guideline 5 *(below right)*
Incorporate the sloping land into the landscaping using stepped retaining walls and planting to soften its appearance.

Guideline 6

On sloping sites, aim to maintain connections to the street and a street presence by:

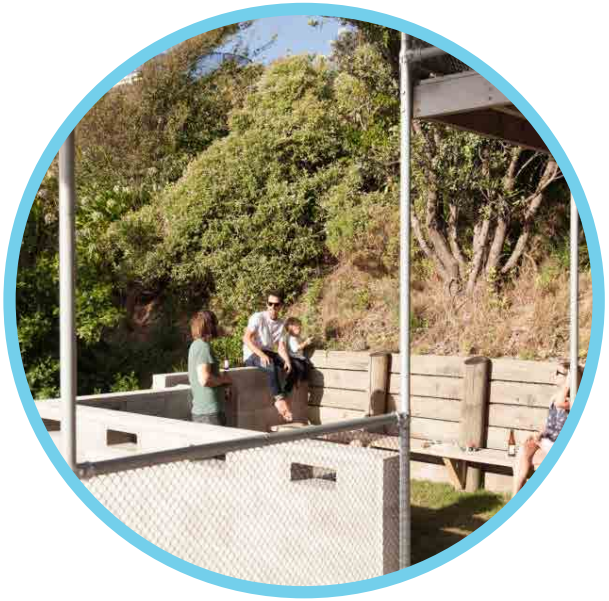
- Locating the building entrance and vehicle access at the street edge.
- Minimising the front setback to achieve a close relationship with the street
- Maintaining a visual connection by ensuring the residential development overlooks the street.
- Stepping the sections of the house up or down the slope.



Guideline 6 These diagrammes show how a sloping site can create conflict when it comes to physically and visually connecting with the street.

Guideline 7

Create flat outdoor spaces around the house. On sloped land this can be achieved through terracing.



Guideline 7 *SPACE CRAFT ARCHITECTS - Wellington, 2017.* This house, built on sloping land, has usable outdoor spaces, achieved through terracing.

Guideline 8

Aim to balance accessibility while minimising earthworks, retaining and ramps. Aim to provide level access to the front door, wherever possible, to allow anyone, regardless of physical limitations, easy access to the building (see 4.3 Building & Site Access).

Guideline 8 Accessibility on sloping sites can be difficult to achieve. The entranceway to this building is not at street level but is accessed via stairs.

2.3 ECOLOGY & HABITATS

The environment is what attracts many people to Whangarei and by retaining and protecting it, it can become a major asset to any commercial development. New development comes with change and it is important to ensure that this change does not disrupt or destroy the positive natural characteristics of the site.

Chapter Objectives

- The design and layout of the development aim to protect and/or enhance Whangarei's natural environment.
- The design and layout of the development should allow access to natural features so people can enjoy them.

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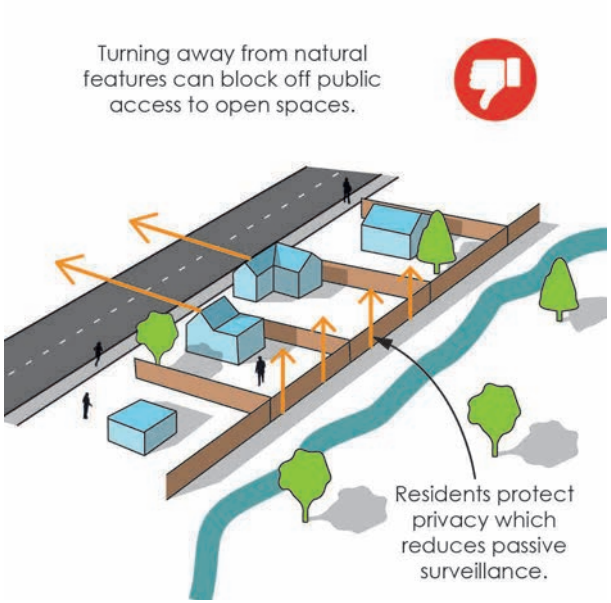
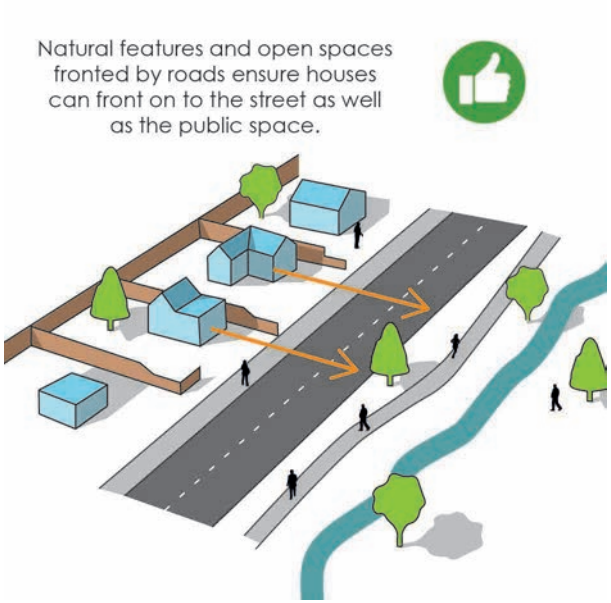
RESIDENTIAL DESIGN GUIDELINES

Guideline 1

Avoid building on areas of natural habitat. The design of the site and building location should aim protect and enhance the natural environment.





Guideline 1 Ensure access to natural features and public open space is protected. Best practice is to front open spaces onto public land rather then private property.

Guideline 2

Avoid blocking natural features to the public, allowing physical access for the wider community, including visitors. Aim for residential development to front onto ecological areas. Where this is not possible, ensure passive surveillance and outlook is maintained.

Guideline 2 This waterway has a public facing edge (i.e. is fronted by streets and pedestrian footpaths) which maintain public access and passive surveillance to the area.

Guideline 3

Aim to retain and improve the ecology and habitat of the site by integrating them into the development. This could be achieved by:

- Using riparian and other planting, including street trees.
- Treating contaminated land.
- Reducing stormwater as well as improving its quality.
- Pest and weed management.
- Using sustainable design techniques within the design of the building (See 9.2 Building Performance).

Guideline 3 *(above)*
Thermal mass and passive heating techniques.

Guideline 3 *(right)*
Hodgson Wetland in Edmington was protected an enhanced with riparian planting since the housing development in 2002.

Guideline 4

Aim to protect and enhance watercourses, existing mature trees or bush (particularly natives), distinctive contours, wetlands and dune systems, as features for the development.

This is an effective way of integrating a new development into an existing environment and creating a sense of maturity.

Guideline 4 Large mature trees also provide immediate amenity value, but can also help integrate into the existing environment.

Guideline 5

If the removal of mature trees or vegetation is unavoidable, the effects on amenity should be mitigated and/or enhanced with the introduction of new additional planting.

Guideline 5 All development, especially those who remove mature trees and vegetation, should include new planting.

2.4 STORMWATER & HAZARDS

As Whangarei continues to grow and urbanise, the risk of flooding and other hazards is likely to increase. Stormwater management and low impact design (water sensitive urban design) should be considered early in the site planning process. It's best to work with, not against, natural systems, enhancing ecosystem and human health.

Chapter Objectives

- The development preserves natural landforms and features to help manage stormwater.
- The development manages stormwater and hazards by carefully locating structures and building platforms away from hazard-prone land.
- The development is designed to keep stormwater runoff to a minimum and aims to store and treat stormwater on site as much as possible.

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RESIDENTIAL DESIGN GUIDELINES

Guideline 1

Consider stormwater run-off in context with the whole neighbourhood, not just the subdivision site. Aim to address as close to the source as possible by protecting existing soils and vegetation that contribute to stormwater management.

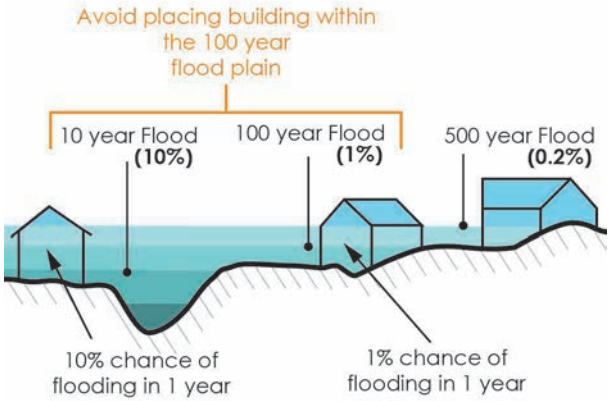
Guideline 1 Increase the density of sites which are not susceptible to natural hazards before building on hazard-prone areas.

Guideline 2

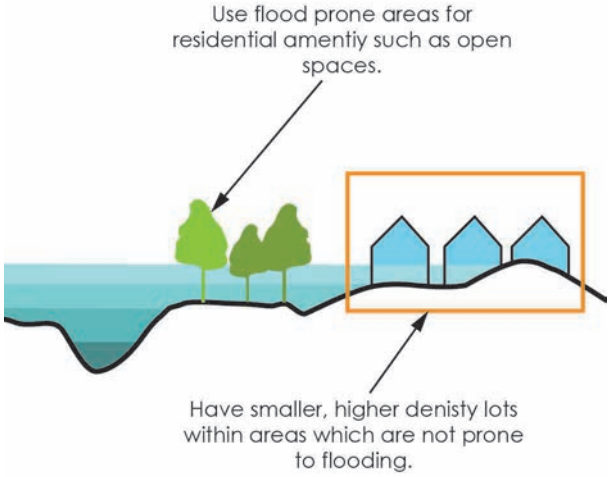
Avoid positioning residential development in areas that are highly susceptible to natural hazards.

Rules of Thumb

- Locate building platforms away from areas prone to natural hazards such as 100-year flood plains and overland water flow paths.
- Consider creating higher building densities and smaller lots in other places on the development site.
- Use hazard-prone and other environmentally sensitive areas to add value and outlook space to the development, rather than fencing them off, which can lower the value of adjoining sections.
- Retain and/or restore natural streams and watercourses, which will minimise the risk of natural hazards such as flooding.



Rule of Thumb *(above right)*
Diagramme showing flood plains and flooding probabilities within those flood plains.



Rule of Thumb *(below right)*
Hazard-prone areas could be used for public open spaces to add amenity to the subdivision.

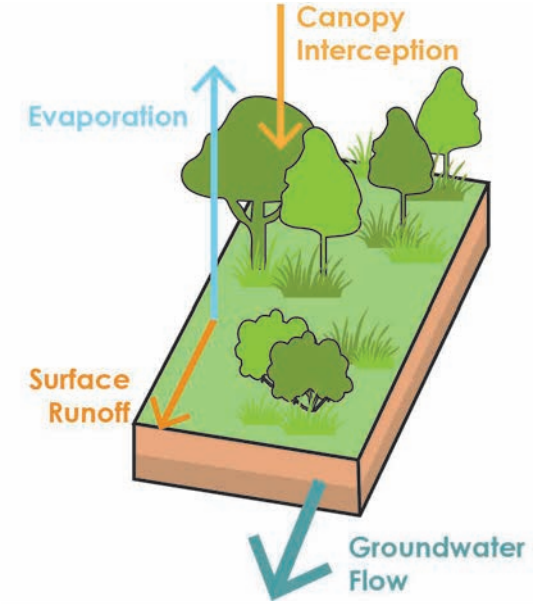
RESIDENTIAL DESIGN GUIDELINES

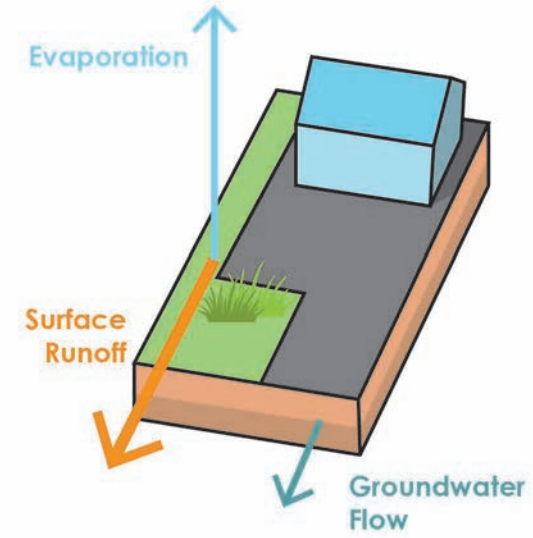
Guideline 3

Aim to minimise areas of hard surfacing (impervious surfaces) within the development to decrease stormwater runoff. Consider limiting the building footprint and/or using impermeable paving treatments.

Rules of Thumb

- To reduce hard impermeable surfaces, consider reducing the width and size of carriageways, driveways and turning bays, and having permeable surfaces in parking areas.





Guideline 3 *(above)*
A natural system contains more permeable surfaces and vegetation which intercepts, filters and absorbs rainfall, leading to higher levels of groundwater and lower levels of stormwater runoff.

Guideline 3 *(below)*
Impermeable paving, driveways, hard surfaces and built form reduce the amount of water absorbed as groundwater. This creates more stormwater runoff, which in turn causes issues with flooding and water quality, and can damage our rivers and streams as water speeds increase.

Guideline 4

When planning infrastructure for stormwater management, ensure life-cycle costs and ongoing maintenance are considered.

Guideline 5

Consider incorporating methods for improving the quality of stormwater to achieve ecological benefits as well as public amenity benefits. These could include:

- Rain gardens
- Tree pits
- Green roofs and green walls
- Swales
- Constructed wetlands
- Detention Tanks

These water sensitive urban design options will reduce and slow down the flow of stormwater and clean it on site.

Guideline 5 *(above right)*
Waitangi Park, Wellington, by Wraight & Associates. A constructed wetland incorporated into open space on Wellington's waterfront.

Guideline 5 *(below right)*
Image showing a rain garden design at the *Brooklyn Botanic Garden Visitor Centre.*

Guideline 6

Consider using the road reserve for stormwater management, through shallow facilities such as grass swales, or centre median islands.

Aim for it to be well integrated into the street design, safe for vehicles, cyclists and pedestrians, and a positive contribution to street amenity.

Guideline 6 Rain garden incorporated into the road reserve creating amenity and a attractive separation between pedestrians and vehicles.

2.5 COASTAL ENVIRONMENTS

Coastal environments in Whangarei are highly valued for their natural character and the recreation opportunities they provide. Preserving the natural character and continuing to allow public access to these high amenity locations are important considerations when developing in coastal environments.

Chapter Objectives

- The design and layout of the development aims to protect and/or enhance the natural character and amenity of the coastal environment.

Distinctive
Connected
Attractive
Inclusive
Sustainable

RESIDENTIAL DESIGN GUIDELINES

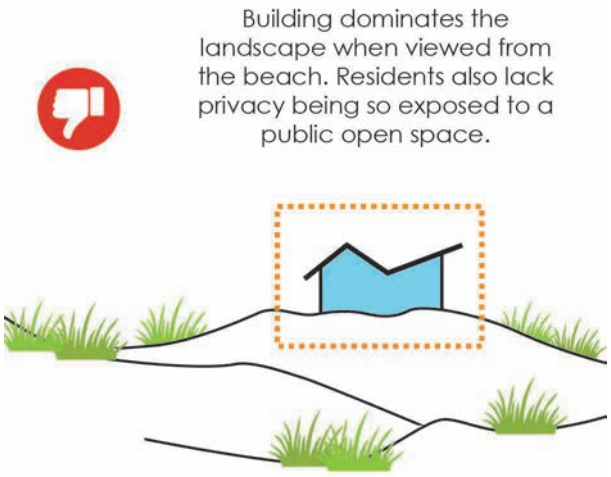
Guideline 1

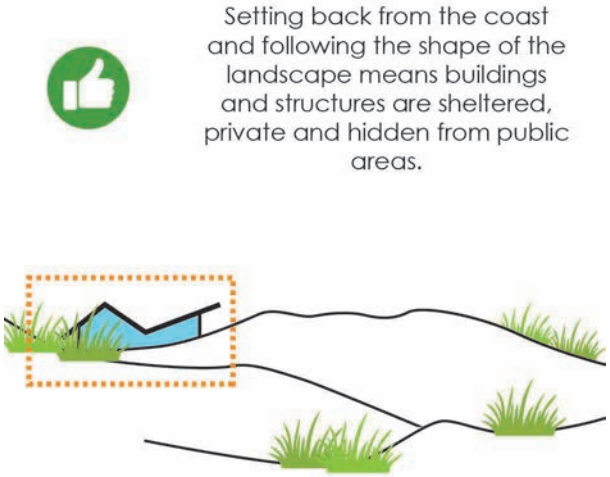
Aim to establish public edges along the coast to protect the coastal character and enable everyone to enjoy it.

Guideline 1 *Oriental Bay in Wellington* is an example of a coastal edge which maintains a public edge.

Guideline 2

Consider where buildings and secondary structures (i.e. water tanks, garages) are viewed from. Aim to avoid positioning them in prominent locations when viewed from the beach or foreshore.

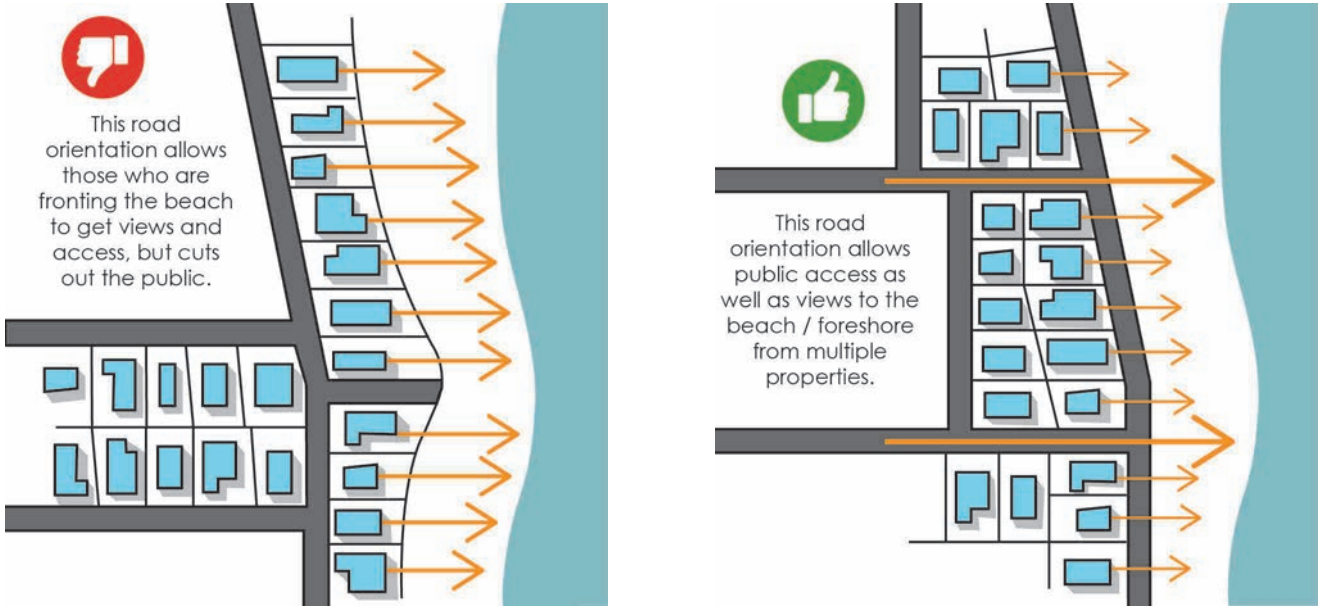




Guideline 2 Consider locations of buildings and structures as viewed from the beach or foreshore. This helps ensure privacy for residents as well as protecting public outlook.

Guideline 3

Consider the design and direction of streets and open spaces so that everyone can enjoy access and views to the coastal environment.



Guideline 3 Consider the layout of streets and public space to improve access to coastal areas.

Guideline 4

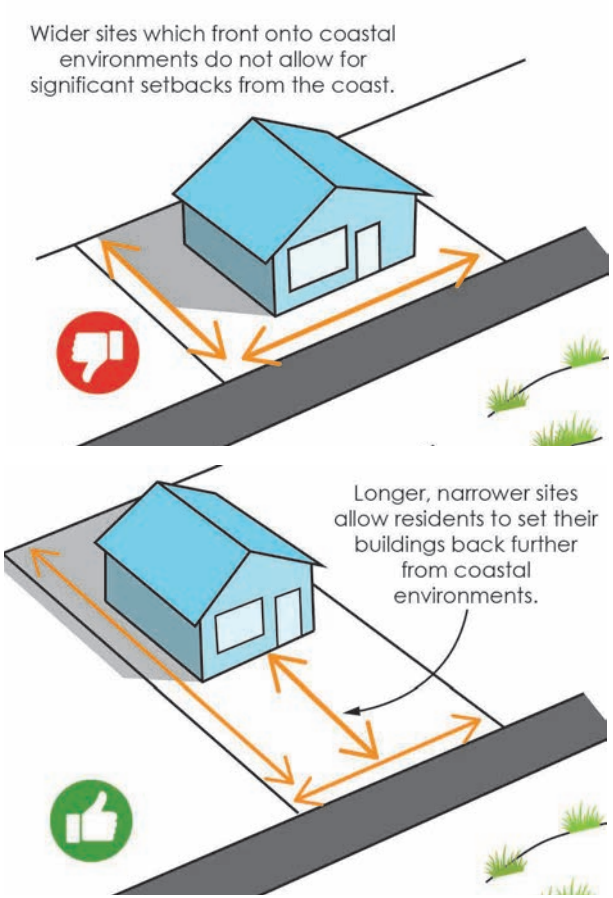
Consider placing single storey houses on sections closer to, or on the edge of, the coastal environment. This will allow houses on sections set further back to have views past the houses on front sections.

Guideline 4 Single storey buildings on coastal edges will allow buildings to see views past the buildings.

RESIDENTIAL DESIGN GUIDELINES

Guideline 5

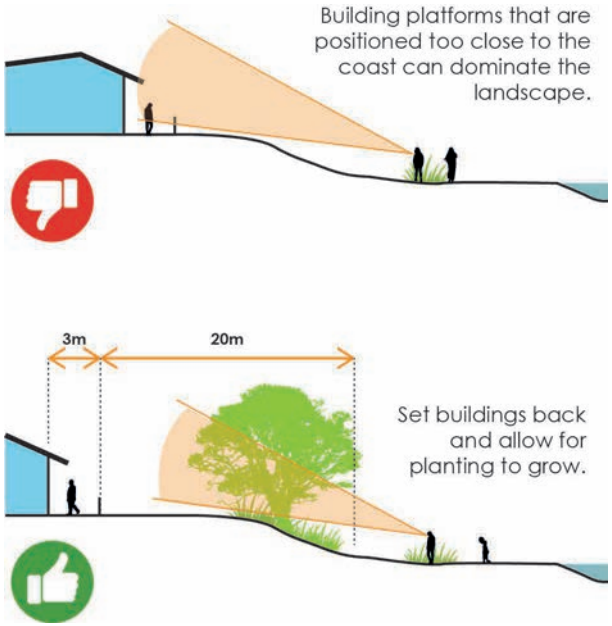
Consider designing sections to be narrow and deep, to allow houses to be set further back from the coastal edge. This helps ensure privacy for residents as well as protecting public outlook and amenity.



Guideline 5 Consider locations of buildings and structures as viewed from the beach or foreshore.

Rules of Thumb

- Locate building platforms back from the coastal edge so that a buffer of vegetation can maintain the coastal character and screen views of buildings. They should be no closer than 23m from the coastal edge (20m of esplanade reserve space and 3m for yard).



Rule of Thumb Set buildings back from the coastal environment.

Guideline 6

Consider using covenants, consent notices or other methods to keep the coastal edge clear of structures.

Guideline 6 Covenants and consent notices can help ensure good quality design is maintained throughout a subdivision.

RESIDENTIAL DESIGN GUIDELINES

Guideline 7

Consider the design of coastal retaining walls by:

- Setting walls back from the coastal edge so that they are not uncovered by erosion soon after construction.
- Using durable materials so that the wall weathers slower in coastal environments.
- Designing retaining walls, which are over a metre in height, so they are stepped or landscaped to reduce the visual impact and create spaces for amenity, access or landscaping.
- Designing access and connections to retained platforms, providing access for all.
- Considering the materials, colours, and form of the wall, to ensure they are complimentary to the setting.

Guideline 7 *(above)*
If not designed to the right conditions, retaining walls will become exposed to the elements and be susceptible to erosion.

Guideline 7 *(below)*
This retaining wall is also designed to incorporate access down to the beach.

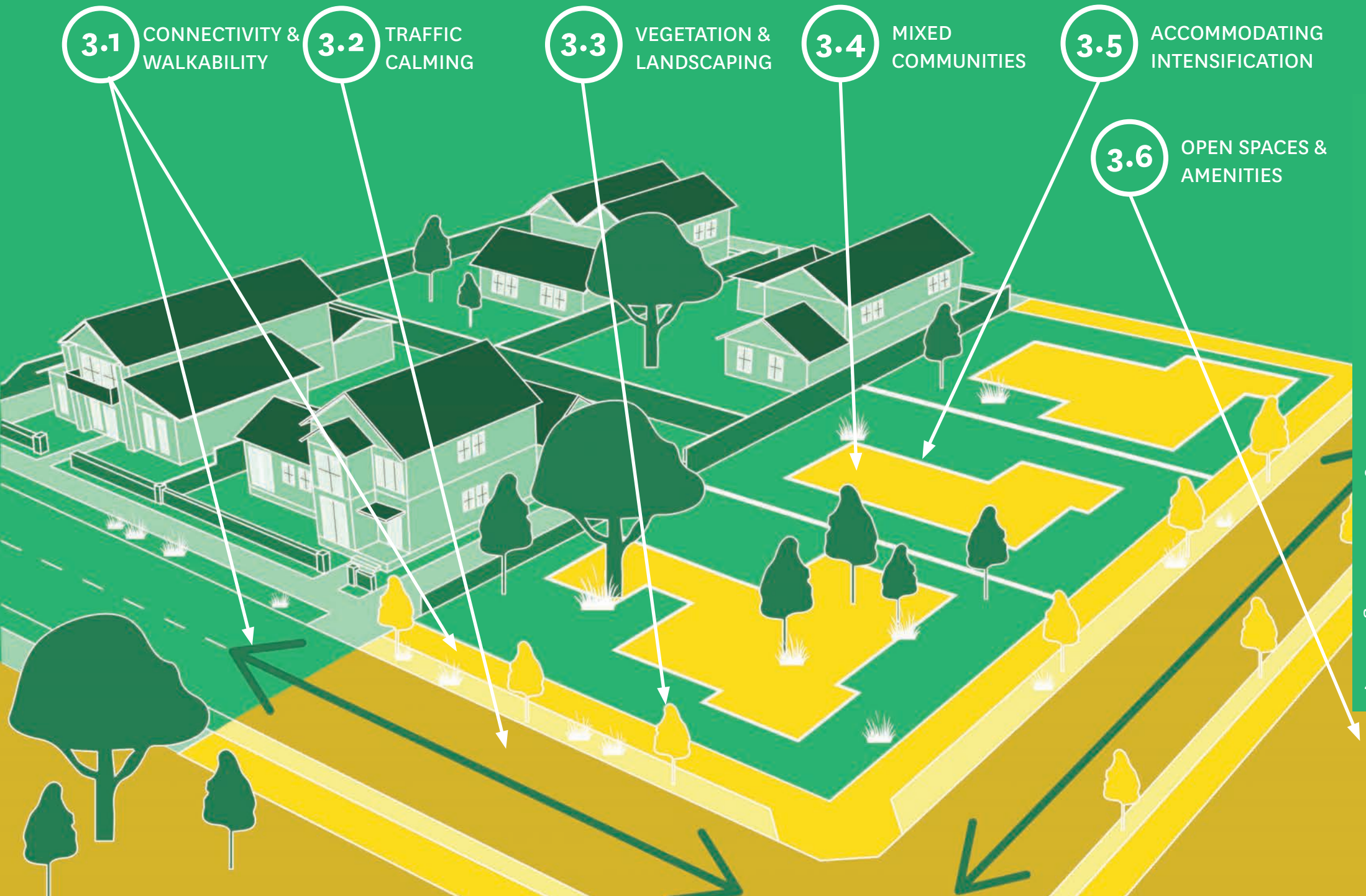
Guideline 8

Restore areas of degraded coast through suitable indigenous plantings and, where necessary, protective fencing.

Guideline 8 Look at restoring coastal areas using planting.

3 SUBDIVISION DESIGN

A successful subdivision is one which holds a range of activities and facilities for a range of different people of diverse cultures and backgrounds. Subdivisions should be able to meet the daily needs of everyone within an easy walking distance. To achieve this, design decisions regarding where to locate different residential sites and amenities are crucial. Their location, and the connections between them, should be considered early in the design and development process.


3.1 CONNECTIVITY & WALKABILITY
3.2 TRAFFIC CALMING
3.3 VEGETATION & LANDSCAPING
3.4 MIXED COMMUNITIES
3.5 ACCOMMODATING INTENSIFICATION
3.6 OPEN SPACES & AMENITIES

3.1 CONNECTIVITY & WALKABILITY

Streets should connect pedestrians, cyclists and vehicles, whether moving through or around the site, to existing streets and pathways. Having well-connected spaces gives people choice, facilitates more movement and creates places that are safer and inviting as they bring activation, a sense of community and passive surveillance to the area. A walkable environment will bring health and lifestyle benefits.

Distinctive
Connected
Attractive
Inclusive
Sustainable

Chapter Objectives

- The design and layout of the subdivision creates and/or maintains connectivity to the wider context, streets and key amenities for all movement types.
- The design and layout of the subdivision prioritise pedestrian convenience and access to destinations.

RESIDENTIAL DESIGN GUIDELINES

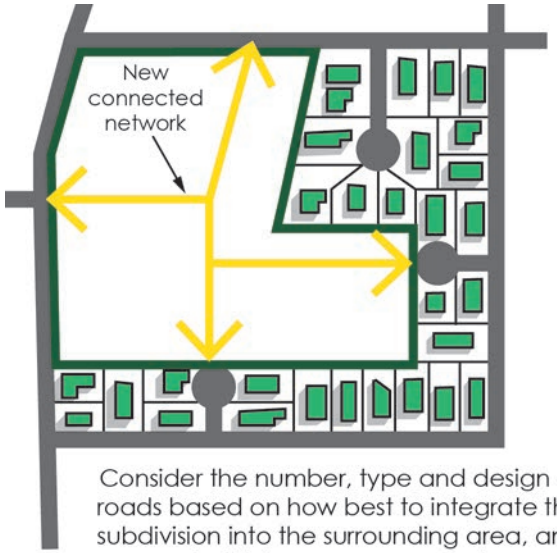
Guideline 1

Aim to connect to the existing movement network as much as possible and avoid a pattern of cul-de-sacs with few through roads, by:

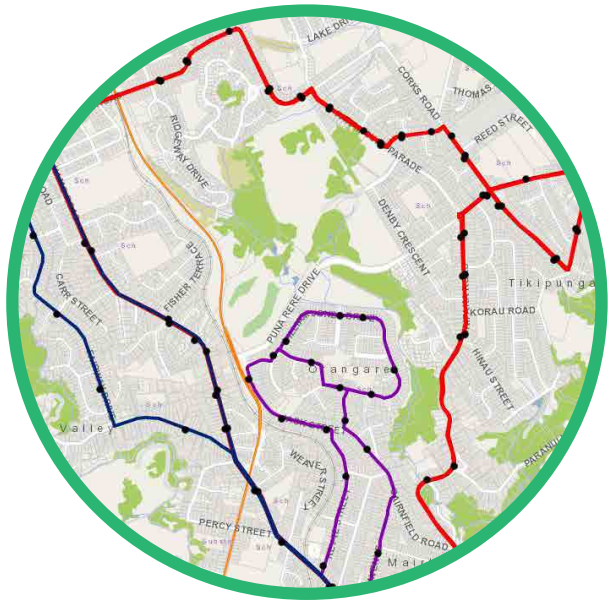
- Creating links to the surrounding street network and pedestrian paths.
- Linking pedestrian routes to public transport routes and stops.
- Creating balanced movement networks by ensuring pedestrians, cyclists and vehicles work together.
- Incorporating existing pedestrian desire lines into the design in the form of through-routes.
- Maintaining direct and convenient vehicle connections into and out of the site.

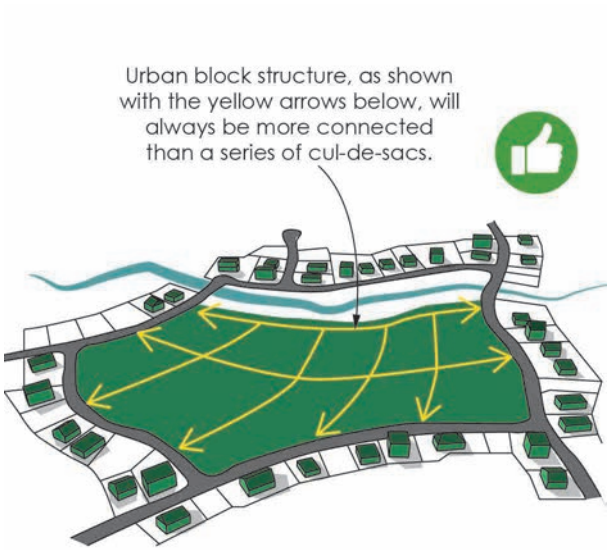
Rules of Thumb

- Connected roads forming urban blocks are better than a pattern of many cul-de-sacs and a few through roads.



Consider the number, type and design of roads based on how best to integrate the subdivision into the surrounding area, and facilitate easy movement.





Guideline 1 *(above left)*
Connect to the existing movement network of the wider neighbourhood context.

Guideline 1 *(below left)*
Connect the existing movement network to the public transport network.

Rule of Thumb *(above)*
The diagramme shows a connected urban block structure which better connects the surroundings as well as creates a connected subdivision.

RESIDENTIAL DESIGN GUIDELINES

Guideline 2

Aim to create connections which are short and direct. Cul-de-sacs should only be considered when connections are not possible due to:

- The landform and typography.
- The significant loss of potentially developable land.
- Natural features and a significant loss of ecology or habitat.
- Unreasonably significant engineering structures and cost.

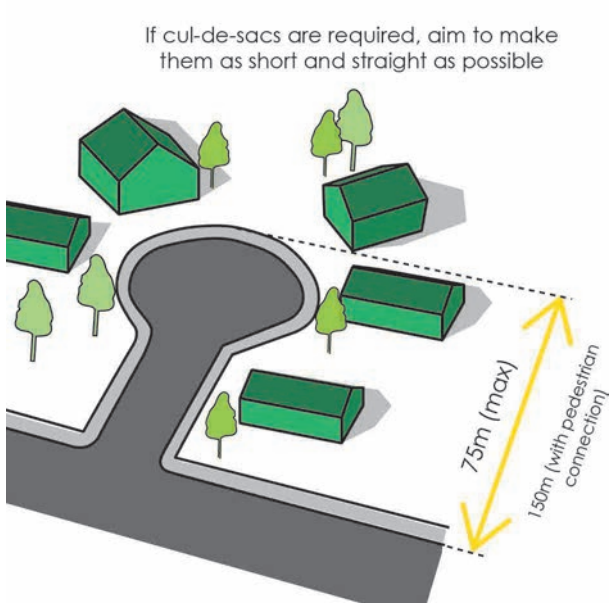
Rules of Thumb

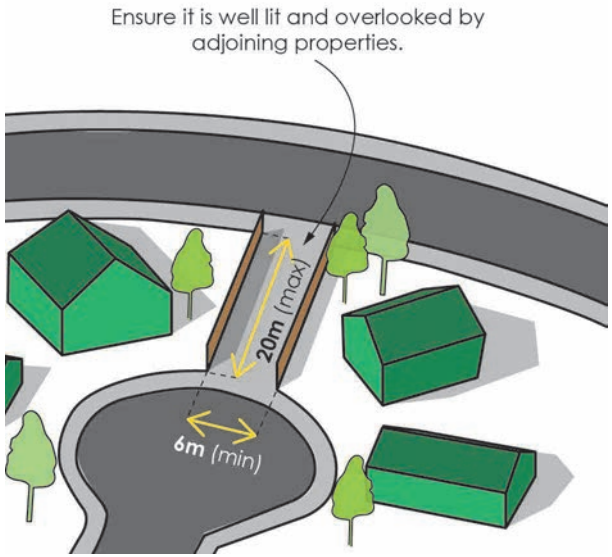
- When cul-de-sacs are unavoidable, they should be designed to be straight and as short as possible to promote slow vehicle speeds. The maximum recommended length is 75m (150m with pedestrian connection).
- Aim to provide pedestrian and cycle links from the ends of cul-de-sacs to adjacent roads or public spaces. If walking and cycling-only paths and connections are needed, ensure they are wide (6m minimum) straight, as short as possible (maximum 20m) and well-lit.

Guideline 2 *(above left)*
A neighbourhood that has multiple cul-de-sacs is not connected or permeable.

Rule of Thumb *(below left)*
Cul-de-sacs should be straight and short (maximum 75m).

Rule of Thumb *(below)*
Provide a pedestrian and cyclist connection at the end of cul-de-sacs to maintain connectivity.





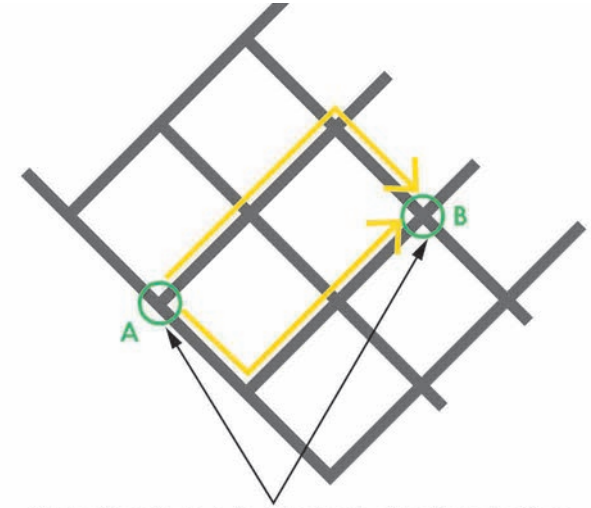
RESIDENTIAL DESIGN GUIDELINES

Guideline 3

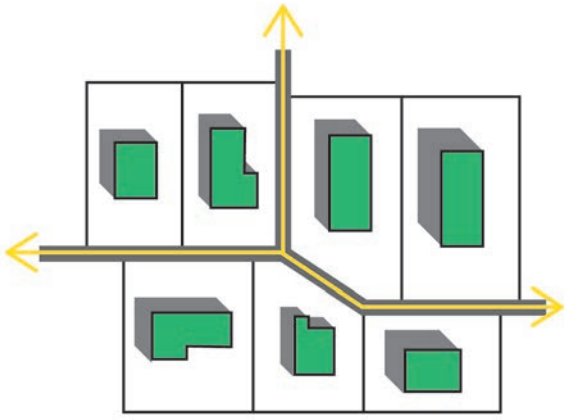
Establish a movement network which offers choice of route. Provide connections to surrounding roads and amenities, minimising the number of lots that are accessible by a single route within a subdivision.

Rules of Thumb

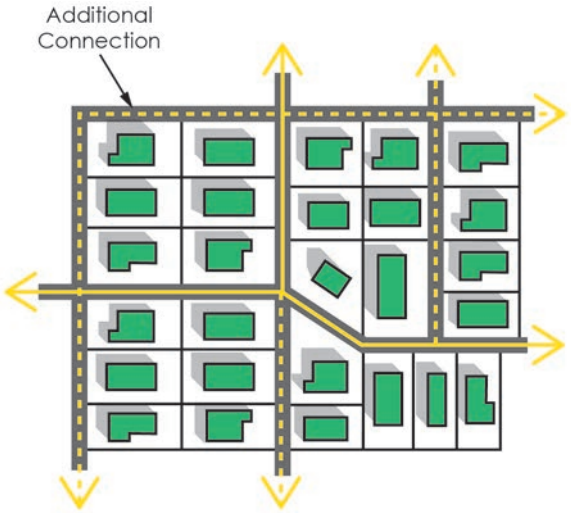
- As density and mix of land uses increases, so should the degree of connectivity and the number of route choices available.



Travelling from A to B is short, direct and offers choice, creating a permeable and well-connected subdivision



A lower density environment requires less street connections as there are fewer people living and moving through a single area.



A higher density environment requires more street connections to move more people more efficiently, as well as increase access to properties.

Guideline 3 *(above)*
Create short and direct routes which offer choice.

Rule of thumb *(right)*
As density increases, so too should the number of physical connections and movement networks.

RESIDENTIAL DESIGN GUIDELINES

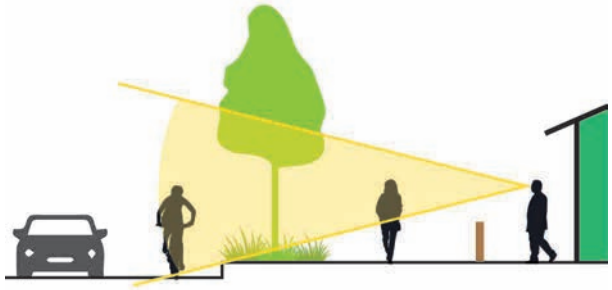
Guideline 4

Encourage walkability by:

- Linking pedestrian routes to public transport routes (existing and future) and local amenities and open space.
- Creating attractive streets with wide footpaths and landscaped berms on both sides of the street. This will create an attractive walking environment as well as outlook for adjacent properties.
- Accommodating multiple modes of transport onto the street network to enhance activity, safety and the perception of safety.
- Activating the street by orientating residential development towards the street or pedestrian environments.
- Designing for all ages and abilities, including wheelchair users, children, the elderly and parents with prams.
- Incorporating existing pedestrian desire lines into the design in the form of through-routes.

Guideline 4 *(above right)*
Create streets which are attractive and are fronted by adjoining properties.

Guideline 4 *(below right)*
Create streets for multiple modes of transport to enhance safety and the feeling of safety.



Multiple modes of transport on one street ensures continuous surveillance from pedestrians, cyclists, drivers and houses as there are more people on the street at one time, creating safer environments.

Guideline 5

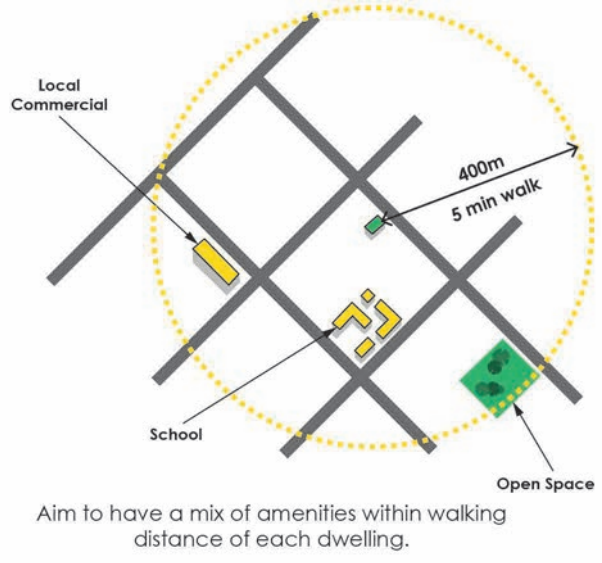
Avoid separating modes of transport unless typography and natural features prevents it. Separate cycle and pedestrian paths may be appropriate where an attractive, longer route can be achieved.

Guideline 5 *Whangarei's Hatea Loop* is an example of a separated walking and cycling track for the purpose of recreation and amenity.

Guideline 6

Consider the locations and mix of local amenities within a walkable distance of each lot (400-800m radius or a 5-10 minute walk) and ensure there are clear and direct connections to these amenities. Local amenities could include:

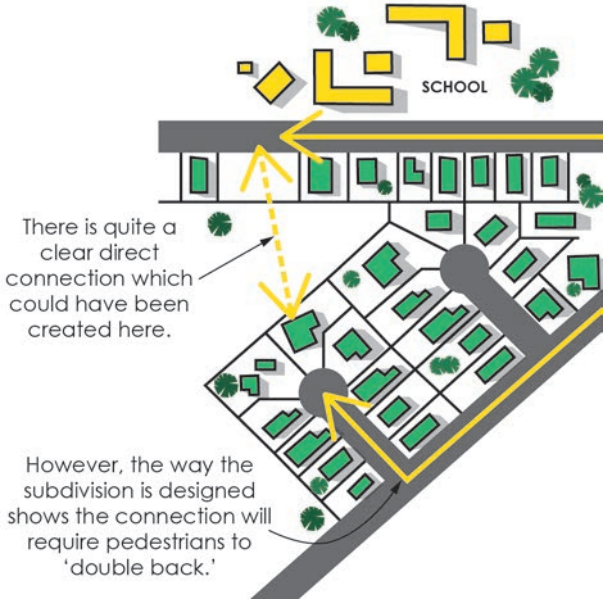
- Public transport
- Commercial buildings
- Schools and education facilities
- Employment, parks and public buildings, such as libraries and town halls.



Guideline 6 Consider the locations of amenities within a new subdivision and aim to have a mixture within walking distance of each dwelling.

Rules of Thumb:

- The best outcome occurs when pedestrians can walk directly from point A to point B within a subdivision, rather than having to 'double back.'



Rule of Thumb The diagramme shows a connected urban block structure which better connects the surroundings as well as creating a connected subdivision.

Guideline 7

Avoid creating gated subdivisions as they do not support connected streets and often result in lower safety and security standards.

Guideline 7 The lack of public connectivity and passive surveillance in a gated community can lead to safety and security issues, both within the subdivision and on the surrounding street.

RESIDENTIAL DESIGN GUIDELINES

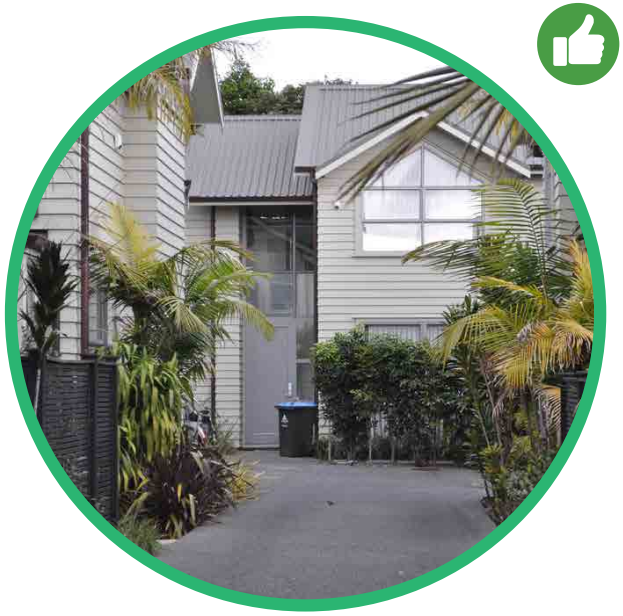
Guideline 8

Aim to design subdivisions with limited rear lots, private driveways and right of ways, as this separates buildings from the street disrupting passive surveillance and activation brought on by public fronts.

Rules of Thumb

- Where rear lots are unavoidable, limit them to less than 10% of the total number of lots in the subdivision. Right of ways (single entry and exit point) should not serve more than 2 – 3 allotments.

Guideline 8 *(above right)*
Traditionally, rear lots disconnect houses from the street.



Guideline 8 *(below right)*
This rear lot still maintains a clear visual connection to the street, overlooking the driveway, and the front door is visible. The driveway is also planted to create an attractive environment.

3.2 TRAFFIC CALMING

The issue of safety and amenity on streets is often addressed by restricting or separating pedestrian and cyclists access, which allows streets to be widened to accommodate higher traffic numbers moving at faster speeds. This action is acceptable on busy arterial roads where high traffic numbers are to be expected at peak times. However, it is not appropriate within local streets or high pedestrian areas. Other methods of traffic calming can instead be applied.

- Distinctive
- Connected
- Attractive
- Inclusive
- Sustainable

Chapter Objectives

- The design and layout of the subdivision ensures safety of residents, pedestrians and cyclists by managing vehicle travel speeds, and establishes a balanced network.

RESIDENTIAL DESIGN GUIDELINES

Guideline 1

Design streets based on the anticipated traffic volume and desired vehicle speed. Roads and streets that are too wide are an inefficient use of land and generate negative effects including larger stormwater runoff, higher traffic speeds and disrupting the amenity of the street.

Rules of Thumb

- Local roads should have a maximum speed of 40km/h while a 30km/h maximum speed might be appropriate on very quiet residential roads.
- Introduce measures that provide enclosure and make a road feel smaller, slowing vehicle speeds (i.e. street trees, building setbacks, parallel carparking).
- Design entrances to each street in a way that slows vehicles down to an appropriate speed from the start, rather than further along the street.

Guideline 1 *(above right)*
A wide residential street can create negative effects and uncomfortably-proportioned spaces.

Guideline 1 *(below right)*
Adding street trees, on-street parking and attractive footpaths makes the road carriageway look more attractive and fell smaller. This reduces vehicle speeds and improves amenity.

Guideline 2

Roads should not be over-designed for vehicle safety, with features such as wider-than-necessary travel lanes or corners. Roads should be designed based on a balance of safety and amenity for all users, not just for vehicle occupants.

Guideline 2 Avoid over-designing and creating large lanes and intersections for drivers' safety. Over-designing can result in drivers concentrating less or increased travel speed.

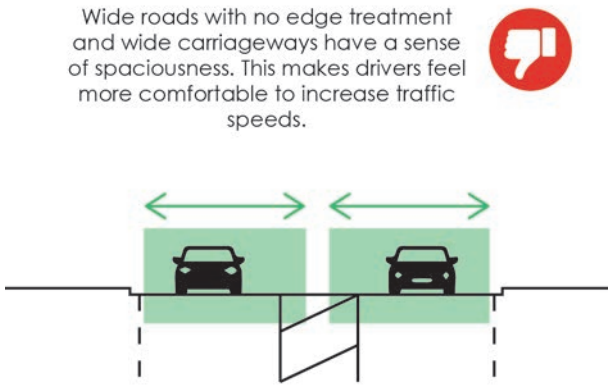
RESIDENTIAL DESIGN GUIDELINES

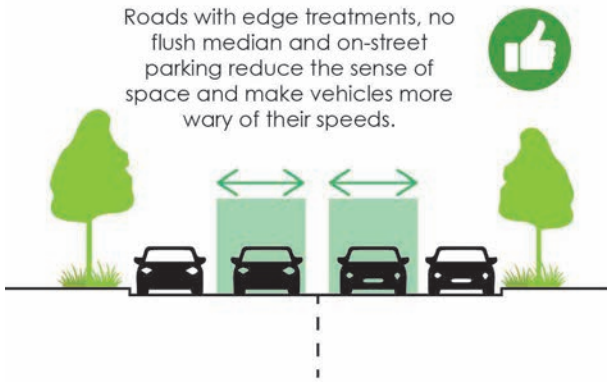
Guideline 3

Traffic calming can be achieved through:

- Changing carriageway widths.
- Creating tighter kerbline radii.
- Traffic islands in key locations.
- Planting and trees.
- Using a variety of textures and surfaces.
- Using flush medians only on very busy streets.
- Promoting slow speeds at intersections and road entrances.
- Introducing temporary measures to test ideas (tactical urbanism).
- Building up to the street edge, and introducing on-street parking to create a sense of enclosure.

Guideline 3 *(left)*
Federal Street in Auckland's CBD uses temporary tactical urbanism techniques to indicate to vehicles a change in traffic speed.





Guideline 3 *(right)*
Traffic calming can be achieved by making the road feel smaller. This can be achieved through edge treatment, the removal of flush medians and adding on-street parking and landscaping.

3.3 VEGETATION & LANDSCAPING

Landscaping is the first thing people see within a neighbourhood, but is usually the last thing to be put in. It should be introduced at an early stage as it can enhance the site's positive attributes rather than be used to hide the negative effects of poor design later. Good quality landscaping contributes to the habitat and ecology, and can create a sense of character and amenity that significantly improves the liveability of subdivisions.

- Distinctive
- Connected
- Attractive
- Inclusive
- Sustainable

Chapter Objectives

- Trees, vegetation and landscaping within the subdivision are appropriate for its location, even at maturity.
- Trees, vegetation and landscaping create character, visual amenity and landmarks within the subdivision design.

RESIDENTIAL DESIGN GUIDELINES

Guideline 1

Retain existing or introduce new trees and landscaping to the subdivision as early as possible. This will maintain continuous habitats, create amenity and character, and provide a sense of scale.

Guideline 1 *Christchurch* subdivision where houses were built around existing mature trees.

Guideline 2

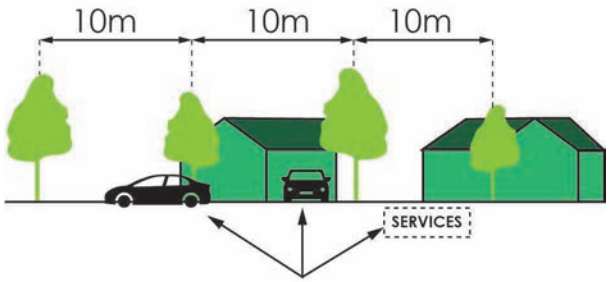
Consider the scale and height of trees at maturity before they are planted, that they will continue to be appropriate for the location and can grow in a balanced and healthy shape:

- Street trees should be planted on adequately sized grass berms or tree pits along the street to allow trees to grow to maturity.
- Avoid planting trees where they will block significant views, or interfere with infrastructure or buildings.

Guideline 2 Palms interfering with powerlines. Consider overhanging services as well as building scale when planting trees.

Rules of Thumb

- Position street trees where they will not need to be removed later - generally at 10m centres, located to avoid interference with services, driveways and parking bays.



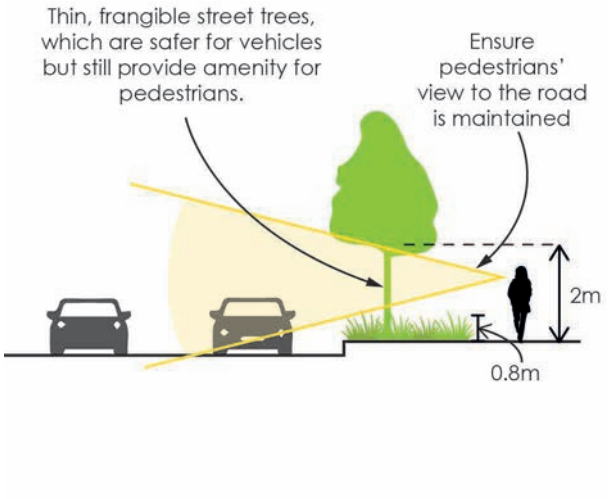
Ensure street trees don't intefere with driveways, parking bays or underground services.

Rule of Thumb Best practice is to space trees at 10m intervals.

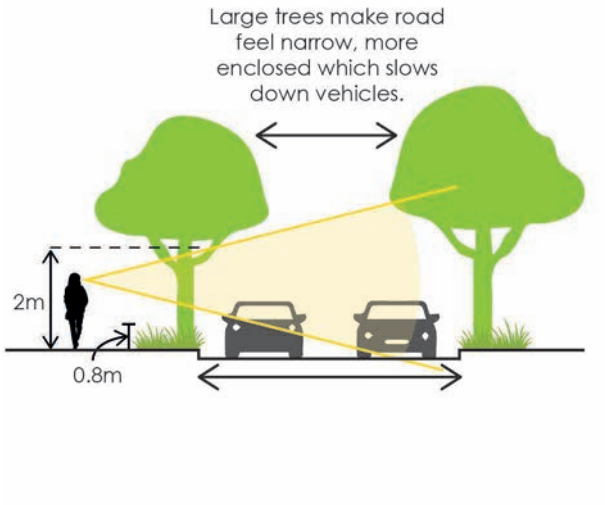
Guideline 3

Consider vehicle traffic and pedestrians when planting street trees:

- On high vehicle roads (i.e.. arterial) use frangible (breakable) tree species to reduce safety risks to vehicles in the event of a crash.
- On pedestrian priority streets, use non-frangible street trees to protect pedestrians.



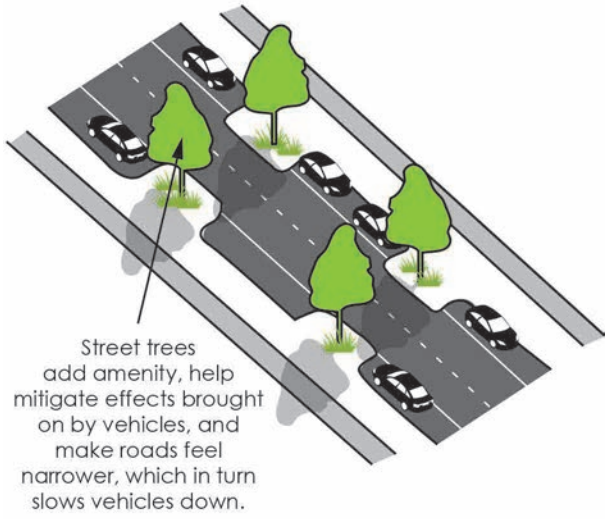
Guideline 3 Street trees on a high vehicle road are better suited to be frangible.



Guideline 3 Street trees on a pedestrian priority streets should be larger to protect pedestrians and slow traffic speeds.

Guideline 4

Consider planting street trees and low planting in the berm or within the parking lanes between the carriageway and footpath.



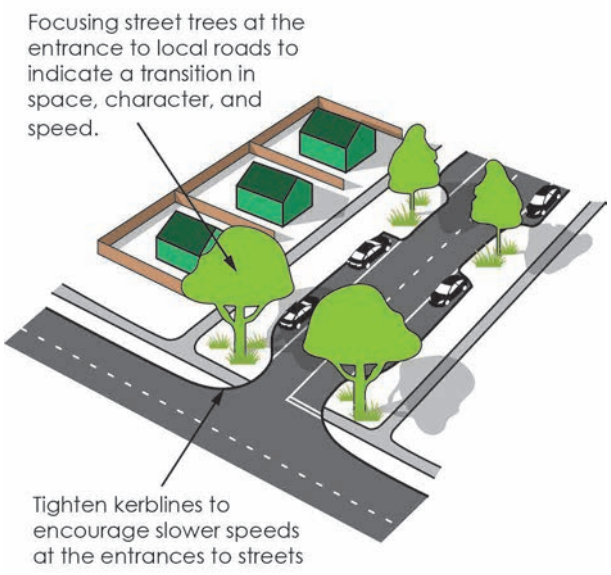
Guideline 4 Plant street trees in berms or within parking bays on streets.

Guideline 5

Concentrate street trees at the entrances to local roads to help indicate to drivers that there is a change from a busier road to a quieter street.

Rules of Thumb

- Consider using different types of street trees and streetscape treatments to highlight a change of place, important streets and destinations.



Guideline 5 Street trees at the entrance to streets or intersections can indicate to vehicles a clear change in hierarchy and a slower speed.

Rule of Thumb Street trees can indicate a change in location, typology and character of a street.

Guideline **6**

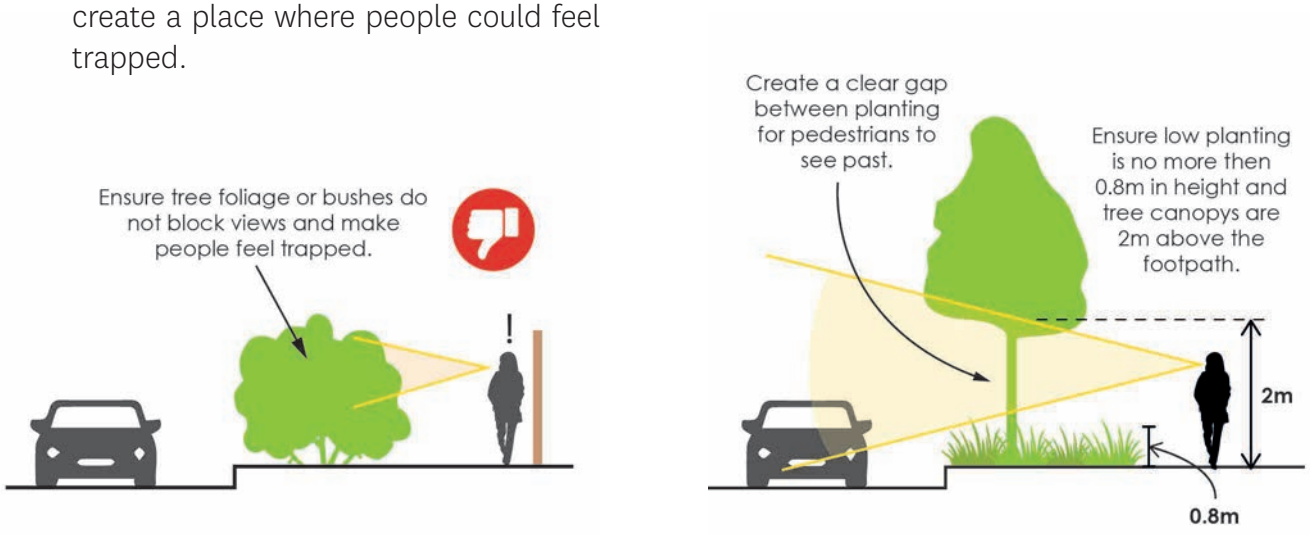
Where road space is limited or too narrow to accommodate trees, provide trees within the front yard of lots.

Guideline 6 This residential road has no berm space, therefore amenity is added by incorporating large trees into the front yard.

Guideline 7

Consider Crime Prevention Through Environmental Design (CPTED) principles when planning the location, density and plant species used within a subdivision.

- Use good street lighting that will not be obscured by tree foliage.
- Make sure low planting and street trees do not block views so that pedestrians can see where they are going and assess the risks they may face.
- Plant street trees with narrow trunks that will not make it difficult for drivers or pedestrians to see past, or that would create a place where people could feel trapped.



Guideline 7 Consider CPTED when designing the landscaping and positioning trees and foliage so they do not block views or disrupt visual connections to pedestrian paths and public spaces.

3.4 MIXED COMMUNITIES

Allowing for a mix of activities and section sizes will provide a greater choice for purchasers, create a more balanced community, and attract a diverse range of people, including people of different cultures, backgrounds, ages and needs. Mixed communities create multiple benefits, including activation, economic development, safety and allowing people to remain within their community for longer.

- Distinctive
- Connected
- Attractive
- Inclusive
- Sustainable

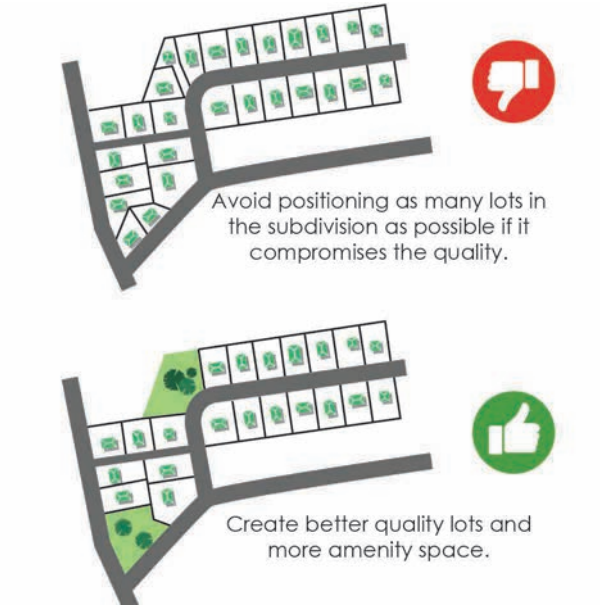
Chapter Objectives

- Subdivisions have a mix of housing types, sizes, uses and activities, which facilitates diversity and activity.

RESIDENTIAL DESIGN GUIDELINES

Guideline 1

Aim to design lots based on quality not quantity to ensure they are suitable for their use and of a high amenity.



Guideline 1 Aim for quality not quantity to create higher-amenity subdivisions.

Guideline 2

Design subdivisions for a range of lot sizes, prices and types of housing (especially those with ten lots or more). This will attract a diverse range of people of different cultures, backgrounds, ages and incomes to an area.

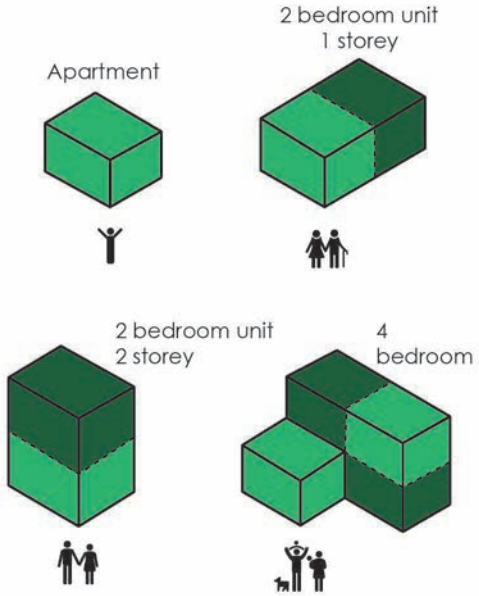
Guideline 2 Create neighbourhoods with a diverse range of housing sizes and types.

Guideline 3

Consider diversity within multi-unit developments and apartment buildings.

Rules of Thumb

- Provide more than one apartment type in all developments of ten or more units.
- Locate a mix of apartments on the ground level where units are more accessible for the disabled, the elderly and families with children.



Guideline 3 Creating lots of different sizes, prices and types will attract a broad range of people to a subdivision.

RESIDENTIAL DESIGN GUIDELINES

Guideline 4

Attract more people to a site by introducing a mix of activities which appeal to a diverse group of people of different demographics.

Rules of Thumb

- A variety of recreational uses, spaces and facilities will attract people at different times of day and throughout the year. Having a mixture of activities adjoining the site (i.e. residential buildings, offices and commercial land uses) will help make places feel safer as it will be overlooked at different times of day.

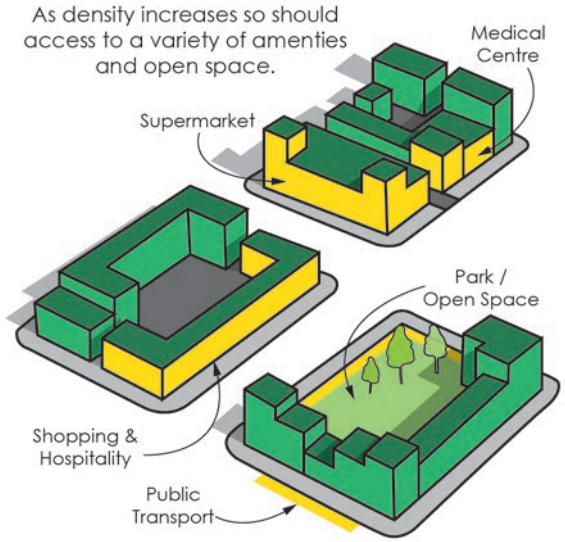
Guideline 4 A mix of activities within walking distance can add to activity and safety as well attract more people.

Guideline 5

As the size of the lots decreases and the density of the subdivision increases:

- Provide for more variety of residential and non-residential land uses. This includes shops, public spaces, open spaces, schools and employment.
- Increase access to open space as well as views and outlook, as smaller lots have less access to private amenities on site.

Where residential lots are located adjacent to other land uses protect residential amenity and privacy by providing a buffer (see 2.1 Context Integration).



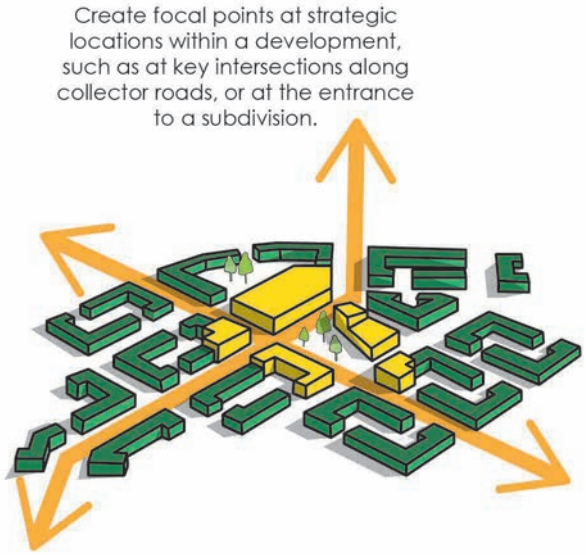
Guideline 5 Create communities of mixed amenities and facilities when density increases.

Guideline 6

Create focal points within neighbourhoods to contribute to way-finding and legibility. Such focal points could be a significant building, open space or natural feature.

Rules of Thumb

- Take advantage of strategic locations adjacent to collector roads and intersections to develop local centres containing retail, service, employment, education and community facilities.



Guideline 6 Focal points in strategic locations, such as key intersections, can contribute to way-finding and legibility.

3.5 ACCOMMODATING INTENSIFICATION

Intensification can be problematic if not designed well from the outset. It is important to integrate development into its surroundings, especially when the surroundings are not of a higher density. Infill can be problematic when it comes to outlook, noise, privacy and amenity. Therefore, consider the placement of windows, outdoor spaces and driveways and how they can affect adjacent future sections.

Chapter Objectives

- Medium density neighbourhoods are considerate of both current and future character of the wider context.
- Medium density neighbourhoods are carefully integrated with their surroundings and are considerate of other residential areas, open spaces, views, outlook and privacy.

- Distinctive
- Connected
- Attractive
- Inclusive
- Sustainable

RESIDENTIAL DESIGN GUIDELINES

Guideline 1

Density should be carefully integrated into subdivisions that can also accommodate the appropriate amount of open spaces and good outlook.

Guideline 1 Density is most appropriate when public open space and attractive views can be provided.

Guideline 2

Specify building platforms, vehicle crossings and private outdoor spaces within the design of new subdivisions, so that future development can be accommodated successfully for both future and existing residents.

Guideline 2 Identifying the location of these aspects will help the future success of the subdivision.

Guideline 3

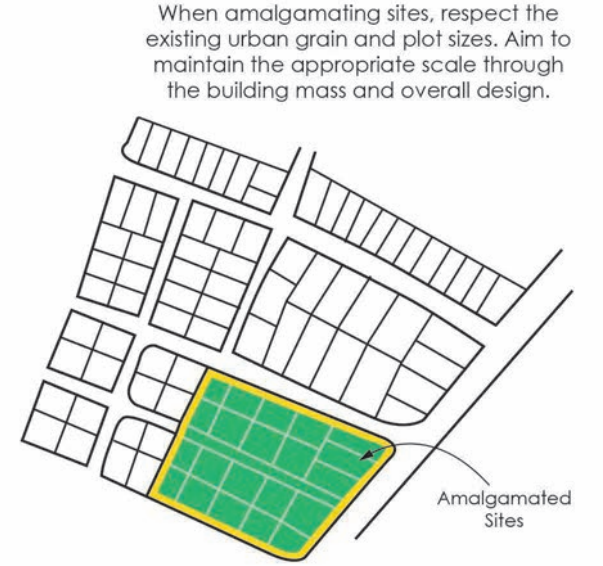
Consider the surrounding neighbourhood character and density, and accommodate edge development to help the subdivision fit in with that character (i.e. larger buildings on edge of the development).

Guideline 3 Create a transition when locating residential development with greater density into an established neighbourhood.

RESIDENTIAL DESIGN GUIDELINES

Guideline 4

If plot amalgamation is undertaken, respect the existing street patterns and block sizes as large buildings and sites can alter the scale of a neighbourhood.



Guideline 4 Be considerate of the surrounding urban form when looking to amalgamate sites.

Guideline 5

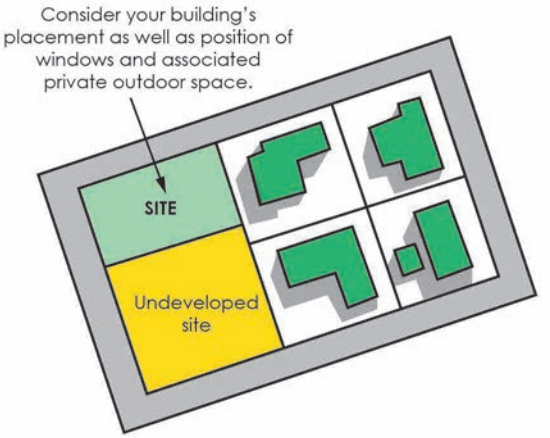
Consider possible building placement of adjacent undeveloped sites and aim not to compromise the adjacent sites' future amenity with your residential development.

Rules of Thumb

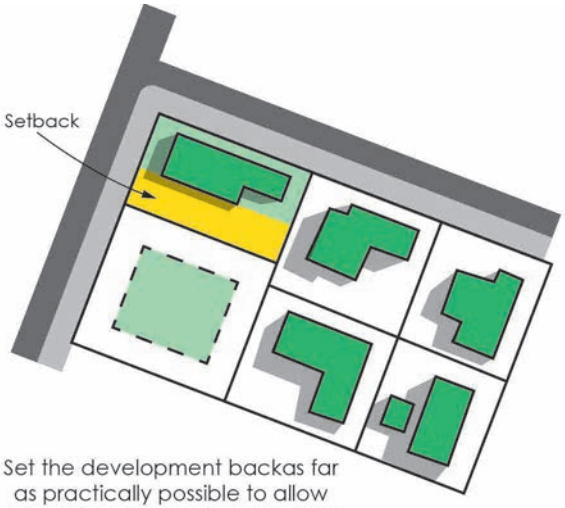
- Lots which are bigger than approximately 650m² could be designed to allow for further subdivision in the future. Consider the ability to provide for building platforms, access, privacy and neighbourhood amenity.
- If anticipating the future neighbouring development is difficult, a good rule of thumb is to set back from the boundary as much as practically possible.

Guideline 5 *(above right)*
Consider how adjacent, undeveloped sites could be developed to ensure your development does not compromise its future amenity.

Rule of Thumb *(below right)*
A good rule of thumb is to set the building back from the shared boundary as much as practically possible.



Take into account adjacent sites which are undeveloped, considering how your future development is positioned on site, and how this could potentially affect future development.



Set the development backas far as practically possible to allow future development more ability to achieve adequate privacy and amenity outcomes.

3.6 OPEN SPACES & AMENITIES

It is important for communities to have access to appropriate open spaces and amenities, especially within higher density environments. Good quality open space and amenities can create a subdivision with higher property values, a stronger sense of local identity and more use of infrastructure, like parks and playground equipment.

- Distinctive
- Connected
- Attractive
- Inclusive
- Sustainable

Chapter Objectives

- Open spaces and amenities are located to have maximum visibility, connectivity and accessibility for residents and the wider community.
- The location, type and amount of open space and other public amenities provided is appropriate to the neighbourhood and its residents.
- A variety of open spaces and amenities for different uses are provided within the neighbourhood design.

RESIDENTIAL DESIGN GUIDELINES

Guideline 1

Do not consider open space as left over land. The location and design should be informed by neighbourhood context and site analysis.

Rules of Thumb

- Use prominent sites for local amenities, open space or large, well-designed developments. These could include corner sites, intersections or other highly visible locations.

Guideline 1 *Laurie Hall Park* is located on a hillside in a prominent location in Whangarei city centre.

Guideline 2

The number of open spaces in a neighbourhood and their amenities should be based on:

- The needs of the community, including population density and demographics.
- The types of users and their requirements.
- Use and access to existing facilities, and gaps in amenity provision.
- Opportunities for dual purpose functions (active and passive recreation).

Guideline 2 *Potter Park Playground in Tikipunga, Whangarei.* Neighbourhoods with a high number of children should consider a playground.

Guideline 3

Incorporate natural features, mature trees and ecological areas into the design of subdivisions through open spaces where they can contribute to recreation networks and/or maintain ecological values. This will give them character and a sense of maturity. This also contributes to sense of place which aids the protection of these features.

Guideline 3 *Whangarei Falls, Whangarei.* Natural features such as mature trees and rivers create a sense of place and maturity when incorporated into open space design.

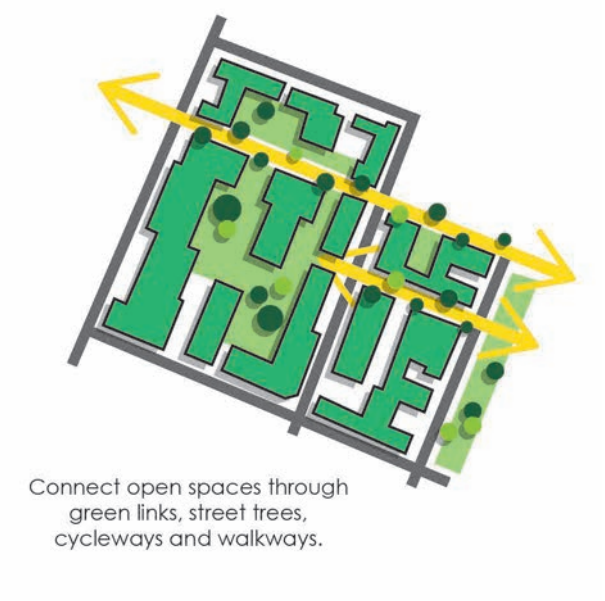
RESIDENTIAL DESIGN GUIDELINES

Guideline 4

Open space within a new subdivision should connect and complement existing open spaces within the wider neighbourhood. Aim to connect open spaces with streets, cycleways and walkways.

Rules of Thumb

- Connections between open space networks can be used as green links so that wildlife can move through developments with the same or better convenience.



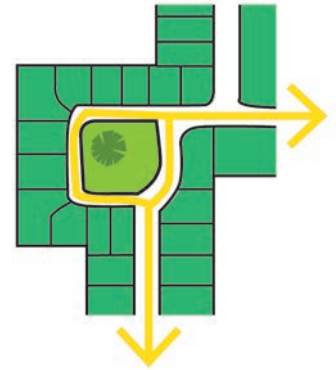
Guideline 4 Connect open spaces using green links along streets, cycleways and walkways.

Guideline 5

Open spaces should be positioned so they contribute to the character of the subdivision and are publicly accessible. Some examples of key locations are:

- At the rural boundary.
- At the entrance of a subdivision.
- At the centre of the subdivision.
- Adjacent to the site boundary, so that it can be extended by a future reserve on an adjacent subdivision.
- In a strategic location that will maximise the number of residents who can access it.
- At the end of cul-de-sac heads to allow pedestrian access.

Guideline 5 *(right)*
Diagrammes showing examples of key places where open space can be located to create a focal point and contribute to the neighbourhood character.

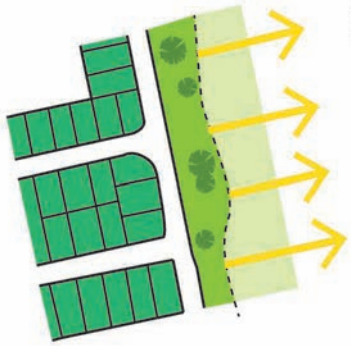


At the centre of the subdivision

- At the centre to create a focal point, and to maximise the amount of residents who use and see it.

At entrance of the subdivision

- At entrance of a subdivision to create an attractive entranceway and maximise the number of residents using/passing the space.



Adjacent to the site boundary

- Maintain a positive outlook by creating views to adjacent open space or rural land.
- Opportunity to be extended into future subdivision reserves.

RESIDENTIAL DESIGN GUIDELINES

Guideline 6

Arrange subdivisions so that development fronts onto open spaces. This includes public street fronts or the fronts of dwellings. This will form an attractive edge and provide surveillance.

Guideline 6 Allowing the development to front onto the adjacent street and open space creates activity and passive surveillance.

Guideline 7

Design public spaces and amenities with opportunities for passive surveillance:

- Locate public spaces along key pedestrian routes, and to be adjoined by streets rather than backs of buildings or private spaces.
- Activate public spaces with activities such as outdoor dining, walkways and active frontages on adjoining businesses.
- Public facilities such as seating, drinking fountains, public toilets and playgrounds will encourage people to linger within public spaces and social interaction, activating it for longer periods of time.
- Consider the placement of public spaces to ensure they are overlooked by adjacent buildings.
- Avoid locating public spaces where there is limited visibility, such as behind buildings, on sloping sites, or densely planted sites.
- Avoid blocking views and sightlines to public spaces with walls, structures, tall impermeable fencing and planting.

Guideline 7 *(above right)*
Open space should include activities such as outdoor seating to encourage people to linger in the space.

Guideline 7 *(below right)*
Waitangi Park in Wellington sits adjacent to buildings which overlook the space.

RESIDENTIAL DESIGN GUIDELINES

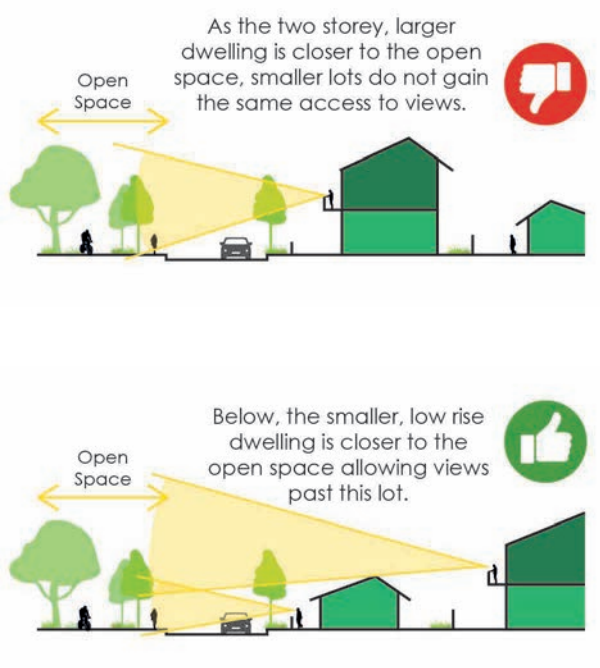
Guideline 8

Provide amenities within parks including children's play equipment, landscape areas for passive recreation, public art and flat land for active recreation.

Guideline 8 This artists impression shows the new Town Basin Park in Whangarei. A space which includes a water feature and a sculpture.

Guideline 9

Locate the smaller lots close to open spaces and other amenities which could include views or outlook opportunity.



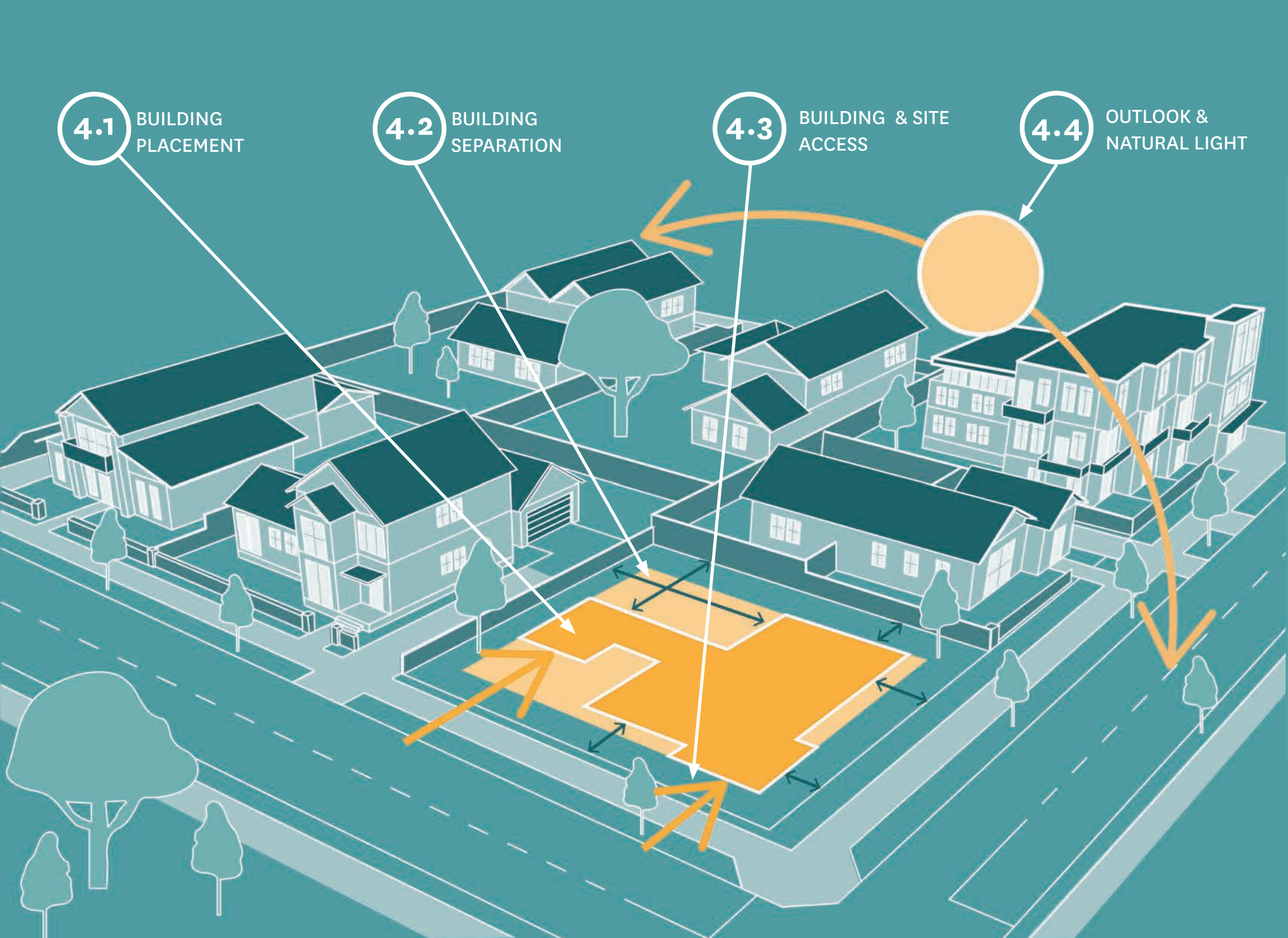
Guideline 9 Locate low-rise development adjacent to open spaces to allow views past the building.

Guideline 10

Ensure the design of parks considers future maintenance requirements and costs.

4 POSITION ON SITE

The position of a building and the spaces around it are vital to ensuring good quality design. The arrangement of the site should make the best use of the space in terms of outdoor space, public amenity, outlook, residential privacy, sun exposure and access. It should also respect neighbouring properties and their right to the same positive qualities.


4.1 BUILDING PLACEMENT
4.2 BUILDING SEPARATION
4.3 BUILDING & SITE ACCESS
4.4 OUTLOOK & NATURAL LIGHT

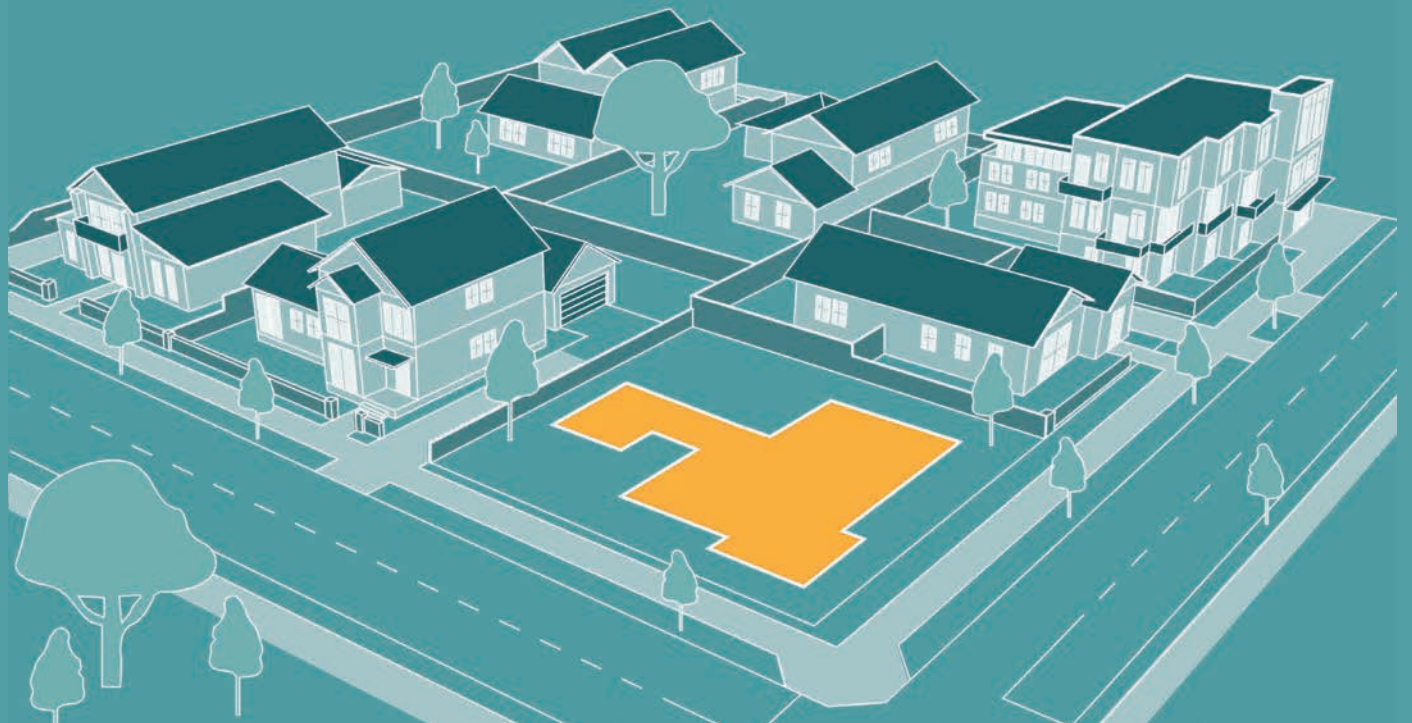
4.1 BUILDING PLACEMENT

The front of the building should face the street to contribute to public amenity, allowing residents to engage as well as contributing to the safety of the street environment. Simultaneously, the back of the building should be private and face onto the backs of neighbouring buildings. The spaces around the building should not be considered as leftover space, but have a clear definition and be carefully considered within the design process.

- Distinctive
- Connected
- Attractive
- Inclusive
- Sustainable

Chapter Objectives

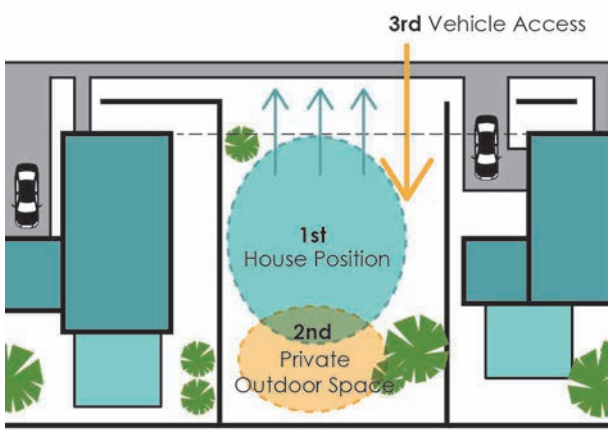
- The development is positioned to contribute positively to the streetscape character with building frontages and entries onto the street.
- The building is positioned to ensure a balance between engagement, activation and articulating the streetscape, while maintaining residential privacy.
- The development is positioned to create quality and functional private outdoor spaces and spaces around the building have a clear purpose or use.



RESIDENTIAL DESIGN GUIDELINES

Guideline 1

Within all residential development prioritise the placement and orientation of the buildings and private and communal open spaces over parking, vehicle manoeuvring areas and service areas.



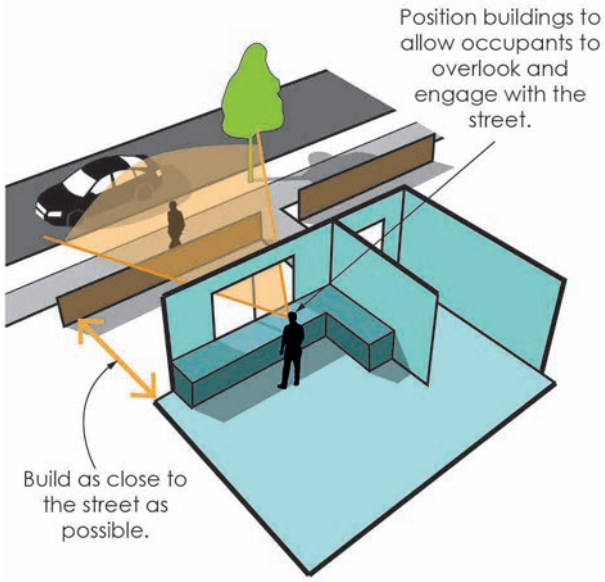
It is important to consider the position of the house first and the private outdoor space second to ensure public amenity and residential privacy. Vehicle access should be the last consideration.

Guideline 1 Prioritise the position of the house and private outdoor space over the vehicle access and carparking.

Guideline 2

Position residential buildings to create a positive interaction with adjacent streets and public open spaces by:

- Aligning to the street or public space to create a defined edge and maximise back -to-back separation.
- Allowing residents to overlook the street and public open spaces (this includes associated courtyards within the development).



Guideline 2 *(above right)*
These residential developments face, have access off, and overlook the street, as well as provide visual interest.

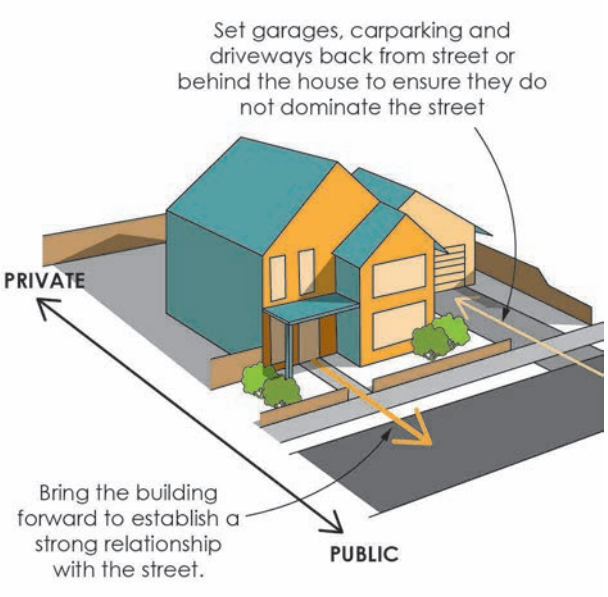
Guideline 2 *(below right)*
Positioning the building close to the street will create a positive relationship, a sense of enclosure and passive surveillance.

Guideline 3

Development, whether it is standalone or multi-unit, should follow the rule of 'public fronts' and 'private backs.'

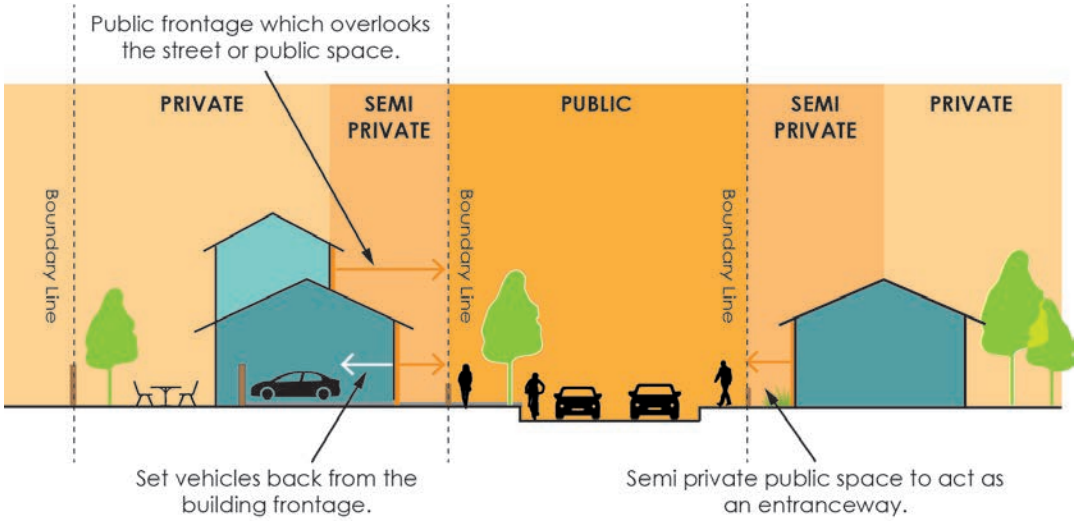
Standalone dwellings should be positioned so that the development has:

- A public front that faces onto the street and the fronts of buildings across the street.
- A semi-public space between the house and the street which has a clear boundary but maintains surveillance to the street and provides access to the house.
- A private outdoor space, behind or beside the dwelling and away from the street, which has access to appropriate levels of sunlight. Ensure it is not overlooked by neighbours and is accessed from a main living area.
- A driveway, laneway, parking access or garages behind or beside the dwelling, where possible, to ensure it does not impact on street amenity.
- Service areas, such as rubbish bins and storage, that are screened from public view.



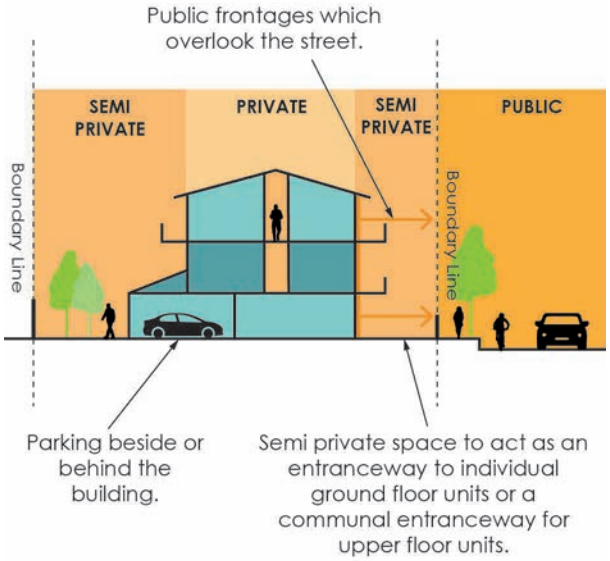
Guideline 3 *(left)*
All residential buildings should have a public front, semi-public frontyard, and private outdoor space.

Guideline 3 *(below)*
Fronting public space and buildings across the street will ensure a safe, active street while protecting resident privacy at the back of the building.

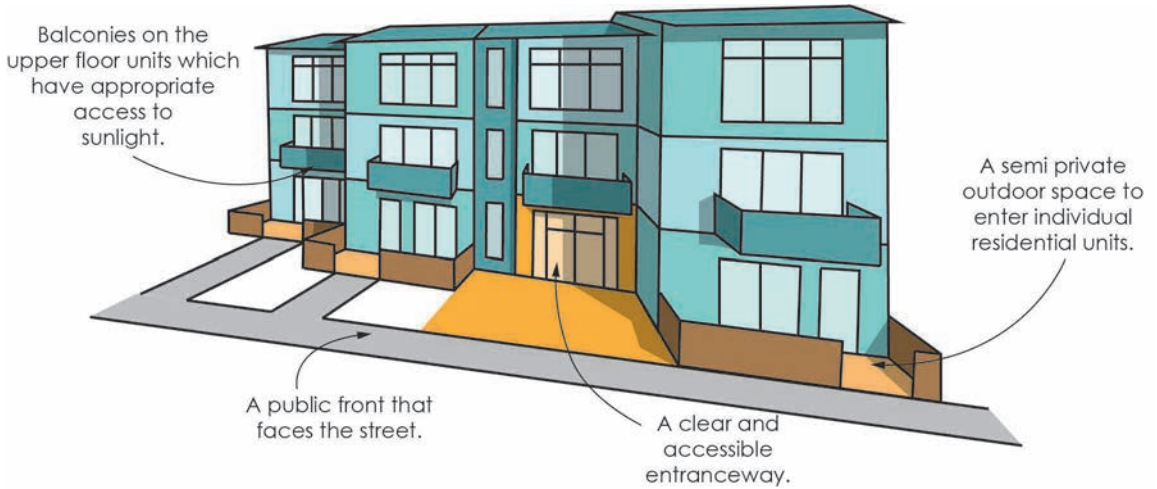


Multi-unit dwellings or buildings should be positioned so that the development has:

- A public front that faces onto the street and the fronts of buildings across the street.
- Clear access from the ground floor level to individual residential units and/or a communal lobby for upper floor residential units which is accessed from the street frontage and separate from any ground floor commercial premises.
- If individual residential units are accessed from the ground floor, a semi-public space between the building and the street which has a clear boundary but maintains surveillance and creates activation for the street.
- A private outdoor space behind or beside the dwelling (if at ground floor), and away from the street which has access to appropriate levels of sunlight. Ensure it is not overlooked by neighbours and is accessed from a main living area.
- Within upper floor units, a balcony which has access to appropriate levels of sunlight. Ensure it is not overlooked by neighbours and is accessed from a main living area.
- A driveway, laneway, parking access or garages behind or beside the dwelling, where possible, to ensure it does not impact on street amenity. Aim to make pedestrian and vehicle access to the street separate.
- Service areas, such as rubbish bins and storage, that are screened from public view and communal outdoor spaces, and easily accessible for rubbish trucks and other service vehicles.



Guideline 3 Multi-unit developments may also include a semi-private space to the rear which acts as communal space for residents.

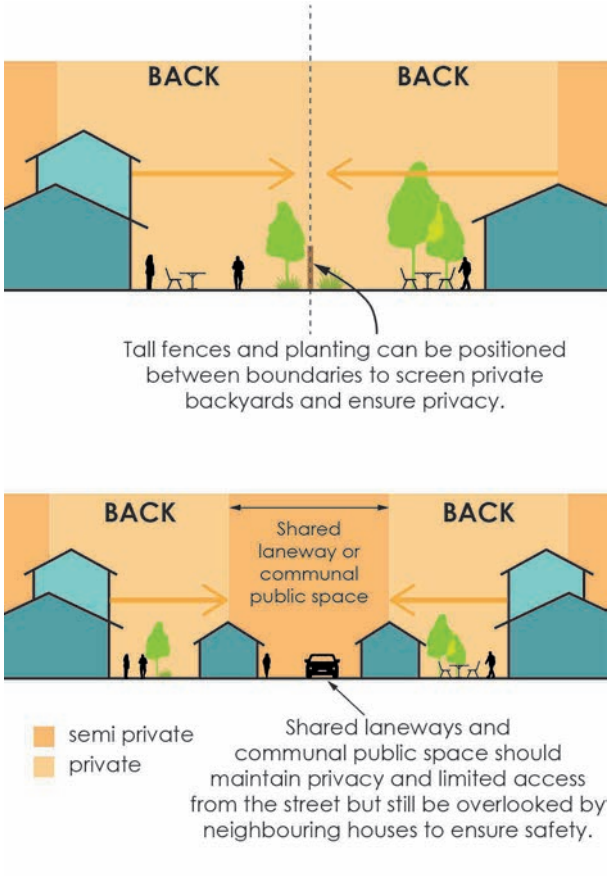


Guideline 3 The entranceway to multi-unit developments should be easy to find and accessible to everyone.

RESIDENTIAL DESIGN GUIDELINES

Guideline 4

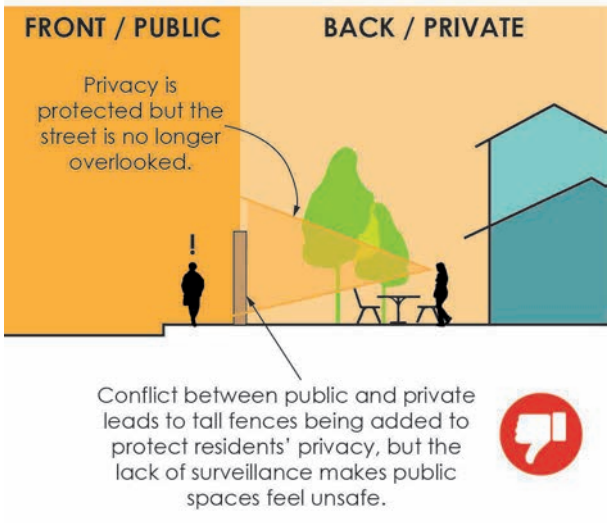
Orientate buildings so their back faces rear yards, communal shared space (such as courtyards or lane-ways) and, where possible, the backs of neighbouring properties.



Guideline 4 Orientate building backs to face rear yards, the backs of other buildings or communal space. This will protect residential privacy.

Guideline 5

Avoid exposing the back of a building onto public space or the 'front' of an adjacent building.



Guideline 5 Orienting buildings so fronts face backs creates conflict between on-street amenity and residential privacy.

Guideline 6

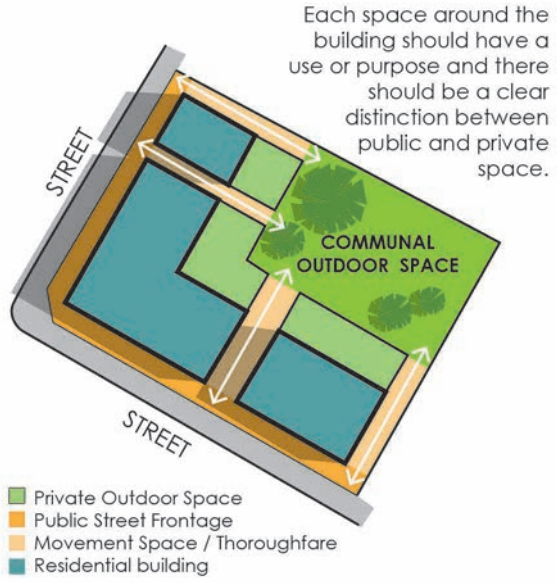
Avoid placing the main, private outdoor space along the building frontage. Placing a private outdoor space between the house and the street will encourage residents to build tall, solid fences to maintain privacy, therefore disturbing the amenity and passive surveillance of the street.

Guideline 6 Poor positioning of private outdoor spaces leads to tall fences along street boundaries which disrupts surveillance of the street.

Guideline 7

Multi-unit developments should be positioned to have a clear network of routes and outdoor spaces for pedestrians and vehicles. Consider:

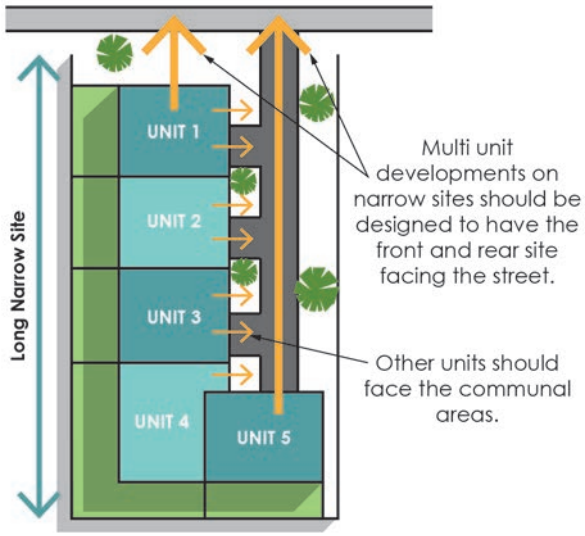
- Having separate access for pedestrians and vehicles.
- Creating positive and usable outdoor spaces which are well integrated into the development (don't think of it as leftover space). Each space should have a clear function and have a clear distinction between public, communal and private.
- Introducing new roads or lanes through the site to increase vehicle connectivity within larger sites.
- Creating pedestrian through-links to improve connectivity on and around the site. It should be made clear whether these links are public or private, and they should have clear entry controls, clear wayfinding and safety through being well-lit and overlooked by buildings.
- Providing both communal and private outdoor spaces for residents. Communal outdoor spaces should be sized relative to the number of residents and the amount of outdoor space they have access too.



Guideline 7 Spaces around the building should be accessible and useable and have a function within the development.

Guideline 8

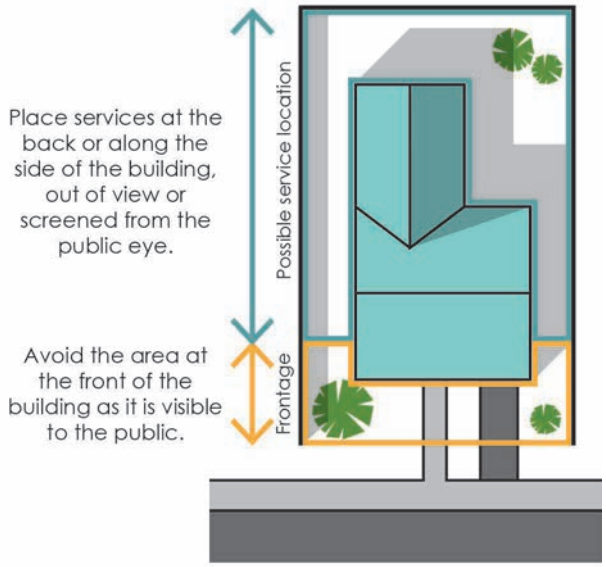
Multi-unit developments on long, narrow sites should be oriented so the front and rear units face the street. This provides surveillance towards both the street and access way and contributes to visual amenity.



Guideline 8 Multi-unit development which are on long narrow sites should aim to create as much passive surveillance to the street as possible.

Guideline 9

Locate services away from the building frontage or entrances. Provide designated areas that are visually contained but easily accessible for residents.



Guideline 9 Locate services at the back, or beside the building, where they are not visible from the public street front.

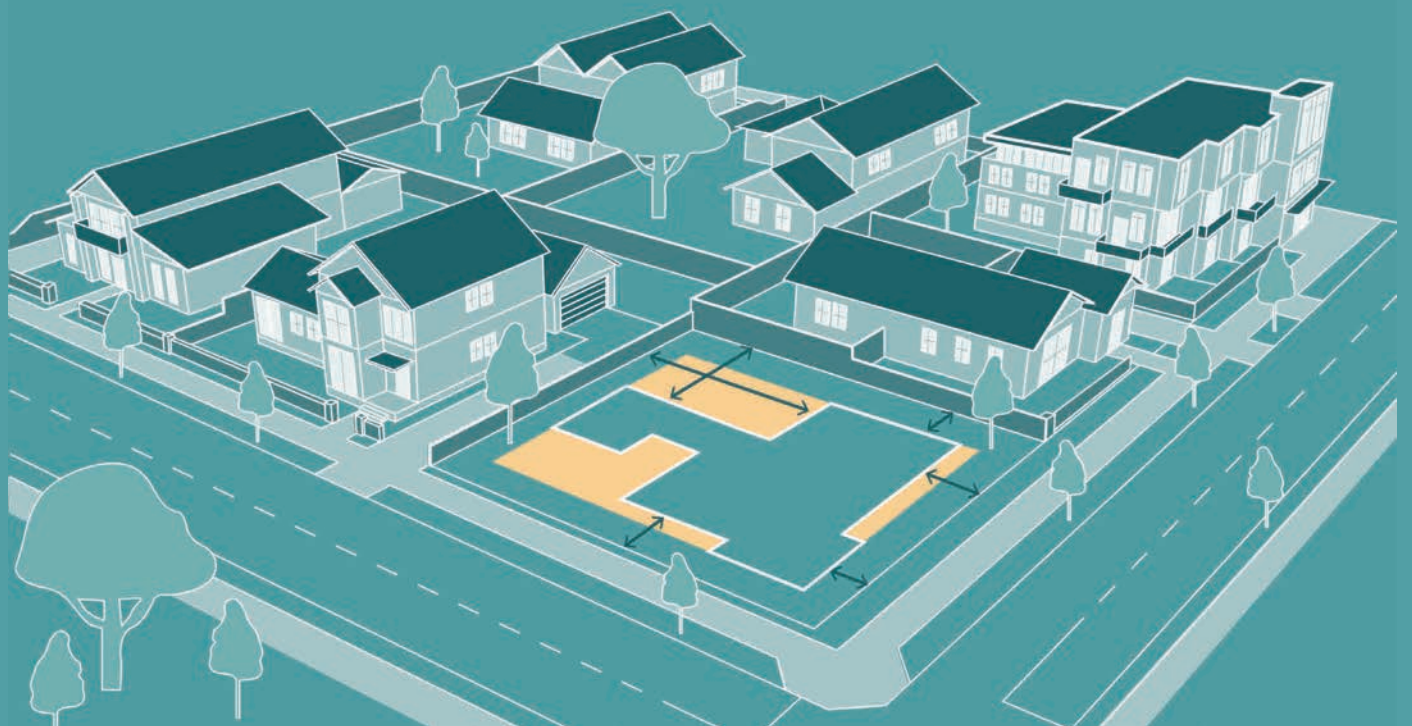
4.2 BUILDING SEPARATION

Building separation is key to achieving appropriate privacy and outlook. A home should be private and a place of retreat, but should also provide opportunity to look out onto surrounding environment and public spaces. Building separation can affect visual and acoustic privacy, extent and quality of outlook, admittance of sunlight and daylight, and shelter from the climate for both your development and neighbouring buildings.

Distinctive
Connected
Attractive
Inclusive
Sustainable

Chapter Objectives

- The position of the building enhances the street or public space and creates a sense of continuity and enclosure.
- The position of the building minimises the overshadowing and overlooking of neighbouring properties.
- The position of the building ensures good visual and acoustic privacy in relation to the street, public spaces and neighbouring properties.



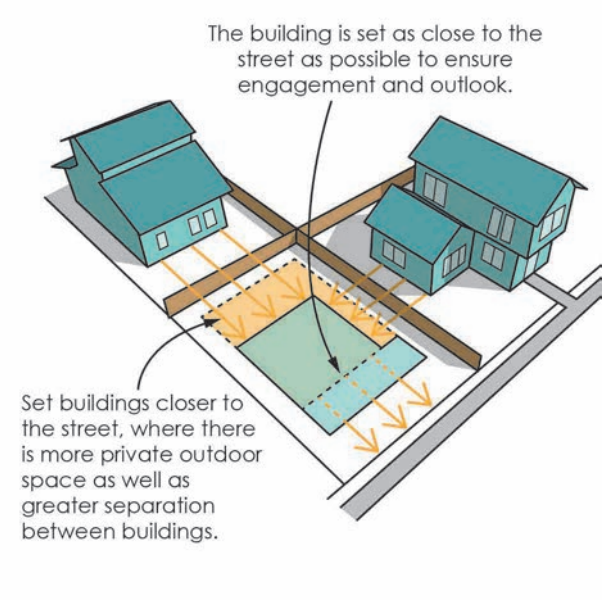
RESIDENTIAL DESIGN GUIDELINES

Guideline 1

Position the building to maximise separation between neighbouring buildings. Consider the location of neighbouring houses, their windows, and the location of private outdoor space.

Rules of Thumb

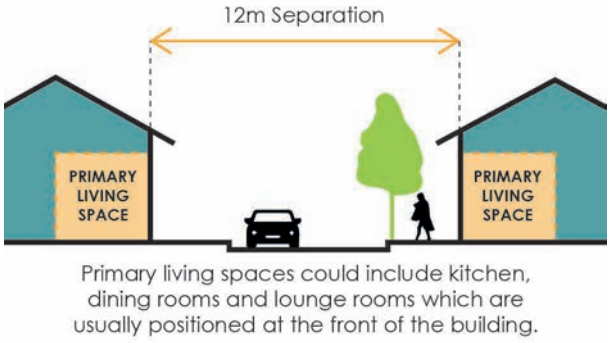
- Build as close to the street as possible to maximise back-to-back and side to side separation from other buildings.



Rule of thumb This building platform has been rearranged on site to be closer to the street and further away from neighbouring buildings.

Rules of Thumb

- The recommended minimum front-to-front separation between buildings across a street or lane is 12m.
- The recommended back-to-back separation between multi-storey dwellings is 18m. This is not necessary for single level developments where back-to-back privacy can be achieved through screening.
- Taller buildings require greater separation to achieve privacy between buildings on site and across boundaries.



Rule of thumb Diagramme showing the minimum front-to-front separation to ensure sufficient privacy, outlook and daylight access.

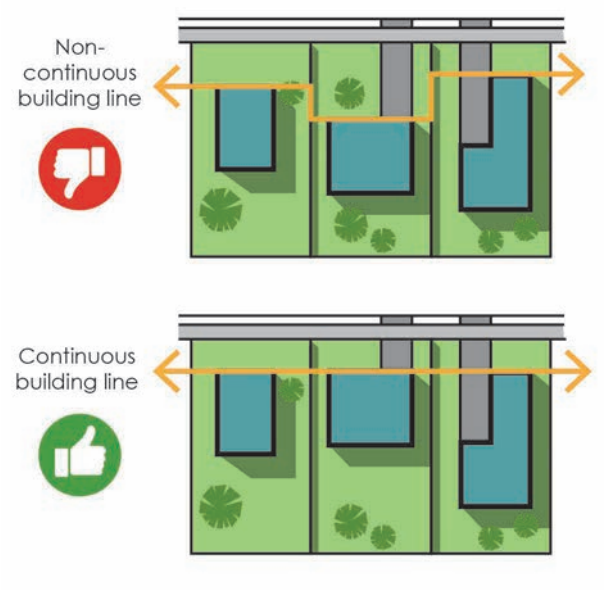
Rule 3 Diagramme showing the minimum separation between multi-storey buildings.

Rule of thumb Increase separation between buildings when one or both buildings are multi-storey.

RESIDENTIAL DESIGN GUIDELINES

Guideline 2

Position the building to respond to neighbouring buildings and create a continuous building line along the street edge.



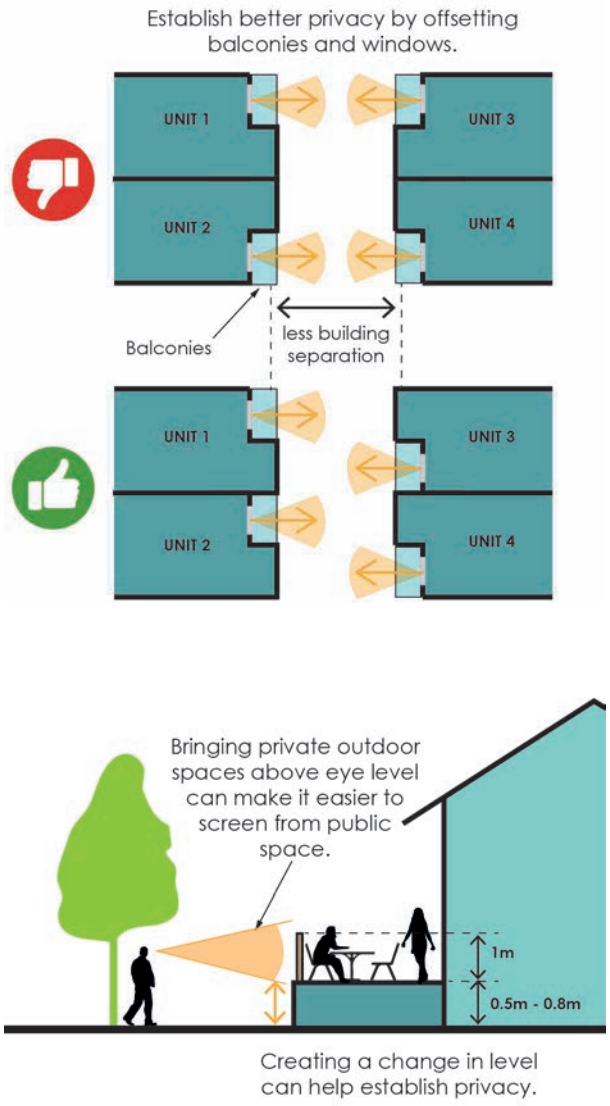
Guideline 2 Create a continuous building line and a sense of enclosure around the street.

Guideline 3

If decent building separation is not possible, consider:

- Screening private outdoor spaces (ground level and balconies).
- Separating, offsetting or screening windows, and private outdoor spaces between buildings.
- Orientating units (within multi-unit developments) to not directly face each other.
- Introducing a change in level.

Guideline 3 Within this multi unit development, the private outdoor spaces are screened from other outdoor spaces, both private and communal.



Guideline 3 The diagrammes above shows examples of how privacy can be created if separation is restricted.

4.3 BUILDING & SITE ACCESS

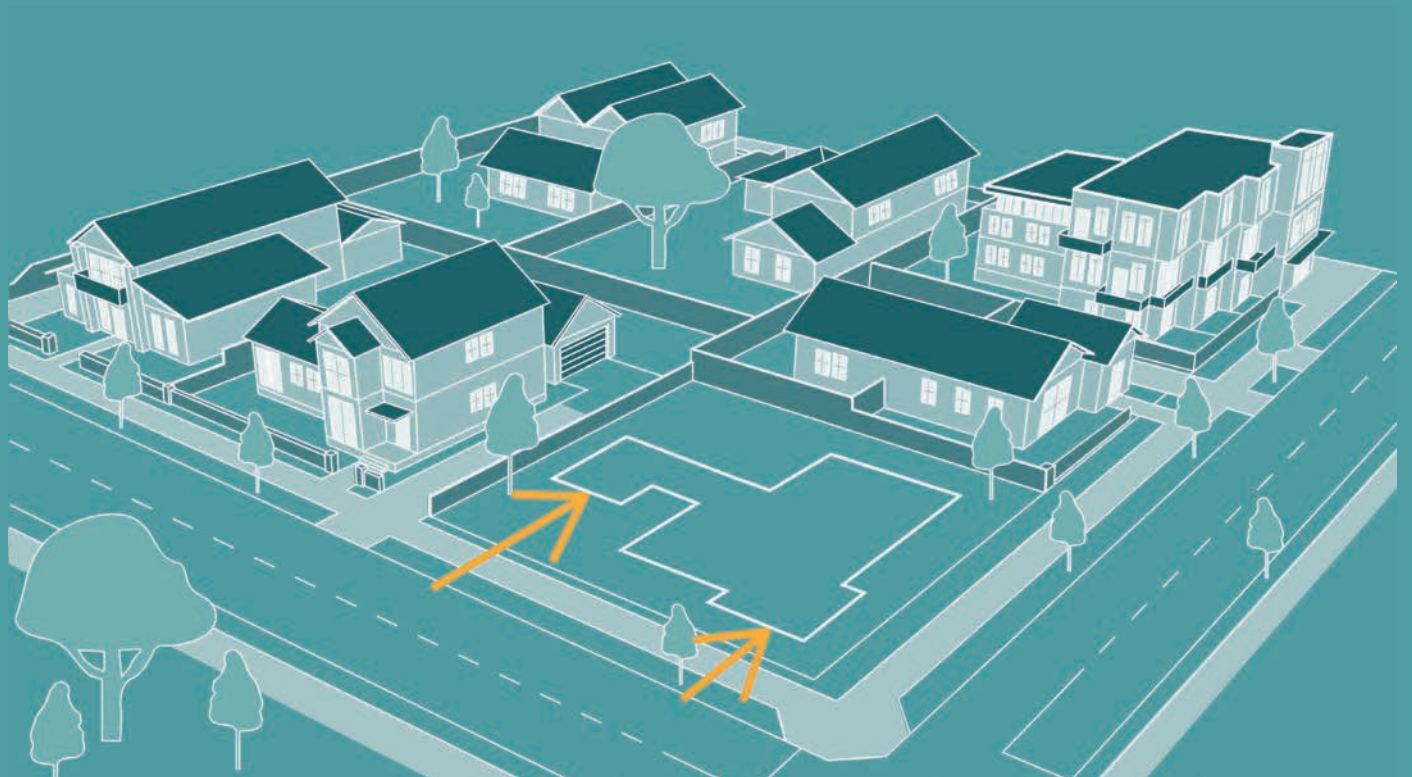
A focus should be given to the pedestrian access as it provides activity to the street and is often the first aspect of the building that people experience. It should be designed to be accessible for everyone, regardless of age and ability, as well as safe, pleasant and attractive.

Vehicle entries, garages and driveways should be secondary to the main pedestrian entrance.

- Distinctive
- Connected
- Attractive
- Inclusive
- Sustainable

Chapter Objectives

- All access points to the site are located and designed to integrate effectively with the street or movement network beyond the site.
- Pedestrian access, entrances and approaches to the development are designed to be safe, attractive and accessible for all, regardless of age or ability.



RESIDENTIAL DESIGN GUIDELINES

Guideline 1

Support all transport modes by considering vehicular access to carparking and garages, as well as pedestrian and cycle access for those entering the site on foot or bicycle.

Guideline 1 Consider accommodating all transport modes and supplying appropriate access and facilities for drivers, cyclists and pedestrians.

Guideline 2

Design pedestrian access to be direct, legible, clear and safe for all residents and visitors. Position pedestrian access at the front of the building and to be accessible off the main street.

In some circumstances designers make the mistake of positioning entrances hidden from view of the street, leaving pedestrians disorientated.

Guideline 2 This entranceway is at the front of the dwelling and is highlighted with the architectural design.

Rules of Thumb

- Footpaths should be a minimum of 1200mm wide. However, a wider footpath can achieve a higher quality outcome.
- Footpaths and building approaches should be level, firm, slip resistant and a maximum slope of 1:20 with a cross fall of not more than 1:50.

Rule of thumb When designing footpaths, both on and around the development, consider the slope and cross fall.

RESIDENTIAL DESIGN GUIDELINES

Guideline 3

Position the garage, driveway or carparking beside or behind the building. If positioned beside, aim to set it back from the main façade of the house. The house should be more visible from the street.

Guideline 3 The view of a house from the street where only the garage door is visible. The dwelling itself is separated from the garage and does not interact with the street.

Guideline 4

On sloping sites, aim to balance accessibility while minimising earthworks, retaining and ramps. Aim to design the building to have level access from the street and private open space so all people, regardless of age or ability, can access the building.

Guideline 4 Consider incorporating level access into the design to ensure it is accessible for all, regardless of age or ability.

Rules of Thumb

- Where there is a change in level consider incorporating an accessibility ramp to the front entrance or private outdoor space. Avoid steep ramps as they are unsafe.
- Another option is wide shallow stairs which can accommodate a person and a piece of equipment (such as a walking frame or wheelchair).

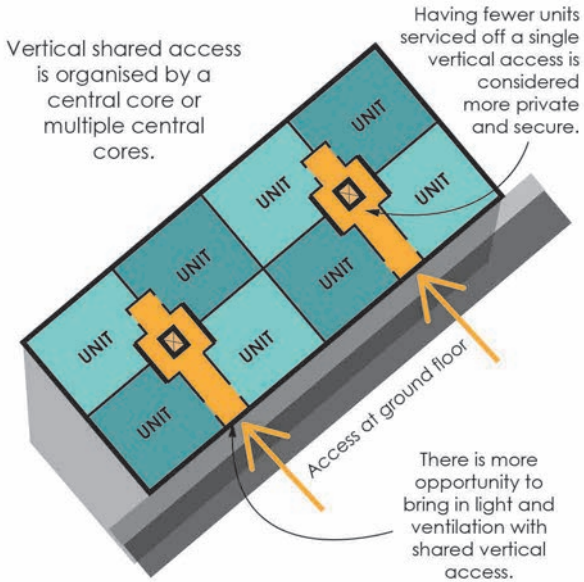
Guideline 4 This accessibility ramp is incorporated into the surrounding landscape design.

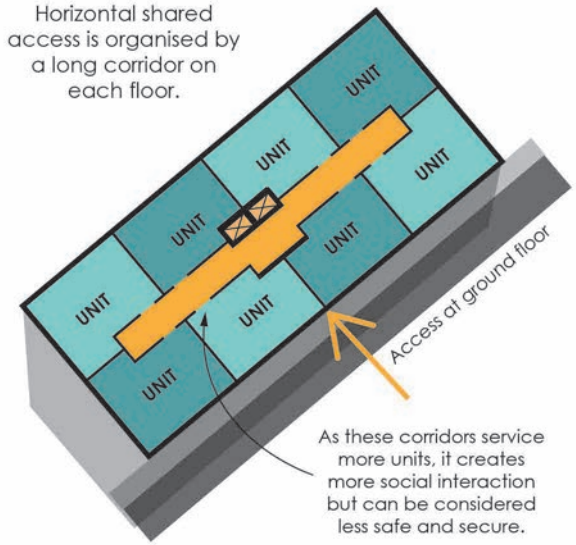
Guideline 5

Consider access to apartments and multi-unit developments, and which is best for your development.

- Individual access, or 'own front door' is when each unit or dwelling is accessed directly and individually from the street or courtyard.
- Vertical shared access is when a building is organised around a vertical core.
- Horizontal shared access is when a building is organised around a long horizontal corridor.

Guideline 5 *Adelaide Wharf - London 2007 AHMM.* These apartments have individual access at ground level.





Benefits

- Individual access enhances street activity through greater frequency of entrances and people coming and going. They are also more private and secure for individual residents.
- Vertical shared access allows more opportunity to bring light and ventilation into the building. It also allows for social interaction between neighbours but is still safe and secure because it is servicing fewer residents than a horizontal shared access would do.
- Horizontal shared access services all or most of the units on each floor. This allows for more opportunities for social interaction but can lead to residents feeling less safe and secure. Depending on the arrangement, there is also less opportunity for natural light and ventilation in these spaces.

Guideline 5 *(above left)*
An example of a vertical shared access arrangement around multiple central cores.

Guideline 5 *(below left)*
An example of a horizontal shared access arrangement around a long single corridor.

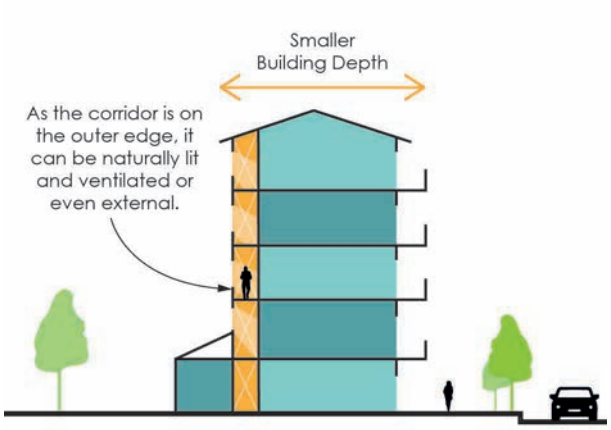
RESIDENTIAL DESIGN GUIDELINES

Guideline 6

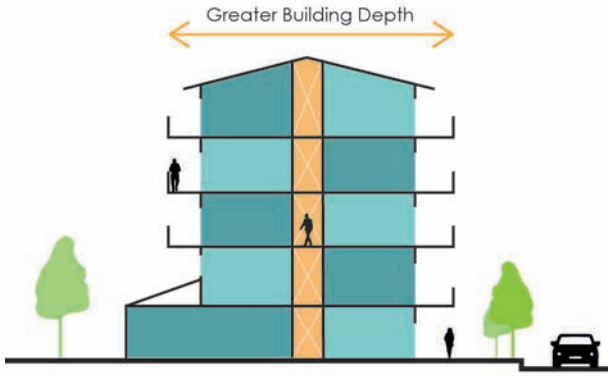
If looking at horizontal shared access within multi-unit or apartment buildings, consider whether the access is a single-loaded corridor or a double-loaded corridor.

- Single-loaded corridors are where the units are accessed from only one side of the corridor. They can be internal or external accessways. Benefits include:
  - Overall, the building depth is shallower than double-loaded, which is better for constrained sites.
  - The orientation of each unit is toward the preferred aspect or view.
  - Corridors can be naturally lit and ventilated.
  - If corridors are external they can allow for double aspect units (ventilation, outlook and natural light on both sides).

- Double-loaded corridors are where the units are accessed from both sides of the corridor. Benefits include:
  - Locates the corridor within the building.
  - There is a greater efficiency of circulation space.
  - Allows for a higher density of units.
  - Allows for more variety of unit types and sizes due to greater building depth.



Single-loaded corridors are when the corridor is located at the outer edge of the building and the units are accessed from one side of the corridor.



Double-loaded corridors are when the corridor is located within the building and the units are accessed from both sides of the corridor.

Rules of Thumb

- When designing double-loaded corridor access consider:
  - Windows at the end of the corridor to let in light and air, and allow views out. An atrium is also an option to let light into the centre of the building.
  - Extra space around lifts and circulation areas to form lobbies where people can meet.
  - Extra width and height in the corridor, particularly around doorways, to give a feeling of spaciousness.
- External corridor access can be unattractive and feel uncomfortable or unsafe (especially on taller buildings). It needs to be carefully designed to ensure it is integrated into the overall form of the building, does not look stuck on, has good weather protection and feels safe.

Guideline 6 *(above left)*
An example of a single-loaded internal corridor. Single loaded corridors can also be external.

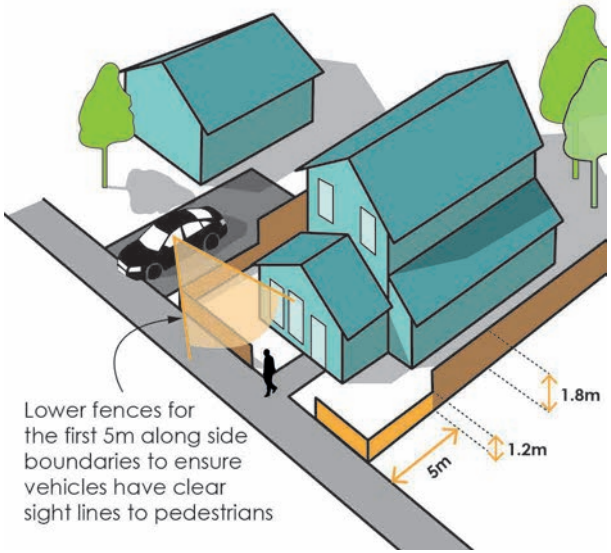
Guideline 6 *(below left)*
An example of a double-loaded internal corridor.

Guideline 7

Prioritise pedestrian safety and convenience by:

- Separating vehicle and pedestrian access, especially within multi-unit developments where vehicle and pedestrian movement is increased.
- Minimising the width and number of vehicle access points on site.
- Creating a clear, safe and accessible pathway for pedestrians between the street and front door which is separate from vehicle access.
- Ensuring clear sight lines at pedestrian and vehicle crossings (lower fences for at least 5m to allow this).
- Using traffic calming devices such as landscaping and surface treatments.
- Aiming to maintain a level thoroughfare for pedestrians at vehicle crossings.

Have a safe and separate access for pedestrians and vehicles.



Lower fences for the first 5m along side boundaries to ensure vehicles have clear sight lines to pedestrians

Guideline 7 *(above right)*
Separate pedestrian access from vehicle access to minimise conflict between the two and highlight the building entranceway.

Guideline 7 *(below right)*
Maintain view shafts between the vehicle access and pedestrian footpath. Lower fences for 5m from the front boundary to maintain sight lines.

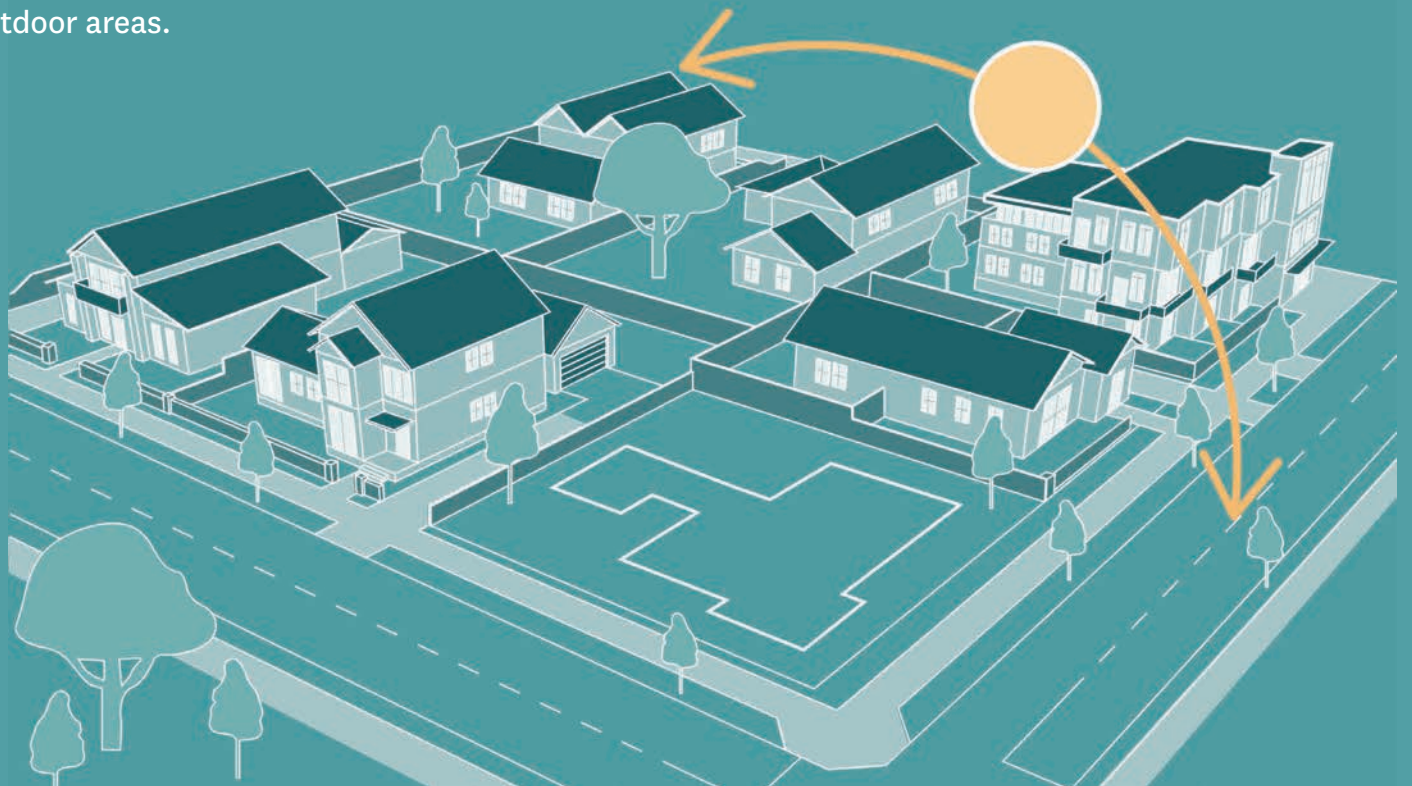
4.4 OUTLOOK & NATURAL LIGHT

Positioning buildings to maximise natural light and outlook contributes to a healthier, warmer and more enjoyable environment, as well as keeping occupants in touch with their surroundings, the weather and the rhythm of the day. These are important when it comes to residential amenity, both in terms of dwelling occupants and neighbouring buildings. It is also an important consideration within medium density developments due to closer proximity of buildings.

- Distinctive
- Connected
- Attractive
- Inclusive
- Sustainable

Chapter Objectives

- The building is oriented to take advantage of sunlight and daylight within certain spaces and to create a balance between maximising winter sun and providing shade for summer sun.
- The building is oriented to take advantage of significant views and provide opportunities for passive surveillance.
- The building is positioned to ensure daylight in all habitable rooms, and appropriate sunlight to private outdoor areas.

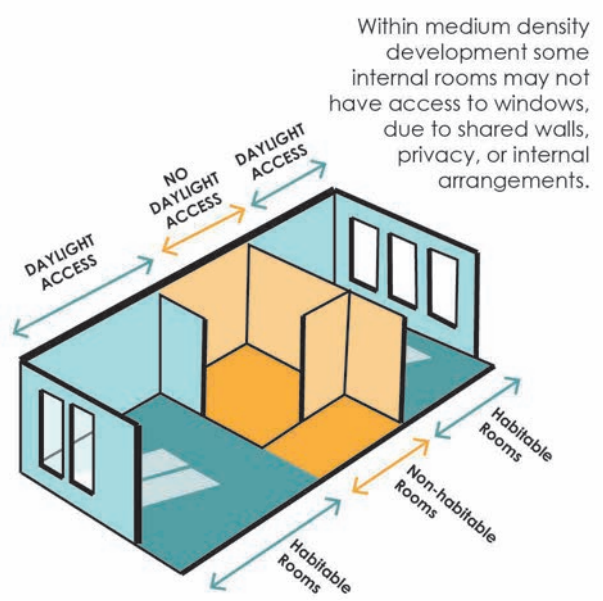


RESIDENTIAL DESIGN GUIDELINES

Guideline 1

Aim to position buildings so all habitable rooms within the development (spaces where residents spend the majority of their time) have access to daylight.

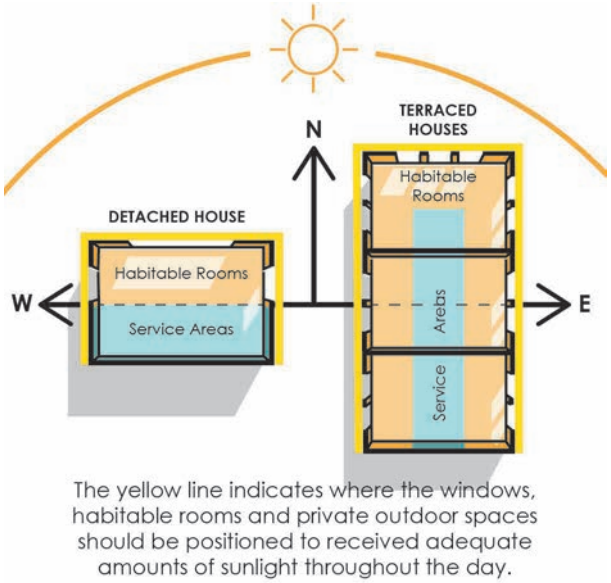
Habitable rooms include bedrooms, kitchens, living rooms, lounges and dining rooms. Non-habitable rooms include bathrooms, laundry, garages, stairwells and hallways.



Guideline 1 Diagramme showing how habitable rooms should be prioritised where access to daylight is available.

Guideline 2

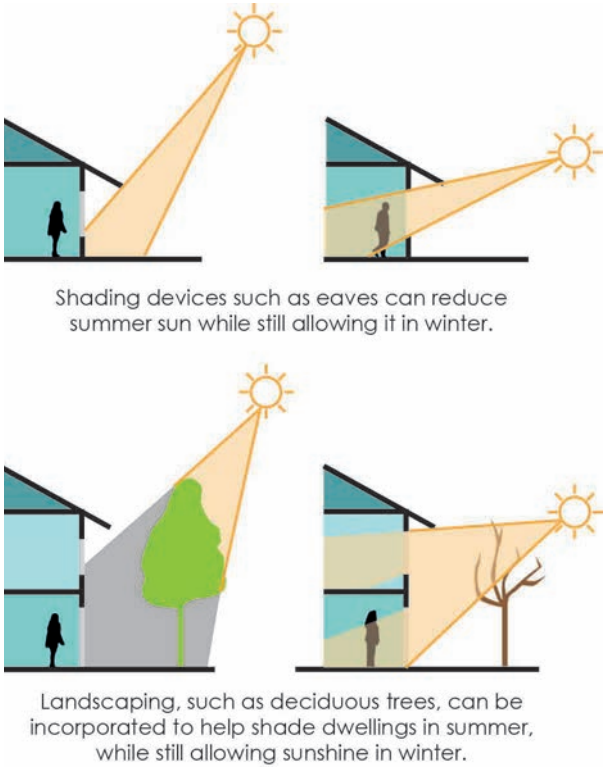
Where possible, orientate houses along an east-west axis. This will maximise north facing walls and access to daylight and sunlight.



Guideline 2 Orienting houses along an east-west axis will help ensure they maximise daylight and sunlight.

Guideline 3

Consider using shading devices such as eaves, pergolas, louvres, screens and planting to optimise summer shading while enabling winter sun.



Guideline 3 Consider shading devices within your residential development.

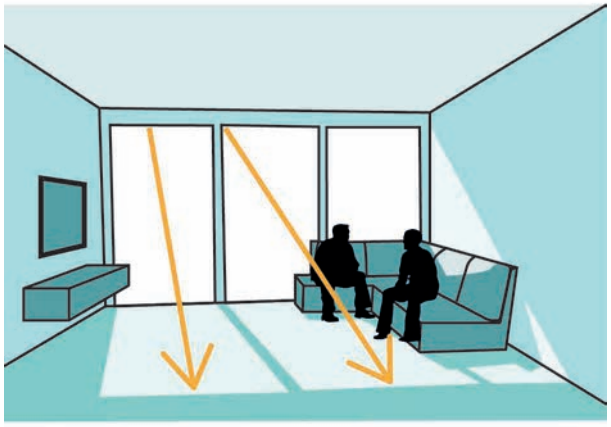
RESIDENTIAL DESIGN GUIDELINES

Guideline 4

Direct sunlight should be focused in principal living areas where everyone can benefit (i.e. shared habitable rooms such as living rooms, kitchens, dining rooms and private outdoor spaces).

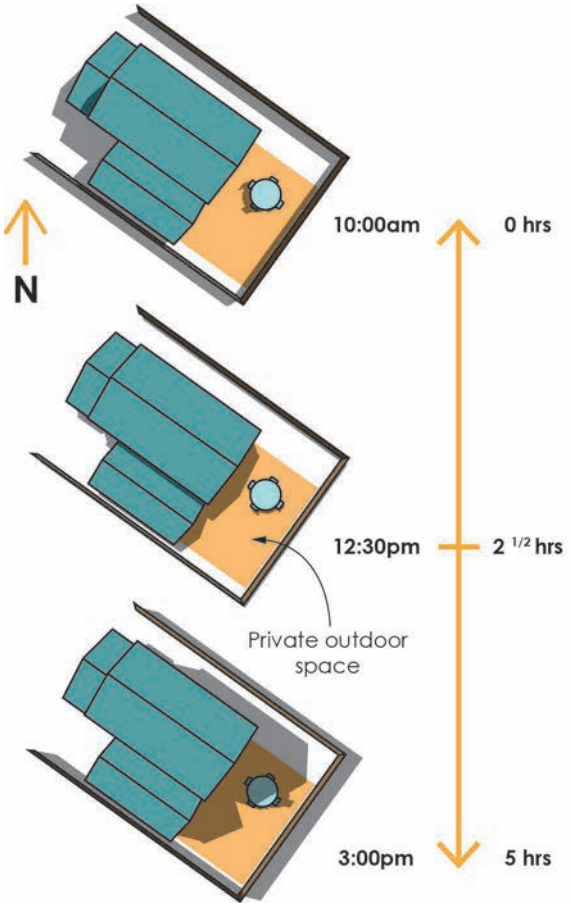
Rules of Thumb

- At least 70% of shared habitable rooms and private open spaces in a development should receive a minimum of three hours of direct sunlight during the winter solstice.
- Primary private outdoor spaces within a development should receive at least five hours of sunlight across 50% of the space during the winter solstice.



Direct sunlight should be focused in shared habitable rooms where everyone can benefit from it.

Guideline 4 Prioritise access to direct sunlight in shared habitable spaces.



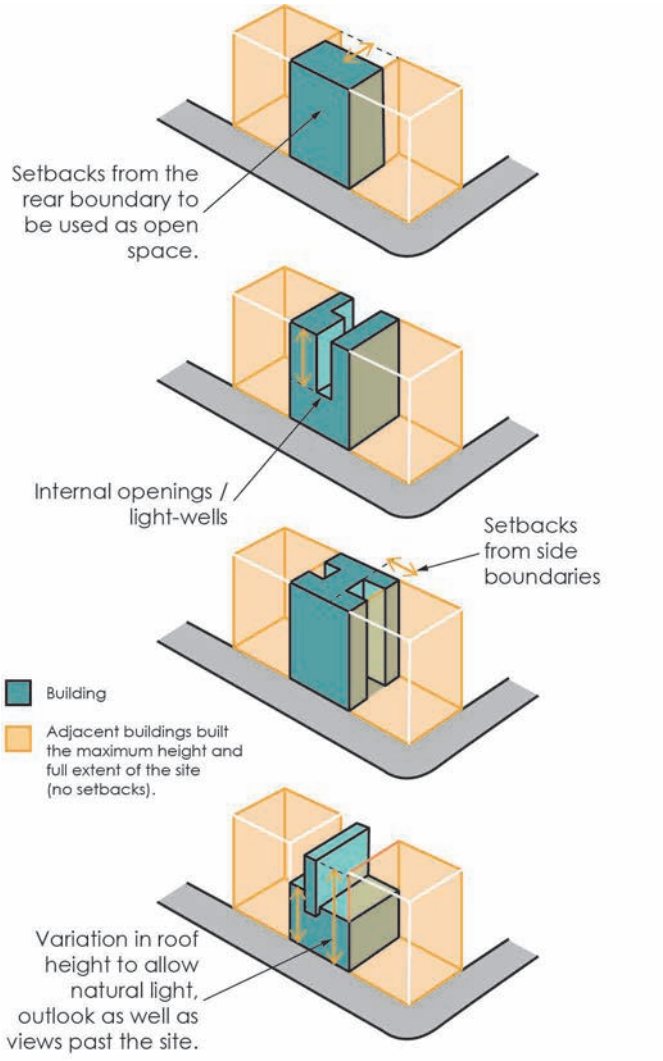
Rule of thumb *(above)*
70% of private outdoor areas, balconies and living areas within a house should receive a combined minimum of three hours of direct sunlight per day.

Rule of thumb *(left)*
Private outdoor spaces should have access to direct sunlight throughout the year.

Guideline 5

Consider creating opportunities for natural light and outlook within large and tall residential and mixed-use buildings, including when adjacent sites are built to the maximum standard. This can be achieved with:

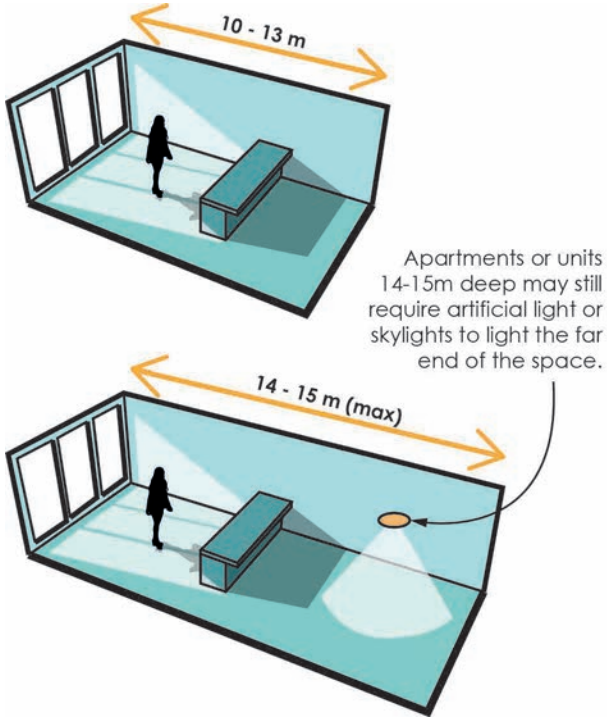
- Internal open air courtyards, or open spaces at the rear of the site.
- Setbacks from one or more side boundaries within the upper floors.
- Skylights, atria or lightwells (as well as external windows).
- Separation between buildings (neighbouring or ones on the same site) to allow views through gaps in the built form.
- Variation in roof height, which will provide variety and interest and also allow views through.



Guideline 5 Diagramme showing examples of how you can achieve light and outlook within particularly large or tall buildings.

Guideline 6

A building with glazing along one façade, is recommended to be a maximum 15m deep to allow natural light into internal spaces. Buildings 10–13m deep can be naturally lit as well as ventilated. Buildings 14–15m deep may still require a skylight or artificial lighting and ventilation.



Guideline 6 Apartments or units with windows along one facade should be no more than 15m deep in order to be lit naturally.

RESIDENTIAL DESIGN GUIDELINES

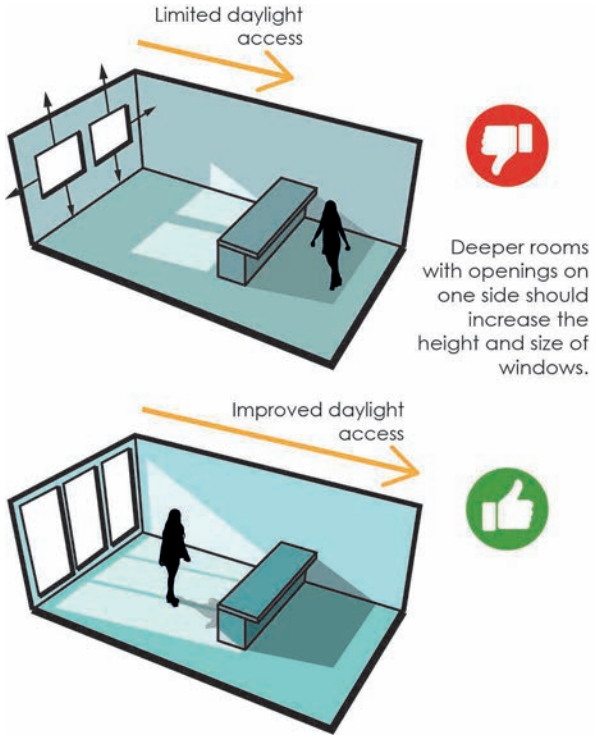
Guideline 7

Optimise the number of habitable rooms with daylight access by using skylights, clerestory windows and fanlights.

Guideline 7 Clerestory windows and skylights can bring daylight into a space where traditional windows are not possible.

Guideline 8

Consider increasing the height and size of windows to improve daylight access to rear rooms. Increasing ceiling heights will also help improve daylight access to rear rooms.



Guideline 8 Within multi-unit developments where windows are not a possibility on all walls, larger windows are an option to increase daylight access.

Guideline 9

Consider the size, positioning and orientation of window openings to capture views. Larger windows, curtain walls and balconies capture key views as well as maximising opportunities for surveillance.

Rules of Thumb

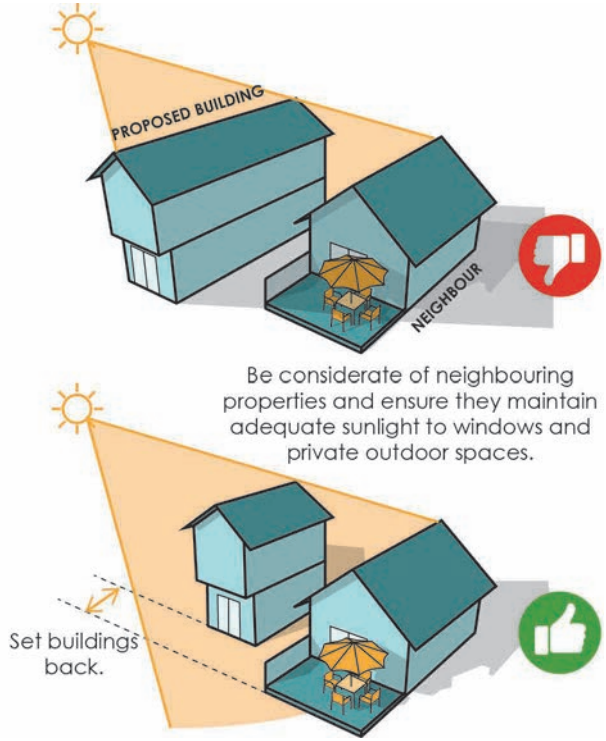
- Living areas should have a maximum window sill height of 800 -1000mm to maintain views out when seated.

Guideline 9 A house with large curtain walls to help capture significant views of the Wellington waterfront.

RESIDENTIAL DESIGN GUIDELINES

Guideline 10

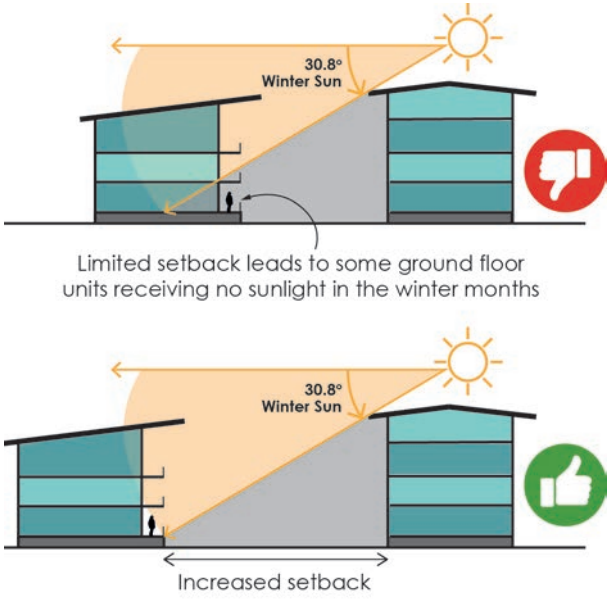
Consider neighbouring buildings or future neighbouring development to avoid impinging on their solar amenity and outlook with your building's position and or height.



Guideline 10 Appropriate building separation at setback can help lead to not impinging on neighbour's access to sunlight.

Guideline 11

Buildings within multi-unit developments should be setback enough to allow sunlight to all ground floor units and outdoor spaces during the winter solstice (21/22 June where the sun angle is 30.8°).



Guideline 11 Appropriate building separation at setback can help lead to not impinging on neighbour's access to sunlight.

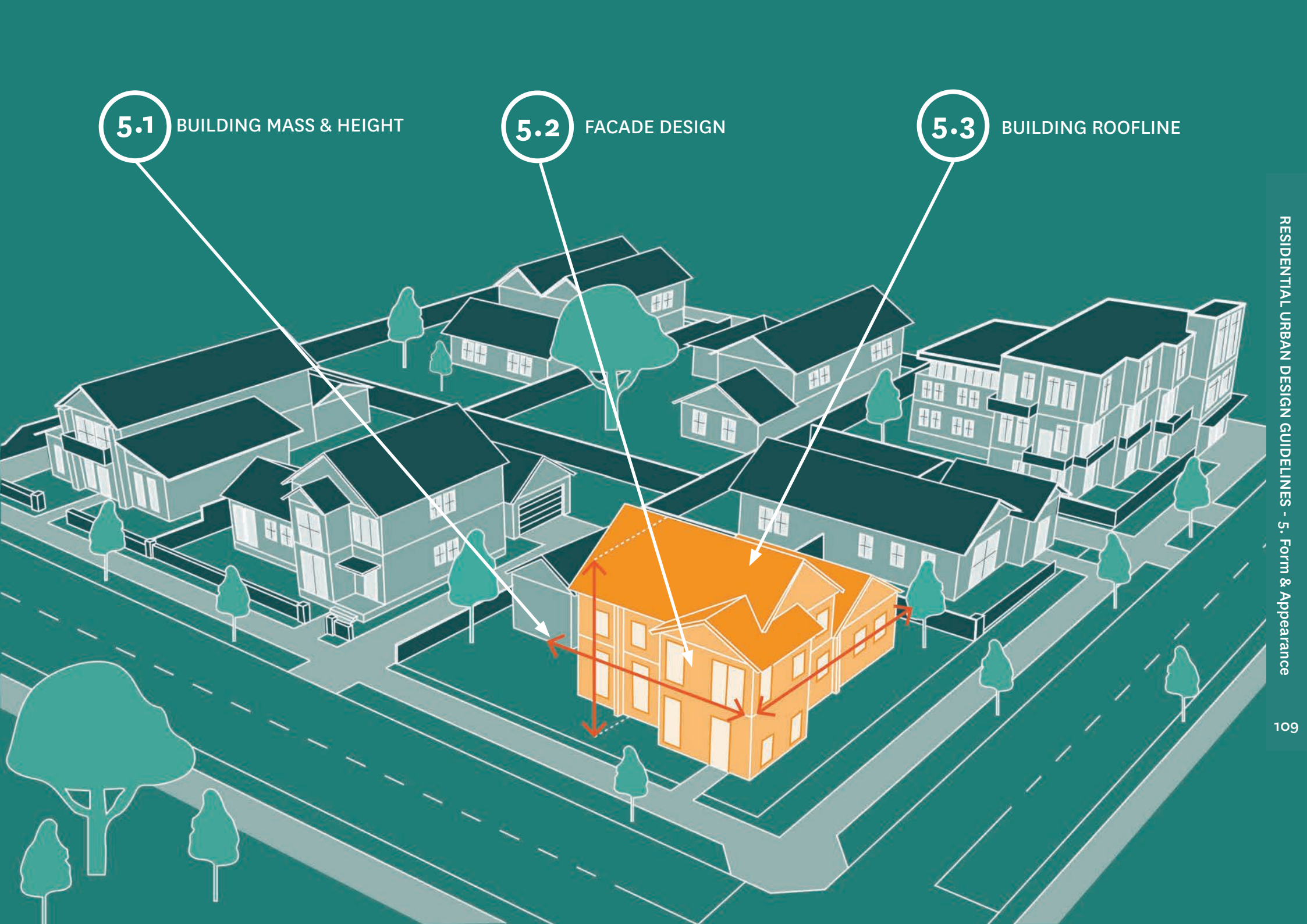
Guideline 12

Where a residential building contains south-facing apartments, consider designing sunny communal outdoor spaces to provide these residents with access to direct sunlight somewhere on the site.

Guideline 12 All residents should have access to sunny areas on site. If not within their individual apartments, through communal outdoor areas.

5 FORM & APPEARANCE

The building form and appearance are important when creating both an attractive and visually interesting development. Considering the building form and appearance also helps the development work with and fit seamlessly into its surroundings. The important aspects of building form and appearance are mass and height, facade articulation and the design of the building roofline.


5.1 BUILDING MASS & HEIGHT
5.2 FACADE DESIGN
5.3 BUILDING ROOFLINE

5.1 BUILDING MASS & HEIGHT

The building mass, height and depth is important to the overall form and composition of the building and how well it is integrated into its environment. While a new development should be consistent with the spatial and dimensional characteristics of its surroundings, it should avoid replicating the visual character and façade design. Good integration is not about imitation, but rather maintaining the scale, proportions and rhythm.

- Distinctive
- Connected
- Attractive
- Inclusive
- Sustainable

Chapter Objectives

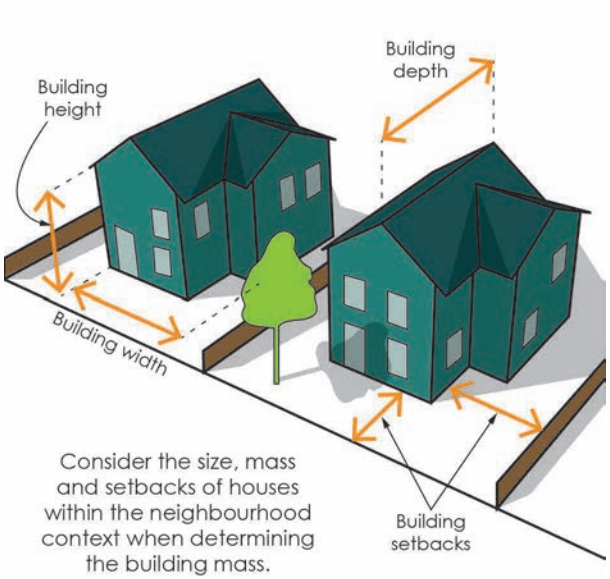
- The building height and mass responds to the form mass and scale of the surrounding environment without replicating the visual characteristics.
- The building mass is oriented towards the street and public space to create a sense of enclosure and a positive street edge.
- Large buildings are designed to reduce the bulk, height and scale and are well integrated into the surrounding environment.

RESIDENTIAL DESIGN GUIDELINES

Guideline 1

When determining the building mass, consider:

- The site size, shape and topography.
- The mass, character and setback of neighbouring buildings.
- Orientating the principle mass towards the adjacent street, public space or key views.



Consider the size, mass and setbacks of houses within the neighbourhood context when determining the building mass.

Guideline 1 *(above right)*
Consider the overall dimensions of the house (height, width and depth), as well as the frontage and side yard setbacks as a means of relating to local character.

Guideline 1 *(below right)*
This house is divided into a series of forms but the principle mass is most prominent and faces the street (e.g. façade elements are angled towards the street).

Guideline 2

When determining the building height, consider:

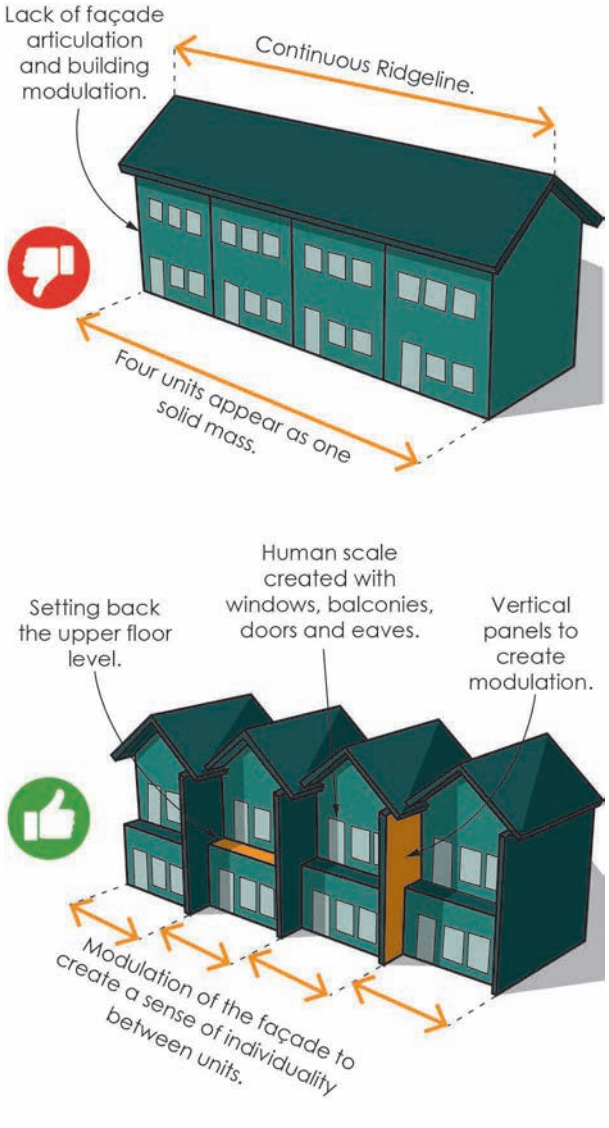
- The maximum height as permitted in the district plan.
- Your building's proportions (i.e. the width and depth).
- The height of neighbouring buildings to maintain a reasonably consistent skyline.
- Significant views to the street and/or the surrounding environment.
- The effect of overshadowing, and impinging on privacy to adjacent public space and neighbouring properties.
- The site conditions (i.e. wind and sunlight).

RESIDENTIAL DESIGN GUIDELINES

Guideline 3

Consider reducing the bulk and size of larger buildings by:

- Limiting continuous ridgelines and long blank walls which face the street. Breaking buildings up into multiple, smaller, vertical blocks.
- Creating a transition in height and scale to help integrate the development into the neighbourhood.
- Creating three distinct horizontal elements within the building (i.e. the base, middle and top).
- Setting the upper level back from the street.
- Providing variation and/or modulation to the building elevation.
- Providing human scale through detailing such as balconies, windows, shading devices, porches, entryways etc.
- Using landscaping to soften the form of the building.
- Using different materials, colour and texture.



Guideline 3 *(left)*
Diagram showing how the mass of four terraced housing units can be broken down and modulated to create visual interest.

Guideline 3 *(below)*
This house uses timber decking to help visually break it up into horizontal sections (base, upper floor, roof), as well as to add texture and visual interest.

Guideline 4

Corner sites, gateways and areas alongside open space present the best opportunity as locations for taller buildings to create a landmark.

Guideline 4 The taller, two storey house is positioned on the corner of these two streets to create a landmark and define the entrance of the street.

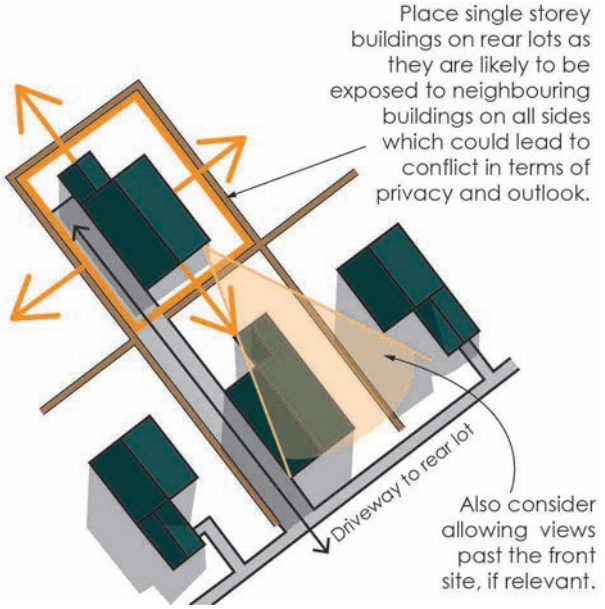
Guideline 5

Consider using massing to emphasise certain parts of the building such as entranceways and corners (see 5.2 façade design).

Guideline 5 This building uses different façade colours and massing to emphasise the corner and make it stand out on the building.

Guideline 6

It is better to place single storey buildings on rear lots to reduce overlooking neighbouring development.



Guideline 6 In cases where designers are developing on rear lots, consider the height of the building to maintain privacy to neighbouring buildings.

RESIDENTIAL DESIGN GUIDELINES

Guideline 7

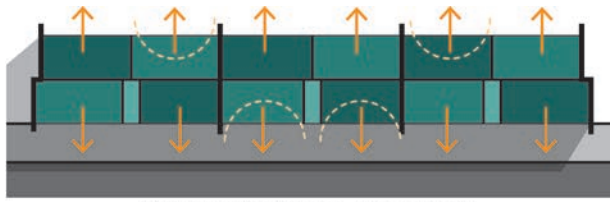
Within multi-unit developments, consider the appropriate building depth based on typology (single aspect or dual aspect) to ensure appropriate outlook, views, ventilation and daylighting.

- Single aspect buildings are closed on three sides and have openable windows on one side of the development. They are appropriate on hillside development or if there is an undesirable site condition on one side.
- Dual aspect buildings are designed to have openable windows on two or more walls. They have the advantage of being easier to ventilate, allowing more natural light and choice of views, and creating more flexible and attractive internal space.

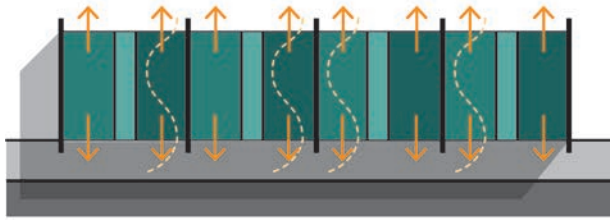
Rules of Thumb

- Single aspect units and spaces should be a maximum depth of 8m and should avoid facing south. This also applies to the back wall of primary living spaces (i.e. kitchen, living, dining) which should be no more than 8m from the window.

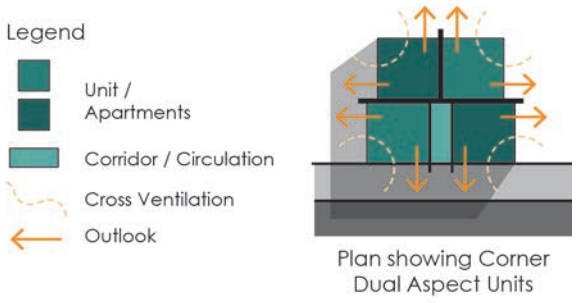
- Double aspect units and spaces which are over 15m deep should be at least 4m wide to allow more glazing and avoid deep, narrow apartments.



Plan showing Single Aspect Units

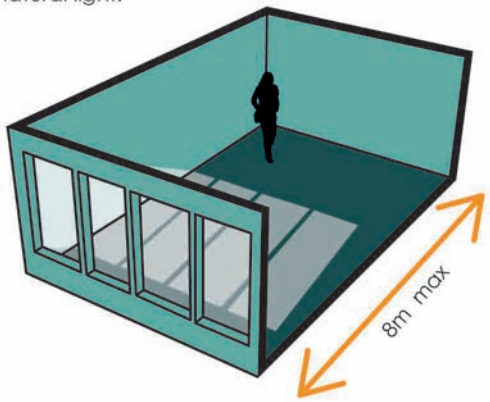


Plan showing Dual Aspect Units



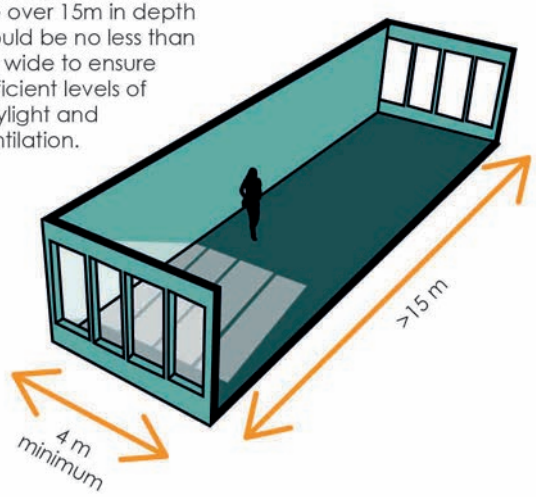
Guideline 7 Diagrammes showing (in plan) single aspect units, dual aspect units, and corner dual aspect units, and how each typology works in terms of outlook and ventilation.

Single aspect units (openable windows on one side) should aim to be no more then 8m deep to ensure appropriate levels of ventilation, outlook and natural light.



Rule of thumb Single aspect units / spaces and back walls of primary living spaces should be no more then 8m deep to maintain appropriate amenity levels.

Dual aspect units that are over 15m in depth should be no less than 4m wide to ensure sufficient levels of daylight and ventilation.



Rule of thumb Dual aspect units / spaces should be no greater than 15m to allow glazing and avoid creating an unusable, long, narrow space.

5.2 FACADE DESIGN

Within the façade design it is important to consider variety and human scale, which is the scale that feels comfortable to us as we naturally measure things against ourselves. While a building's size, mass and height is influential when it comes to integrating positively into the neighbourhood context, human scale and façade articulation influence how the building fits into the street environment and how we as humans experience and actively engage with a building.

- Distinctive
- Connected
- Attractive
- Inclusive
- Sustainable

Chapter Objectives

- The façade design creates engagement between public and private spaces and has an appropriate human scale which positively contributes to public amenity.
- The building is designed to express different units within a development.

RESIDENTIAL DESIGN GUIDELINES

Guideline 1

Design walls and façades with sufficient articulation, rhythm and detail to ensure the dwelling or multi-unit development engages visually with the street, public spaces and pedestrians passing by and creates more distinctive and legible environments.

Guideline 1 *(above right)*
Houses within a subdivision can sometimes be designed with the a repeated model, creating streets with no visual interest or legibility.

Guideline 1 *(below right)*
These terraced houses maintain the same proportions, but have variation in colours, materials and openings, giving each building a distinctive appearance.

Guideline 2

The façade design should respond to the positive characteristics of buildings within the local context. Within the design of neighbouring buildings, consider:

- The roof shape and overhang, verandahs, balconies and porches.
- Windows and doors.
- Façade modulation.
- Façade materials.

Guideline 2 *Moore Park Residence, Toronto, Drew Mandel Architects.* This modern infill house was inspired by the forms and characteristics of the 1920's neighbouring houses.

RESIDENTIAL DESIGN GUIDELINES

Guideline 3

Design all parts of the building together to create a clear relationship and character. This includes the walls, roof, windows, entranceways, verandahs and patios.

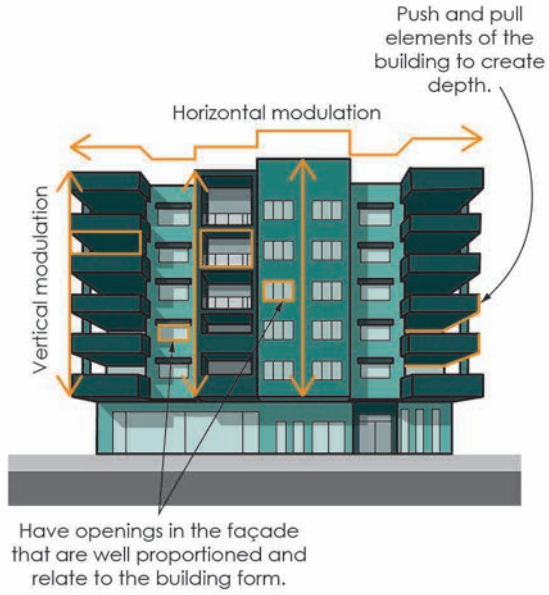
Guideline 3 The design elements of these terrace houses have a clear relationship with the materials and articulation of the windows.

Guideline 4

The building façade should:

- Avoid being overly repetitive, especially within multi-unit developments.
- Create vertical and horizontal modulation to break up the scale and bulk of the façade.
- Create depth by projecting and recessing (push and pull) elements and expressing building elements such as entries and windows.
- Have well defined building entries.
- Have well-proportioned windows and openings in the façade that relate to the shapes and forms of the building.
- Use colour and material changes to highlight details and building forms.

Guideline 4 *(above right)*
An example of a housing development which is overly repetitive to the point where it becomes monotonous.



Guideline 4 *(below right)*
Create modulation, depth and openings in the façade to create visual interest and human scale.

RESIDENTIAL DESIGN GUIDELINES

Guideline 5

Provide articulation to the building corner by:

- Locating prominent entranceways at the apex of the corner.
- Using recesses or projections in the building form to express the corner.
- Adding architectural features which wrap around the building at the corner, such as balconies, windows or continuous rooflines.
- Setting the corner back to provide areas of public amenity space.

Guideline 5 This corner apartment addresses both adjacent streets as well as containing a prominent entranceway at the apex.

Guideline 6

Apartments, terrace housing and units within multi-unit developments should be expressed as separate entities to provide a sense of individuality. Consider differentiating units by:

- Colour and material changes.
- Size and scale.
- Roofline.
- Variation in the alignment and orientation of units.
- Architectural detailing (i.e. windows, entranceways, verandahs and balconies).

Rules of Thumb

- Balconies and the design of the balustrade can be used to articulate and add visual interest to the overall building façade.

Guideline 6 *(above right)*
Using colour differentiation and variation between units to create separation.

Guideline 6 *(below right)*
The glass panels on the building façade create differentiation between different units.

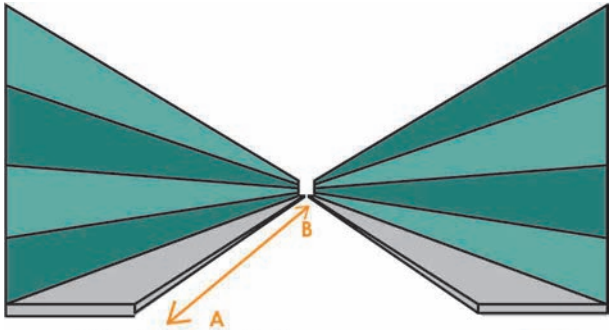
RESIDENTIAL DESIGN GUIDELINES

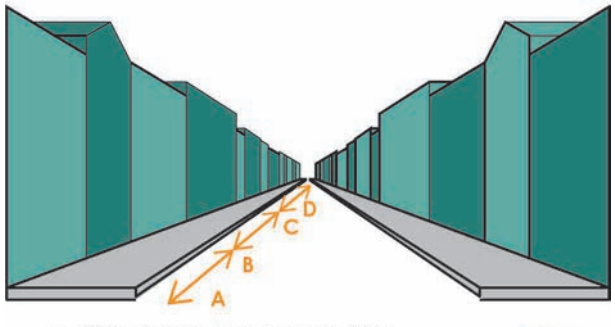
Guideline 7

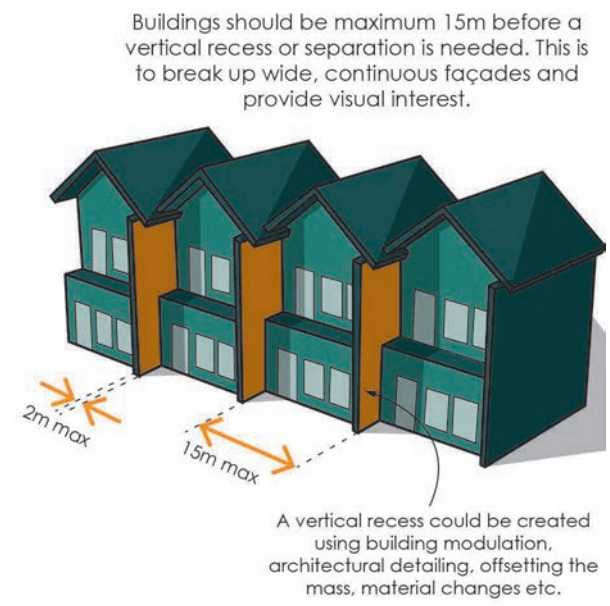
Avoid creating long blank walls, particularly those visible from public spaces. Façades (particularly if there is not setback) should be designed to a human scale.

Rules of Thumb

- Buildings with a strong horizontal emphasis tend to disrupt the visual rhythm of streets while vertical elements break up views and make objects appear closer, creating visual interest.
- The maximum length of a building façade is 15 metres before a vertical recess of at least two metres or separation of buildings is needed.







Rule of thumb *(above)*
Aim to design buildings to have rhythm and break up vertically to create visual interest and make objects appear closer.

Rule of thumb *(below left)*
A good rule of thumb is to have a vertical recess of 15m maximum to break up the bulk of the building facade.

RESIDENTIAL DESIGN GUIDELINES

Guideline 8

Consider integrating building services, such as drainage pipes, grilles, screens, louvres and car park entry doors into the façade design.

Guideline 8 These louvres have been designed to fit into the overall design of the building and create a visually interesting architectural feature.

Guideline 9

Materials should be well integrated into the façade design. Consider:

- The local character and context.
- Design narrative.
- Using robust and low maintenance materials.
- Climate and environmental conditions.
- Buildability.
- Seismic resilience.

Guideline 9 *Solea Condominiums, Washington, D.C.* Consider the properties and character of materials used within the façade design.

5.3 BUILDING ROOFLINE

Rooves and rooflines are often an afterthought, but are highly visible from taller adjacent buildings, across open space and from the street. They should be designed to complement the building exterior not just to accommodate the desired floorplan. Changes in the ridgeline, direction, height and varying the parapets, form, overhang and pitch can be done to provide variety and create an interesting roofline.

Distinctive
Connected
Attractive
Inclusive
Sustainable

Chapter Objectives

- The roof and roofline design creates engagement and has an appropriate human scale which positively contributes to public amenity.

RESIDENTIAL DESIGN GUIDELINES

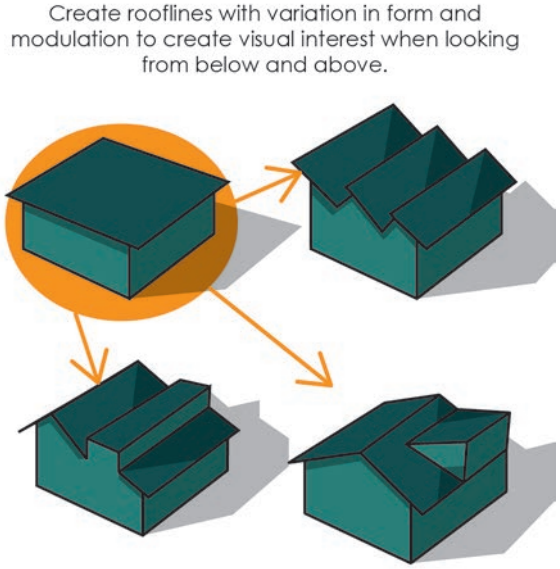
Guideline 1

Consider existing rooflines, types, pitches and colours of neighbouring buildings, and continuing the existing pattern, to enhance the visual amenity of the street.

Guideline 1 Take design cues from the rooflines of existing neighbourhood buildings.

Guideline 2

Consider designing variation in the roof form to create visual interest and to express aspects of the building design. This can be achieved through changes in height, orientation and roof shape.



Guideline 2 A flat roof does not create visual interest when viewed from above or below.

Guideline 3

Create variation in roof form between multi-unit developments. This can be achieved through changes in height, orientation, alignment and roof shape.

Guideline 3 Subtle changes to, or separating the roofline through pitch, can help differentiate units within multi-unit developments.

RESIDENTIAL DESIGN GUIDELINES

Guideline 4

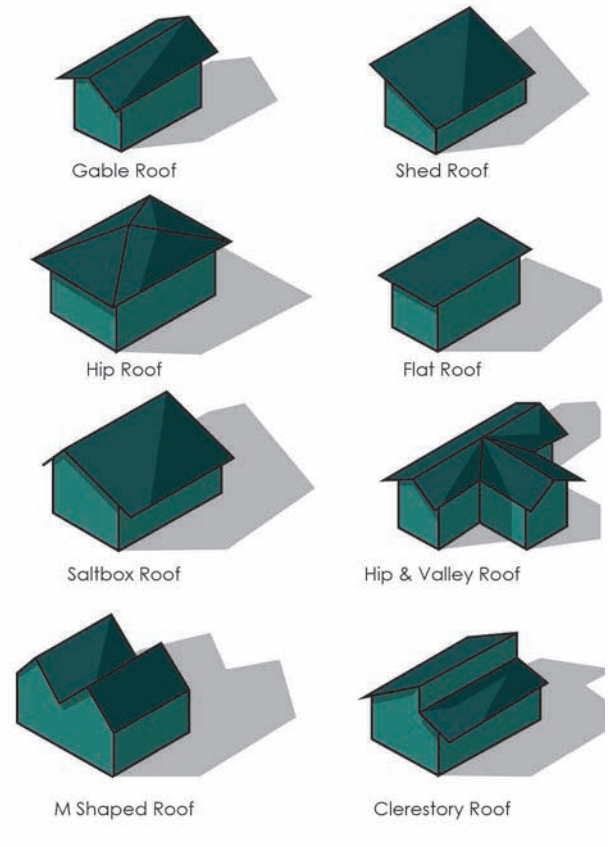
Avoid creating a continuous ridgeline or excessively high or steeply sloping rooves. Break the roof down into smaller elements differentiated by height, shape and physical breaks and setbacks.

Avoid creating buildings with continuous ridgelines. These lack visual interest when viewed from the street or other public areas.

Guideline 4 Break up the roof form and ridgeline with variation and creating smaller elements.

Guideline 5

Use simple roof forms which are cheaper to build and have less chance of future maintenance issues.



Guideline 5 Simple roof forms that could be used within residential development. To create variation, a combination of these roof forms could be used.

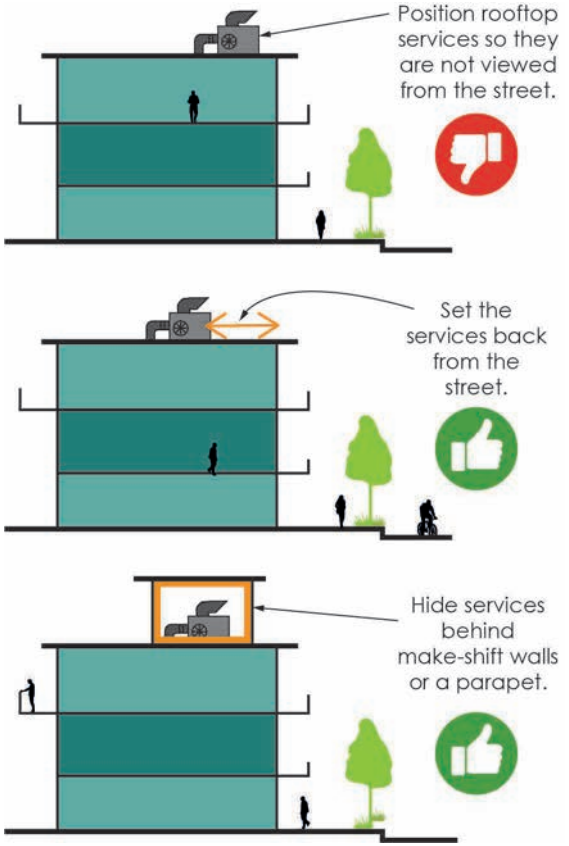
Guideline 6

Use eaves to provide visual interest and clearly define the edge of the roof, as well as provide weather protection.

Guideline 6 *One Market Lane, Wellington, Studio Pacific Architecture.* Eaves can create visual interest when viewing a building from below.

Guideline 7

Rooftop building services such as plants and mechanical and electrical apparatus should be set back so they are not viewed from the street and/or concealed behind a parapet or extended wall.



Guideline 7 Conceal rooftop services so they cannot be easily viewed from the street or other buildings.

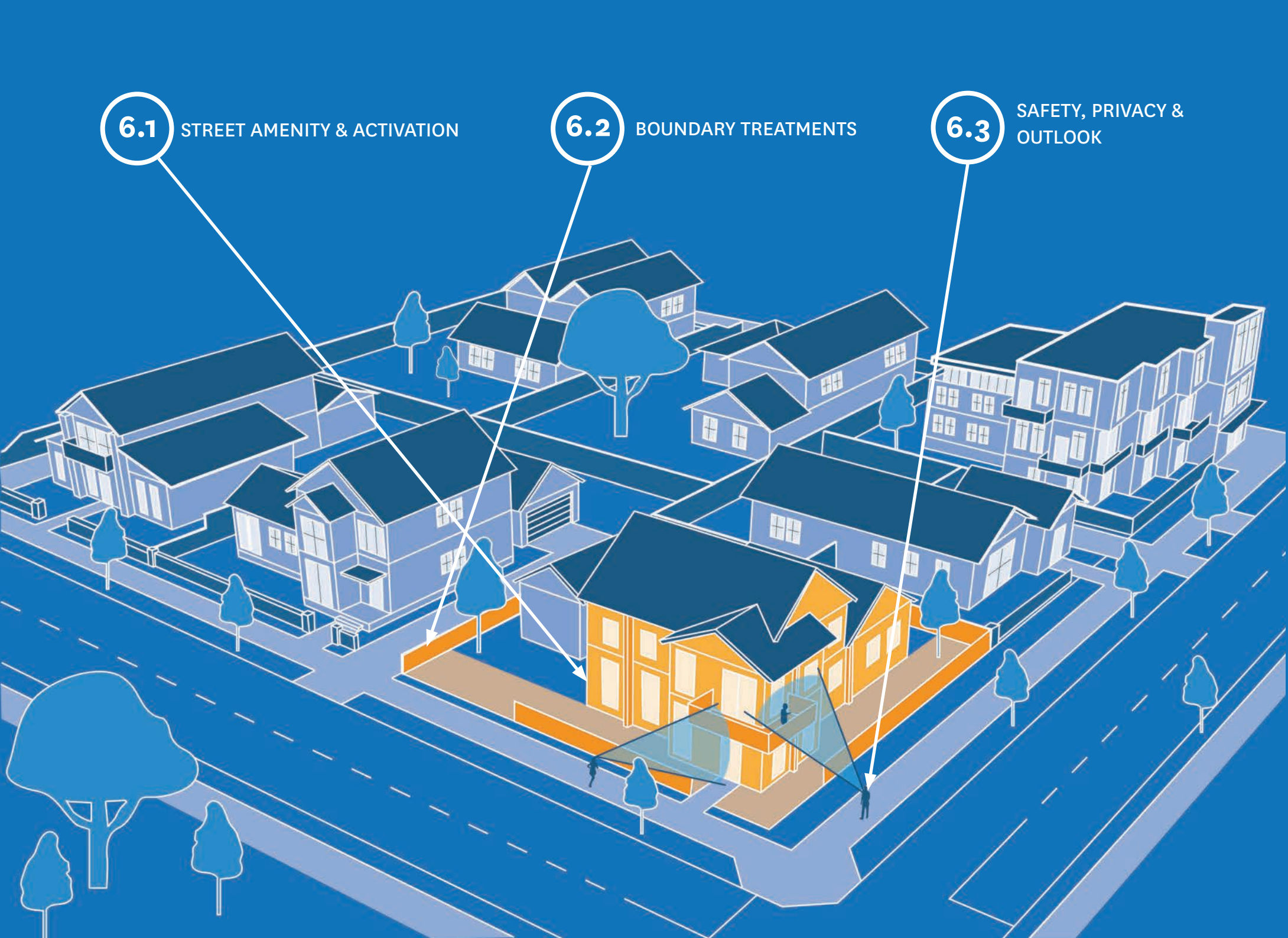
Guideline 8

Consider incorporating green rooves or roof gardens into the building development to provide outlook and amenity for residents and reduce stormwater runoff.

Guideline 8 A green roof, wall or roof garden is a good way to provide articulation, outlook and relief within a higher density residential environment.

6 RESPONSE TO THE STREET

How a development responds to the street and adjacent public space is important when creating an attractive and safe public environment. It is also important to balance this with protecting residential privacy within the site and building. Buildings should be designed to engage with the street, have appropriate boundary treatments and allow residents appropriate privacy while providing surveillance to their surroundings.


6.1
STREET AMENITY & ACTIVATION
6.2
BOUNDARY TREATMENTS
6.3
SAFETY, PRIVACY & OUTLOOK

6.1 STREET AMENITY & ACTIVATION

Within medium density development, the street is defined by the quality of buildings and front yards that line its edges. Residential development should address, and have a visual connection to the street. Pedestrians within in public space should be able to see the front of a residential dwelling to a degree that is not intrusive. There should be an active and engaged relationship between the development and the street that helps alleviate the impact of density.

- Distinctive
- Connected
- Attractive
- Inclusive
- Sustainable

Chapter Objectives

- The building is designed to engage with the public realm, contributing to safety within the surrounding public spaces and streets.

RESIDENTIAL DESIGN GUIDELINES

Guideline 1

Design the building to positively engage with the street by:

- Orienting the building frontage towards the street.
- Designing the building to reinforce the street edge and to create a continuous building line.
- Creating a transitional/semi-private area, such as a sheltered porch or a small area for plants and/or seating, between the street and the front door.
- Designing the façade to create visual interest and support the pedestrian experience.
- Using landscaping at the front of the building to enhance the overall street character.
- Locating frequently used rooms (e.g. kitchens and living rooms) on the street side of the building.

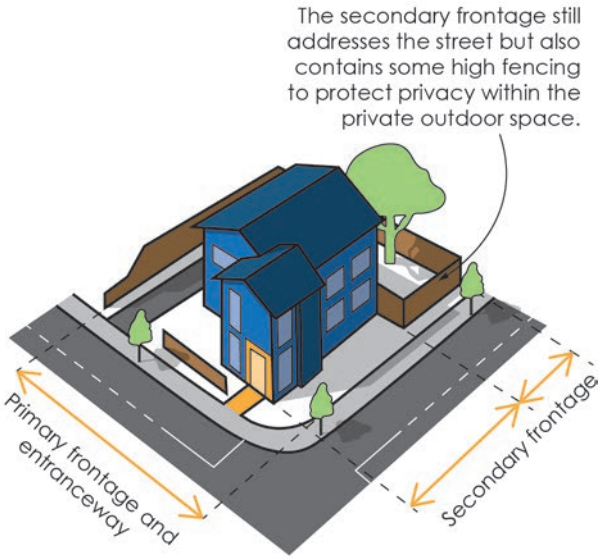
Guideline 1 *(above right)*
Develop houses to maintain a continuous building line and reinforce the edge of the street.

Guideline 1 *(below right)*
Fencing and planting are used to create a transitional area, highlight the entrance to the building as well as establish a clear distinction between public and private land while maintaining views.

Guideline 2

Design corner sites to positively address and provide public fronts to both adjacent streets.

The primary frontage will generally be to the busiest street, and will have low fencing, direct access to the front door and be overlooked from the main living area. The secondary frontage might include some higher fencing and privacy screening, but the street should still be overlooked from a main habitable room.



Guideline 2 Consider both frontages within the design of corner sites.

RESIDENTIAL DESIGN GUIDELINES

Guideline 3

When designing the building entrance, ensure it:

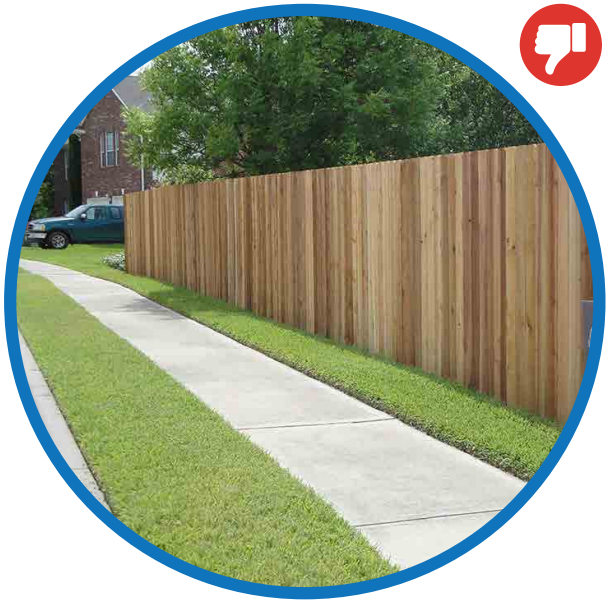
- Is located at the front of the building facing the street.
- Is clearly visible from the street, shared driveway or laneway.
- Is well articulated and prominent within the design of the building.
- Where possible, includes shelter from the wind and rain.
- Includes a wide and accessible path from the street.
- Is well lit to ensure safety.
- Leads into a main habitable space within the house.

Guideline 3 *(above right)*
Avoid hiding the building entranceway where it can not provide activation and surveillance or a welcoming entry point to the street.

Guideline 3 *(below right)*
Use materials, lighting, landscaping and architectural features to highlight the building entranceway.

Guideline 4

Avoid large blank walls that are visible from the street or public space. This includes tall impermeable fencing.



Guideline 4 Avoid situations where developments may require building tall solid fencing along the street edge.

Guideline 5

Within apartments or multi-unit developments where residential units are located on the ground floor (in a residential or in a commercial environment), consider:

- Having a setback from the public street.
- Raising the ground floor level for visual privacy.
- Maintaining appropriate screening between the street and private residents.
- Having a private entranceway for residents which is separate to commercial entrances.
- Providing individual street entries for each ground floor unit to add to the visual amenity and activation of the street.
- Placing entrances to residential units on quieter streets at the back or side of the development to ensure its privacy does not disrupt the active frontage.

Guideline 5 *(above right)*
Raising the ground floor level and screening private outdoor space can create an attractive edge which maintains privacy and surveillance.

Guideline 5 *(below right)*
Planting can also be used to soften the edge of raised ground floor levels.

Guideline 6

Avoid carparking and garages that are visible from the street and dominate the building frontage. They should be set back from the front façade of the building.

Guideline 6 This house has a garage which is visually prominent from the street and sits in front of the main building.

6.2 BOUNDARY TREATMENTS

The overall impression of a residential street is formed by the building. However, equally as important is the quality of the boundary treatment and how it is designed to ensure activity, surveillance and privacy between occupants and the public. Boundary treatments can be described as the design elements that define the site from its surroundings.

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Chapter Objectives

- The boundary treatments are designed to contribute to the quality of the street, making it safe and attractive while protecting residential privacy.
- The boundary treatments create a well-defined edge between public and private land.
- The boundary treatments balance appropriate views into adjacent public spaces with privacy of occupants.
- The quality of the street or public outdoor space is not compromised by high fencing along the building's frontage.

RESIDENTIAL DESIGN GUIDELINES

Guideline 1

The boundary treatment should add quality to the front of the development as viewed from a public space. This can be achieved by:

- Responding to the character of the neighbourhood and the positive boundary treatments used.
- The height, depth and the quality of materials used for boundary treatments.
- Avoiding continuous, monotonous blank walls or tall fences which block views between the street or public open space and the building.
- Softening fences with vertical and horizontal rhythm and by using landscaping and planting.

Guideline 1 *(above right)*
The boundary treatment should respond to the character of the building and surrounding neighbourhood.

Guideline 1 *(below right)*
Hedging and planting can be used to soften the boundary treatment.

Guideline 2

Clearly distinguish public and privately owned land (i.e. the street and the front yard). This can be done with fencing, walls, changes in paving, landscaping or a combination.

Guideline 2 These terrace houses use fencing and planting to create a clear distinction between what is public and what is private space.

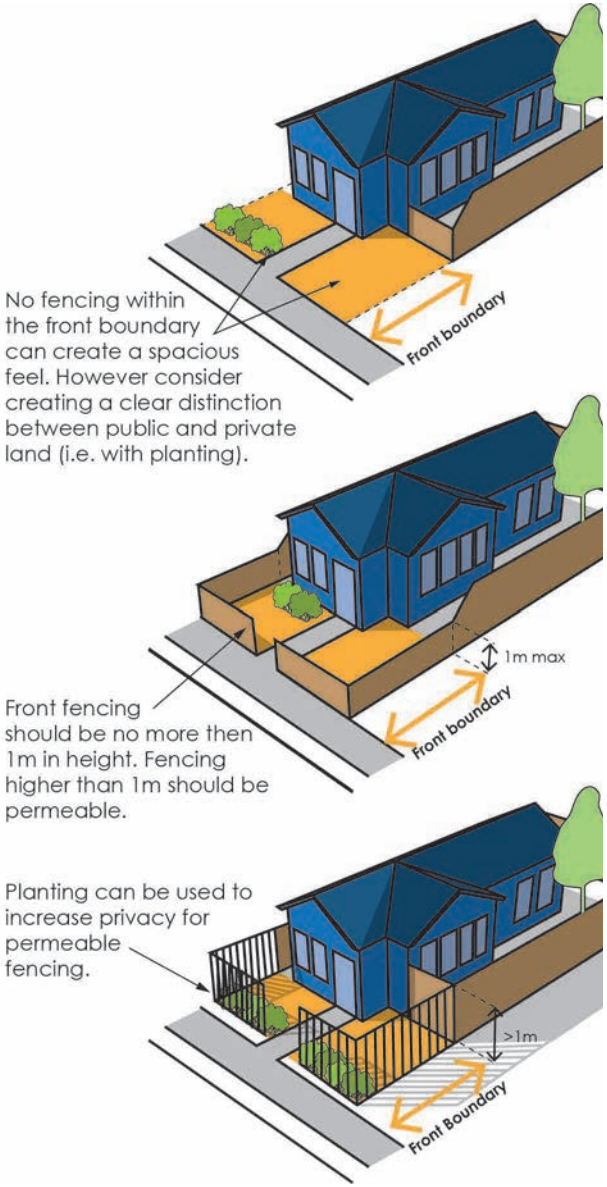
RESIDENTIAL DESIGN GUIDELINES

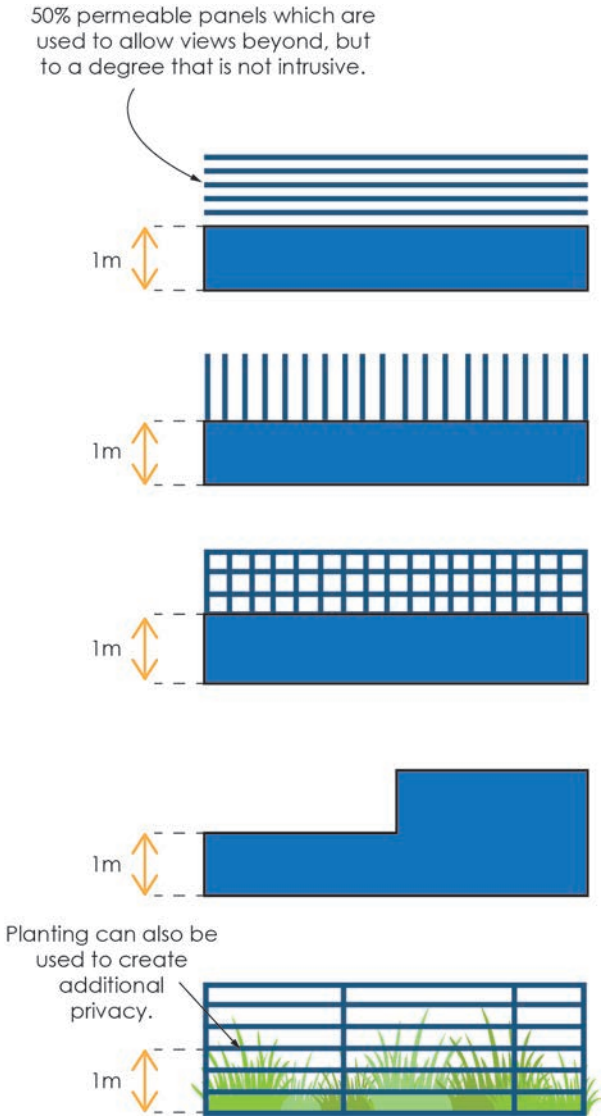
Guideline 3

Make fencing at the front boundary low and/ or permeable to allow views past to the building frontage. Open plan front gardens give a more spacious feel to the street.

Rules of Thumb

- Use low fencing to a height of no more than 1m along the front boundary.
- Where a high fence is required, a general rule is to keep solid fences below eye height. Solid portions of the fence should be kept below 1m while above this can be permeable. Alternatively, make the entire fence permeable.
- Use a mix of solid and permeable fencing. This may be a low solid wall with a permeable fence on top, or solid, full height fencing with permeable panels.





Guideline 3 *(right)*
This diagramme shows appropriate options for front boundary treatments to create an open aspect and allow views past.

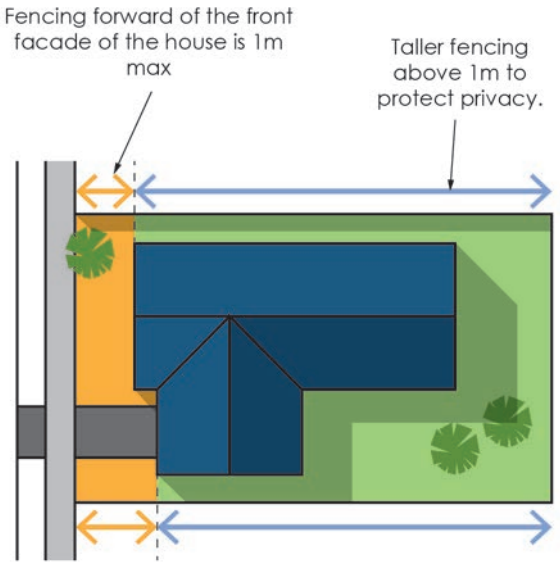
Guideline 3 *(far right)*
If privacy or security are a concern at the front of the development, consider using a mix of solid and permeable fencing rather then establishing a tall, solid fence.

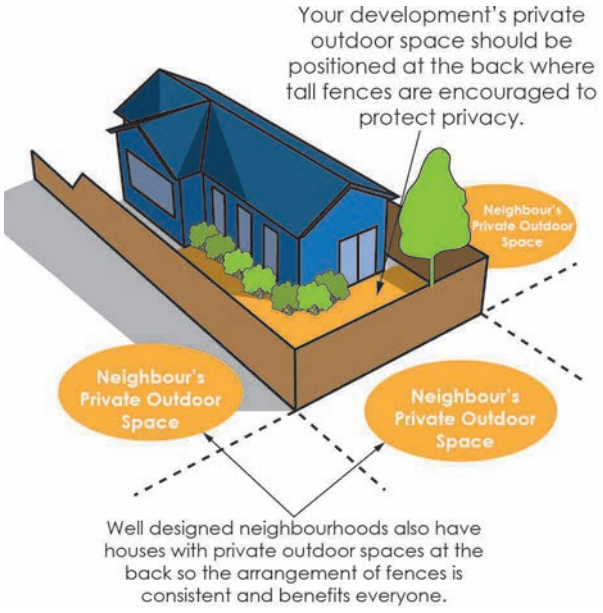
Guideline 4

Use tall fences to protect privacy behind the main façade of the house. Tall fences should be carefully designed to provide privacy and security while maintaining amenity, outlook, light and air.

Rules of Thumb

- Use fencing of 2m behind the building to ensure privacy to private outdoor spaces and rear rooms.



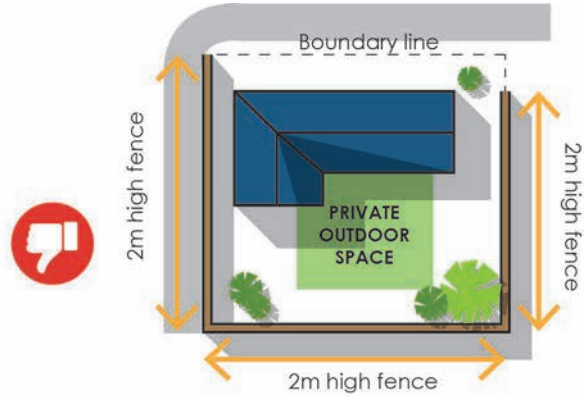


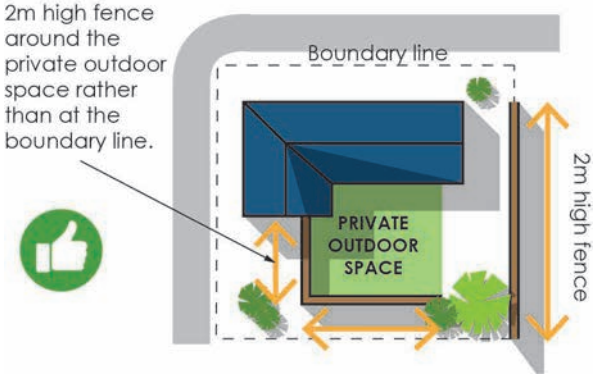
Guideline 4 *(above right)*
Solid fencing that is a height greater then 1m, can be built to protect privacy at the rear of the site.

Guideline 4 *(below right)*
As taller fencing is more appropriate at the rear of the site, this is also where private outdoor spaces should be located.

Guideline 5

If a tall fence is required for privacy between the building and the street or public space, limit the extent of frontage it covers and maintain a visual connection between the house and the street.





Guideline 5 Where private spaces are in view of the street, provide screening around the edge of the space. This will allow for privacy while still allowing a visual connection.

RESIDENTIAL DESIGN GUIDELINES

Guideline 6

Where retaining walls are located along a boundary and are more than 1m in height, ensure they are softened by creating a stepped retaining wall and by incorporating planting.

Guideline 6 Stepping or terracing retaining walls and using planting to soften their appearance, can create a more attractive boundary treatment.

Guideline 7

Reduce the potential for graffiti on tall fences by:

- Establishing planting in front of the wall.
- Using low, permeable fencing.
- Using rough materials, e.g. stone.
- Breaking up the horizontal length by providing spacing or vertical features.
- Staining or painting fences with dark colours.

Guideline 7 *(above right)*
Fencing materials and design can add enough texture to a fence to discourage graffiti and vandalism.

Guideline 7 *(below right)*
Creating permeable fencing can visually break the fence up to discourage vandalism.

6.3 SAFETY, PRIVACY & OUTLOOK

It is important that a balance is created between passive surveillance and protecting individual privacy. Views to the public street create better neighbourhood amenity, create passive surveillance and mitigate anti-social behaviour, fostering good neighbourhood communities and improving safety. Protecting privacy and security is equally as important. Privacy is a key part of making a dwelling feel safe and attractive.

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Chapter Objectives

- The building is safe and secure, and perceived as safe and secure for residents and visitors.

RESIDENTIAL DESIGN GUIDELINES

Guideline 1

Enhance safety and perceptions of safety by allowing residents to overlook public spaces such as streets, parks, reserves and shared driveways, and providing passive surveillance.

Rules of Thumb

- Place main habitable rooms so they overlook the street. Such rooms could include the kitchen, dining room, living room or a bedroom.
- Consider Crime Prevention Through Environmental Design (CPTED) principles when trying to maximise privacy and outlook. CPTED helps reduce both the fear and occurrence of crime and anti-social behaviour. The four key principles are:
  - Surveillance - 'see and be seen' - people are present and can see what is going on.
  - Natural access management - methods are used to attract people and vehicles to some places and restrict them from others.
  - Territorial reinforcement - clear boundaries encourage community 'ownership' of the space.
- Quality environments - good quality, well maintained, well lit, places attract people and support surveillance.

Rule of Thumb *(above)*
Tall fences around a public space create a surveillance issue.

Rule of Thumb *(above right)*
Te Ara I Whiti, The Lightpath, Auckland. Lighting and signage is a great way to create natural access management as it attracts people to the space and indicates to them that it is safe.

Rule of Thumb *(below right)*
Hobsonville, Auckland. Fencing at the boundary creates a clear distinction between public and private land.

RESIDENTIAL DESIGN GUIDELINES

Guideline 2

Consider the location of private outdoor spaces, positioning them where they are most private and are not overlooked by adjacent buildings or public spaces.

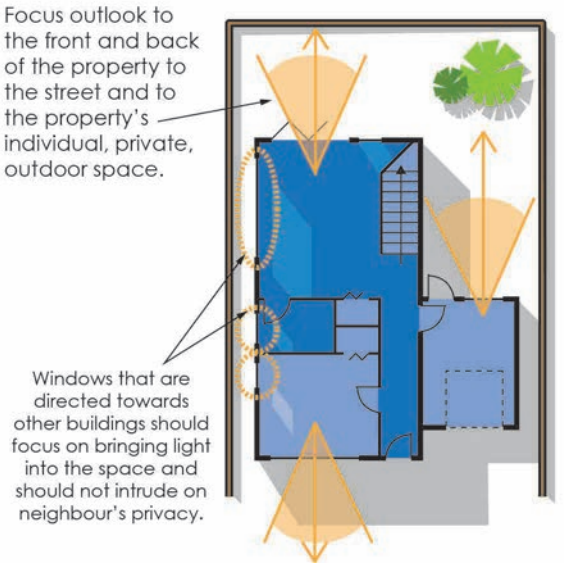
Guideline 2 Position private outdoor spaces where they are most private and easily screened while still maintaining good levels of sunlight.

Guideline 3

Position windows and balconies to focus outlook frontwards towards the street, and backwards towards the resident's own backyard, not sideways into neighbouring houses or gardens.

Rules of Thumb

- Consider internal privacy of windows which overlook public spaces. Allow for internal or external screening such as curtains, blinds and louvres.



Guideline 3 *(above right)*
This diagramme shows how outlook is focused to the street and back yard to protect the privacy of neighbouring properties.

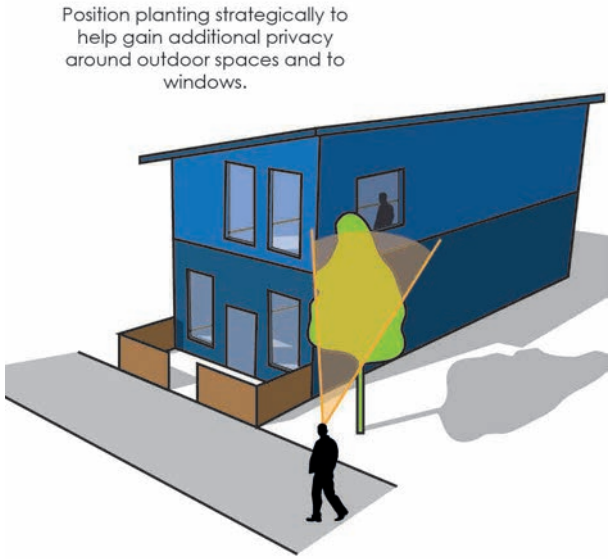
Rule of Thumb *(below right)*
Blinds or curtains are a form of internal screen which can provide additional privacy to internal spaces.

RESIDENTIAL DESIGN GUIDELINES

Guideline 4

Increase privacy between your development and neighbouring buildings by:

- Offsetting windows or balconies on elevations so they don't directly face each other.
- Staggering the building line or incorporating vertical fins between buildings/units.
- Recessing balconies or incorporating vertical fins between balconies.
- Incorporating solid or semi-solid balustrades on balconies.
- Designing louvres or screens on windows or balconies.
- Strategically positioning fencing.
- Incorporating landscaping as a screen between spaces.
- Designing pergolas or other shading devices to limit overlooking adjacent buildings and their private, open space.



Guideline 4 *(above left)*
Louvres and vertical screens can be added to the façade to allow light and outlook but create privacy.

Guideline 4 *(below left)*
Screens can also be added around private outdoor space. This is a good alternative to fully fencing a site.

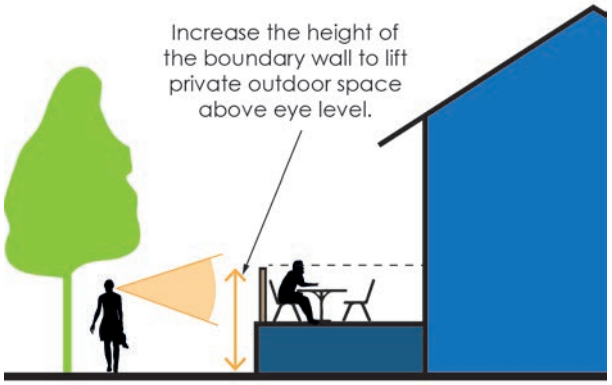
Guideline 4 *(above)*
Planting can also be used strategically to block views to windows and private outdoor areas.

RESIDENTIAL DESIGN GUIDELINES

Guideline 5

Where private open spaces are in view of the public, privacy and surveillance can be balanced by:

- Considering the height of boundary wall to control views into the property while maintaining views out.
- Using a fence, wall, hedge or planting that is visually permeable to give passing pedestrians a sense of private property without a clear view into it.
- Minimising direct sightlines by using a change in level from the street to the private outdoor area.
- Using landscaping such as trees or hedges to provide screening.



Guideline 5 *(above right)*
Planting can provide a permeable and softer edge to private outdoor space then a solid fence.

Guideline 5 *(below right)*
Raising the ground floor level can lift private outdoor space above eye level but still allow passive surveillance.

Guideline 6

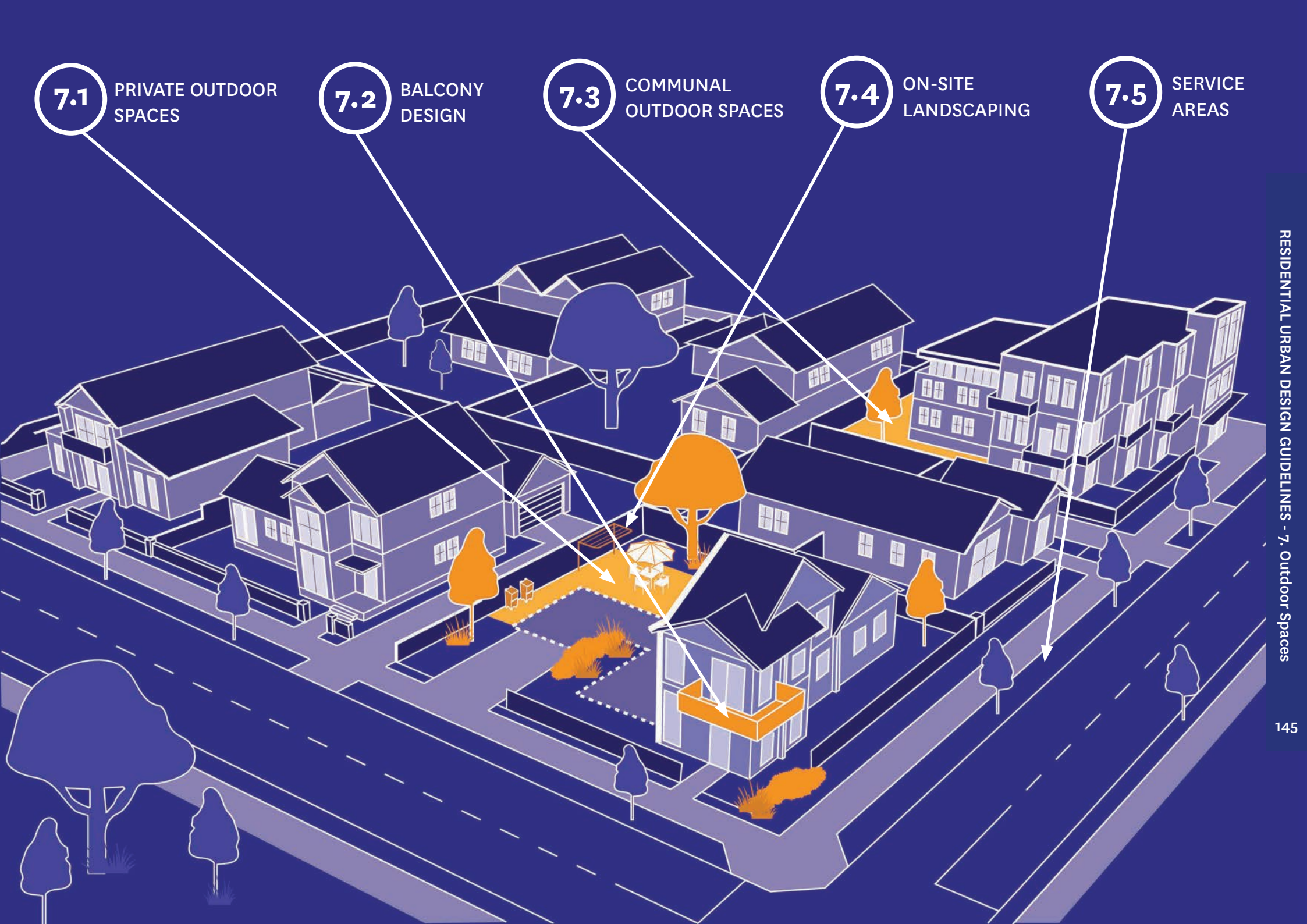
If the development backs onto a public open space, designers need to create a balance between surveillance to the front and the back and protecting residential privacy. Consider:

- Creating a clear boundary between private and public space.
- Avoiding high fences and establishing fences which are low or at least 50% permeable.
- Positioning habitable rooms at the back and the front of the dwelling to overlook the public space.

Guideline 6 Where private outdoor space is adjacent to public space it is important to create clear boundaries between them.

7 OUTDOOR SPACES

Within medium and higher density development where sites, houses and units are smaller, well designed outdoor spaces become much more important. They provide residents with amenity by granting access to fresh air, sunlight and views. They are also often used for utilities and services that need to be carefully managed and arranged to not affect the quality of the outdoor spaces and development.


7.1 PRIVATE OUTDOOR SPACES
7.2 BALCONY DESIGN
7.3 COMMUNAL OUTDOOR SPACES
7.4 ON-SITE LANDSCAPING
7.5 SERVICE AREAS

7.1

PRIVATE OUTDOOR SPACES

Private outdoor spaces act as the breathing space within higher density development. They provide amenity and improve liveability for residents. It is important to consider access, shelter, sunlight, views and privacy to ensure spaces are usable and pleasant. Consideration of neighbouring outdoor spaces will ensure views, privacy and sunlight are not compromised for either dwelling.

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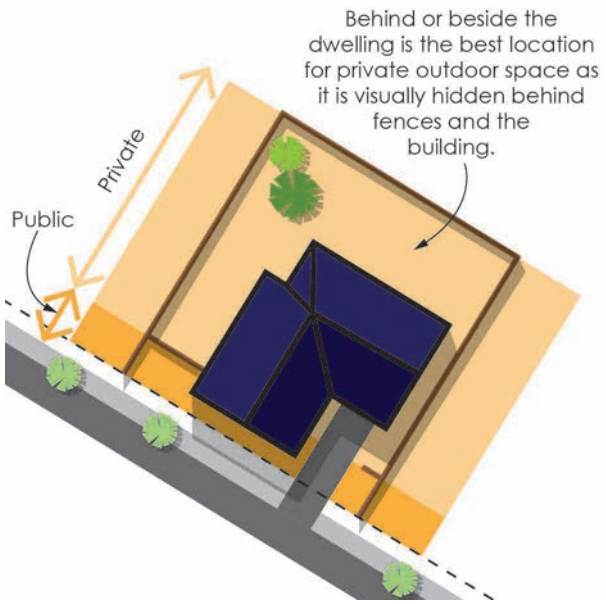
Chapter Objectives

- The private outdoor space is designed to be attractive, private, usable and enjoyable for residents and suitable for the size of the house and number of residents.
- The private outdoor space is accessible for all and located off a primary living space within the development.
- The development and the location of the private outdoor space is considerate of neighbouring properties and their access to daylight, sunlight, outlook and privacy.

Guideline 1

Locate private outdoor spaces behind or beside the building to ensure privacy. Avoid placing private outdoor spaces at the front of the dwelling where the privacy required can compromise the active frontage and passive surveillance.



Guideline 1 Private outdoor space positioned behind or beside the building is easier to make private without disrupting an active street.

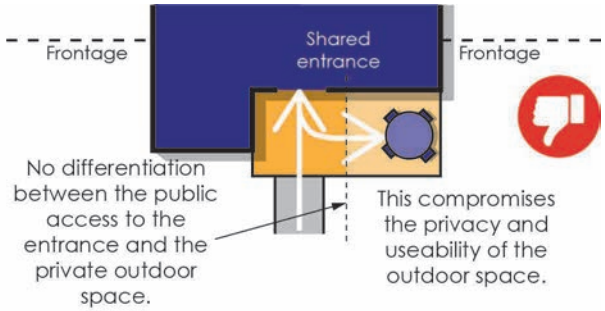
Guideline 2

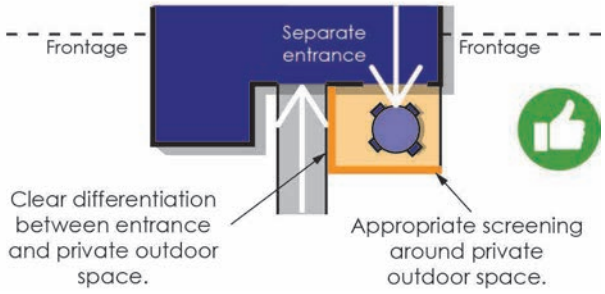
Where private open space in view of public space is unavoidable, consider solutions to prevent conflict between privacy and public amenity. These could include:

- Partially screening the private outdoor space with a high but permeable fence, screen or planting to give passing pedestrians a sense of private property and control views into the property while maintaining views out.
- Providing screening around the private outdoor space rather than at the boundary.
- Raising the ground floor level by 500-800mm to minimise direct sightlines from the street to the private outdoor area.
- When placed at the front of the dwelling, maintaining separation and avoiding access routes to the front door passing through the private outdoor space.

Guideline 2 *(above right)*
A private outdoor space at the front of the dwelling is raised above ground level and has appropriate screening to protect privacy but maintain an attractive frontage.

Guideline 2 *(below right)*
Public access or entranceways should be kept separate to private outdoor space.





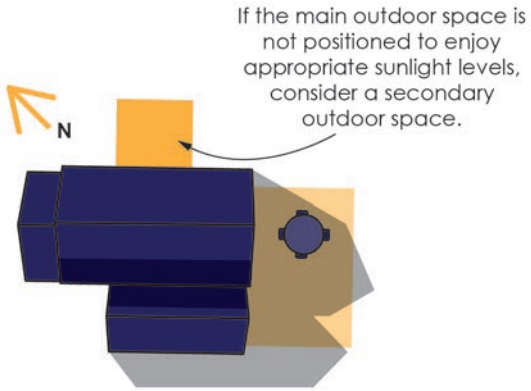
RESIDENTIAL DESIGN GUIDELINES

Guideline 3

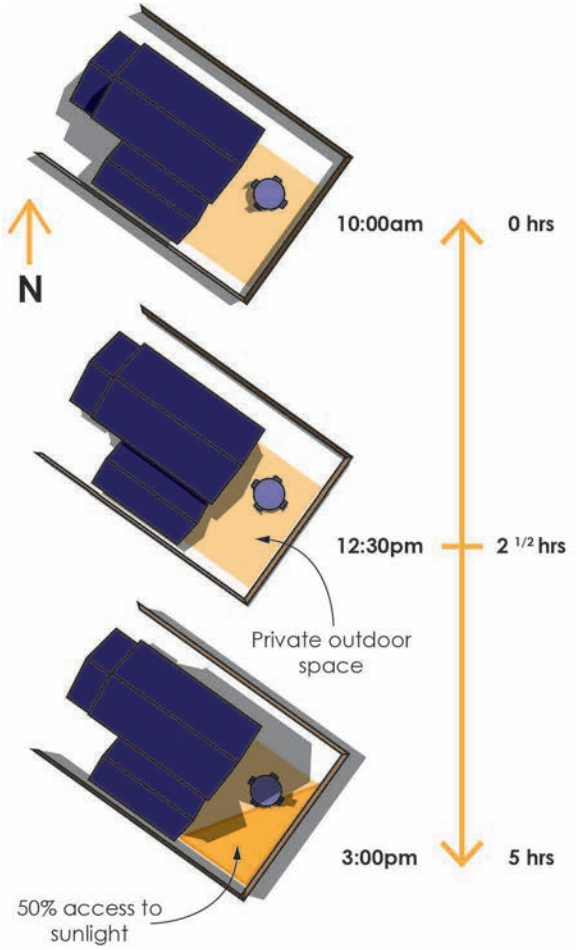
Position the private outdoor space where it has access to direct sunlight. Orientate them to the north, east or west of the building.

Rules of Thumb

- All private outdoor spaces should receive at least five hours of sunlight on 50% of the outdoor space during the winter solstice.
- If the main outdoor space is positioned to not receive adequate sunlight, consider a secondary private outdoor space to take advantage of different climatic conditions throughout year.



Rule of Thumb Consider a second outdoor space for those that do not meet the above rule of thumb.



Rule of Thumb The main private outdoor space should be oriented to enjoy 5 hours of sunlight during winter.

Guideline 4

Position the main private outdoor space to be directly accessed from a main habitable room, such as the kitchen, lounge or dining room. Secondary private outdoor spaces can be accessed from bedrooms.

Guideline 4 Private outdoor spaces should be linked to main habitable rooms so they can be accessed and enjoyed by everyone.

RESIDENTIAL DESIGN GUIDELINES

Guideline 5

The size of the outdoor space should accommodate all residents within the dwelling or unit, and be accessible for all residents.

Rules of Thumb

- Provide level access between the house and the private outdoor space.
- Locate the main private outdoor space at ground level rather than within the upper levels where it is less accessible.

Guideline 5 Access between private outdoor space and adjacent internal rooms should be level to allow everyone access.

Guideline 6

Position private outdoor spaces to take advantage of prominent views.

Guideline 6 Aim to capture significant views to natural features, open spaces, city-scapes and coastal areas from the private outdoor spaces.

Guideline 7

Consider designing private outdoor spaces to be sheltered from the elements so they can be used throughout the year.

Guideline 7 Shelter parts of the outdoor space from above and along its edges to protect residents from the elements such as rain and wind.

RESIDENTIAL DESIGN GUIDELINES

Guideline 8

Design the private outdoor spaces around the house to be functional and flexible. They should be usable for a range of activities such as outdoor dining, play and relaxation, as well as to be separate from service areas such as bin storage.

Rules of Thumb

- Design outdoor spaces as a regular shape. They should be flat, accessible and have a minimum dimension of 4 x 4 m. Long narrow spaces are not functional as private outdoor spaces.
- It is better to have a single large, usable outdoor area over a series of physically separated small ones. If multiple small outdoor areas are required, ensure they serve different functions, or provide access to sunlight, or shelter from the elements at different points of the day.

Guideline 8 *(above left)*
Outdoor spaces should be functional, allow space for activities such as gardening, outdoor dining as well as relaxation.

Guideline 8 *(below left)*
Ensure a private outdoor spaces usability by making as private as possible without visually impacting the outdoor space.

Guideline 8 *(above)*
Consider providing enough space for activities such as play.

7.2 BALCONY DESIGN

In some circumstances, balconies or terraces are a more appropriate option than ground floor private outdoor space, for example, within upper floor apartments and multi-unit developments. Therefore, private outdoor spaces should be provided in the form of a balcony or terrace. Balconies should act as an extension of the room to which they are attached and should be well designed, sheltered, private and functional.

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Chapter Objectives

- Balconies are designed to be private, respond to the environment and be enjoyable and usable for residents.
- Balconies are designed to contribute to the safety and activity of the street by creating opportunities for passive surveillance, while not compromising residential privacy.
- Balconies are designed to be accessible for all and located off a primary living space within the development.

RESIDENTIAL DESIGN GUIDELINES

Guideline 1

Position balconies so they are accessed off a main habitable room, such as living room, kitchen or dining space. They should be accessible for all, including residents and visitors. If the balcony is a secondary outdoor space, it can be accessed from a private internal room, such as a bedroom.

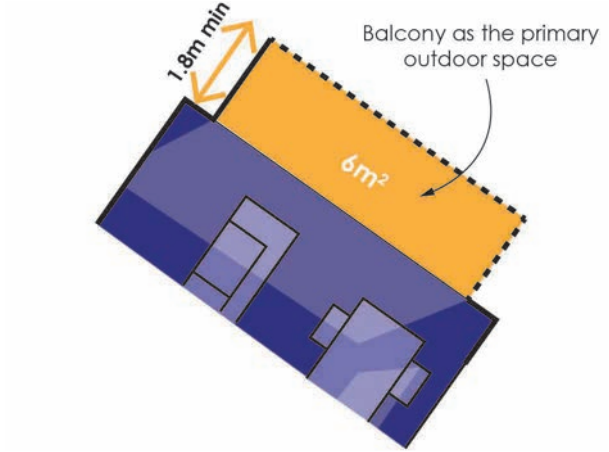
Guideline 1 Balconies should be accessed from main rooms such as kitchens, living rooms or dining rooms.

Guideline 2

Consider the number of residents within a unit and design the balcony space to ensure all residents and their guests can be accommodated comfortably.

Rules of Thumb

- If the balcony is the main outdoor living space, it needs to be at least 6m² with a minimum dimension of 1.8m.



Rule of Thumb *(above)*
As the primary outdoor space, balconies should be a minimum dimension of 1.8m and at least 6m².

Guideline 2 *(above right)*
Balconies should be able to accommodate all residents who live in the dwelling or unit, plus visitors.

Guideline 2 *(below right)*
Juliet balconies are designed to extend views, but are not an appropriate private outdoor space.

RESIDENTIAL DESIGN GUIDELINES

Guideline 3

Design the balcony to be incorporated into the overall design of the building and add visual interest to the façade.

Guideline 3 Balconies should act as a design feature to add visual interest to the façade, especially when there are multiple balconies.

Guideline 4

When designing balconies, consider:

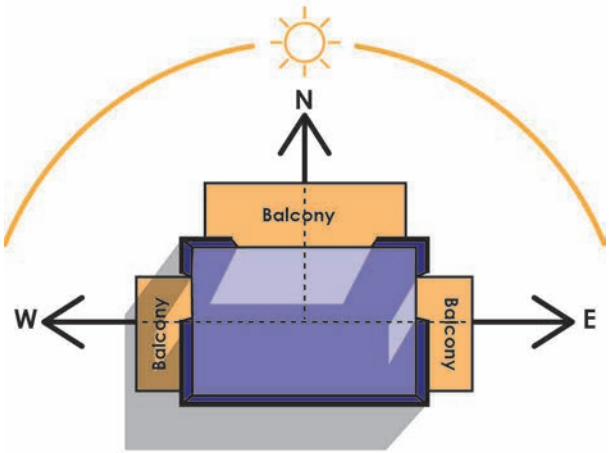
- Orienting them to the north, east or west to ensure they receive adequate sunlight.
- Orienting balconies away from adjacent or neighbouring private outdoor spaces, wherever possible.
- Using partitions between neighbouring balconies, where possible, to create more privacy.

Rules of Thumb

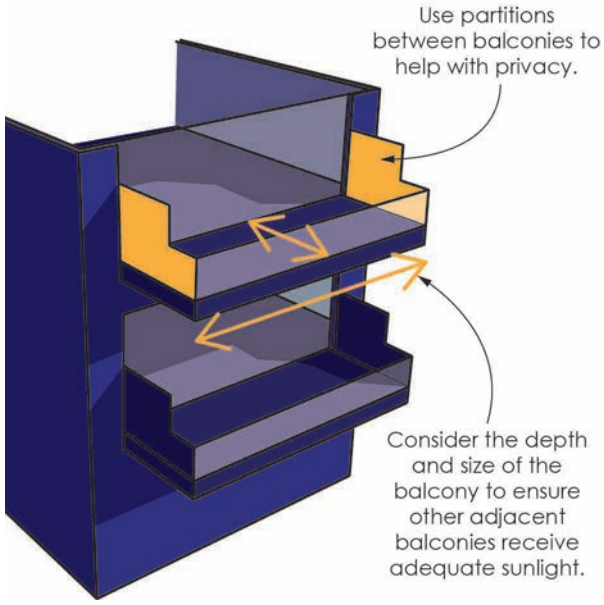
- The depth and size of the balcony should aim to not disrupt daylight and sunlight entering the rooms or units adjacent or below.

Guideline 4 *(above right)*
Locate balconies where they will receive adequate sunlight on the north, east or west side of the building.

Guideline 4 *(below right)*
The position, size and depth of balconies should be considerate of adjacent balconies.



Balconies should be orientated towards the north, east or west of the building.



RESIDENTIAL DESIGN GUIDELINES

Guideline 5

Consider designing balcony balustrades to include:

- A mixture of materials to create visual interest on the façade.
- Visually impermeable balustrades within.
- Well used areas or seating areas on the balcony to increase privacy but maintain outlook.
- Services and drainage pipes which are incorporated into the façade and balcony design.

Guideline 5 This apartment building includes balconies with different balustrade designs to break up repetition and create visual interest.

Guideline 6

Consider designing recessed balconies which act as an extension of the interior, create privacy and shelter from the elements, and help with noise ventilation.

Guideline 6 Recessed balconies can act as an extension of internal space as well as create privacy from surrounding units.

Guideline 7

Within the balcony design utilise sun screens, awnings, pergolas, shutters and operable walls to control sunlight and wind.

Guideline 7 Sun screens and louvres can be introduced to control the amount of wind and sunlight that enters the space.

7.3 COMMUNAL OUTDOOR SPACES

When private outdoor spaces are minimal, communal spaces should be provided within the site that can be shared by residents to cater for their outdoor needs. It is important to get the design of communal outdoor areas right as they risk becoming underutilised if they do not feel safe and comfortable to use. The key components of well-designed communal outdoor spaces are appropriate size, amenity, multipurpose, flexible and accessible.

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Chapter Objectives

- Communal outdoor spaces are designed to be overlooked by adjacent buildings and provide a pleasant outlook and visual amenity for residents.
- Communal outdoor spaces are designed to be accessible, usable and attractive for all residents.

RESIDENTIAL DESIGN GUIDELINES

Guideline 1

Within multi-unit developments, consider providing both communal and private outdoor spaces to be used by residents.

Guideline 1 This development provides private outdoor space behind each unit as well as a communal outdoor space for residents.

Guideline 2

Create a clear distinction between communal outdoor space that is accessible to the public or for the private use of residents.

If private, control access through location, planning, design and management, so it is only available to the residents of the development.

Guideline 2 This playground is open to the surrounding area making it accessible to the public as well as residents.

Guideline 3

Design communal outdoor spaces for year-round use, both day and night, and position them to receive appropriate sunlight and daylight levels throughout the year.

Guideline 3 Spaces which are covered can help ensure year round use for residents.

RESIDENTIAL DESIGN GUIDELINES

Guideline 4

Communal outdoor spaces should be sized relative to the number of residents and how much outdoor space (public and private) they have access too.

Guideline 4 Be considerate of all users and residents and their spatial requirements when designing outdoor space.

Guideline 5

Design communal outdoor spaces to be:

- Easily accessible by all residents and directly accessed by the dwellings or units they serve.
- Safe to use by providing adequate lighting and ensuring the space is well overlooked by adjacent properties.
- Attractive and providing a pleasant outlook for neighbouring properties.
- Well landscaped with the appropriate amenities to meet the residents' needs.
- Functional and flexible, providing a mix of furniture and spaces.
- Easy to maintain.

Rules of Thumb

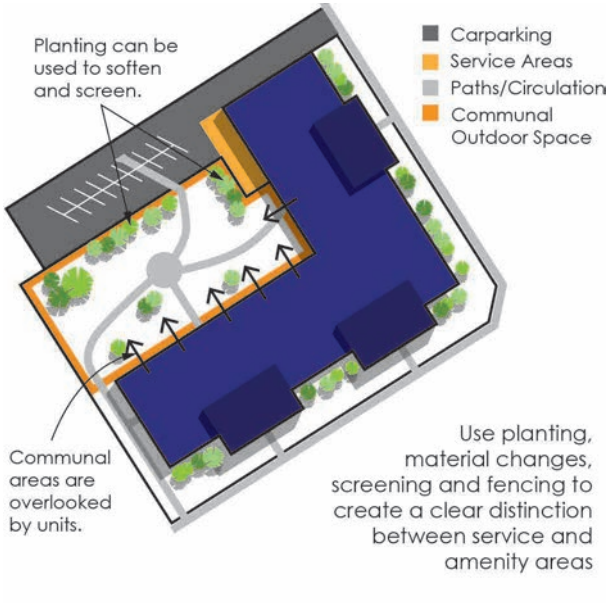
- Communal outdoor spaces may be accommodated above ground floor level if adequate amenity and access can be achieved.

Guideline 5 *(above)*
Ensure all residents have clear and easy access to the communal outdoor space.

Rule of thumb *(below)*
Rooftops are a good alternative to ground floor outdoor space.

Guideline 6

Create a clear distinction between any areas created for services (rubbish collection, carparking) and amenity spaces.



Guideline 6 Differentiate spaces to ensure their function is clear and they are useable.

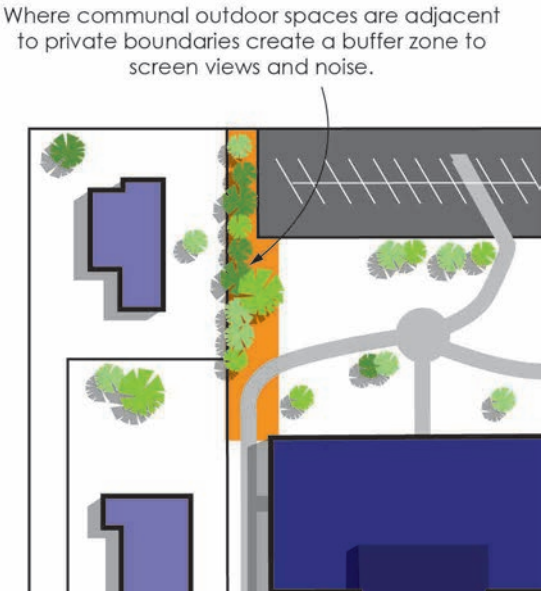
Guideline 7

Use both soft landscaping (trees, shrubs, grass, planted beds etc.) and hard landscaping (paving, furniture, fixtures etc.) to define areas.

Guideline 7 Soft and hard landscaping can be used to create interesting and functional outdoor spaces.

Guideline 8

Communal outdoor space should be considerate of neighbouring properties. Consider the location of facilities that generate a lot of activity and ensure a buffer zone is provided.



Guideline 8 Set the communal outdoor space back from the private boundary with a buffer zone.

7.4 ON-SITE LANDSCAPING

Often, within the design of any new development, landscaping is given the lowest priority, and yet it is the first thing people see. It is important in creating an attractive and pleasant environment and can influence a development's usability, privacy, character and visual amenity. It can also soften and mitigate adverse visual effects. However, it should never be used to compensate for poor site and building design.

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Chapter Objectives

- The landscaping is designed to provide opportunities for outdoor activity, to enhance privacy, to improve outlook and views.
- The landscaping contributes to the local streetscape character and the amenity of the wider area.
- The landscape design improves the appearance and functionality of all spaces around the house, including the driveway or shared access way.

RESIDENTIAL DESIGN GUIDELINES

Guideline 1

Design landscaping which contributes to the character of the site and adds to residential and public amenity by:

- Getting specialist landscape inputs to ensure outdoor spaces are given appropriate attention and design treatment.
- Protecting and enhancing existing habitat and ecology.
- Retaining and incorporating mature trees and existing vegetation into the landscaping.
- Planting trees and vegetation which are local to the area, enhancing the existing or desired future character of the area.
- Incorporating changes in level, landmarks, views and significant site elements into the landscape design.
- Considering water-sensitive urban design methods.

Guideline 1 *(above right)*
This outdoor space incorporates the changes in level into the overall landscape design.

Guideline 1 *(below right)*
This development maintained mature trees and vegetation to add to the character of the outdoor space.

Guideline 2

Incorporate landscaping into all spaces around the building including private outdoor spaces, front and rear gardens, entranceways, pathways, driveways and carparks.

Guideline 2 Landscaping is incorporated into the front of these terrace houses to create an attractive entranceway.

RESIDENTIAL DESIGN GUIDELINES

Guideline 3

Improve amenity by integrating landscaping and planting into the design of the building. Consider:

- Softening and mitigating the effects of blank walls and solid forms.
- Screening private open spaces, garages parking, rubbish storage and other service areas.
- Creating a privacy buffer between houses/ units.
- Providing appropriate shading with trees and shade structures.
- Providing direct and accessible pedestrian routes.
- Providing outdoor storage areas for equipment.

Guideline 3 *(above right)*
This planting was positioned on the edge of this wall to help soften its appearance.

Guideline 3 *(below right)*
This planting acts as a privacy screen, providing further privacy to the courtyard.

Guideline 4

Consider providing opportunities for residents to individualise their private outdoor space, for example, by providing space for gardening, planting edible plants and outdoor play areas.

Guideline 4 This outdoor allows for activities such as gardening and provides enough space for other activities such as play.

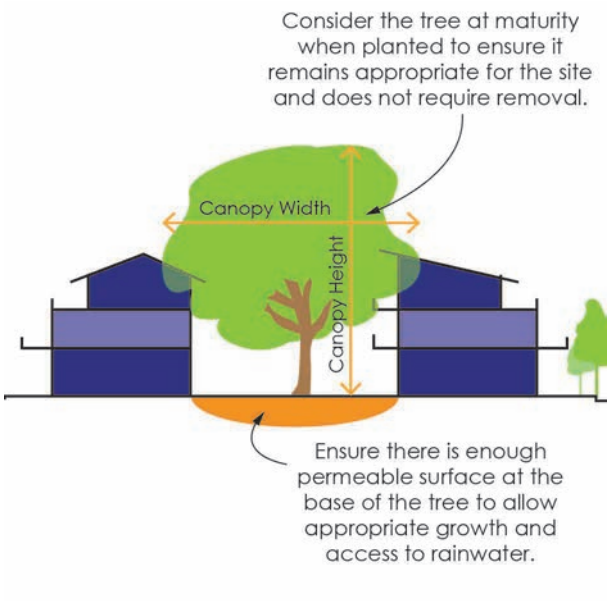
RESIDENTIAL DESIGN GUIDELINES

Guideline 5

Consider the scale and height of trees at maturity before they are planted. Ensure they do not block significant views, outlook or over shade the development or neighbouring buildings.

Rules of Thumb

- Allow trees to grow in balanced and healthy shape. Provide adequate pervious space around plants and trees to avoid restricting growth and allow natural access to rainwater.

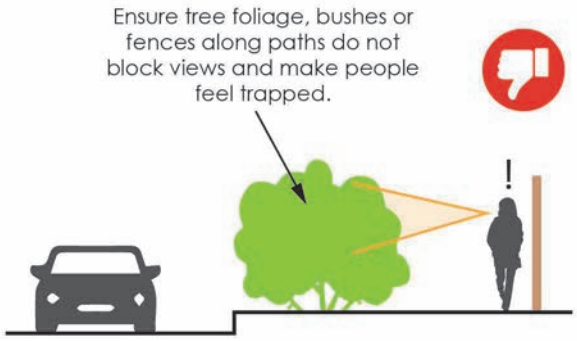


Guideline 5 *(above right)*
When planting new trees consider their height and size at maturity so that their scale does not cause issues in the future.

Guideline 5 *(below right)*
The building here is set back enough from the trees to allow it to grow in a balanced and healthy way.

Guideline 6

Planting and landscaping should be designed to reduce opportunities for crime. Avoid creating areas of dense planting or tall shrubs close to pathways and between the building and the street, as it can disrupt passive surveillance.



Guideline 6 Planting and landscaping which is too dense can create areas of entrapment that make residents and pedestrians feel unsafe.

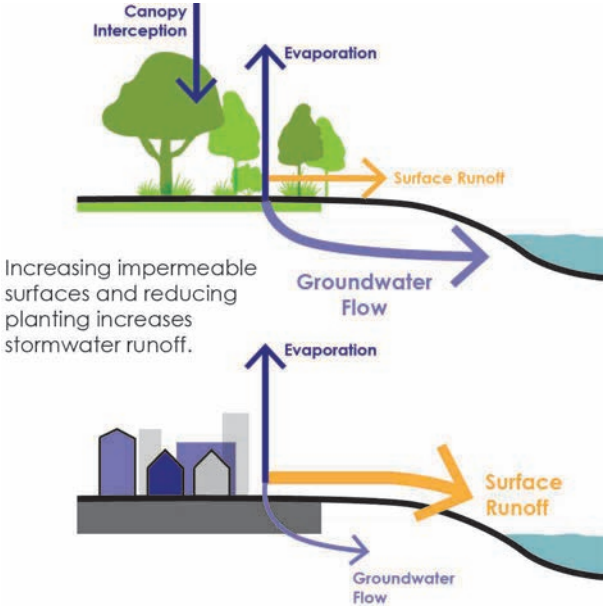
RESIDENTIAL DESIGN GUIDELINES

Guideline 7

Incorporate water-sensitive urban design methods into your landscaping to reduce the flow of stormwater and increase its quality. This will help achieve ecological benefits as well as public amenity benefits (see 2.4 Stormwater and Hazards).

Rules of Thumb

- Minimise areas of hard surfacing (impervious surfaces) within the development to decrease stormwater runoff. Permeable surfaces, such as gravel or porous paving, can reduce stormwater run-off, are often more attractive than large areas of asphalt, and can slow the flow of stormwater and increase its quality.
- Incorporate living rooves and walls into your building design to add amenity, character and stormwater filtration.



Guideline 7 *(above right)*
Diagramme showing how permeable surfaces can help reduce surface runoff.

Rule of thumb *(below right)*
Green walls and rooves have ecological benefits as well as create an attractive architectural feature.

Guideline 8

Consider retaining roof or balcony runoff for reuse within and around the building, for example, watering gardens and flushing toilets.

7.5 SERVICE AREAS

Service areas are important to the success of any residential development both in terms of providing functional and accessible spaces for services but also ensuring service areas are appropriately located and designed to not detract from the development. Consider where service areas are placed on site, how they are used, and where they can be seen by both residents as well as the public.

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Chapter Objectives

- Service areas are designed to be accessible, functional and easy to use, and are well integrated into the design of the development.
- Service areas are located away from the public street, outdoor areas and building entrances.

RESIDENTIAL DESIGN GUIDELINES

Guideline 1

Position service areas and facilities to minimise negative visual, noise or odour effects and to enable practical use.

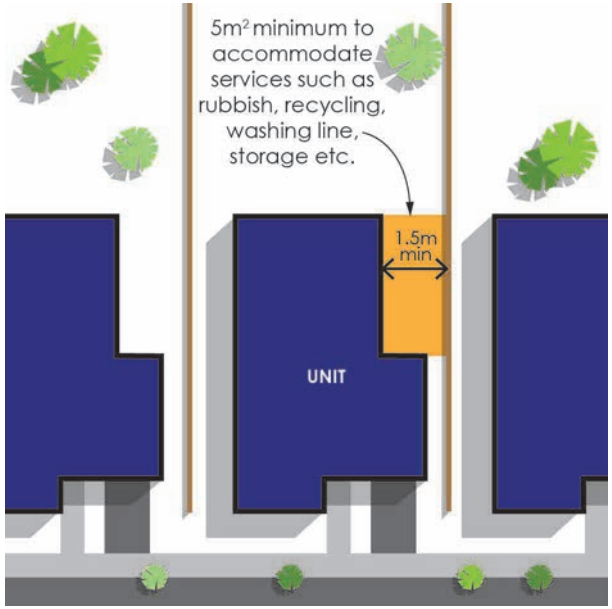
Guideline 1 This development has subtly positioned the rubbish storage area beside the development behind a fenced area.

Guideline 2

Provide appropriate space for services and storage outside or within communal areas to service each dwelling or unit.

Rules of Thumb:

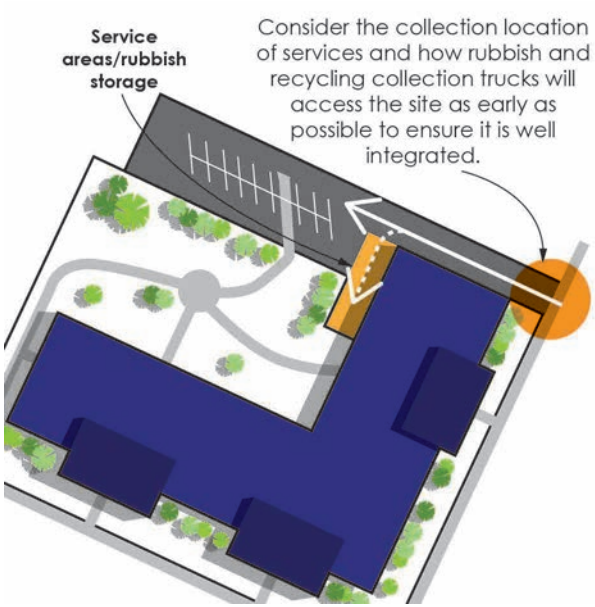
- Each unit should have a minimum of 5m² of outdoor storage and services space (with a minimum dimension of 1.5m) to enable them to provide a range of appropriate functions.



Rule of thumb Single lot and terrace housing developments should have a minimum of 5m² of storage area available for each development.

Guideline 3

Consider the best storage location and form of collection for rubbish and recycling as early as possible within the design.



Guideline 3 Consider rubbish collection as early as possible to ensure it is integrated well into the design.

RESIDENTIAL DESIGN GUIDELINES

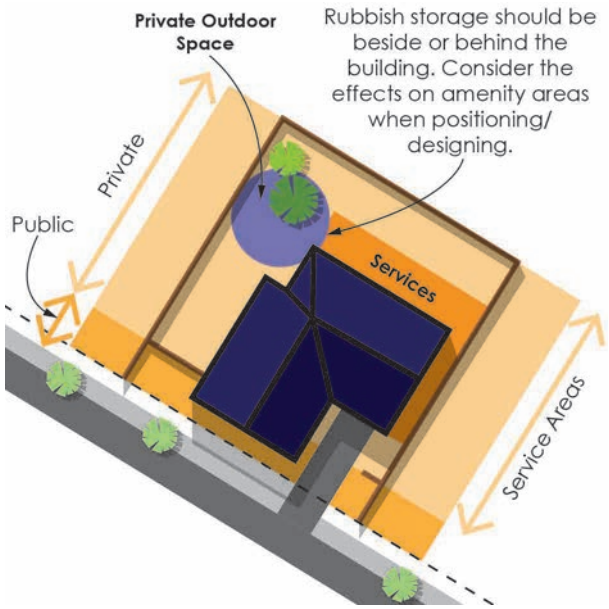
Guideline 4

Provide sufficient space for rubbish and recycling bins. Preferably beside, behind, within or below the building in a dedicated space. This space should be:

- Large enough to store at least one standard large rubbish bin for each dwelling.
- Located or screened to be visually unobtrusive.
- Naturally ventilated to avoid significant smell, have good lighting and be easy to maintain (an impervious floor will permit washing down).
- Accessible from the dwelling or the units served, as well as rubbish and recycling trucks.

Rules of Thumb

- Where bins are stored near the front of the building or within amenity areas, consider screening them from view behind a boundary wall, landscaping, or within a container.



Guideline 4 *(above right)*
Position rubbish and recycling storage beside or behind dwellings and away from amenity areas.

Rule of thumb *(below right)*
Where bins are visible from public areas, screen using landscaping or fencing

Guideline 5

Provide a dedicated space beside or behind the building for drying clothes. This area should be accessible and should be screened from public view.

Rules of Thumb

- In multi-unit developments where balconies are the only location available for drying clothes, consider providing a dedicated space that is screened.

Guideline 5 This clothes drying rack can be folded up or down to make use of space. It is also screened from public areas.

Guideline 6

Encourage recycling by providing space for recycling bins, organic waste (i.e. compost), as well as rubbish bins.

Guideline 7

Consider the location and design of services such as mail boxes, drain pipes, utility boxes, satellite dishes, lift plants and external access ways (within multi-unit developments) and other mechanical and electrical equipment.

- Position services away from the front of the building to avoid visual clutter.
- Provide recessed channels for down pipes or use materials which are well incorporated into the façade design.
- Integrate mail boxes within boundary walls or fences.
- Locate utility meters and service connections in discreet locations or concealing them from view (but maintain easy access for utility companies).
- Set back or conceal roof-mounted mechanical and electrical apparatus behind a parapet or extended wall.

Guideline 7 *(above right)*
These down pipes are incorporated into the balcony and façade design ensuring they are not visually intrusive.

Guideline 7 *(below right)*
Aim to locate external mechanical equipment where they are not visible from public areas.

RESIDENTIAL DESIGN GUIDELINES

Guideline 8

In multi-unit developments, consider co-locating rubbish areas within a communal outdoor space, which is well located to be easily accessed by all units within the development.

Rules of Thumb

- For the convenience of residents, the distance between rubbish storage areas and collection points should be kept to a minimum (a maximum of 20m is a good rule of thumb) and the route should be as accessible as possible.

Guideline 9

Provide storage space (preferably lockable) for garden tools, bicycles, motor scooters, lawnmowers and other equipment. This could be provided within the garage or in a covered space to the rear of the house where it is easily accessible.

Rules of Thumb

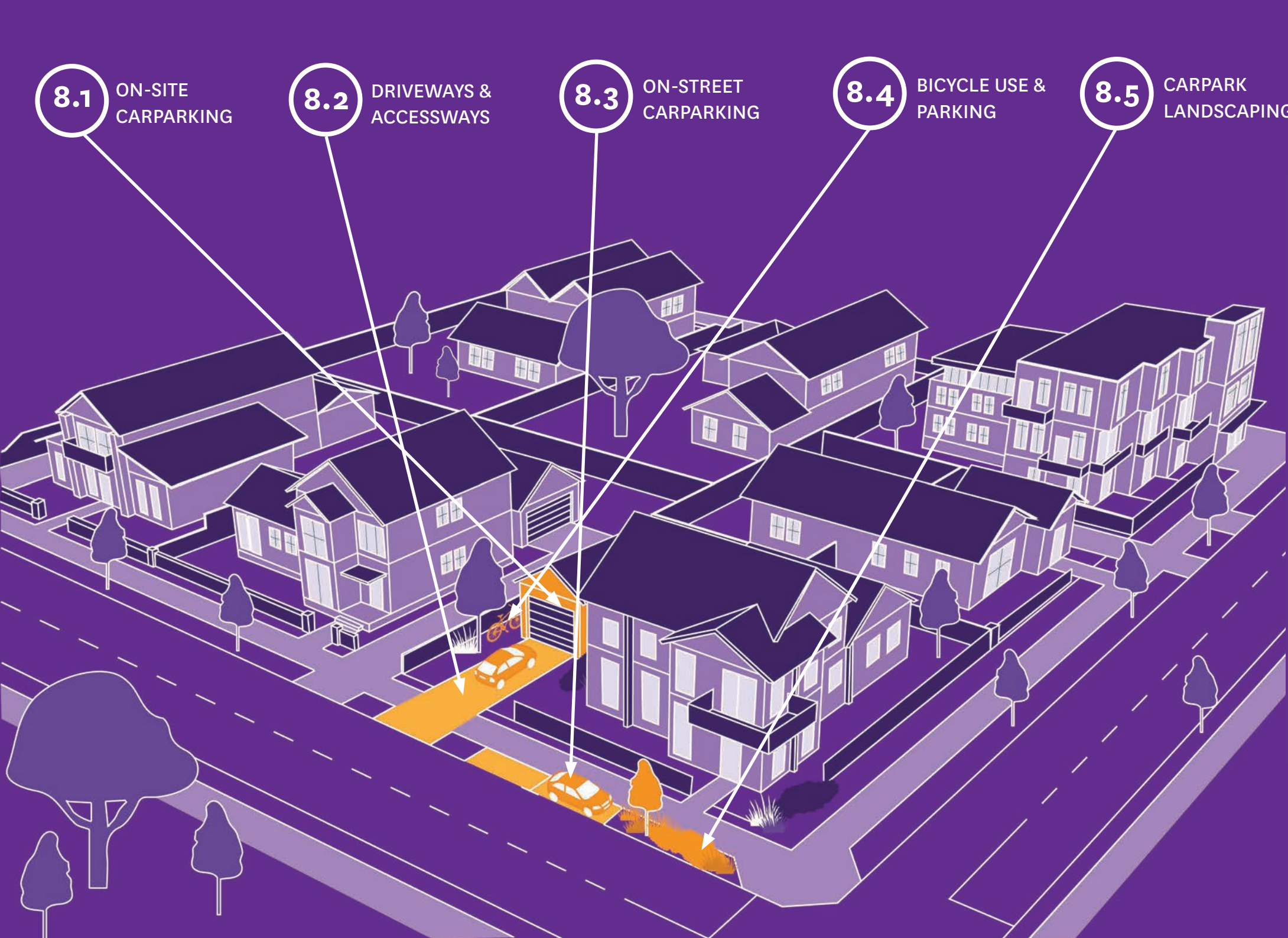
- In multi-unit developments where storage space is limited, consider providing larger, secure storage within communal areas.

Guideline 9 *(above right)*
Provide secure, internal storage for equipment such as bicycles for residents of multi-unit developments.

Guideline 9 *(below right)*
Consider providing additional, secure storage within communal areas where internal storage cannot be provided.

8 POSITIONING VEHICLES

The position of vehicles and carparking within residential development is an important aspect to consider. When not well located or designed the presence of vehicles can dominate residential environments, interrupt pedestrian movement and break up active street frontages. Careful consideration needs to be taken when locating and designing driveways and carparking to ensure amenity values can be maintained and access to alternative modes of transport such as walking and cycling can be promoted.


8.1 ON-SITE CARPARKING
8.2 DRIVEWAYS & ACCESSWAYS
8.3 ON-STREET CARPARKING
8.4 BICYCLE USE & PARKING
8.5 CARPARK LANDSCAPING

8.1 ON-SITE CARPARKING

The arrangement of on-site parking and garaging is an important consideration as it can compromise the building's relationship to the street, pedestrian activity and adjoining public spaces. Effective management of carparking will ensure it is practical and safe for drivers and pedestrians, and well integrated into the development.

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Chapter Objectives

- On-site parking and garaging is appropriate, without compromising streetscape character, landscape quality or pedestrian amenity and safety.
- On-site parking and garages consider access, ease of movement and safety of pedestrians as well as vehicles.

RESIDENTIAL DESIGN GUIDELINES

Guideline 1

Consider the need for carparking in relation to:

- The building's proximity to amenities.
- The building's proximity to other parking facilities and available on-street parking.
- The building's proximity to alternative transport i.e. public transport, car sharing, walking and cycling tracks.
- The density of development and the local area.
- The site's capacity to accommodate parking.

Guideline 1 *Fillmore at Boulevard, by Brookfield Residential.* This site is considerate of the quantity of parking in the area. Therefore, it focuses on other forms of transport.

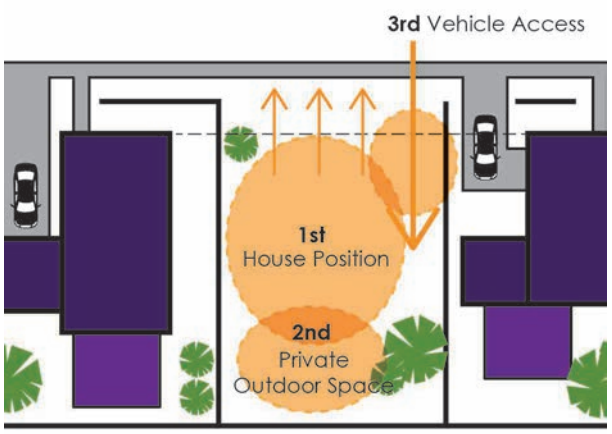
Guideline 2

If on-site parking is required, consider:

- The position of the building (dwelling), and associated open space prior to positioning the carparking and access to ensure best use of the site.
- Within multi-unit developments, the parking demand and the vehicle types to help determine the amount of parking required.
- The site dimensions and relevant planning controls to help determine the shape, height and position of the parking area.
- The land value to help determine the type of parking e.g. parking which is underground, elevated or surface.
- Minimising the amount of on-site parking to encourage visitors to park on the street to encourage active and safe streets.

Guideline 2 *(above right)*
Prioritise the position of the house and outdoor space first before vehicle access and carparking.

Guideline 2 *(below right)*
Large residential carparking lots take a large portion of space on the site and can cause a negative visual impact.



It is important to prioritise the position of the house and the private outdoor space before carparking and vehicle access.

RESIDENTIAL DESIGN GUIDELINES

Guideline 3

Design on-site parking to be identifiable, efficient, attractive, safe and logical for all users to negotiate, including pedestrians and cyclists as well as drivers.

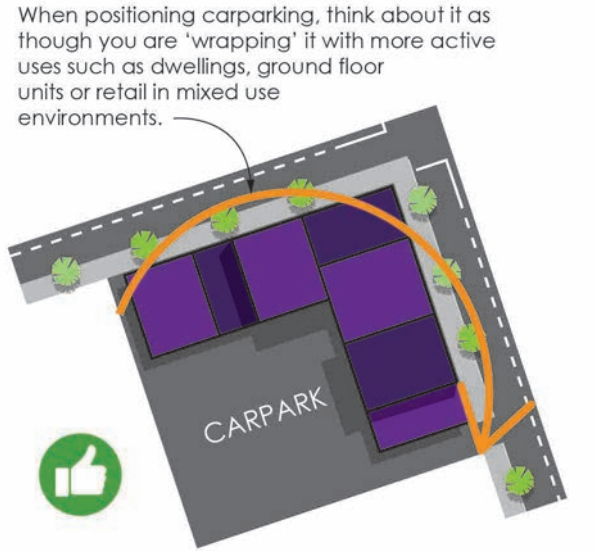
Guideline 3 This carpark uses colour changes and clear signage to help pedestrians navigate the environment and slow vehicle speeds.

Guideline 4

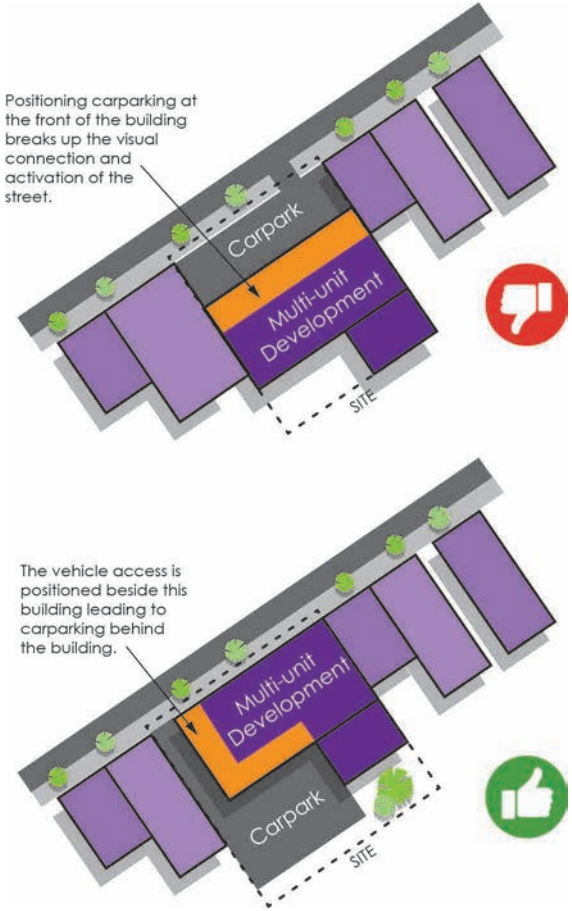
Within all developments, whether single dwellings or multi-unit apartments, aim to position carparking, garages or carports beside or behind the development to minimise compromising its appearance, and the presence of vehicles from the street.

Rules of Thumb

- Consider 'wrapping' carparking areas with other uses such as retail or apartments along street edges.



Rule of Thumb Where carparking is adjacent to public areas such as streets, wrap it with buildings to create more attractive and active edges.



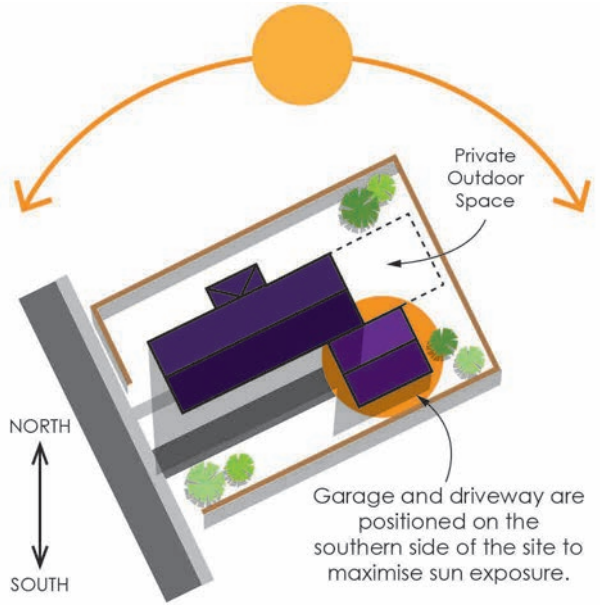
Guideline 4 Within single dwellings and multi-use developments, position carparking beside or behind the building rather than in front of the building.

RESIDENTIAL DESIGN GUIDELINES

Guideline 5

When locating carparking, garages or carports consider positioning them:

- On the southern side of the site, to maximise sun exposure to the rear yard.
- Where they might contribute to wind shelter on an exposed site
- Where they can contribute to privacy for both the rear yard and the neighbour.



Guideline 5 The driveway and garage are positioned on the southern side of the site to allow more sun to the house and private outdoor space.

Guideline 6

Avoid positioning carparking at the front of the dwelling where it can disrupt the visual connection between the dwelling/unit and the street. If carparking is positioned along the building frontage:

- Ensure the building accounts for most the front façade.
- Provide open parking rather then a carport. If covered parking is necessary, consider a carport that maintains views to and from the building and is incorporated into its design.
- Avoid vehicle manoeuvring areas that conflict with pedestrian entrances or connections between the house and the street.
- Incorporate planting, fencing and lighting which will create an attractive entrance and soften the appearance of parked cars as viewed from the street.
- Create a strong and visually interesting entranceway.

Guideline 6 *(above right)*
Where carparking is at the front of the dwelling, screen it from view of the street.

Guideline 6 *(below right)*
This carport colour and form is incorporated into the overall design of the house .

RESIDENTIAL DESIGN GUIDELINES

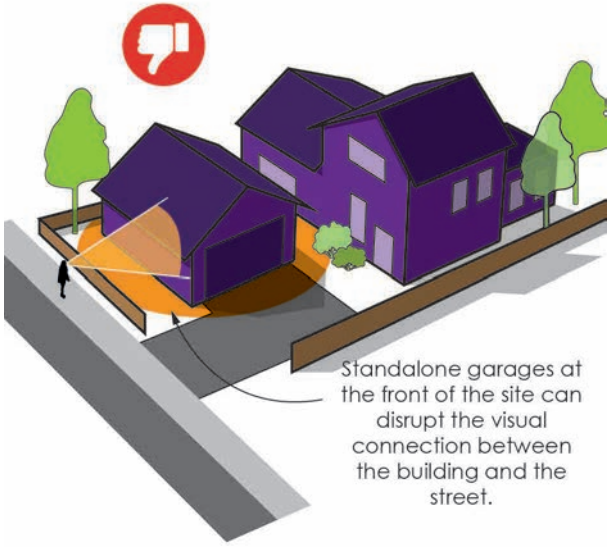
Guideline 7

When designing garages, consider:

- Avoiding large double garages that dominate the façade of the building.
- Positioning garages beside or behind the house. They should not project forward from the building frontage.
- Avoiding standalone garages that block views between the building and the street, disrupting surveillance.
- Tying into the overall design of the building through form and materials.
- Providing a direct connection from the garage to the garden, which can increase the usability of the garage throughout the year.

Rules of Thumb

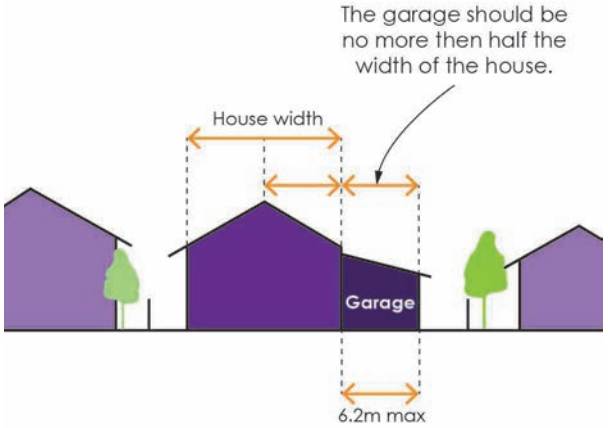
- Garages should not be more than half of the width of the house, and no more than 6.2m wide.
- Double garages should always be avoided on lots less than 7.5m wide, and should be used only on lots that are 12.5m wide or more.
- Garage doors should be at least 5m away from the legal boundary of the road in order to park a second car on the driveway.
- Driveway widths should be a maximum of 3m for a single garage and 4.5m for a double garage.

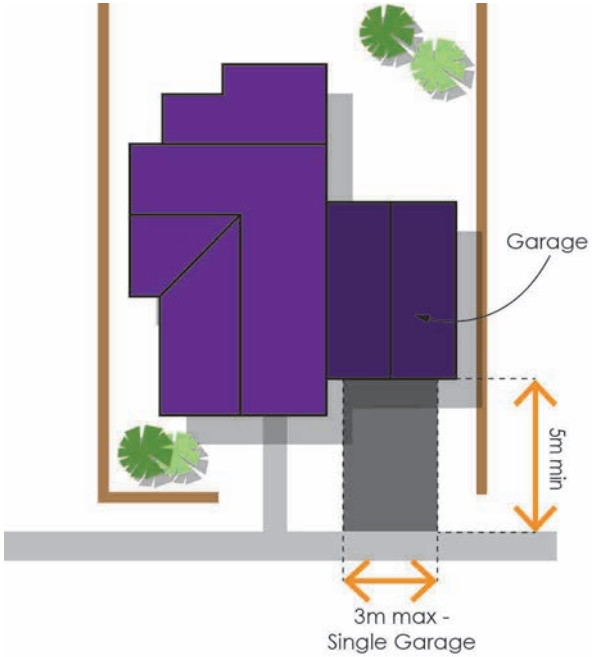


Guideline 7 *(above)*
Avoid positioning standalone garages in front of the building.

Rule of Thumb *(above right)*
Consider the garage width to ensure it does not dominate the building frontage.

Rule of Thumb *(below right)*
Consider how far the garage is set back from the road boundary and how wide the driveway is.





RESIDENTIAL DESIGN GUIDELINES

Guideline 8

Break up the form of larger garages by:

- Using two staggered single garage doors instead of one large double garage door.
- Setting the garage back past the main façade of the building.
- Incorporating it into the design of the house using materials or planting to soften its appearance.

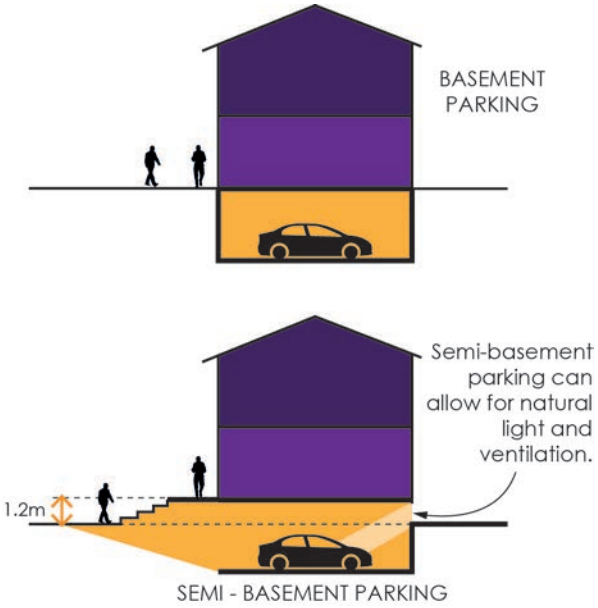
Guideline 8 This double garage does not dominate the house as it is broken up into two and is designed as a part of the façade.

Guideline 9

Within large multi-unit developments, consider basement, semi-basement or under-croft parking, whenever possible, as they locate parking underground, concealing it from the street and allowing for more active uses.

- Semi-basement parking should not be more than 1.2m above ground level to avoid blank street edges.
- Allow natural ventilation to the basement and under-croft carparking areas, where possible.
- Ventilation grilles, screening and car park openings should be well integrated into the façade and landscape design of the development.
- Provide safe and secure access to parking areas for building users.
- Consider utilising the space above under-croft or basement parking for communal, or private outdoor space.

Guideline 9 *(above right)*
Under-croft parking is unenclosed and occupies an area under the building footprint.



Guideline 9 *(below right)*
Diagramme showing basement and semi-basement parking.

Guideline 10

When designing surface parking for multi-unit developments, consider:

- Setting the carparking back from the façade of the building, or behind the building itself.
- Accommodating all modes of transport by creating an attractive, slow-speed environment.
- Visually connecting it to communal outdoor space to make it active and multi-functional.
- Positioning the carpark to be overlooked by residential buildings.
- Incorporating good lighting into the design of the carparking and any paths to and from the building entrances.
- Incorporating trees and planting to soften the appearance of surface parking from the street and creating an attractive outlook for residents.
- Designing the carpark to minimise stormwater runoff.

Rules of Thumb

- Provide a clear path of at least 1.2m wide to offer an accessible route between carparking and the entranceway.

Guideline 10 *(above)*
This carpark has planting and clear path differentiated by lines and materials for pedestrians to navigate the carpark.

Guideline 10 *(right)*
Include planting to soften the appearance of carparking.

Guideline 11

Above-ground parking in residential environments should be limited. If above-ground parking is incorporated into a multi-unit building, consider the façade treatment and incorporating active uses at ground level.

Guideline 11 *Mountain Dwellings Ørestad, Copenhagen.* This development uses façade detailing to screen above-ground carparking.

Guideline 12

Think about pedestrian movement within carparks and create safe and convenient paths by:

- Making walking routes through carparking areas direct, intuitive and accessible for all. Consider using paint finishes or a surface texture to highlight pedestrian paths.
- Creating pedestrian crossings where they cross vehicle paths.
- Creating entrances and pedestrian routes to and from car parks that are safe and well-lit.
- Avoiding shared accessways and entrances into carparks between pedestrians and vehicles.
- Creating designated pedestrian areas where people may need to congregate i.e. around building entrances.
- Locating disability parking near entrances or along key pedestrian routes.

Guideline 12 *(above right)*
Include pedestrian crossings and differentiated surfaces to help pedestrians navigate carparks.

Guideline 12 *(below right)*
Ensure there is a safe pedestrian entranceway that is separate from vehicle entrances.

RESIDENTIAL DESIGN GUIDELINES

Guideline 13

Minimise concreting and paving to that which is necessary for safe and efficient vehicle and pedestrian access. This will reduce costs and allow more space for front gardens, tree planting and landscape design.

Rules of Thumb

- Minimise hard, impermeable surfaces by reducing the width and size of carriageways, driveways and turning bays, and having permeable surfaces in parking areas.
- Expressing joints or breaking up any hard surface with a second material is a good way to soften large areas of concrete and paving.

Guideline 13 *(above right)*
Large driveways can be expensive and unattractive.

Rule of Thumb *(below right)*
Permeable surfaces can be attractive and aid stormwater runoff.

8.2 DRIVEWAYS & ACCESSWAYS

It is important to inform drivers of where to go through clear access points as well as wayfinding signage (within multi-unit developments). Equal consideration needs to be given to pedestrians at vehicle access points and driveways in carparks. Having parked their cars, drivers are now pedestrians in an environment which is traditionally dedicated and designed for vehicles.

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Chapter Objectives

- Access to on-site parking is visible to approaching vehicles and creates a positive contribution to the street environment.
- Access to on-site parking is well designed to ensure pedestrians and cyclists are safe, have ease of movement and are not disrupted by vehicles.
- The carpark is designed so pedestrians walking to and from their vehicles are safe from moving vehicles and have direct and intuitive paths to the building entrances and public spaces.
- Signage within carparks is well integrated into the building design and is legible and understandable for both drivers and pedestrians.

RESIDENTIAL DESIGN GUIDELINES

Guideline 1

Design driveways and vehicle crossings to respect other street functions, avoiding street trees, their root systems, services and on-street carparking (preferably all will be positioned in unison - see 3. Subdivision Design).

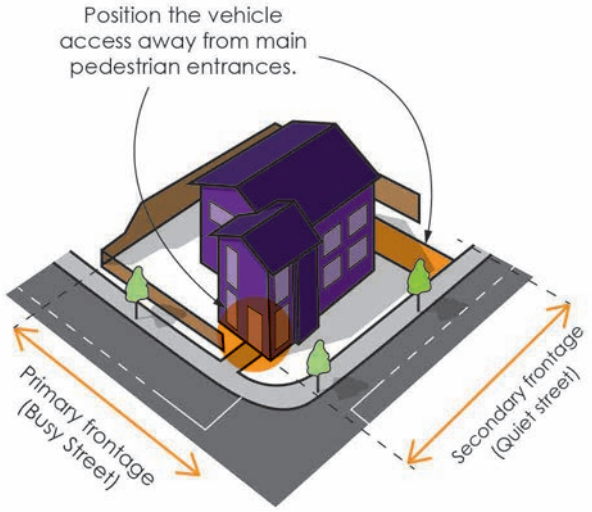
Guideline 1 Consider the context of the street and the other street functions when locating vehicle accessways and driveways.

Guideline 2

Where a site has two road frontages, consider locating vehicle entries away from main pedestrian entries and on secondary frontages.

Rules of Thumb

- Usually it is better to provide access off the quieter street, but providing it off the street with the longest boundary can make it easier to successfully integrate parking into the house design.



Guideline 2 Provide vehicle access where it does not disrupt the main pedestrian entrance.

Guideline 3

Aim to provide a separate path from the street to the front door for pedestrians that is safe and accessible. Front doors should not open directly onto driveways or on-site manoeuvring areas.

Guideline 3 Create a path to the front door or entranceway that is separate from the driveway.

RESIDENTIAL DESIGN GUIDELINES

Guideline 4

Consider pedestrian safety at vehicle crossings, driveways and shared accessways.

- Ensure clear sight-lines at vehicle crossings by designing low fencing at front boundaries.
- Minimise the width and number of vehicle access points (consider sharing driveway crossovers with adjacent developments).
- Locate children's play areas away from driveways and ensure they are fully fenced.
- Avoid using speed bumps. Use other measures such as planting and surface treatment to reduce car speeds.
- Allow space for pedestrians to move out of the way of oncoming vehicles.

Rules of Thumb

- Driveways or accessways serving more than six dwellings should include a clearly delineated footpath at least 1.2m wide.

Rule Of Thumb *(above)*
Include a footpath on driveways servicing multiple houses to connect pedestrians to the street.

Guideline 4 *(above left)*
A shared driveway limits vehicle access points and reduces pedestrian and vehicle conflict.

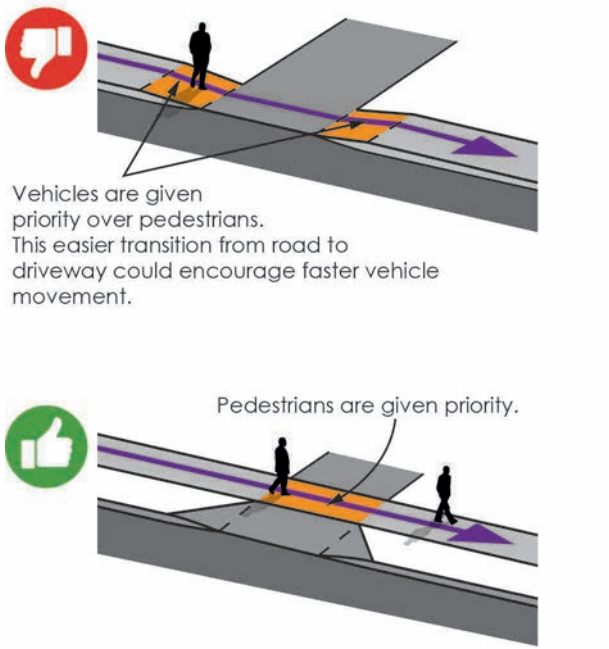
Guideline 4 *(below left)*
A small planting strip alongside the fenceline creates a pedestrian refuge along the driveway.

RESIDENTIAL DESIGN GUIDELINES

Guideline 5

Consider the design of vehicle crossings and driveways:

- Make them as narrow as possible, for every lot, to reduce vehicle entry and exit speeds.
- Give priority to pedestrian footpaths at vehicle crossings to promote accessibility and slow vehicle exit and entrance speeds.



Guideline 5 Build vehicle crossings to prioritise pedestrians over vehicles.

Guideline 6

Where the development serves many units, design the right of way or shared accessway:

- To be overlooked by the buildings and habitable rooms.
- To have entranceways that are clearly visible, especially on rear lots.
- To have varying fencing, materials, height and planting to create visual interest.
- To be attractive and safe with planting and good lighting.
- To avoid large areas of asphalt and concrete.
- To look and function like a street when servicing many houses.
- With differentiation between private and public space.
- With a pedestrian footpath along the driveway, especially when it serves a large number of houses.

Guideline 6 *(above right)*
This development included a 'home zone' or secondary street behind the house to accommodate garages and carparking.

Guideline 6 *(below right)*
Shared driveways or rear lanes should be designed like a street with buildings overlooking the space.

Guideline 7

On narrow sites or frontages, the accessway itself will form a significant part of the landscaping at the street edge. Consider the appearance of vehicle access points as it can form a significant part of the amenity at the street edge.

- Use high quality, low maintenance materials.
- Avoid creating oversized vehicle entrances that form large holes in building façade and break up continuous building lines and active frontages.
- Visually screen rubbish collection areas, loading and servicing areas from the street.
- Integrate the access into the design of the street or the building.
- Recess carpark entries from the main building line.

Guideline 7 *(above right)*
Sandringham, Auckland. This carpark entranceway is well integrated into the building façade design.

Guideline 7 *(below right)*
A planting strip at the entrance to a carpark can create a more attractive entranceway.

8.3 ON-STREET CARPARKING

On-street carparking can be more positive than on-site parking as it does not disrupt the ability to provide active frontages. However, on-street parking can make a carriageway appear much wider and still lead to vehicle dominance.

On-street parking can be provided in the form of parallel parking and diagonal parking.

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Chapter Objectives

- On-street parking does not compromise streetscape character, landscape quality, pedestrian amenity and safety, or traffic movements.

Guideline 1

Consider on-street parking as an alternative to on-site parking. The advantages of on-street parking include:

- The number of vehicle entrance ways and accessways is reduced allowing for a consistent streetscape.
- People are moving to and from their vehicles creating more activity on the street.
- Parked cars create a buffer between moving traffic and pedestrians on the footpath.
- Parking spaces are more accessible and used more frequently, therefore fewer spaces are needed, overall.
- Can be low-cost to construct.
- Enables passive surveillance, as pedestrians and people in buildings can keep an eye on vehicles.

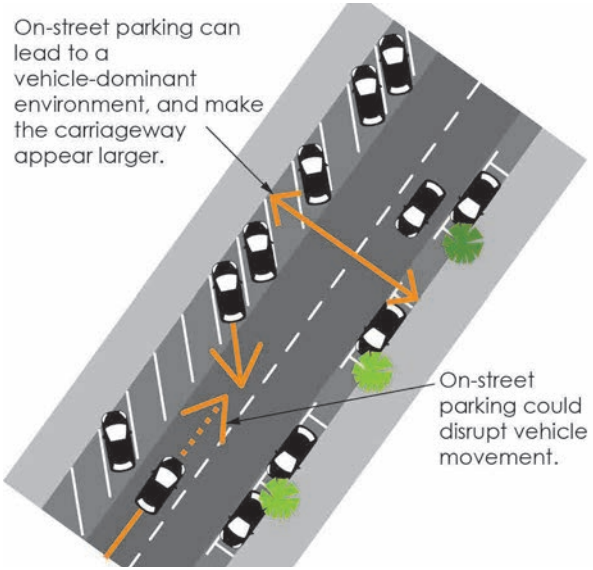
Guideline 1 *(above right)*
Passive surveillance is created between vehicles and pedestrians with on-street parking.

Guideline 1 *(below right)*
With well-designed footpaths and appropriate landscape design, on-street parking does not need to create an unattractive environment.

Guideline 2

The disadvantages include:

- It is within the public street, therefore cannot be allocated.
- Can affect the width of the road, especially with diagonal or perpendicular parking.
- On street parking (especially diagonal parking) may not be appropriate in every situation as it can disrupt the movement of traffic on busy roads.
- Can lead to increased vehicle movements and car dominance if not well designed.



Guideline 2 To much on-street carparking can disrupt vehicle movement and can dominate the street environment.

RESIDENTIAL DESIGN GUIDELINES

Guideline 3

Provide breaks in rows of on-street parking. This allows space for street trees to soften the impact of parking and allows for safer and more accessible road crossing for pedestrians.

Rules of Thumb

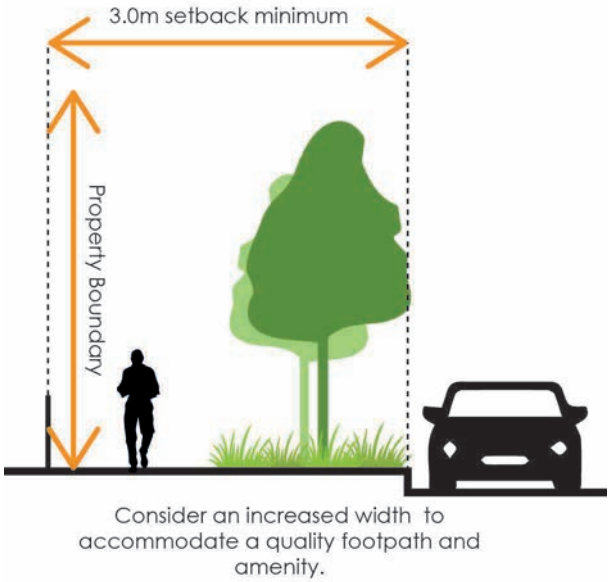
- Apply a break in the form of tree bays, crossing points or pedestrian rest areas every 6 carparking spaces.

Guideline 3 *(above right)*
Creating a continuous row of on-street carparking can create an unattractive, car-dominant environment.

Guideline 3 *(below right)*
Planting bays help break up and soften the appearance of on-street parking.

Guideline 4

On-street parking should be designed to minimise the visual impact to the streetscape and adjacent buildings by having a minimum setback of 3.0m from the front boundary and 1.5m from other boundaries.



Guideline 4 Parking should be set back from a main building façade by a minimum of 3m.

8.4 BICYCLE USE & PARKING

With the increasing popularity of walking and cycling it is important to consider bicycle parking and associated facilities within commercial developments. Encouraging cycling can lower car dependency and provide a more cost-effective alternative to building carparking spaces. Cycling also offers health benefits to occupants and helps reduce traffic congestion.

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Chapter Objectives

- Bicycle parking is designed to be easily accessible, safe and secure for the public and building occupants.
- Associated facilities are provided to accommodate and encourage cycling and are conveniently located, well designed and accessible.

RESIDENTIAL DESIGN GUIDELINES

Guideline 1

Within the multi-unit development, encourage cycling by providing as much bicycle parking as possible.

Rules of Thumb

- Provide secure and sheltered storage, well-maintained changing rooms, lockers and wayfinding signage.
- Where space is limited, wall-hung cycle racks are an option as they can provide a space-efficient storage solution.

Rule of Thumb *(above right)*
Providing lockable, secure and sheltered storage can encourage cycling.

Rule of Thumb *(below right)*
Providing wall hung options is an efficient space saver in multi-unit developments.

Guideline 2

Consider providing public bicycle parking for visitors as close to the front entrance of the building as possible (within 20-30m) ensuring it is easy to get to and accessible.

Rules of Thumb

- Consider providing one visitor or short-term cycle parking space per 20 units.

Guideline 2 Provide additional bicycle parking for visitors.

Guideline 3

Consider the safety and security of bicycles and residents by:

- Locating bicycle parking where it is visible and well overlooked by buildings or passing pedestrians.
- Providing good quality lighting. Parked bicycles, and the routes to and from, should be well-lit.
- Ensuring residents and visitors can securely lock their bicycles to something secure and immovable.

Guideline 3 Bicycle parking should be located where there is activity to create surveillance.

Guideline 4

If a shared option is not possible (for example within individual dwellings), consider providing individual secure and sheltered bicycle storage, for example in the garage, outdoor storage areas, or a wall-hung rack within the unit.

Guideline 4 This apartment has a wall-hung rack on the balcony which is safe and secure and a good use of space.

Guideline 5

Position bicycle parking where it will not cause an obstruction for pedestrians and vehicles moving about the site.

Rules of Thumb

- Consider the spacing of clustered bike stands. It is recommended that they be spaced 1m apart. If they are too close together, they will be difficult to use.

Guideline 5 Position bicycle parking where it will not obstruct pedestrian footpaths or roads.

Guideline 6

Design bicycle parking to be attractive and robust, ensuring it fits in visually with its surroundings.

Guideline 6 Bicycle parking should be attractive as well as functional.

8.5 CARPARK LANDSCAPING

Surface carparking should avoid appearing as a large expanse of hard surface and be dominated by vehicles. Consider incorporating quality landscaping within the carpark to help improve safety and amenity, and to create an attractive outlook for residents and visitors within the commercial development.

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Chapter Objectives

- Surface carparks are designed to incorporate quality landscape design to improve the appearance and safety of the carpark for users.

RESIDENTIAL DESIGN GUIDELINES

Guideline 1

Minimise concreting and paving to that which is necessary for safe and efficient vehicle and pedestrian access. This will reduce costs and allow more space for front gardens, tree planting and landscape design.

Rules of Thumb

- Minimise hard, impermeable surfaces by reducing the width and size of carriageways, driveways and turning bays, and having permeable surfaces in parking areas.
- Expressing joints, creating texture, or breaking up any hard surface with a second material is a good way to soften large areas of concrete and paving.

Guideline 1 *(above right)*
Large driveways can be expensive and unattractive.

Rule of Thumb *(below right)*
Permeable surfaces can be attractive and aid stormwater runoff.

Guideline 2

Use water-sensitive design techniques within parking areas.

Rules of Thumb

- Water sensitive design techniques such as rain gardens will direct stormwater runoff from parking areas to planted filtration beds. These will help absorb and filter out pollutants prior to them entering stormwater outlets, or our natural water bodies.

Guideline 2 Incorporate techniques such as rain gardens into the design of parking areas.

RESIDENTIAL DESIGN GUIDELINES

Guideline 3

Where there is surface parking consider:

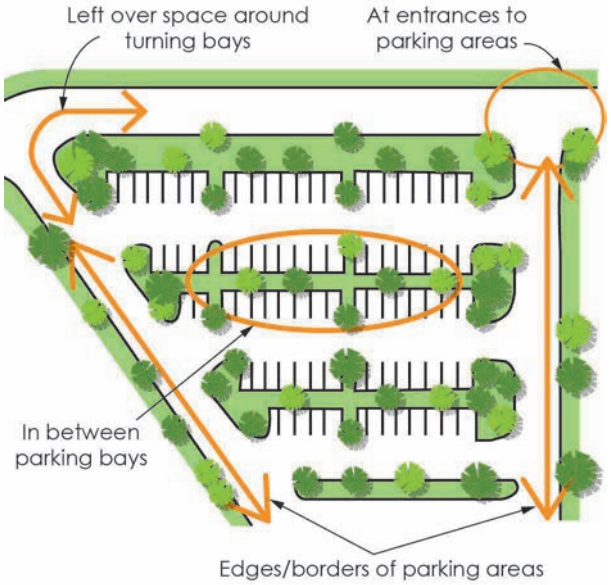
- Establishing planting between parking bays.
- Integrating trees into the design to soften and green the carpark.
- Appropriate tree species and maintenance (i.e. pruning of lower branches so they do not interfere with vehicles and pedestrians).
- Low planting less than 800mm in height.

Guideline 3 *(above right)*
Consider the types of trees to ensure they are the right scale and appropriate in terms of growth and maintenance.

Guideline 3 *(below right)*
Consider a mixture of low planting and trees between parking bays.

Guideline 4

Design carparks to maximise available space for greenery such as in between parking bays, borders and areas left outside of turning circles.



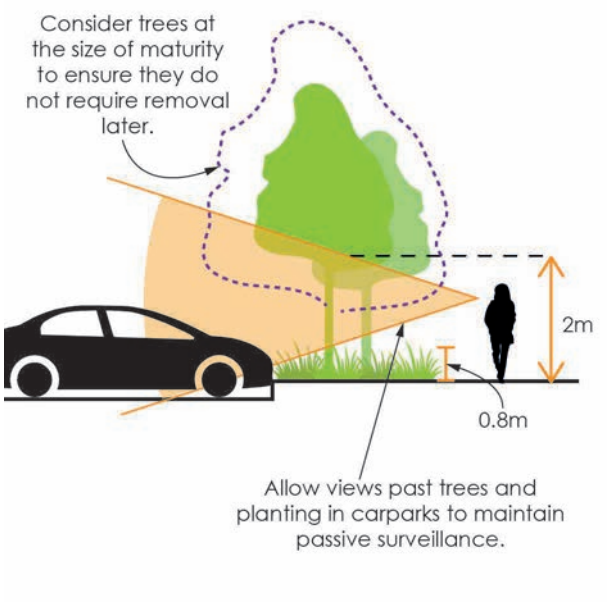
Guideline 4 Planting and landscape design should be incorporated as early as possible to maximise amenity.

Guideline 5

Care needs to be taken where trees are provided to ensure they are given adequate protection from moving vehicles and do not disrupt passive surveillance or safety.

Rules of Thumb

- Low planting should not exceed 800mm in height to avoid potential issues such as concealment (providing hiding spaces).
- Crown lifting (trimming of low level branches) should be to a height of 1.8m - 2m to provide clear views past as well as a walking space below branches.
- Trees should be considered at their mature state to ensure they do not outgrow the space they are planted.



Guideline 5 *(above right)*
Consider trees at maturity so they do not continue to grow or dominate the space.

Guideline 5 *(below right)*
Maintain low planting and tree branches to the appropriate height to allow views past.

9 BUILDING DESIGN

The building needs to be designed to have safe and easy internal access. It also needs to perform in a way that makes the spaces useable. Well designed internal layouts, good access, quality building materials and appropriate heating, cooling and ventilation techniques will ensure the building is functional and comfortable for all residents and visitors


9.1
INTERNAL ACCESS
& LAYOUTS
9.2
BUILDING
PERFORMANCE

9.1 INTERNAL ACCESS & LAYOUTS

Residential development needs to accommodate people in, out and within the building, whether they are residents or visitors. Well designed and well arranged internal rooms and spaces can help ensure clear and easy access for all occupants. Spaces should also be easy to understand and easy to use with clear differentiation between functions, appropriate levels of storage and circulation space between levels and around rooms.

- Distinctive
- Connected
- Attractive
- Inclusive
- Sustainable

Chapter Objectives

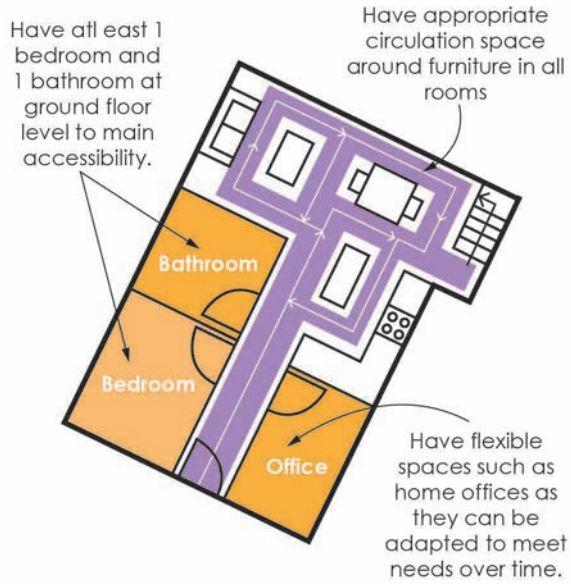
- Internal spaces are designed to be accessible for everyone regardless of age or ability.
- Spaces are easy to move through and easy to understand with clear differentiation, appropriate way-finding and plenty of space for residents to circulate.

RESIDENTIAL DESIGN GUIDELINES

Guideline 1

Consider universal design and accessibility at the earlier stages of the design.

- Allow enough circulation space to move around and onto furniture.
- Ensuring one bathroom is large enough to be converted to an accessible bathroom in the future, if required.
- Consider heights of benchtops and storage.
- Provide convenient wheelchair access between a main bedroom and bathroom.
- Providing flexible spaces such as offices, studies, en-suites, utility rooms and separate living and dining areas.
- In multi-story dwellings/units, position at least 1 bedroom and 1 bathroom at ground floor level.



Guideline 1 *(above right)*
Consider designing kitchens to have a mix of storage at different heights and space below counters, sinks and stove tops.

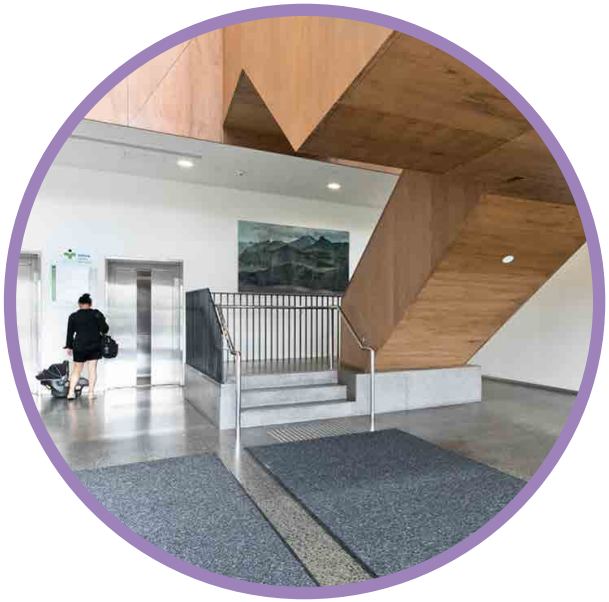
Guideline 1 *(below right)*
Provide flexible spaces within residential properties such as offices and spare bedrooms.

Guideline 2

Allow for easy movement between floors. In multi-level buildings, such as apartments, stairs should not be the only option.

Rules of Thumb

- Stairs and elevators should be in close proximity to ensure equal access from the main entrance for different users.



Guideline 2 Multi-level developments should have elevator access as well as stairs, accessible from the main entrance.

RESIDENTIAL DESIGN GUIDELINES

Guideline 3

When designing circulation space:

- Plan efficiently to maintain the maximum amount of usable floor space.
- Think about how people will move around the building, including between floors.
- Make sure access routes are wide, level and unobstructed to accommodate all users.
- Design circulation space to the anticipated capacity.
- Consider the need for corridors within the development. Minimising corridors can make a dwelling or unit more flexible. If corridors are unavoidable, consider providing wider spaces to allow wheelchair access.
- Use visual indicators, not level changes, to mark spatial transitions. Materials and colours can be used to indicate different spaces and functions.
- Avoid small steps and ledges and, where possible, create ramps.

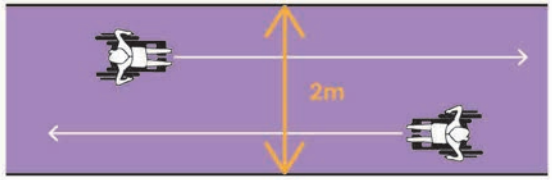
Rules of Thumb

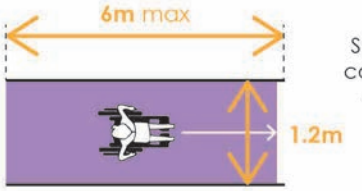
- Long corridors should have a clear width of 2m to enable people to easily pass each other moving in either direction. For shorter Corridors of less than 6m long, a width of at least 1.2m may be acceptable.

Guideline 3 *(above right)*
Corumbene Lachlan Dementia Home, Tasmania. This rest home development uses visual indicators and screens to define separate spaces while still maintaining through-views.

Guideline 3 *(below right)*
Consider the length and width of corridors to allow accessibility.

Long corridors, such as those within apartment buildings, should be 2m wide to allow 2 people to pass one another comfortably.





Smaller hallways or corridors of less then 6m can be 1.2m wide.

RESIDENTIAL DESIGN GUIDELINES

Guideline 4

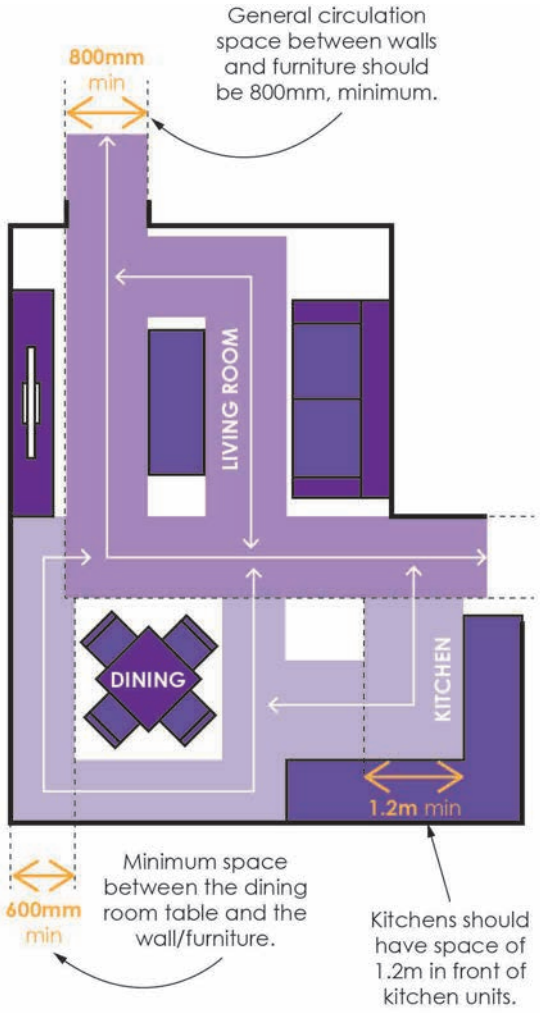
Provide enough space to meet the needs of residents by:

- Allowing sufficient circulation space for ease of movement between all the rooms.
- Allowing enough space for standard sized beds, circulation and secondary storage/ furniture in the bedrooms.
- Providing enough room for all residents and guests to sit comfortably around a dining room table.
- Providing enough space in the living room for all residents to sit and watch television.
- Providing enough space in kitchens so that two people can circulate safely and carry out activities hygienically.
- Avoiding crossing through the middle of living spaces to access bedrooms and bathrooms. Movement should be directed around the edges of the room.

Rules of Thumb

- A room size of between 4 x 4m and 5 x 5m enables a variety of different uses with relative ease from bedrooms and living rooms to offices and shops.

- A 3.2m minimum dimension in a bedroom allows more flexibility for furniture layouts.
- A 3.8m minimum dimension in living and dining rooms allows for flexibility of furniture placement and easy movement.
- Circulation space should be a minimum of 800mm around furniture and fittings. Access around a dining room table should be a minimum of 600-700mm where it adjoins a bench, wall or other furniture.
- Kitchens should have a 1.2m access space in front of the kitchen units. This may be reduced to 700mm where this access space adjoins general circulation space.



Guideline 4 *(right)*
Kitchen, dining room and living room circulation space. Open plan, regular shaped spaces with minimal corridors is often a good option to make spaces flexible and allow for more circulation space.

RESIDENTIAL DESIGN GUIDELINES

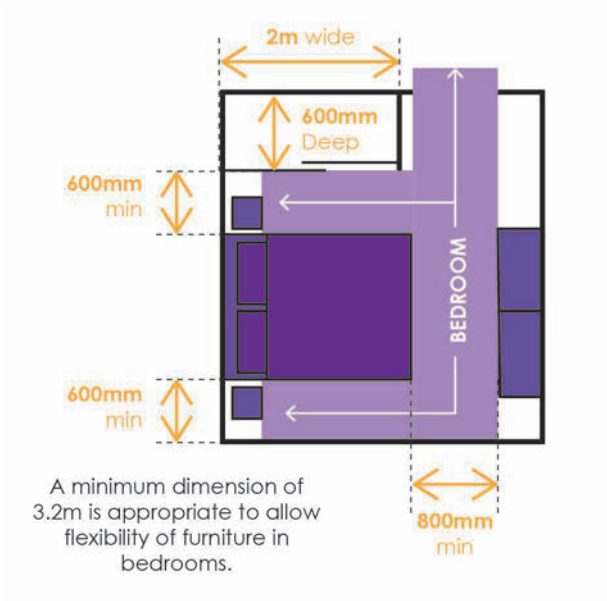
Guideline 5

Provide enough storage for the full range of day-to-day items.

- Storage should be proportional to the number of occupants.
- Provide built in storage as it is a more efficient use of space.
- Provide adequate storage for everyday items (i.e. cleaning products) and those for occasional use (i.e. suitcases).
- Provide secure storage in the house, unit or garage for larger items such as recreational or gardening equipment, bicycles and/or mobility scooters.
- Provide suitable space for utilities such as washing, drying, waste and recycling.
- Within multi-unit developments where space is limited, consider additional secure storage at ground or basement level for bicycles, motor scooters or sport's equipment.

Rules of Thumb

- Bedroom wardrobes should be at least 600mm deep internally, and 2m wide.



Guideline 5 *(above left)*
Provide built-in storage as this is more efficient and usable.

Guideline 5 *(below left)*
Bedroom storage should be a minimum of 2m wide and 600mm deep.

9.2 BUILDING PERFORMANCE

Building performance is important when considering residents level of comfort and amenity and creating spaces which look and feel healthy and inviting. Considering more passive techniques for building construction, heating, cooling and ventilation can also help the overall cost of a development. It can also create a more sustainable and environmentally friendly development throughout its lifecycle.

- Distinctive
- Connected
- Attractive
- Inclusive
- Sustainable

Chapter Objectives

- The building has enhanced performance and creates a comfortable and healthy environment for residents and visitors.
- The building design incorporates passive and natural techniques when it comes to solar design, drainage, ventilation, water systems, waste and lighting throughout all stages of its lifecycle.

RESIDENTIAL DESIGN GUIDELINES

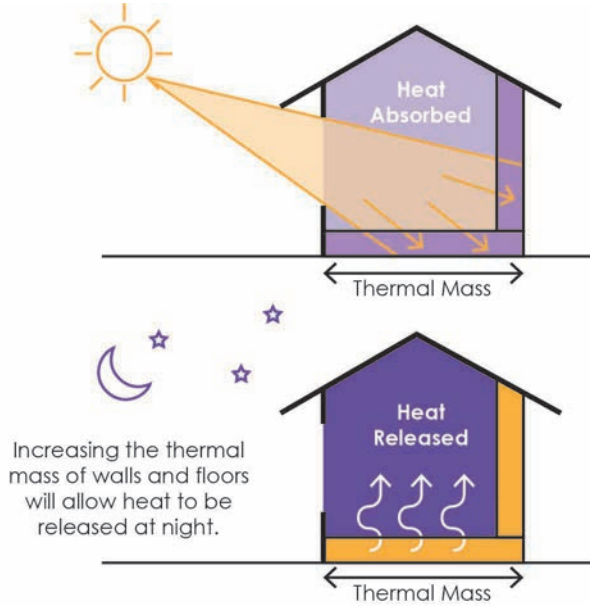
Guideline 1

Create a comfortable and healthy internal environment by heating and cooling through passive solar design techniques.

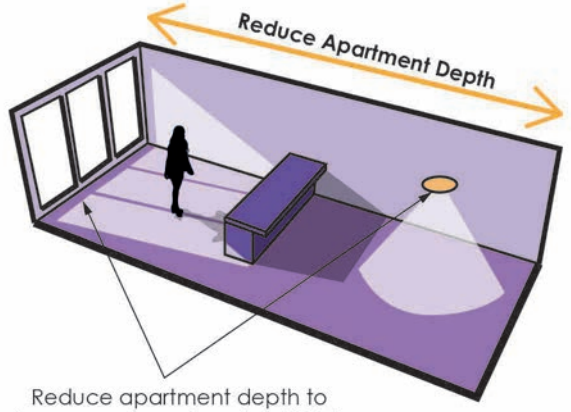
- Provide enough daylight access to spaces (especially to primary living areas and outdoor spaces).
- Orientate main living areas, so they are north, east or west-facing and maximise glazing on the north façade.
- Allow for natural ventilation through opening windows and adjustable vents. Position windows and doors to take advantage of cooling summer breezes, while avoiding winter winds.
- Maximise thermal mass (materials with the ability to absorb and retain heat) of floors in walls where direct sunlight enters for significant parts of the day.
- Insulate walls, floors and ceilings above minimum standards in order to reduce long-term heating and cooling costs.
- Use joinery that does not allow heat transfer.
- Double-glaze external windows and doors to improve the acoustic and thermal performance.
- Within apartments, reduce the depth to provide more solar access and minimise the number of internal rooms that do not receive sunlight.
- Install curtains or blinds to reduce heat loss through windows.
- Designing façades using elements such as sun shading, light shelves and bay windows that suit façade orientation.
- Consider green rooves and walls.
- Install solar panels for water heating or electricity generation. These are more cost effective and well-integrated if considered at the earlier stages of development. A north facing, sloping roof is the most efficient place to locate panels.
- Choose materials and colours that reflect or absorb radiant heat where required.

Guideline 1 *(above right)*
Increase the thermal mass of walls and floors that get direct sunlight as it will help heat spaces at night.

Guideline 1 *(below right)*
Consider apartment depth and access to natural light. This will reduce reliance on artificial lighting.



Increasing the thermal mass of walls and floors will allow heat to be released at night.



Reduce apartment depth to improve access to natural light and create less reliance on artificial lighting.

RESIDENTIAL DESIGN GUIDELINES

Guideline 2

When designing the house consider:

- Deflection – keeping the water away from potential entry points.
- Drainage – removing any water that does enter.
- Drying – allowing any remaining moisture to be removed by ventilation or diffusion.
- Durability – providing durable, low maintenance materials.

Guideline 2 *Hobsonville, Auckland.* Eaves are a simple and effective way of protecting wall and roof junctions.

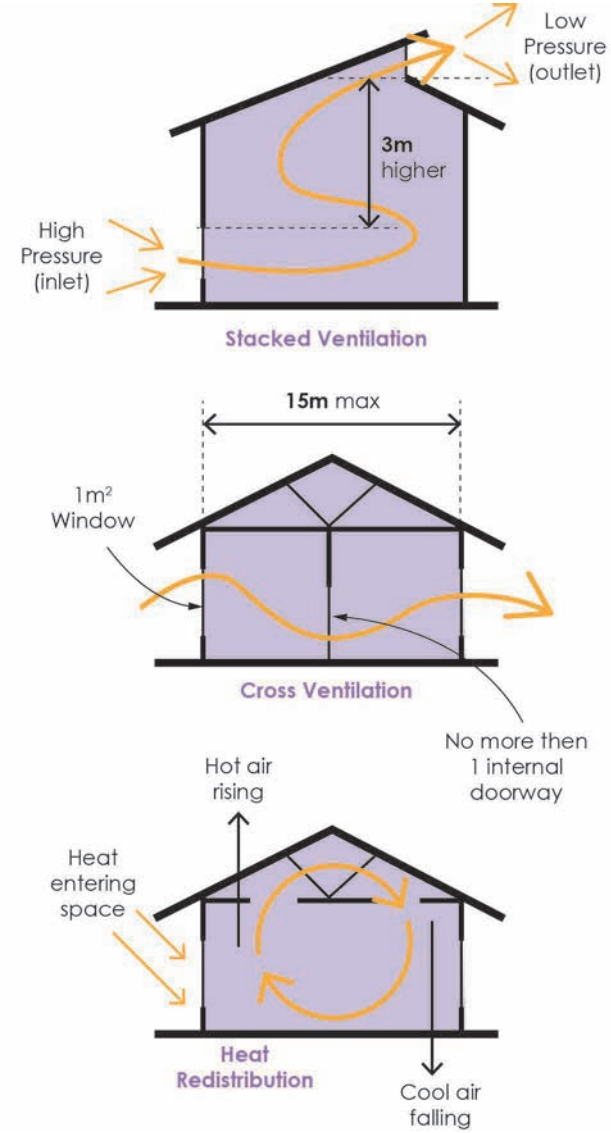
Guideline 3

Design the building layout to increase the potential for natural ventilation. Design solutions to consider are:

- Stack ventilation, which works through vertical air movement where warm air escapes at higher levels and cool air is drawn in at lower levels. This is best applied in two-story or mezzanine-type dwellings or units.
- Cross ventilation, which works through pressure difference on different sides of the building. This is best applied to narrow buildings, dual aspect and corner aspect units (see 5.1 Building Mass & Height).
- Ventilation through the cycling of air (hot air rising and cool air falling) to redistribute heat throughout the house.

Rules of Thumb

- To allow for cross ventilation, the breeze path should be less than 15m, windows should be at least 1m² in area and there should be no more than one interior door in the path.
- To allow for stack ventilation, the outlet opening should be 3m higher than the inlet.



Guideline 3 Types of natural ventilation include stacked ventilation, cross ventilation and heat redistribution.

Guideline 4

Consider ways to ventilate and move heat around the house:

- Provide windows on external walls to make all habitable rooms naturally lit and ventilated.
- Consider mechanical techniques such as fans or ducting to circulate cool air in the summer and warm air in the winter.
- Ventilate bathrooms and kitchens to the outside to prevent a build-up of moisture. Natural ventilation is preferred, but mechanical ventilation must be provided if this is not possible.
- For internal spaces such as service areas, corridors and bathrooms, consider skylights, fanlights, solar tubes or clerestory windows which provide natural light and ventilation.
- Use ventilation options that are secure and rainproof when left open so dwellings and units can maintain ventilation when not occupied.
- Consider alternative or secondary fresh air sources when environments require the closure of windows for noise reduction (i.e. mixed use developments).

Guideline 4 Residential spaces, including apartments, should have openable windows to allow for natural ventilation.

Guideline 5

Improve the efficiency of water systems and encourage water conservation by:

- Insulating the hot water system.
- Installing water-saving devices such as flow regulators, AAA rated shower heads, dual flush toilets and tap aerators.
- Installing water meters or check meters within individual units to discourage waste.
- Installing rainwater tanks for collecting and storing non-potable stormwater for reuse in toilet flushing, laundry use and garden irrigation.
- Recycling grey water from bathroom sinks, showers, tubs and washing machines, for irrigation and toilet flushing.

Rules of Thumb

- Toilet flushing, laundry and garden irrigation make up 65% of total household water use.

Guideline 6

Reduce energy use in multi-unit developments using smart metering to allow residents the ability to monitor their own energy and water use.

Guideline 7

Reduce the reliance on artificial lighting by:

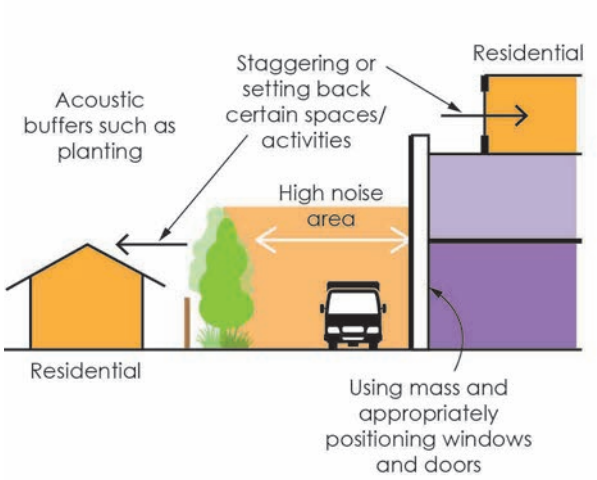
- Providing dimmable lighting to allow for a range of light level requirements.
- Using separate lighting circuits for flexibility of use.
- Using energy efficient lighting, such as compact fluorescent lights.
- Using motion sensor switches in common areas, doorways, entrances, carparks and for outdoor security lighting.
- Using solar lighting.

Guideline 7 Solar lighting is a good option to reduce use of artificial lighting in outdoor areas at night.

Guideline 8

Address acoustics and reduce noise transmission by:

- Considering the layout and orientation of the development, units and openings.
- Positioning building entrances and exits, roller doors and lifts as far away as possible from bedrooms.
- Using sound buffers such as planting, acoustic wall and floor systems, insulation, acoustic cladding panels, double-glazing, high-mass construction (e.g. masonry and concrete), or separated and/or staggered room arrangements.



Guideline 8 Consider how to accommodate areas of high noise levels by positioning and orienting spaces and using buffers.

RESIDENTIAL DESIGN GUIDELINES

Guideline 9

When selecting building materials consider:

- Using durable and low maintenance materials which will weather well to reduce repair and maintenance costs.
- The cost of the material over its lifetime from the installation, maintenance and removal.
- The embodied energy of a material including the energy used to create the material as well as the manufacturing, transportation, installation, maintenance and disposal of the material.
- Using materials that can be reused and recycled at the end of the building's life.
- Using locally sourced materials to reduce transportation costs.
- Avoiding contamination of the environment, for example zinc and copper claddings which can contaminate stormwater.

Guideline 9 *(above right)*
Container House, Ty Kelly, Montana. This house was constructed from 2 recycled shipping containers.

Guideline 9 *(below right)*
Cubo House, Phooey Architects, Melbourne. This terrace house was built from recycled materials salvaged from the demolition of the previous building on site.

Guideline 10

Aim to minimise waste during all stages of the building's life cycle, from design, construction to demolition by:

- Incorporating existing built elements into the development.
- Recycling and reusing demolition materials.
- Specifying building materials that can be reused and recycled.
- Specifying project needs modestly to avoid an oversupply of materials.
- Utilising standard product/component sizes as these are often efficiently produced.
- Designing for durability, adaptability and ease of future upgrades.

RESIDENTIAL DESIGN GUIDELINES

Guideline 11

Contribute to sense of place and identity by retaining, refurbishing, adapting and reusing existing buildings instead of demolishing them.

Rules of Thumb

- Many older buildings are built with high quality materials, generous floor-to-ceiling heights and modular structures that can be easily adapted to commercial and residential use.
- Enclosed stairwells next to front doors can be adapted from larger to smaller units with separate entrances to the stairwell (or vice versa).

Guideline 11 *(above right)*
Gantry, Camperdown, NSW. This contemporary multi-unit housing complex reused the saw toothed gable and masonry facade from the previous building on site.

Guideline 11 *(below right)*
Hannahs Factory, Wellington. This former shoe factory was converted into New York style loft apartments.

Private Bag 9023, Whangārei 0148, New Zealand
Forum North Building, Rust Avenue, Whangārei
Ruakākā Service Centre, Takutai Place, Ruakākā
P: +64 9 430 4200
E: mailroom@wdc.govt.nz
W: www.wdc.govt.nz
Facebook.com/WhangareiDC