



CREATING NEW NEIGHBOURHOODS

A design guide for Christchurch



ACKNOWLEDGEMENTS

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CONTENTS

INTRODUCTION

1. Introduction	5
2. Working with the District Plan	6
3. Outline Development Plans	6
4. Essential qualities of Residential New Neighbourhoods	7

PREPARATION

5. Co-operation, co-ordination and costs	9
6. Understanding the site and its context	11

NEIGHBOURHOOD LAYOUT











7. Creating a sense of place	13
8. Achieving a higher density of development	18
9. Vehicle, pedestrian and cyclist network	23
10. Vegetation, ecology, open space and stormwater facilities	26
11. Interfaces	31
12. Incorporating existing properties on the site	37

SITE AND BUILDING DESIGN

13. Lot size and shape and house types	40
14. Access and parking	46
15. Comprehensive housing	51

BIBLIOGRAPHY	57
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KEY TO DRAWING COLOURS

	Lowest density residential
	Middle density residential
	Highest density residential
	Commercial use/neighbourhood centre
	Neighbourhood or Linear Park
	Stormwater management/recreational/ conservation use
	Waterways and stormwater ponds
	One storey
	Two storey
	Three storey

PURPOSE



1. INTRODUCTION

The purpose of this design guide is to assist landowners, developers and their consultants when planning and designing developments in the Residential New Neighbourhood (RNN) Zone and to guide Council staff when reviewing proposals.

This zone comprises a number of primarily greenfield sites on the outskirts of Christchurch City. Most of these sites include land in several different ownerships. This means that extra effort is needed to ensure that development is co-ordinated, functional, well integrated with neighbouring parts of the city and most importantly, becomes an attractive and desirable place to live.

This guide provides advice on progressing a development proposal and examples of good practice and design solutions which meet the requirements of the Christchurch District Plan (the District Plan).

For more detailed information in relation to technical and engineering requirements, reference should be made to the Infrastructure Design Standard (IDS).

Further documents relating to neighbourhood design, are listed in the Bibliography.

Landowners will need to engage appropriate planning, design and engineering consultants to assist with developing and progressing a proposal.

Early consultation with Council staff is essential in order that prospective developers can be informed of particular requirements and issues. Up to date information on what is planned in the immediate area can be provided by the Council.

Equally important is consultation with adjacent landowners, to establish what their development aspirations are, what concerns they may have and to glean local information. Much better outcomes result when adjacent land owners consult and co-operate with each other.

This guide generally follows the process of designing a new neighbourhood, starting with the big picture and working through to the detail. However, designing an RNN or part of one, is an iterative process and many aspects of design must be considered at the same time.



Northwood – a master planned subdivision.

2. WORKING WITH THE DISTRICT PLAN

It is advisable to become familiar with the requirements of the District Plan at the outset. Chapter 8 Subdivision and Chapter 14 Residential are the most relevant, but other aspects of development are covered in other Chapters, such as Chapter 7 Transport, which sets out standards for roads.

This guide, which is non-statutory, is an aid to interpreting the provisions (Objectives, Policies, Rules, Matters of Discretion and Outline Development Plans) contained in the District Plan. The examples in this guide are to demonstrate to applicants the type of urban form that is anticipated. However, the circumstances and context of application sites are very varied and Council Staff understand that in some cases compromises or trade-offs will need to be made.

When Council receive an application for a subdivision or a comprehensive housing development, experienced Council staff (or occasionally consultants) will assess your application against the District Plan provisions. Some of these can be quantified, such as minimum site size, but others need a level of professional judgement. Those of specific relevance to RNN's are:

8.5.10. Additional matters for the RNN Zone

14.13.1 Residential design principles

14.13.25. Comprehensive residential development in the RNN Zone.

Reference is made throughout the guide to relevant District Plan rules.

3. OUTLINE DEVELOPMENT PLANS

All of the RNNs have an accompanying Outline Development Plan (ODP). The ODP comprises one, or in some cases two plans and a narrative. The purpose of the ODP is to set out the broad development framework for the RNN. This will assist in the creation of an attractive, coherent, and functional place.

3.1. THE PLAN:

- Shows the residential neighbourhood and neighbouring parts of the city
- Sets out important existing features such as transmission lines and heritage buildings
- Indicates the location of certain elements which will be required within the neighbourhood, such as collector roads, road access points, reserves and stormwater facilities
- Some of these elements are in a fixed location, but mostly there is some flexibility in their location as well as their alignment, shape and size.

3.2. THE NARRATIVE:

- Explains the context of the neighbourhood
- Identifies features which add to the values and quality of the area
- Sets out development requirements
- Includes District Plan provisions which apply specifically to that neighbourhood.

The ODP is a statutory requirement and development needs to be consistent with it. However, as development proceeds over time there may be a need to adjust the location of some elements and/or there may be some changes in the development requirements. Developers/owners should check with the Council to confirm the current details of the ODP. For more information about An Accessible City and the Christchurch Central Recovery Plan, visit ceraarchive.dpmc.govt.nz/documents/christchurch-central-recovery-plan

4. ESSENTIAL QUALITIES OF NEW NEIGHBOURHOODS

RNNs are the largest development areas in Christchurch. They will change tracts of rural or undeveloped land to built-up urban areas. It is vital that they become valuable and positive additions to the city. They will be around for a long time.

RNNs are to:

4.1. EMBRACE TANGATA WHENUA VALUES

Tangata Whenua values are recognised, acknowledged and embedded as a core part of the development process. The importance of land, water and air, is recognised culturally and ecologically. References are made through open space design, planting and public art works.

4.2. HAVE A SENSE OF PLACE AND ENGENDER COMMUNITY PRIDE

The neighbourhood has its own identity drawn from the characteristics and history of the land and its context. The neighbourhood looks good, and feels good, i.e. it has high standards of amenity, visual and acoustic privacy. People are proud to live here.

4.3. HAVE A STRONG SENSE OF COMMUNITY

Residents know their neighbours. There are opportunities to meet and socialise. Community facilities are provided or are easily accessible from the neighbourhood. The neighbourhood feels safe and residents are able to watch out for each other.



The Landing, Wigram Skies – new town centre.

4.4. BE WELL INTEGRATED AND WELL CONNECTED

The neighbourhood works well and complements the surrounding environment. The layout encourages walking and cycling and use of public transport. There are good connections within the neighbourhood and to the surrounding area.

Everyone, including the young, disabled and elderly, is able to move around the neighbourhood with ease, in safety and comfort. Commercial centres are located where they are commercially viable and accessible.

4.5. PROVIDE CHOICE, DIVERSITY AND INNOVATION

There is a good variety of housing size, type and value, catering for many sectors of the market. Residents can remain in the same neighbourhood as they age. There are opportunities for outdoor activities.

4.6. BE ENVIRONMENTALLY SUSTAINABLE

The neighbourhood has a low impact on, and contributes to the quality of, the environment and biodiversity and is resource efficient. Ecological values are retained and enhanced. Good use is made of opportunities for water conservation and solar access. High maintenance publicly owned features are avoided. Houses are energy efficient.



Wigram Skies, incorporating cultural and ecological values.

PREPARATION



5. CO-OPERATION, CO-ORDINATION AND COSTS

Most of the areas zoned as RNN are in numerous different ownerships. This presents challenges to co-ordinated development.

5.1. WORKING TOGETHER

It is essential that owners work together to make the most of the sites' opportunities, and to achieve: a rational and connected road, footpath and cycleway network across the neighbourhood; integrated infrastructure; a high quality co-ordinated public realm (streets and parks) and a good standard and mix of residential properties and community facilities. In the absence of an overall developer, it is helpful if owners all use the same consultants. Residential development is complex and specialist advice is best sought at an early stage. It may be possible for Council to operate as a facilitator between landowners.



Concept plan designed so that development doesn't have to follow a particular sequence. Landholdings are outlined with dashed red lines.

The minimum size for a RNN subdivision is 4 hectares. If an existing landholding is smaller than this, it is advisable to approach a neighbouring owner/s to determine whether they are interested in developing a joint development proposal which is in excess of 4 hectares in extent.

There are some real benefits for owners of neighbouring land parcels who work together. Generally each lot will rely on the others for road, water and wastewater connections and integrated stormwater management. Pro-rata design and infrastructure costs can be reduced. Unless everyone works together, it is unlikely that a single landowner will obtain their consents if they don't have water and wastewater connections to their boundaries.

5.2. OVERALL PLANS

Where there are a number of owners who are not all interested in developing their land at the same time, it is helpful to have an overall plan drawn up. This can be designed to ensure that each owner can develop independently of the others and are not tied to a particular sequence.

In order that development within the total RNN is achieved in an integrated manner with regards to infrastructure capacity, grades and compatible earthworks between separate ownership blocks, the Council may require the preparation of an infrastructure integration plan for the wider area. This is to provide confirmation that services and stormwater facilities for all properties within the entire RNN can integrate.

5.3. SEQUENCE OF DEVELOPMENT

Some landowners may not be able to develop their land until a neighbouring owner has developed theirs. This may be due to the site being in the centre of a development area or infrastructure requirements, such as not having direct access to an existing wastewater main.

Minimum Development Site Area

In order to avoid sporadic development there is a minimum initial subdivision development size of 4 hectares, i.e. to change from rural land to part of a residential neighbourhood (Rule 8.6.11.c.i Land area for subdivision). It is possible to apply for a Restricted Discretionary Activity Resource Consent for smaller sites. A proposed development of less than 4 hectares may be looked at more favourably if it is immediately adjacent to an existing built up area.

5.4. COST SHARING ARRANGEMENTS

The distribution of primary infrastructure such as collector roads, stormwater facilities and local reserves is likely to fall unevenly on landowners, so cost-sharing arrangements between owners and/or with the Council will be necessary. For instance stormwater is best managed with fewer, larger, stormwater basins, so one landowner may need to give up a significant portion of their land to cater for stormwater run-off from neighbouring land parcels not in their ownership. In which case the Council will compensate the affected landowner and recoup the cost from those landowners who are able to develop more of their land because they do not have to provide on-site stormwater facilities.

5.5. DEVELOPMENT CONTRIBUTIONS

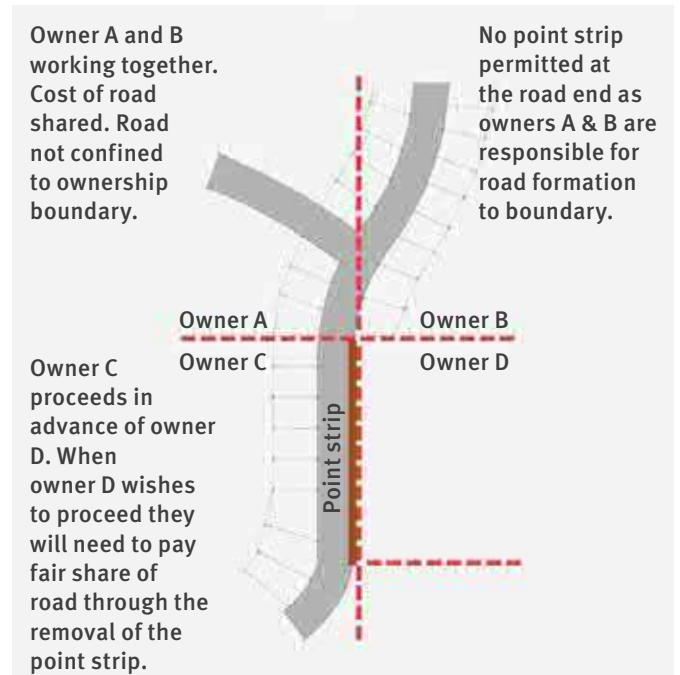
Development contributions will be required to help pay for reserves and network infrastructure. They may be monetary payments or sometimes a contribution of land. Developers are required to pay per additional household created and for commercial developments. Amounts vary depending on the location of the development. Further information is provided on the Councils website. www.ccc.govt.nz/consents-and-licences/development-contributions

5.6. COLLECTOR ROADS

In some cases Collector Roads are shown on ODPs running along property boundaries. Where owners are working together they can share the cost of the road and decide on the best alignment. Where only one owner wishes to proceed the road may need to run along the boundary but entirely on their land. If the owner of the adjacent land wishes to develop in the future they will have to pay their share towards the cost of the road.

5.7. POINT STRIPS

Where in the course of subdivision a new road, cycle way or pedestrian link is constructed and vested that will, or could provide frontage to other land, that other land (with subdivision potential) can be separated from the new road, cycle way or pedestrian link by a point strip, and an agreement will be entered into by the first subdivider with the Council, to ensure the benefiting owner pays a fair share towards the cost of providing the frontage road, cycle way or pedestrian link. The point strip(s) will transfer to Council on the deposit of the plan for each stage of the subdivision. The point strip agreement sets the amount to be paid, which will be updated from the date of signature of the agreement by the Consumers Price Index.



Management of road provision between developers.

Such agreements will be held by the Council and can be identified by the point strip separating the subsequent property from frontage to the road, cycle way or pedestrian link.

5.8. WATER AND WASTEWATER

Full high pressure water reticulation will be required to service development. Provision will need to be made for sufficient water supply and access to water supplies for firefighting.

Most RNNs will be serviced by a pressure sewer network with telemetry. A wastewater capacity certificate will be required.

For further information reference should be made to the IDS, Construction Standard Specifications, the New Zealand Fire Service Firefighting Water Supplies Code of Practice and other relevant technical advice.

6. UNDERSTANDING THE SITE AND ITS CONTEXT

A thorough understanding of the site and its context is necessary, prior to embarking on the design of a subdivision. This will enable a concept to be developed which takes advantage of the natural and historical features of the site and relates well to its context. The type of matters to be considered include the following in addition to the requirements of the ODP:

TABLE 1. SITE AND CONTEXT MATTERS TO BE CONSIDERED

1. Existing site features	2. Surrounding context
Any natural, cultural or archaeological features to be preserved or respected	Availability of services (e.g. wastewater outfall, water supply connections), their location and capacity o)
Ground conditions, land unsuitable to be built on, contaminated land	Character of surrounding area, including streetscape
Site contours, changes of level	Adjoining land use zoning and land uses
Site orientation	Existing pattern and nature of surrounding roads and available access points
Climatic conditions	Adjacent or nearby pedestrian and cycle links
Trees, shelterbelts and other vegetation and their suitability for retention	Location of schools, parks, libraries, and other community and commercial facilities, bus routes and stops
Watercourses and springs	Open outlooks, near and distant views
Stormwater drains. Potential locations of stormwater facilities (if required)	The relationship of surrounding development to the site, particularly adjacent houses
Electricity transmission and distribution lines	
Easements and other restrictions	3. Development proposals and requirements
Existing buildings and structures which are to be retained or removed	Advice should be sought from the City Council and neighbouring landowners/residents
Nature and condition of site boundaries	Planned development in the area, within and around the RNN
Interfaces where buffers will be required	Planned cycle routes or pedestrian walkways
Pedestrian and cycle routes and desire lines and potential connections through the site	Planned road upgrades or changes
	Other relevant Council projects
	District Plan requirements

Early consultation with the appropriate iwi, runanga or representative authority (Iwi Management Plans provide a starting point). Heritage New Zealand and Council staff (Heritage, Ecology, Urban Design) is advised.

NEIGHBOURHOOD LAYOUT



White house black, Halswell

7. CREATING A SENSE OF PLACE

Once a thorough understanding of the site and its context has been gained consideration needs to be given to the ‘big picture’ of the neighbourhood. Thought needs to be given to how the whole neighbourhood will come together to be a place, rather than a collection of unrelated subdivisions. A sense of place is a combination of characteristics that make a place special and unique. A sense of place may be derived from the history and cultural references of the site, existing features such as mature trees or waterways and from the design and elements of the new neighbourhood.

7.1. INITIAL DEVELOPERS SET A PATTERN

Where land is in a number of ownerships and an overall developer is not developing to a masterplan, it will be more difficult to nurture an overall sense of place. The ODPs give guidance on the elements that can be used to create a sense of place. Where land comprising a RNN is largely under the control of one developer an overall concept or theme can be developed. In other cases, the first developers in an area will set a pattern, such as creating the collector road as a boulevard, establishing a consistent treatment for a river corridor, selecting street trees and furniture, which may need to be continued by subsequent developers.

7.2. RECOGNISING PAST HISTORY, CULTURAL AND NATURAL VALUES

At Wigram Skies, on the site of the former Wigram airfield, a masterplan was developed with the existing runway forming a central spine road. Aviation history and Ngāi Tahu cultural values and influences are reflected in street names, landscaping and artworks. The roads are laid out to converge on the town centre, strengthening its role as the focus of the new community.

The Te Whāriki neighbourhood at Lincoln is located on what was Te Waihora lakebed and its associated wetlands. The traditional name for the area is Tauhinu; taken from a variety of shrub that grew abundantly in the area.

Te Taumutu Rūnanga have worked closely with Ngāi Tahu Property to restore old waterways, re-establish locally occurring native plants, integrate modern stormwater treatment systems and bring to life, through street and reserve names, a number of place and species names associated with Te Waihora.



Te Whāriki, Lincoln.

7.3. DESIGNING TO TAKE ADVANTAGE OF EXISTING FEATURES

Maximum advantage can be taken of existing features of the site such as streams, changes of level, trees, character buildings to create a point of difference and a connection to the past.

Many of the RNN Zones have views out to rural land and hills beyond, or river corridors. These can be taken advantage of to create a sense of place. Roads can be aligned so that they focus on the view. Reserves can be located on the edge so that there is a view out of the neighbourhood.

At Redwood Springs, Redwood, north Christchurch, a large linear park is located on the edge of the neighbourhood, along the Styx River (Puharakekenui) corridor. Roads within the neighbourhood are aligned to provide views along them to the reserve and rural land beyond.

At Linden Grove, Hillmorton, the trees which grew on the former hospital site have been incorporated into reserves to become a feature of the new neighbourhood.

Character buildings are very valuable assets in new development areas. They not only provide a feature in the townscape but also can become a focal point for the community. White House Black, Halswell is an 1880's homestead which has been renovated as part of the Te Repo Oaks neighbourhood and now operates as a café and restaurant.



Redwood Springs, road aligned to provide view towards the reserve.



Central park at Linden Grove.



Redwood Springs, Redwood.



Linden Grove, Hillmorton.

7.4. DESIGNING AROUND COLLECTOR ROADS

Where a collector road runs right through a neighbourhood it can act as a main structuring device for development. Each individual development can link to it as the spine of the neighbourhood. Higher density development can be located along it.

William Brittan Avenue, Halswell, a collector road, was constructed in stages as part of four separate developments. It now forms a central co-ordinating and orientating feature of the neighbourhood.



William Brittan Avenue, links subdivisions at Halswell, providing a sense of place for the neighbourhood.



William Brittan Avenue, Halswell.

7.6. DESIGNING AROUND STORMWATER FACILITIES

Where stormwater management is a large component of a new neighbourhood it can be used as the focus of the design, in conjunction with neighbourhood reserves, cyclist and pedestrian facilities.

A linear reserve incorporating stormwater management facilities provides the centre piece of the new neighbourhood of Prestons, north Christchurch.

Similarly Longhurst, Halswell West is distinguished by the linear stormwater and recreational reserve running through the neighbourhood.



Prestons New Neighbourhood (North).



Longhurst, Halswell.

7.7. CREATING A NEW CHARACTER

In some neighbourhoods where there are few distinctive existing features, a sense of place has to be created through the design and layout of the development. At Northwood, Belfast, former apple orchards have been replaced with a new community, structured around a central boulevard, large open spaces Kaputone Stream and a lake.



Northwood, Belfast.

8. ACHIEVING A HIGHER DENSITY OF DEVELOPMENT

RNNs need to achieve a higher density of housing development than has traditionally been the case in Christchurch. The District Plan requires each RNN to achieve a density of at least 15 households per hectare (hh/ha). Older suburbs of Christchurch such as Westlake, Halswell are built to a densities of less than 10 to the hectare (Westlake is 9.7 hhs/ha).

There are many advantages of higher density housing. It makes better use of land to counteract urban sprawl; it can provide more affordable housing and housing choices; can provide a critical mass to support a bus route and local shops and services; provide a more interesting and vibrant neighbourhood and a more balanced community.

Achieving higher densities does not mean compromising on the quality of the residential environment. However, it does require a lot more thought at the subdivision and design stage. It is not just a matter of making section sizes smaller.

Each new neighbourhood is to include a good range of homes to suit a wide range of households. Attractive older Christchurch suburbs, such as St Albans, provide a good model for a new neighbourhood. They have a diversity of residential properties, including stand alone houses, townhouses, apartments and retirement options, and a full range of community facilities.

District Plan Density Requirement

Policy 8.2.2.8. – Urban Density requires a minimum net density of 15 hh/ha to be achieved when averaged across the whole of the residential development area within the relevant Outline Development Plan. There is an exception for areas shown on an Outline Development Plan as being subject to development constraints, where either an alternative minimum net density may be specified in the Outline Development Plan or else no minimum applies. There is also an exception for the RNN (Prestons) Zone.

Rule 8.6.11.b.iii - Residential net density. Where a subdivision and/or or comprehensive housing development will result in a residential net density lower than 15 households per hectare for that site, there is a need to demonstrate, through the use of legal mechanisms, how the lost density will be offset elsewhere in the Outline Development Plan area such that the residential net density required across the whole Outline Development Plan area can still be achieved.

Net density includes residential lots, neighbourhood parks and local roads and excludes stormwater retention and treatment areas, geotechnically constrained areas, community and retail facilities, major roads, larger reserves and land set aside to protect significant ecological, cultural, historic heritage or landscape values.

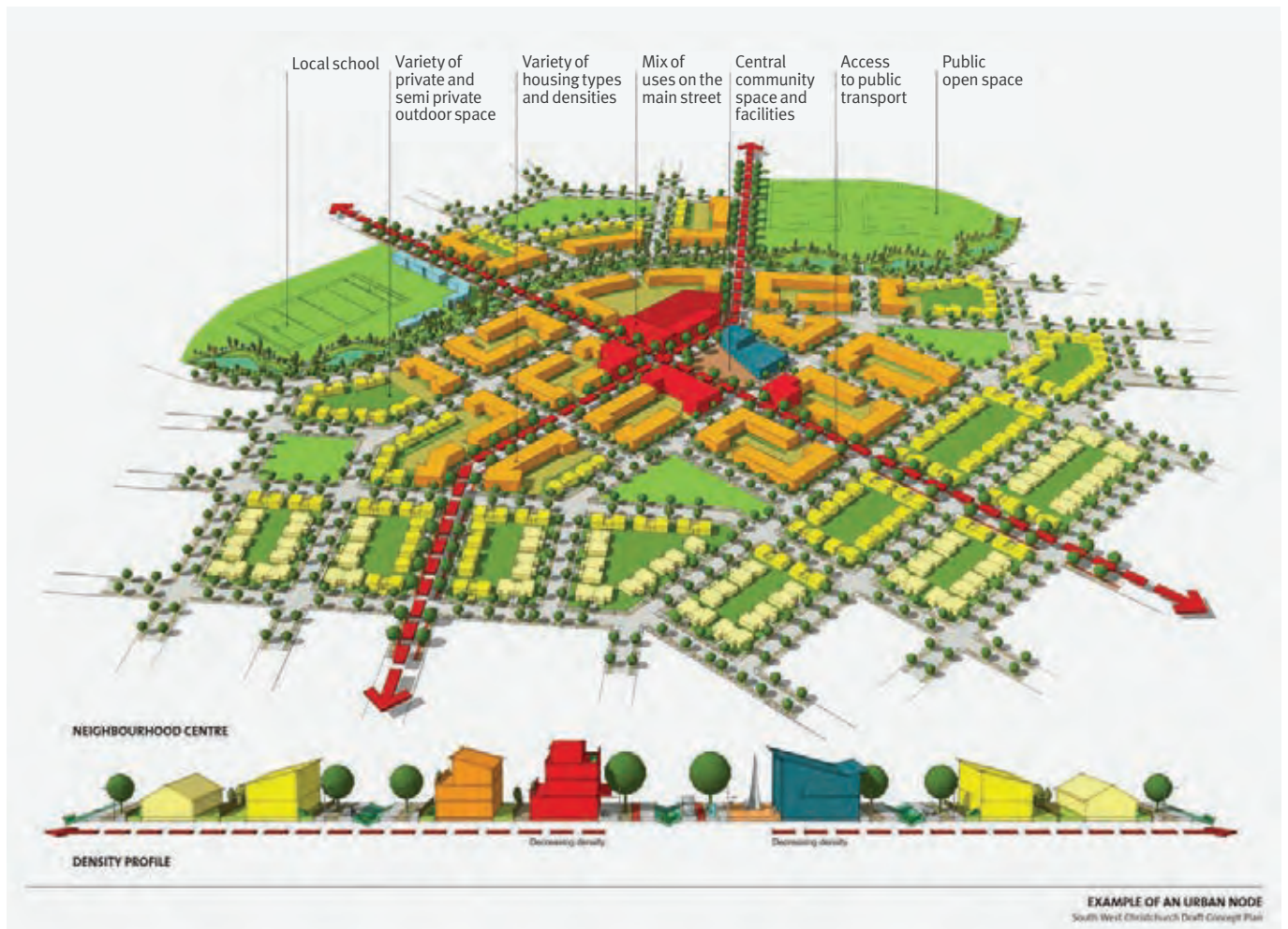
8.1. LOCATION OF HIGHER DENSITY AREAS

The first challenge is to utilise the density in a creative way to foster placemaking. Variations in density can be used to structure a subdivision with higher densities around focal points, such as community facilities or alongside spine roads. Smaller lots may be located closer to a bus route for convenience, or adjacent to open outlooks for borrowed amenity.

Consideration needs to be given to whether smaller properties should be concentrated in one area, located in small clusters or dispersed throughout the development. While there is a logic to increasing densities towards the centre of a neighbourhood, concentration of density can lead to poor urban design outcomes if not carefully handled. For example long rows (more than about 6) of terraced units can be monotonous, large areas of dense development can be visually dominant, issues with lack of space for on-street parking and street trees can arise and it can be difficult to achieve good orientation and access to sunlight.



At Longhurst, Halswell smaller lots are concentrated around a local centre, a large reserve and along the bus route.



Increasing residential density towards the centre of the neighbourhood.

8.2. RESPECTING DENSITY OF ADJOINING RESIDENTIAL AREAS

Greenfield sites on the edges of urban areas will often abut lower density residential development, in which case it will be more acceptable and appropriate to have similar size lots adjoining the existing ones, with higher densities located within the new subdivision. At Cairnbrae Drive, Prebbleton, the smallest lots are in the centre. Larger lots abut existing suburban residential development. The largest lots are along the western boundary adjacent to much larger lifestyle lots.



Cairnbrae Drive, Prebbleton.

8.3. VARYING THE DENSITY

The Northwood, Belfast masterplan was designed to accommodate about 1000 homes on a 100 hectare site. The inclusion of additional higher density developments in the later stages has led to an overall net density of around 12.25 hhs/ha. There is a wide variety of lot sizes ranging from 160m² to 1400m². House types include large standalone houses, semi-detached two-storey houses, small single storey units, short two storey terraces and a retirement village.



Mixed density development in Northwood, Belfast.



Northwood, Belfast.

8.4. REDUCING THE IMPACT OF HIGHER DENSITY

With higher densities, care needs to be taken to ensure that development does not feel cramped, oppressive and monotonous.

A more open, spacious feel can be achieved by:

- Allowing sufficient space between the fronts of houses across a road (at least 20m)
- Taking advantage of open outlooks
- Maximising the profile of reserves
- Strategic placement of trees
- Open front gardens
- A good balance between house and garden size
- Use of light coloured wall finishes
- Breaking up terraces into short sections to allow views through of open sky
- Separation at first floor level, such as by interspersing single storey garaging between the housing or having smaller upper floors than ground floors
- Use of small apartment blocks which look like one large house.

8.5. SMALL GROUPS OF HIGHER DENSITY HOUSES

Small groups of higher density houses can work well, adding variety and interest to the streetscape. They can provide a scale of development which can be taken up for comprehensive development by house building companies.



Delamain, Yaldhurst.



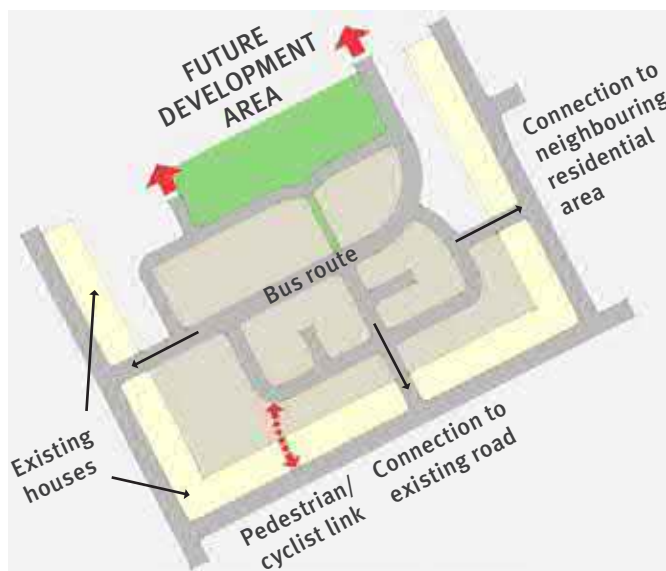
Hobsonville, Auckland

9. VEHICLE, PEDESTRIAN AND CYCLIST NETWORK

Note: For more detailed and technical advice, reference should be made to the Infrastructure Design Standard, Part 8– Roading. And the Construction Standard Specification (CSS).

9.1. A CONNECTED ROAD NETWORK

A well connected network of roads increases accessibility for residents, allows for safer, more efficient and resilient infrastructure provision and is more adaptable to changes.



A connected road network.

9.2. A SELF-EXPLANATORY ROAD HIERARCHY

The design of the road corridor in terms of carriage way width, surface materials, planting and traffic calming will convey to users the status of the road, e.g. collector, local through road, cul-de-sac, in order to aid orientation within the neighbourhood and to manage vehicle speed.

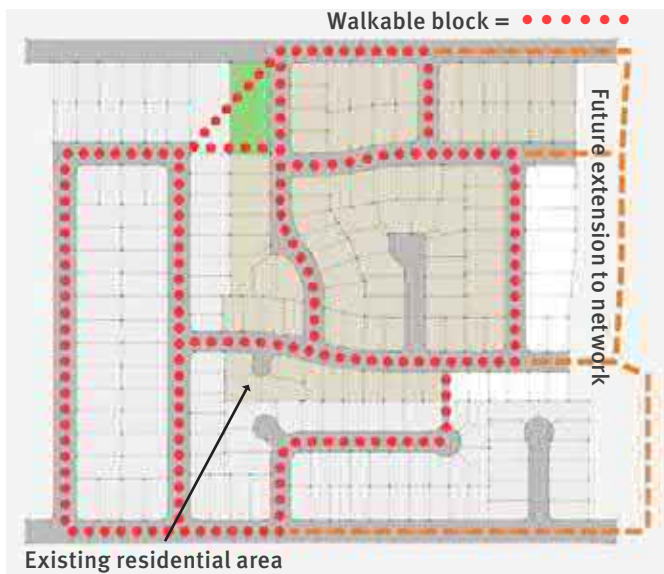
The road and block layout needs to:

- Connect new and existing developments and make allowance to connect to future developments
- Be simple and logical so that it is easy for people to work out where they are and where they are going
- Make allowance for longer term growth
- Make allowance for a bus service on collector routes
- Connect to existing roads, pedestrian and cyclist links
- Support connectivity of services between existing and future development.

9.3. NETWORK FOR PEDESTRIAN AND CYCLIST MOVEMENT

RNNs are to be designed to encourage walking and cycling. Pedestrians and cyclists will use the roads, but off-road connections can often provide shortcuts and a choice of routes, encouraging residents to walk and cycle more. This requires relatively small block sizes (see Walkable blocks below). Frequent connections to linear parks and bus routes will also be important.

In some neighbourhoods provision will be needed to be made for strategic cycle routes and on-road cycle lanes may be required.



Walkable blocks.

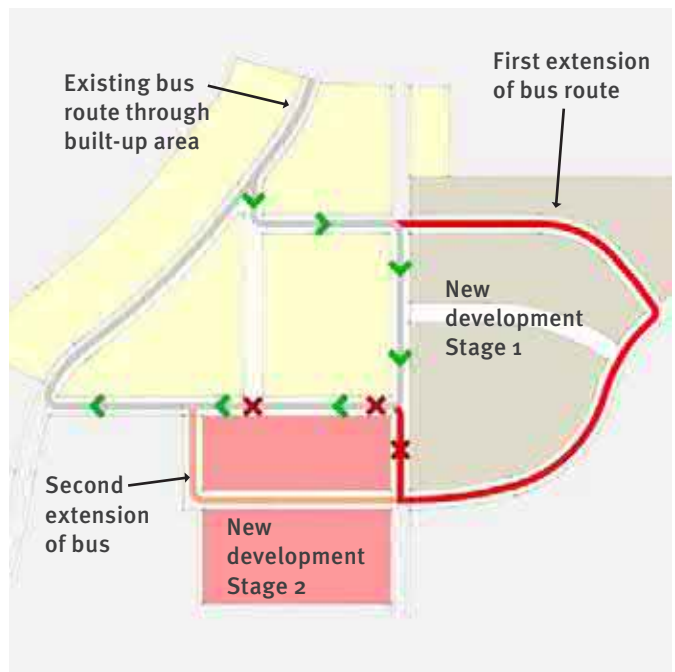
Walkable blocks
 The District Plan *Rule 8.6.11.i. Walkable block size*, requires every subdivision layout to comprise or complete blocks with a perimeter of no more than 800m. A residential block comprises a group of lots. Its perimeter is defined as the shortest distance which it is possible to walk entirely around on publicly accessible land (roads, paths and reserves).

9.4. PEDESTRIAN AND CYCLIST LINKS

The subdivision layout should be designed to minimise pedestrian/cyclist links which run between the side boundaries of residential properties. These can compromise the privacy of private gardens or feel unsafe if they are not overlooked. Where they are necessary they should be short, straight and at least 8 metres wide.



Northwood, Belfast. A walkway reserve is overlooked and has a clear view through.



Incremental extension of existing bus route.



Bus stop located adjacent to reserve while still being convenient for nearby residents.

9.5. CATERING FOR BUS SERVICES

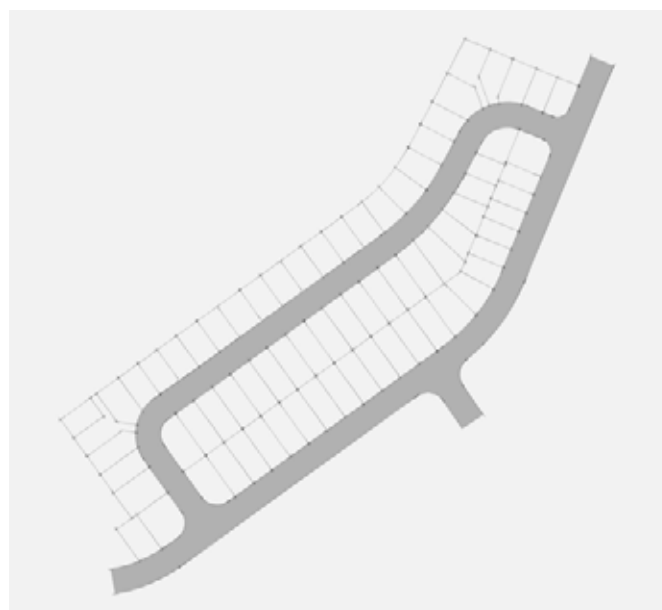
In most cases collector roads will need to be capable of accommodating a bus route, although the use of the route may be delayed until the neighbourhood is more fully developed. In some cases an existing route can be extended incrementally. Roads need to cater for the manoeuvring requirements of public transport vehicles. Bus services need to follow a direct route through the neighbourhood, without the need to double back. Ideally, all houses should be within a 500 metre walk of a bus stop.

The provision of bus routes in new neighbourhoods must be discussed with Canterbury Regional Council (Environment Canterbury) staff, at an early stage.

It is important to consider the location of bus stops and shelters when designing the subdivision layout. Opposition to them can arise if potential purchasers are not alerted to their probable location at the outset.

9.6. CULS-DE-SAC

Culs-de-sac can provide safe, quiet living environments and a strong connection with other neighbours in the cul-de-sac. However, the liberal use of culs-de-sacs could increase travel distances and limit pedestrian and cycling connections. As culs-de-sac only provide access to properties from one direction they can be problematic in times of emergency, if the road is blocked. Where they are employed they should ideally be short in length, unless there are special site circumstances that necessitate a longer cul-de-sac.



A crescent street form can be used instead of two culs-de-sac.

Cul-de-sac length

District Plan **Rule 8.6.11.f** - Maximum cul-de-sac length requires culs-de-sac to be no more than 100 metres in length or 150 metres if there is a footpath/cyclist link from the cul-de-sac head to an adjacent street.

10. VEGETATION, ECOLOGY, OPEN SPACE AND STORMWATER FACILITIES

Note: For more detailed and technical advice, reference should be made to the Water and Wetlands Design Guide, and the IDS, Part 5-Stormwater and Land drainage and Part 10– Reserves, Streetscape and Open Spaces. Early discussion with Council staff is recommended to ensure agreement on the location, design and detail of reserves and stormwater facilities.

10.1. TYPE AND SIZE OF OPEN SPACES

Open spaces within the RNN provide greenery and spaciousness in contrast to the built form, and contribute to environmental quality. They should contribute to a wider green space network. Where existing open spaces adjoin the RNN, they should be taken advantage of, in order to provide an asset for the new, as well as the existing community. They may need to be extended or enhanced in conjunction with new development.

Neighbourhood Parks are the first priority for park provision and using development contribution funds. They serve the immediate neighbourhood and should be suitable for accommodating substantial tree planting, open space and children’s play equipment, i.e. they should be relatively flat and square in shape and around 3000m² in area. In choosing a location for a playground, consideration needs to be given to the potential impact of noise and activity on residential neighbours.

Linear Parks need to be sufficiently wide to accommodate a shared path for pedestrians and cyclists and landscaping. They can be developed alongside watercourses or form a buffer between residential development and less compatible activities. They can form ecological corridors if they are at least 50 metres wide. Co-location of Neighbourhood/Linear Parks and drainage reserves is highly desirable. A drainage reserve can provide a valued setting and significantly add to amenity values for park users.

Subdivision Standards for Reserves

District Plan *Rule 8.6.11.h*. - Reserve width requires reserves for utility, pedestrian access or stormwater conveyance to have a minimum width of 8 metres.



Wigram Skies low impact stormwater management.

10.2. LOCATING PARKS

All residential development should be within 400 metres walking distance of a Neighbourhood Park. These should be located in central, high profile locations so that the maximum number of people benefit from the visual and spatial contrast they provide. This might be in a location which is passed by many residents as they come and go from their neighbourhood, as at Delamain, Yaldhurst.

It is not acceptable to nominate a group of lots as the reserve after the layout has been designed. Council will not accept recreation reserves that are significantly encumbered by utilities or provide a stormwater management function. These areas are to vest as Local Purpose (Utility) Reserves. Nor will Council adopt a recreation reserve which is of benefit only to a few immediate neighbours.

In some cases a reserve may be located on the site boundary, so that a view to countryside beyond is afforded. Also, it can be extended if adjacent land is developed.

Indicative locations of reserves are shown on ODPs. The exact location and configuration will need to be discussed with Council at the time of subdivision.



Delamain, Yaldhurst. Reserve located on the urban/rural boundary.



Delamain, Yaldhurst.



Reserve overlooked from surrounding houses and roads.

10.3. FREEDOM FROM CRIME

Parks and playgrounds need to be designed and located in accordance with Crime Prevention through Environmental Design principles (CPTED). This means locating them so they can be easily seen from surrounding houses and roads. To enable casual surveillance at least 25% of the reserve boundary is to have a road frontage. Some important principles for helping create a safe neighbourhood are:

- Provide clear sightlines along paths from one end to the other
- Light walkways if they are intended to be used after dark
- Provide an alternative safe route to that through the park
- Avoid dead ends, places of entrapment and hiding places
- Further information and advice is provided by the Design Out Crime Advisory Service (DOCAS).

Subdivision Standards for Reserves

District Plan **Rule 8.6.11.g.** — **Road frontage to public reserves** requires the minimum road frontage to a public reserve to be at least 25% of the length of the perimeter of the reserve.



Delamain, Yaldhurst. Houses directly overlooking the reserve and street.

10.4. INCORPORATING TREES AND RETAINING AND ENHANCING ECOLOGICAL VALUES

Trees and vegetation add points of difference and contrast within a RNN and can add value to neighbouring properties. Ensuring an overall tree canopy is important to environmental quality and ecology. Where mature trees exist on a site, their suitability for retention should be investigated. Farm trees and shelter belts are often not compatible with residential development due to their size, tendency, to drop branches and cause shading. If they can be retained they should be located in open spaces or road reserves and not in private gardens.

Because of their fixed location the layout will need to be designed to respond to their position and size.

Incorporating local native trees and shrubs into plantings can help provide a sense of place as well as enhancing city wildlife resources, habitat connectivity and tangata whenua values.

Retaining and planting of vegetation adjacent to waterways can also provide an important buffer and habitat to aquatic systems. This riparian vegetation should be designed in accordance with the Councils Waterways, Wetlands and Drainage Guide Part 11: Riparian Planting. Existing vegetation should be inspected by an arborist and/or botanist and remnant native vegetation identified, so that the RNN can be designed to safeguard that which is worthy of protection.

10.5. STREET TREES

Tree lined streets are highly valued and can create an identity for a neighbourhood. Where located along primary streets they contribute to the legibility of the neighbourhood. Careful thought needs to be given to street trees at the subdivision design stage to ensure that road design and street tree placement is coordinated and that proposed locations do not conflict with services or individual property accesses and trees have enough space to grow. Advice on choice and location of street trees is provided in the IDS.

10.6. STORMWATER MANAGEMENT

Stormwater management (quantity and quality) needs to be considered early in the site planning process, as this will usually influence the design of the RNN. Reference should be made to CCC Stormwater Management Plans which provide details on specific design solutions, including but not limited to: the size, location and orientation of stormwater facilities, location and design of major waterways, and other catchment-specific design requirements. The Stormwater Management Plans have been developed to provide integrated, holistic stormwater management schemes that cater for a range of values: Ecology, Landscape, Recreation, Heritage, Culture and Drainage.

Indicative locations and sizes of stormwater facilities are shown on the ODPs based on conceptual-level calculations made from assumptions about land use,



Redwood Springs, Redwood. Trees located at the side and in the centre of the street. Central stormwater swale.

topography and geomorphology. Further refinement of basin size, location and orientation will be required at or prior to subdivision having regard to land levels, soil conditions, hydrology, public safety and down gradient land owners. Some aspects of stormwater mitigation facilities may be flexible to subdivision layout, some may not.

Some ODPs identify particular waterways which the Council has identified as being suitable for protection and enhancement. Sometimes these are existing natural waterways with already high ecological, landscape or cultural value. Often, they will be highly modified rural drains which have a dry-weather base flow of ground or spring water and could benefit ecologically and aesthetically from naturalisation such as bank improvements and riparian planting.

10.7. TYPES OF STORMWATER FACILITY

Management of stormwater could include the use of swales, rain gardens, stormwater first flush and retention basins and ponds, wetlands and riparian planting. This provides opportunities for enhancing the amenity and distinctiveness of the development and can have ecological benefits (such as providing habitat).

One large, progressively staged and integrated, collective mitigation approach to serve a wide area is typically required by the Stormwater Management Plan. A large facility can achieve other values in addition to its drainage function. In some cases, small-scale temporary stormwater mitigation systems may allow an individual development to progress ahead of the permanent collective facility being constructed.

Care needs to be taken where there are swales to ensure that they are not disrupted by frequent property accesses. This may be achieved by pairing accesses, rear access, running swales along the centre of the road or along the side boundaries of properties.



Silverstream, Kaiapoi. Stormwater facility.

11. INTERFACES

The way in which new residential development relates to adjacent public spaces—roads, footpaths/cycleways, reserves, waterways, rural land, proposed and existing development etc. needs to be considered early in the design process. Good interfaces are attractive and encourage community pride. Visibility between the fronts of houses and public space allows for natural surveillance. People are usually less likely to commit a crime if they think they may be being watched. Conversely people are likely to feel safer if they think someone is watching out for them. Ideally houses should front onto roads and reserves. This can be difficult to achieve in some situations, but there are a variety of design solutions.

11.1 INTERFACE BETWEEN RESIDENTIAL PROPERTIES AND ROADS

In most circumstances houses will have direct access from the road in front of them. An open interface with the road (low fences and planting) helps to provide a connection between the occupants of that house and the wider community, it also makes for an attractive street scene. Having direct access from individual properties limits traffic speeds (this is known as ‘side friction’).

Where it is likely that rural land on the opposite side of a road, will be zoned for residential use at some stage, the interface should be designed to urban standards in anticipation that the road will become urban, with an urban speed limit, drainage, lighting and provision for pedestrians and cyclists. Developers are responsible for funding the appropriate interface in accordance with the Council’s development contribution policy.

Where there is to be no direct property access with a road, consideration needs to be given early in the design process as to how the interface will be handled. If the layout is designed so that private rear gardens are adjacent to the road, the new owners may want high, solid, fences for privacy and noise attenuation reasons. This results in an unsatisfactory outcome for the community.

Achieving a good interface can be difficult when the lots are on the south side of a road. Wider shallower lots mean that there are less lots abutting the south side of the road and houses can be placed to one side so that the garden is not unduly shaded by the house.



Delamain, Yaldhurst. Plan view of sites oriented to allow overlooking of Buchanans Road.



Delamain, Yaldhurst. Houses face towards Buchanans Road.

Houses can front the road by:

- Providing access from within the subdivision, Buchanans Road, Delamain
- Using a cul-de-sac head coming from behind
- Running a right of way between the road or a reserve and the front of properties
- Using rear access lots
- A green screen interface

In some cases it may be appropriate to provide ‘a green screen’ to obscure a line of back fences from the road, such as where:

- the road is heavily trafficked
- development is on the south side of the road
- there is no likelihood of residential development having direct access onto the opposite side of the road
- there is already mature tree planting along the road boundary which is worthy of retention
- there is a waterway between the road and the development
- the boundary of the RNN is with a rural road.



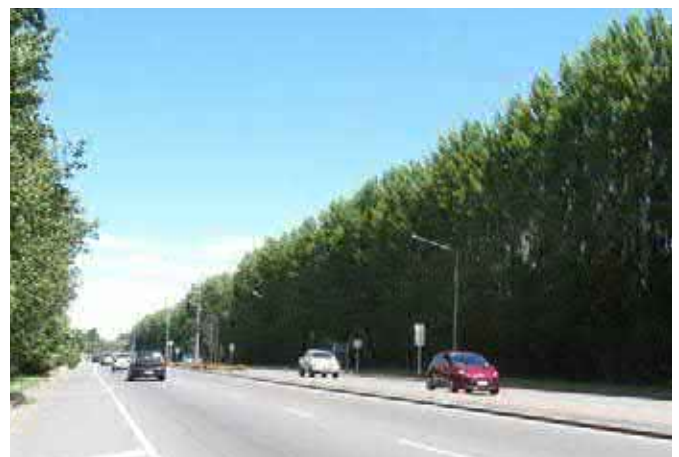
Access from cul-de-sac head.



Aidanfield. Houses face towards Dunbars Road across a Right of Way.



Property access from local road, allows good interface with main road.



Main North Road, Northwood.

11.2. INTERFACE WITH OPEN SPACES

All public open spaces should be well overlooked from houses and roads to allow for natural surveillance. A road along the boundary of a park is a good solution. It can be narrower than usual, as development is only on one side and the second footpath can run within the park.

Where side or rear boundaries of properties abut open space, low or see through fences can be employed. However consideration needs to be given to the privacy of private gardens.

Rights of way can also be used to enable properties to front onto reserves.



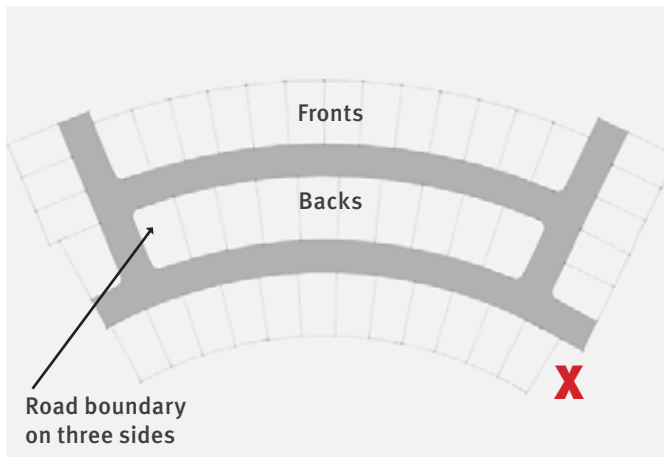
Linden Grove, Hillmorton.



Beach Grove, Kaiapoi. Properties adjoining walkway reserve have low fences and windows overlooking the open space.



Milns Estate, Halswell. Rights of way provide access to properties facing the tennis court and reserve.



Lots arranged like this will likely result in properties which have a poor interface from house to house and with the road.

11.3. INTERFACE BETWEEN RESIDENTIAL PROPERTIES

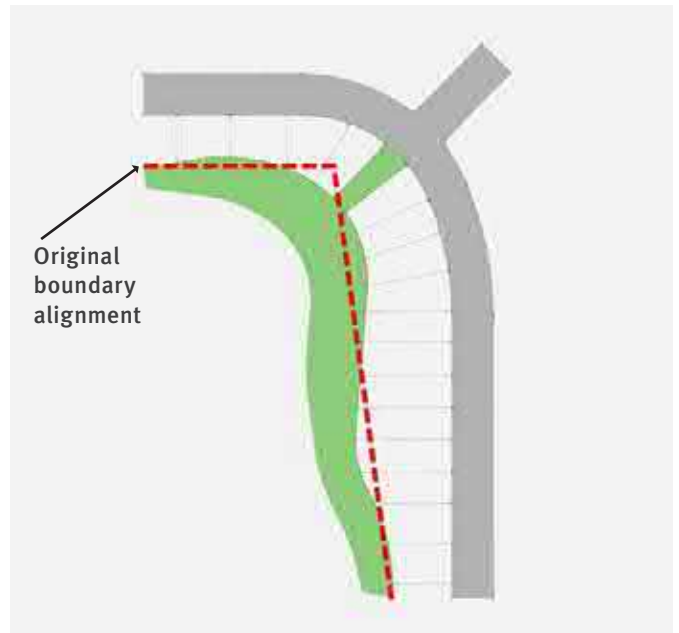
As a general rule fronts of houses should face each other across a road, while backs should adjoin backs. This makes it possible to create attractive semi-public frontages with private rear gardens. Care should be taken to avoid a road layout where properties have dual road frontages, resulting in backs facing fronts. Also, it is very difficult to create a satisfactory interface with the street where corner sections have road frontages on three sides.

11.4 INTERFACE DIRECTLY WITH RURAL LAND

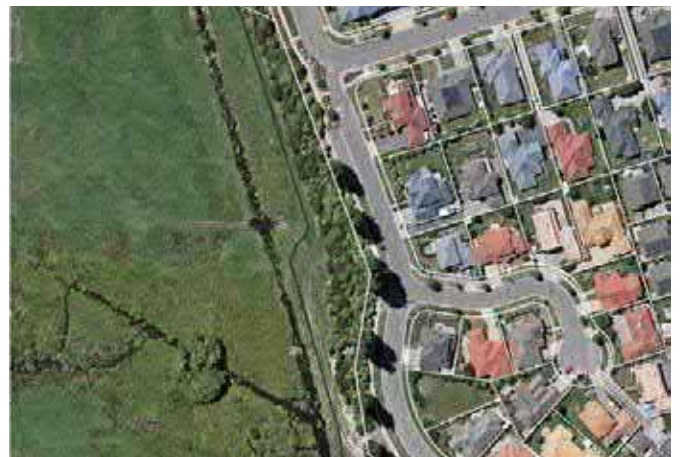
The edges of subdivisions are often highly visible where they abut rural land. Edges that are 'open and soft' rather than hard and urban, generally sit more comfortably in the landscape.

This may be achieved by hedging or low or open fencing, which should be consistent along the length of the boundary. Larger sections on the rural boundary enable greater amounts of garden planting and possibly views through to the countryside, from within the neighbourhood.

To provide a less harsh edge to development, a more sinuous alignment of the boundary between the residential development area and adjacent open land is encouraged, providing there is no increase in the total development area.



Sinuous alignment of boundary between residential property and open land.



Interface of Caleb Place, Northwood with Styx Mill Conservation Reserve.



Boundary between rear of properties at Westmorland and Cashmere Stream.



Westmorland. Cashmere Stream is on the left. Residential properties are set well back from the stream. The setback is accessible to the public. Properties have open rear gardens, but intervening planting ensures that from the streamside, only glimpses of development are possible.

11.5. INTERFACE WITH WATERWAYS

The District Plan safeguards the land at the edges of waterbodies from inappropriate and harmful activities, while supporting increased ecological and amenity values of the waterways. Generous space alongside the waterways and planted waterway margins, help to integrate waterways with new development. Visual and physical access to the waterway margins should be managed to provide for opportunities for people to interact with the waterways, while maintaining the integrity of the ecological habitat. The exact nature of the interface will depend on the context of the waterway and whether there is public access alongside it.



Te Whariki, Lincoln, boundary between residential property and wetland. Metal railing fence and low planting provide a soft edge.

Setbacks from waterways

District Plan **Rule 6.6.4. Activity Status Tables—City and Settlement Water Body Setbacks** specifies minimum setback distances for buildings, fences and other structures from water bodies within the RNNs. There are also restrictions on impervious services, earthworks and culvert crossings within the setbacks.

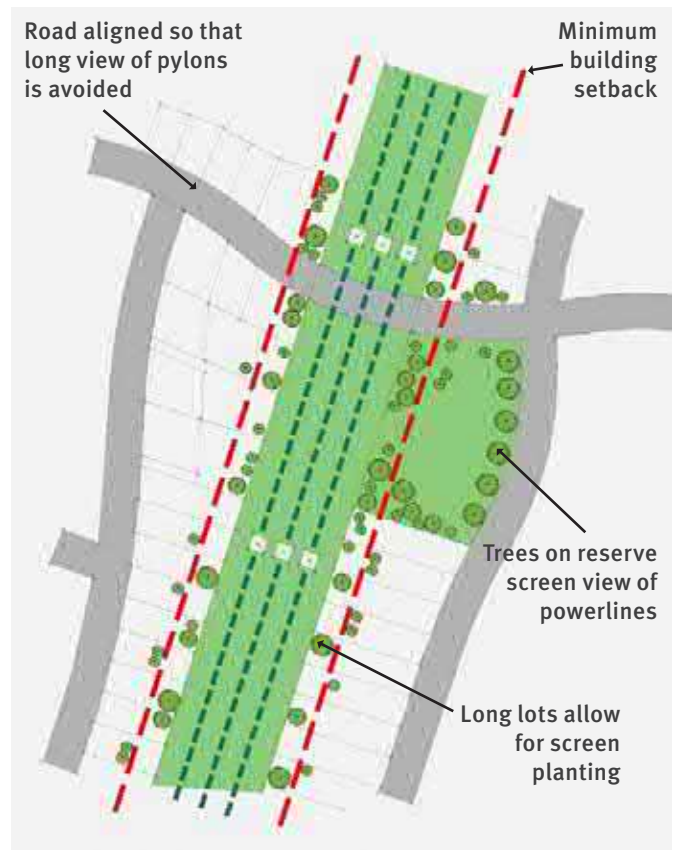
11.5. INTERFACE WITH ELECTRICITY POWERLINES AND STRUCTURES

Easements and building set backs from electricity distribution and transmissions lines and pylons are required for operational and safety reasons. Additional measures are usually needed to avoid unattractive outlooks for nearby residents and an adverse impact on the wider neighbourhood.

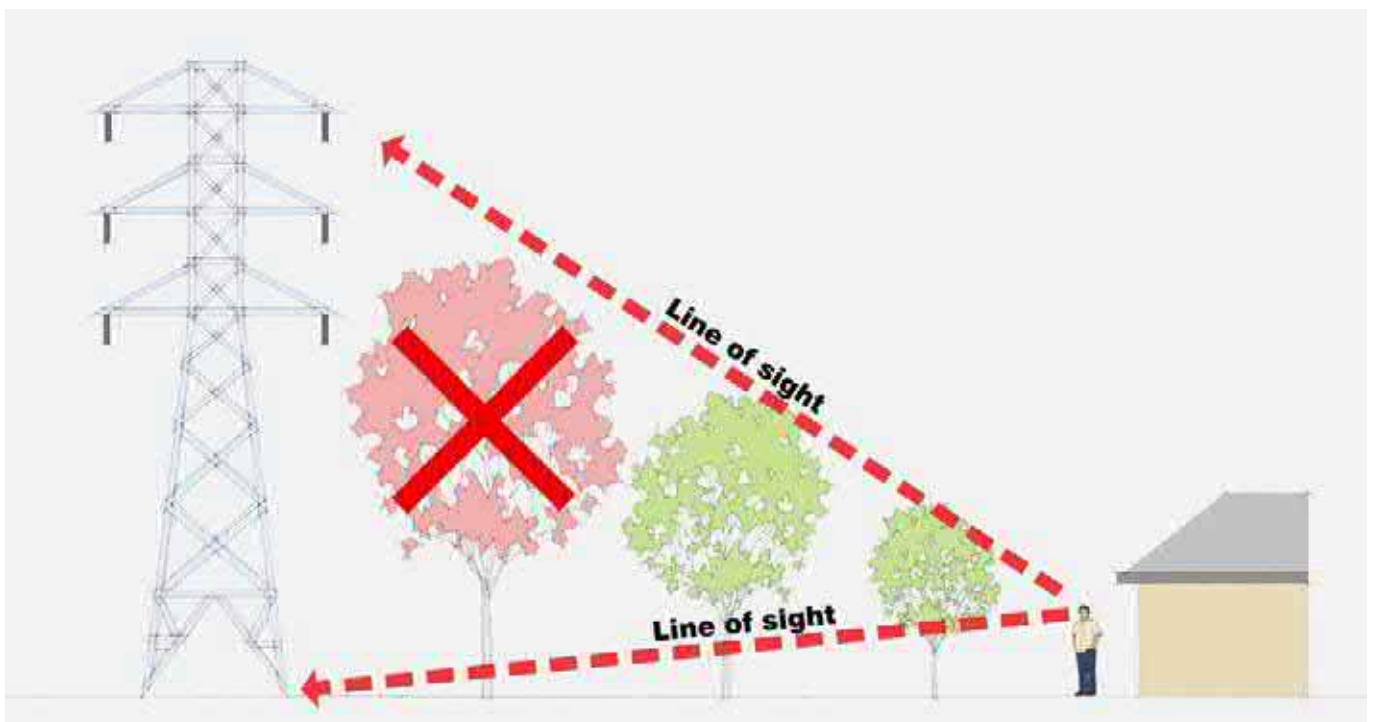
Successful integration of electricity infrastructure within a new residential environment starts at the layout design stage. Where powerlines run through a neighbourhood, aligning lots so that the lines are between back boundaries, can limit the number of properties from which they are visible. Road alignments can be designed to avoid focusing on pylons. This is particularly necessary where they are large or there are multiple lines. Where lines are located in a linear reserve, the reserve needs to be of sufficient width to enable planting to screen the infrastructure.

Longer lots adjacent to powerline corridors allow additional distance between the house and infrastructure and provide space for garden planting.

Large trees can be dangerous near powerlines, but carefully chosen and located smaller trees and shrubs can form an effective screen. For further advice see: *Trees and Powerlines*, Transpower New Zealand Ltd.



Carefully aligned roads, strategic planting and longer and larger lots help integrate powerlines and pylons.



Strategically placed trees minimise the visual impact of pylons.

12. INCORPORATING EXISTING PROPERTIES ON THE SITE



Existing lifestyle block remains undeveloped when rest of subdivision takes place.

In some cases existing properties such as large houses on lifestyle blocks will need to be incorporated within a new subdivision. The subdivision will need to be designed so that the house and its remaining garden sits comfortably with its new neighbours and is easily accessed. At the same time allowance needs to be made to ensure that the land can be redeveloped in the future to a much higher density.

12.1. CALCULATING DENSITY

Retaining an existing house is likely to make it difficult to meet the minimum density requirements for the subdivision, depending on the size of the existing house lot and the proportion it occupies of the whole subdivision. Where drawings are provided to demonstrate how many smaller lots could be accommodated on the existing house lot at a future date, those lots can be included in the density calculation.



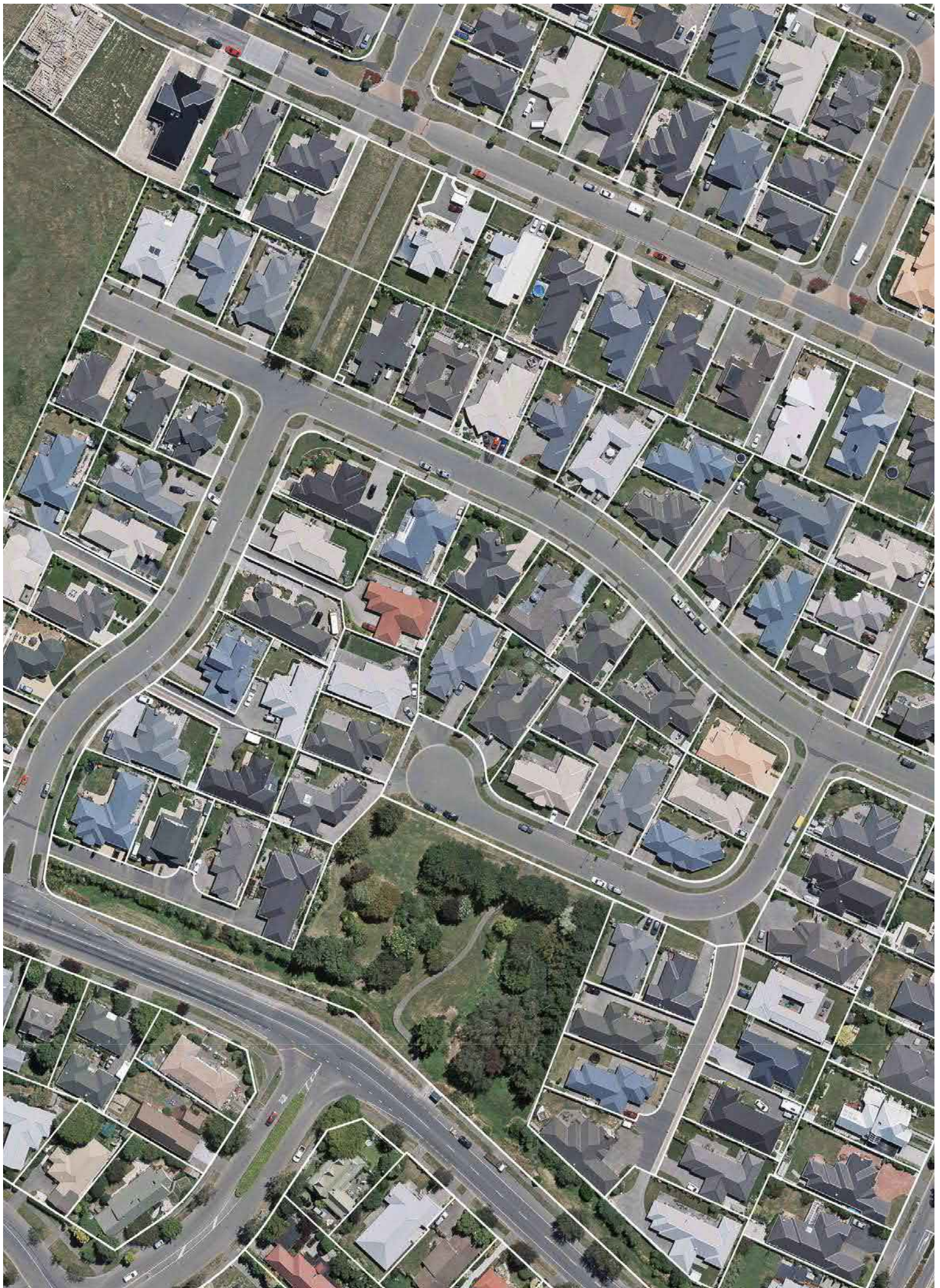
Subdivision designed to allow for future development of lifestyle block.

12.2. MATURE GARDENS

Gardens of existing properties may well include mature planting. This can become a feature of new development even if it is retained within a private garden. This may mean designing the layout of new development such that the planting is a focal point and is visible from surrounding areas.

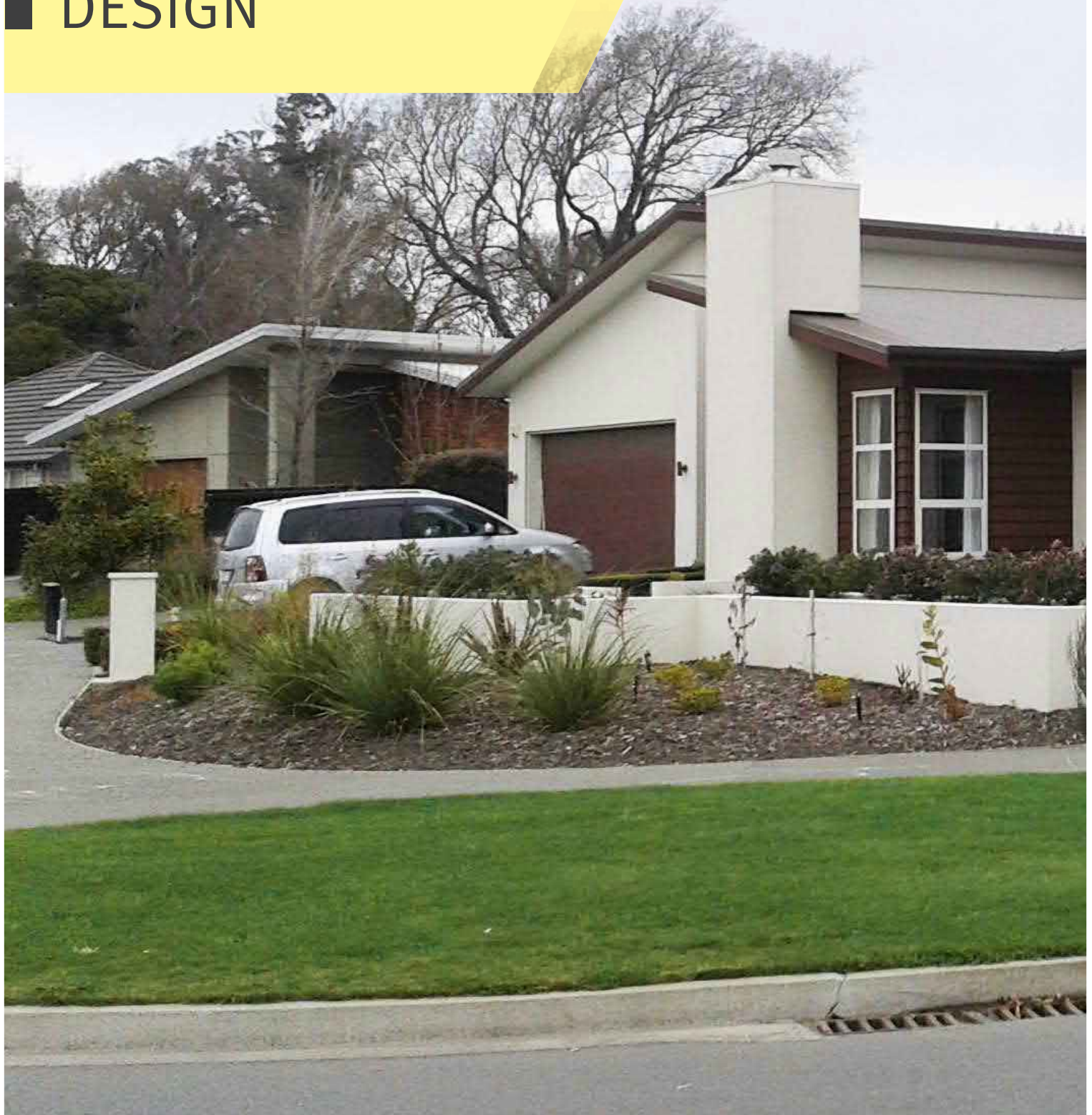
12.3. COMFORTABLE RELATIONSHIP BETWEEN NEW AND EXISTING HOUSES

Where existing properties remain, consideration must be given to how adjacent new houses will relate to the existing house. They may need to have larger or longer lots or screen planting. This is especially so where the remaining house is not in the same ownership as the developer of the adjacent land.



At Cassinia Gardens, Aidanfield, Halswell, a garden with mature trees has been retained and is now a reserve, serving the existing and new community.

SITE & BUILDING DESIGN



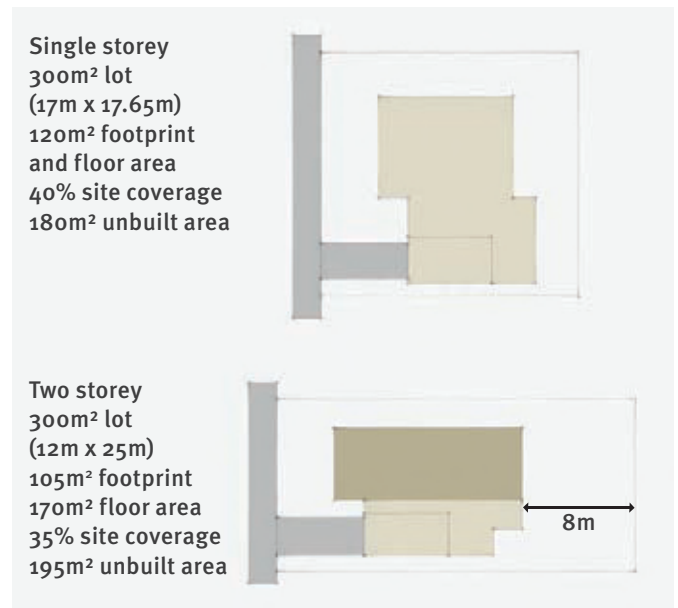
13. LOT SIZE AND SHAPE AND HOUSE TYPES

A range of lot sizes and types within a neighbourhood facilitates a more interesting residential environment, attracts a mix of residents and potentially results in a more balanced community. As densities increase section sizes will reduce, however, skilled layout design can provide section shapes and orientations which not only accommodate a good variety of housing, but also maximise the appeal, liveability and efficiency of the neighbourhood.

13.1. LOT SIZES

Where land is to be comprehensively developed lot sizes may be as small as 120m² but for development on a lot by lot basis, 300m² is about the smallest size which is workable to allow for setbacks from the boundaries and recession planes. Large blocks of identical section sizes and shapes are to be avoided, especially long lines of lots for terraced housing.

Smaller lot sizes are intended for smaller houses. The garden size is to be proportionate to the size of the house with a standard maximum area of the site covered by buildings of 40%.



Example lot and building shape for single and two-storey houses on 300m² lot.

District Plan standards for lots

Rule 14.12.2. Site Coverage

The maximum area of a site which can be covered by buildings is:

1. 40% for lots of 300m² and over
2. 45% for lots under 300m²
- 6-8. Special provisions for Prestons, Wigram and Yaldhurst RNN's.

Rule 8.6.11.d Table 8. Net site area for allotments

- A. The minimum lot size for corner lots is 400m²
 For all other lots the minimum size is 300m²
 Except that 20% of lots in a subdivision may be between 180² and 299m².
- C-F. Special provisions for Highfield, Prestons, Wigram and Yaldhurst RNN's.

Rule 8.6.11.e. Minimum allotments dimension

Lots for terraced houses:

- iii. Corner lots and end of terrace lots are to have a minimum lot width of 10m.
 Mid terrace lots are to have a minimum width of 7m.

All other lots:

- ii. Corner lots are to have a minimum lot width on both road boundaries of 14 metres.
- v. All other lots are to have a minimum lot width on the road boundary of 10 metres.

Lots with a boundary to public open space:

- iv. Are to have a minimum dimension to the space of 10m except for mid-block terrace lots which may have a dimension of 7m.
- vi. Special provisions for Prestons, Wigram and Yaldhurst RNN's.

13.2. LOT DIMENSIONS

Lots need to be wide enough to accommodate a house and garage. The house frontage is to be at least as wide as the garage, to avoid garages dominating the street scene. For a standalone house with a double garage this translates to a lot width of at least 14m (6m garage, 6m house frontage, 1m setback from each side boundary) or 8.5m for a single garage. Standalone two storey houses will need to have wider lot widths in order to allow for recession plane limits. This width can obviously be reduced if houses are to be attached or have garages accessed via a rear lane.

Where small lots are intended for standalone single storey houses a squarer lot shape is appropriate. Two storey houses require longer lots to ensure sufficient privacy at first floor level between opposing houses, a minimum distance of 16m between windows is recommended. This is important both for back to back distance and where houses are to face each other across a narrow road or right of way.

Lots intended for standalone two storey houses will need to be wider to allow for recession planes from side boundaries. Attached houses with narrower lot frontages use land, roading and services more efficiently and help to achieve the required density for the neighbourhood.

In some situations longer lots may be required for buffering purposes. The additional length of the rear garden can provide:

- distance between new and existing houses
- a setback from transmission lines, an airport noise contour, motorway, railway line or for other amenity reasons
- a transition from urban to rural land.



Building envelope for a standalone, two storey house on a 10m wide N-S orientated lot.



Lot sizes and house designs suited to their location and orientation.



A two storey house on a corner can act as a minor landmark.

13.3. CORNER LOTS

As corner lots have two street frontages, they are more prominent in the street scene. They can be problematic to develop as they have a greater proportion of the site required for the front yard setback and the driveway access needs to be sited away from the corner. It can be particularly difficult to design a house for a small lot situated on the south east side of a road junction, so that the house does not unduly shade its rear garden.

Larger two storey houses or small apartment blocks, on corners can act as minor landmarks for the neighbourhood.

In order to enable a house design which presents an attractive frontage to the street and provides a sunny and private garden area, corner sites need to be larger. Developers may wish to build, or provide house designs, for corner lots themselves, to ensure an overall high quality for the neighbourhood.

Achieving sun in private gardens and habitable rooms becomes more difficult as density increases. Lot shapes and sizes need to vary according to their orientation, e.g. small narrow sections suitable for two storey terraced houses are best located on the north side of a road, where they have a sunny rear garden and do not unduly shade neighbouring properties. Lots on the south side need to be wide enough to accommodate a garden to the side of the house.

13.4. ORIENTATION AND RELATIONSHIP OF LOTS TO EACH OTHER AND THE STREET

Achieving sun in private gardens and habitable rooms becomes more difficult as density increases. Lot shapes and sizes need to vary according to their orientation, e.g. small narrow sections suitable for two storey terraced houses are best located on the north side of a road, where they have a sunny rear garden and do not unduly shade neighbouring properties. Lots on the south side need to be wide enough to accommodate a garden to the side of the house.

Where lack of consideration to the location of private outdoor space has been given at the layout design stage, the result may be that residents erect high solid fences along the street frontage. This can spoil the appearance of the street and reduce casual surveillance and interaction between the occupants and the wider community.

A street layout which forms blocks with a predominantly north-south orientation, creates mostly east-west orientated lots. Lots with south facing rear gardens can be avoided or minimised. The interior of the block is open, providing space and access to light and sun for all rear gardens.

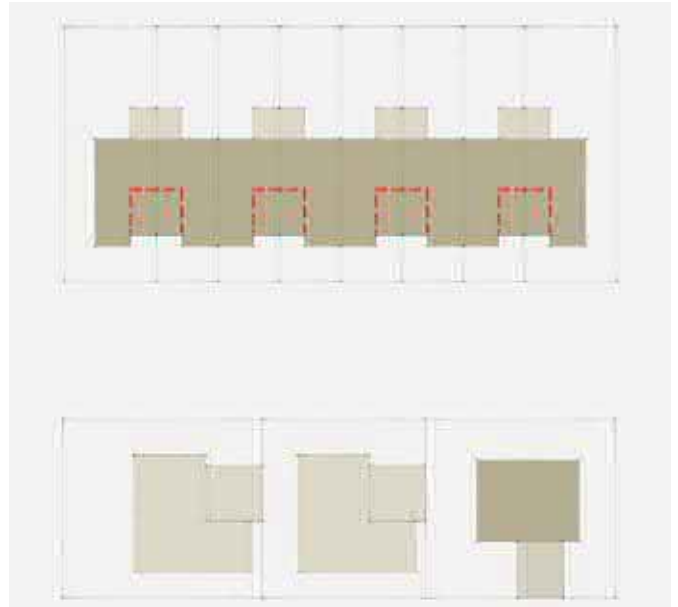
It is important to consider the interface between large and small lots. For example if the rear boundaries of a row of narrow lots intended for a two storey terrace, interfaces with the side boundaries of two larger lots, the terraced block can be overly dominant and lead to a lack of privacy and an unacceptable level of shading for the occupants of houses on the larger lots.

13.5. REAR LOTS

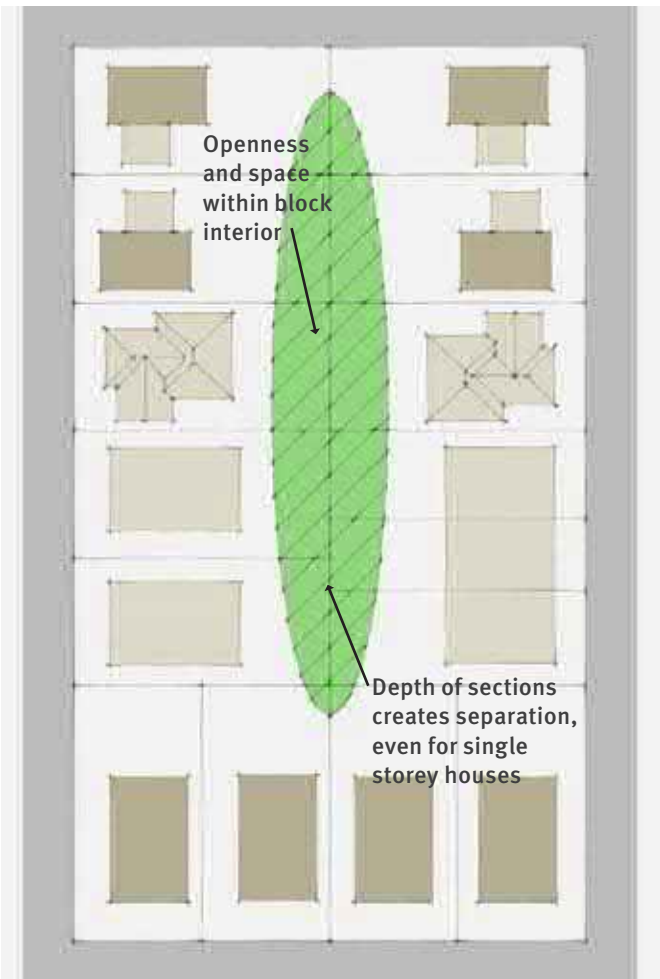
Houses on rear lots lack a connection with the street (and therefore the community) and, if two storey, can cause privacy and amenity issues for surrounding neighbours. Rear lots are useful for: awkward shaped site shapes; where they are used to create a good interface with a road or open space; where they are bigger and provide openness and space for mid-block tree planting.



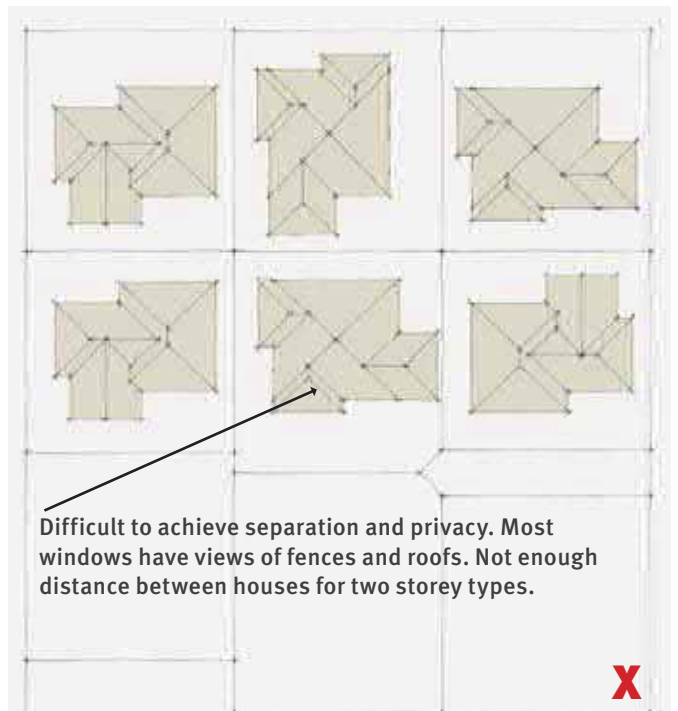
This layout means that eight two storey terraced houses will overlook two single storey houses.



Longer narrower lots are suited to the north side of the road, shallower wider ones to the south side.



A north –south aligned street block maximises access to sunlight and daylight in rear gardens.



Disadvantages of rear lots.



Two storey house types.



Two storey terrace stepping down to single storey.



Good balance of windows and garage on house frontage.

13.6. HOUSE TYPES

Changing from conventional subdivisions built at less than 10 houses to the hectare, to new neighbourhoods where densities are at least 15 houses per hectare, necessitates a change from conventional house types. RNNs are likely to include at least some of the following typologies: narrower frontage designs; two storey houses with fewer windows in the side elevations; duplexes (i.e. a pair of houses with a common wall); terraces; two and three storey apartments; integral garages, and garages not attached to the house. Such a variety will not only achieve higher densities but also offer more choice including lower cost properties.

Care must be taken to make sure higher density and higher rise housing is compatible with its immediate neighbours. For example:

- a two storey terrace may need to step down at the end so that it relates well to adjacent single storey housing
- New housing immediately adjoining older single storey housing may need to be single storey
- New housing may need to be set well back from existing housing.

13.7. BALCONIES

Upper floor balconies can be very intrusive on neighbours privacy and are best confined to elevations facing roads or reserves, unless they are for decorative purposes.

13.8 NORTH FACING FRONT YARDS

Where front yards are north facing, privacy and a larger area of garden which receives the sun, can be achieved through setting the house further back on the lot.



Smaller single storey house types.



Single storey terraced housing with rear access. Houses are elevated a little from the street.



Ground and first floor balconies facing the road and park.

14. ACCESS AND PARKING

14.1 CUL-DE-SAC HEADS

Cul-de-sac heads should be shaped to ensure that space is available for on-street parking. Each property is required to have a minimum frontage to it of 10 metres or 7m for a terrace, this provides sufficient space for driveways and street trees. Rights of way from the head of a cul-de-sac can be problematic. They limit space for visitor parking and can cause underground servicing issues.

14.2. REAR LANES

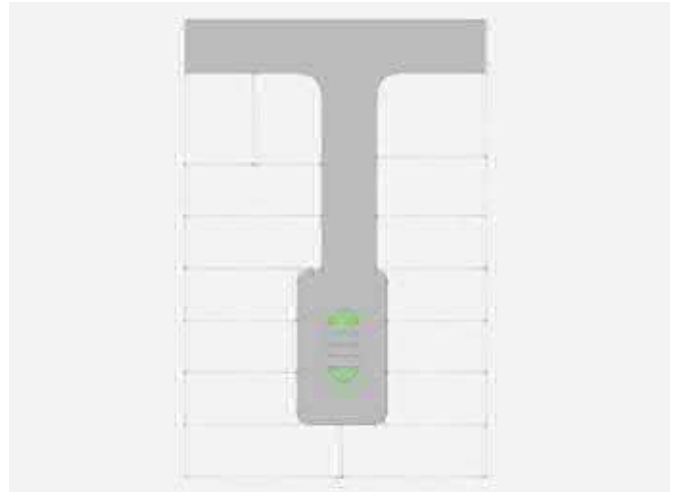
Rear lanes have some benefits such as:

- Providing vehicle access to properties where access from the frontage road is not desirable
- Enabling much narrower lots (as little as 4m wide) by placing the vehicle access at the rear
- Enabling services to be run along them
- Avoiding disruption of footpaths with driveways, which allows safer pedestrian movement and more street tree planting.

However rear lanes can become the main entrance to properties, taking life away from the primary street and they typically require a larger area of land within the development to be devoted to roads.

Rear access lanes which are practical, attractive and safe environments:

- Are wide enough to allow planting, vehicle manoeuvring and parking
- Do not provide rear access for properties on one side and front access for properties on the other side of the lane
- Also need to face onto road or a reserve in front of the lot. Where the latter, a pedestrian path running along the edge of the reserve will be needed to give access to the front doors.



An elongated cul-de-sac head provides a good street frontage length to each property and space for visitor parking.



An attractive rear access lane.



Narrow lots, served by a rear access lane.

14.3. RIGHTS OF WAY (ROW)

Rights of way may be needed to access awkward areas. They can create a more private, secluded environment and, because they minimise the amount of hard surface can look very attractive. However, they can create a feeling of being hemmed in in higher density areas. The inclusion of a turning space in the RoW helps reduce the need for on-site turning which takes up space on the lot.

Generally rear access lanes and rights of way are retained in private ownership, except when otherwise agreed with the Council. Disputes can arise between neighbours in relation to upkeep and inconsiderate parking.



An attractive right of way.

14.4. PROPERTY ACCESS

Frequent driveways can impair the visual and physical continuity of the street scene. Narrowing down driveways at the street frontage or pairing them, helps to minimise this effect and also results in a safer environment for pedestrians.

Attention needs to be given at an early stage to the details of the road in front of the property. Consideration will need to be given to the placement of driveways where the property is adjacent to:

- Cross roads which are to be controlled by a roundabout, as the associated approach island is likely to restrict the location of the driveway
- Pedestrian crossing facilities
- A bus stop
- A street tree.

Driveways should be sited away from street corners, for traffic safety and to ensure that the garage is not prominent in the street scene.



Driveway and garage sited away from corner.

14.5. GARAGES AND PARKING

In order to achieve higher densities there will need to be a reduction in the amount of space devoted to on-site parking. Garages may be single rather than double, in some cases they may not be attached to the house, shared parking may be provided in private parking courts. Extra on-street parking and associated planting can be provided through localised road-widening.

A practical arrangement is to set the house back 4m from the road and the garage at least 5.5m. This allows a car to be parked in front of the garage.

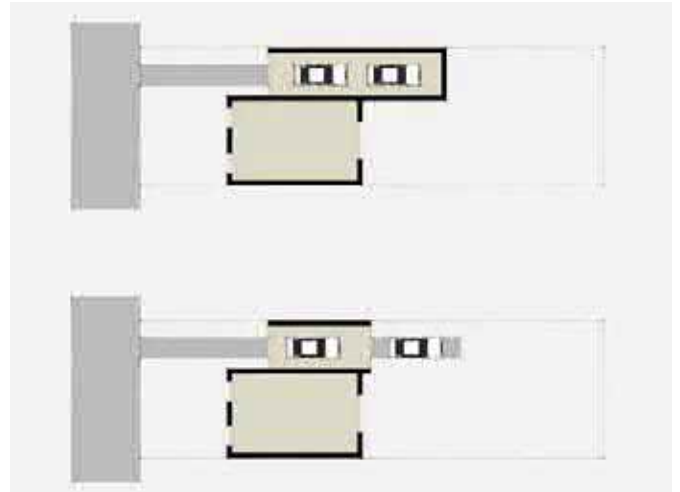
Integral garages can allow a narrower plot width, but should not occupy more than half the width of the building frontage.

Houses linked by their garages create separation distance between habitable rooms and help to break up the mass of attached buildings.

To cater for more cars a tandem garage can be provided or the garage can have doors at both ends, so that an additional car can be accommodated in the rear garden.

A car port can be provided instead of a garage. This can often allow more light into the house and garden and the space can be utilised as an extension to the garden when a car is not parked there.

In some situations the garage of one house can back onto the garage of the adjoining house.



Tandem garages.



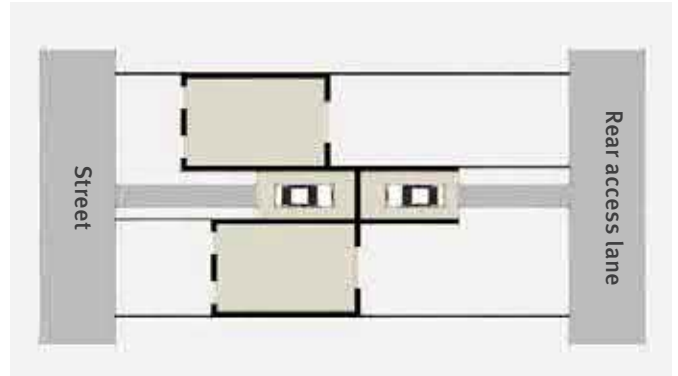
Integral garage.



Houses linked by their garages

14.6. GROUPED GARAGING AND PARKING

Grouped garaging and parking facilitates higher densities and allows for more varied development forms. It needs to be convenient, safe, and secure and not detract from the visual amenity of the neighbourhood. This can be achieved by siting garaging/parking close to the residence it serves; ensuring it is overlooked by adjacent housing and well lit at night; and grouping in small discreet clusters.



Back to back garages.

Built form standards for garages and parking

Rule 14.12.2.9 Parking areas. Parking areas are required to be separated from adjoining roads by either planting, and/or fencing.

Rule 14.12.2.10 Garages. Garages are not to comprise more than 50% of the ground floor elevation, nor be more than 6.5m wide.

The minimum setback of garage doors facing a shared access or road boundary is 5.5m.

The above rules do not apply to comprehensive residential development.



Higher densities can be achieved with shared parking provision.



Grouped garaging enables more varied development forms.

15. COMPREHENSIVE HOUSING

Residential development can be comprehensively developed, with the sites and residential properties designed as a package or through the conventional means of subdivision followed by house building by others. The former approach is by far the superior means of achieving good quality urban design in higher density development. To ensure good levels of privacy, amenity and outlook, houses can be designed in relation to each other, taking into account window placement, separation between buildings, shading, location of gardens, balconies, garages and parking. The District Plan encourages comprehensive housing development through relaxation of some subdivision and built form standards.

District Plan provisions for comprehensive housing

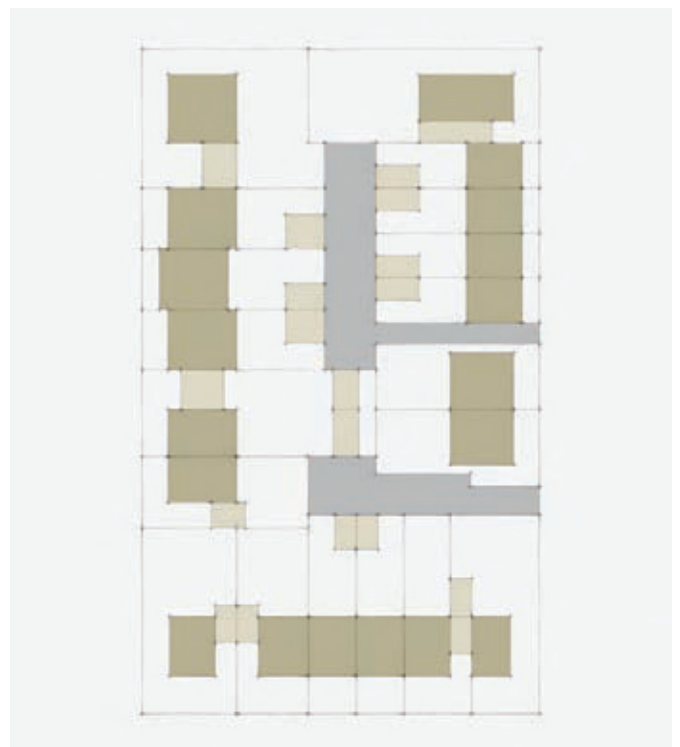
Rule 8.6.11.c.ii. Land area for subdivision The District Plan requires a comprehensive housing site to be a minimum of 6000m². There are development benefits for a site of this size as follows:

- Rule 8.6.11.d. Net site area of allotments Table 8.B. There is no minimum lot size.
- Rule 14.12.2.1 a.ii. Building height. The maximum building height is 11 metres.
- Rule 14.12.2.2. iv. Site coverage. The maximum site coverage is 50%. Calculated over the net area of the whole site.
- 14.12.2.4. Daylight recession planes. Recession planes apply only at the site perimeters
- 14.12.2.5. Minimum building setback from internal boundaries. Only applies to internal boundaries on the perimeter of the entire site.

Sites of at least 6000m² may be set aside for comprehensive development by others or developed at a later date.

15.1. COMPREHENSIVE DEVELOPMENT

Comprehensive development provides more scope for clustered housing and irregular lot shapes allowing innovative layouts. Stonefields at Mount Wellington, Auckland, Addison in Takanini, South Auckland and Hobsonville Point, in north-west Auckland are three examples of large comprehensive housing developments, achieving densities of up to 30 hhs/ha.



Example of a comprehensive housing site.

Statistics

Site area including half of perimeter road = 7140m²

Site width = No of houses = 23
(12 x 2 bed, 10 x 3 bed, 1 x 4 bed)

Density = 32 houses per hectare



Good back to back separation distance between houses.

On a smaller scale small development blocks of 6000–10,000m² give sufficient scope for a group of houses to be designed as a whole. This means the benefits of comprehensive housing can be maximised, for example by an open area in the centre of the block providing a spacious feel and good access to sunlight and daylight.

Efficiency in access and parking can be realised at this scale, such as with grouped parking or rear access to properties.

Areas within a subdivision for comprehensive housing should not just be determined by selecting a street block or worse, a left over space, without carefully considering whether they are of workable dimensions. A minimum width of 50m allows sufficient width for back to back development or houses to face each other across a road without compromising privacy and outlook.

15.2. THINKING AHEAD

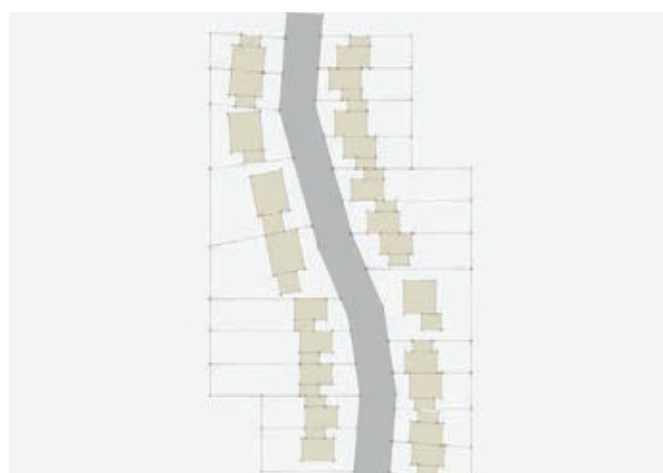
Although the subdivider may not be the housebuilder, thought needs to be given at subdivision stage to the design within the comprehensive housing lot, such as potential building footprints, no. of storeys, access and parking arrangements and any on-site communal open space. The aim being to establish that houses of a good standard of amenity which meet District Plan requirements are capable of being accommodated. Using a range of typical house types, can assist in this regard.

15.3. A VARIETY OF URBAN FORMS

With comprehensive housing more interesting and varied urban form can be created, such as a sinuous street, a crescent or a courtyard.

The sinuous street

Houses jut in and out along the street, to form a sequence of spaces rather than one long corridor. This form can be useful for long narrow sites or where collector roads run through the site.



Example of a sinuous layout form.

Statistics

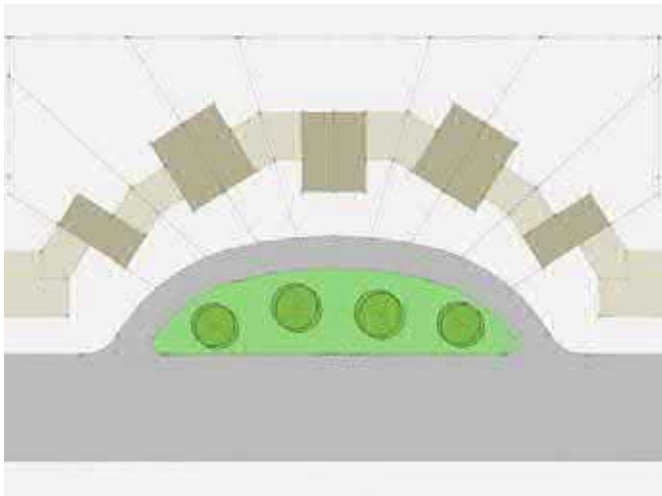
Site area including half of perimeter road = 7000m²

No of houses = 22
(4 x 1 bed, 7 x 2 bed, 10 x 3 bed, 1 x 4 bed)

Density = 31 houses per hectare

The crescent

Crescent forms can be created using splayed lots. If terraced, the house or the garage can have angled walls.



Example of a crescent layout form.

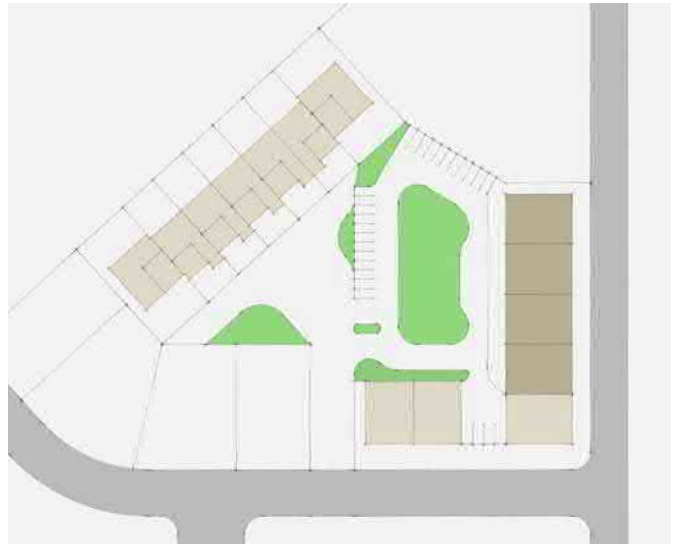


Henley Green, Northwood, incorporates a variety of higher density house typologies.

The cluster

Squarer site shapes can be used to accommodate internal shared parking areas or public space. A sense of spaciousness is achieved while maintaining a higher density.

Dividing the comprehensive housing block in this way provides opportunities for smaller builders.



Example of a cluster layout.

Statistics
Site size = 8,500m ²
Site size plus half the surrounding roads = 10,500m ²
No. of lots = 29
Lot size range Individual lots 260 –625 m ²
Pro rata for grouped apartments = 190m ²
Average lot size 293m ²
Density = 27.5 hhs/ha

Apartments

Small groups of apartments within a comprehensive housing development provide another housing choice.

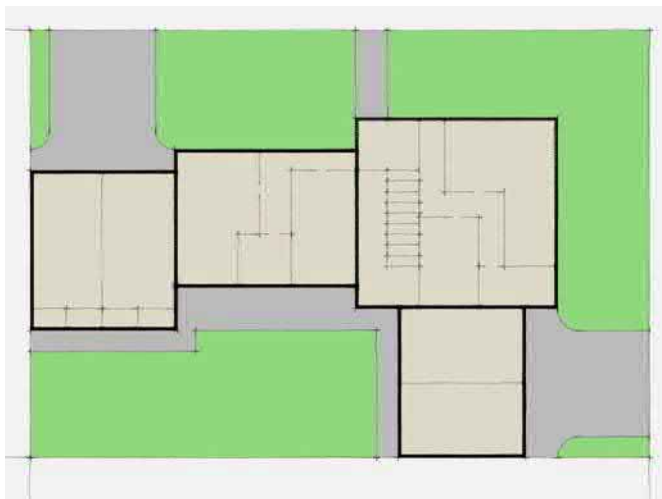
Apartments use land efficiently and offer another housing choice, particularly for one or two person households. There are a variety of apartment forms suited to the RNN context.

Apartments can be incorporated to make best use of awkward shaped or positioned sites.

Developing apartments or terraced houses in small blocks, keeps work-in-progress to manageable levels.



Block of 6 apartments on internal corner site.



Block of 4 apartments on south west corner site.

Statistics

Site size = c.27m x 180m = 486m²

4 x 1 bed apartments—2 per floor

Footprint including garages = 198m²

4 x garages

Communal garden

Average lot size = 121.5m²

Average apartment size = 48m²

Statistics

Site size = c.28m x 30m = 840m²

6 x 1 bed apartments—3 per floor

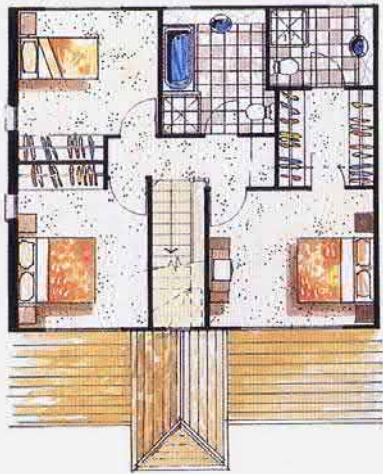
Footprint including garages = 219m²

3 x garages, 4 x parking spaces

Communal garden

Average lot size = 140m²

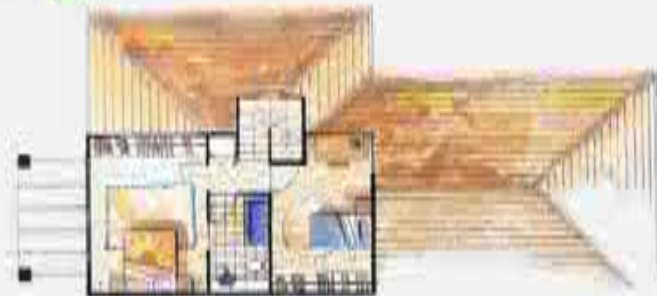
Average apartment size = 49m²



MANOR HOME E
 Ground floor 121.3m²
 Upper floor 42.4m²
 Porch/Patio 6.2m²
 Total Area 169.9m²



MANOR HOME D
 Ground floor 74.2m²
 Upper floor 61.3m²
 Porch/Patio 3.2m²
 Total Area 138.7m²



Standard house types. SOURCE: Sunland Group Limited, Cordoba Manors, Robina, Queensland.

15.4. HOUSE AND LAND PACKAGES

House and land packages allow lots and house types to be matched and give the developer more control over the relationship of houses to each other, yet still provide purchasers with choices. With standard house types there can be savings through building to standard dimensions and bulk purchase of materials. Developers may pre-determine which house is to be built on which lot or provide a range of types suitable for each lot type.

Having chosen one of our homes that best suits your need, look at the map opposite to see where you would like to live.

Further advice regarding higher density housing design can be found in Exploring New Housing Choices for changing lifestyles, Christchurch City Council/Jasmax and Building Multi-unit Housing in Living 3 Zones, Christchurch City Council.



Example of a large scale comprehensive housing development. The neighbourhood is designed as a whole, purchasers chose from a range of standard house types. Developed in stages, adjustments can be made to layout and house types at each stage SOURCE: Taylor Wimpey, Bromptons, Little Dunmow, UK.

BIBLIOGRAPHY

CHRISTCHURCH CITY COUNCIL

- Building Multi-unit Housing in Living 3 Zones
- Christchurch Cycle Design Guidelines 2013
- Construction Standard Specifications (CSS)
- Design Out Crime Advisory Service webpage
ccc.govt.nz/culture-and-community/community-safety/design-out-crime-advisory-service
- Exploring New Housing Choices for Changing Lifestyles, Christchurch City Council
- Health Promotion and sustainability through environmental design
- Infrastructure Design Standard (IDS)
- Part 5. Stormwater Land Drainage, Part 6. Wastewater Drainage, Part 7. Water Supply, Part 8. Roading, Part 10. Reserves Streetscape
- Stormwater Management Plans
- Thinking About Fencing, April 2005
- Waterways, Wetlands and Drainage Guide, Ko Te Anga Whakaora mo Nga Arawai Repo.
ccc.govt.nz/environment/water/policy-and-strategy/waterways-wetlands-and-drainage-guide

MINISTRY FOR THE ENVIRONMENT

- New Zealand Urban Design Protocol, March 2005
- Urban Design Case Studies, March 2005:
Harbour View—Waitakere City, Northwood Residential Area—Christchurch
May 2008: Master Planned Community—Addison, Papakura, Auckland
- People, Places and Spaces, A Design Guide for Urban New Zealand, March 2002

STANDARDS NEW ZEALAND

- Subdivision for People and the Environment, SNZHB 44:2001
- The New Zealand Fire Service Firefighting Water Supplies Code of Practice, SNZ PAS 4509:2008

Other publications

- Hobsonville Point: www.hobsonvillepoint.co.nz/
- Mahaanu Iwi Management Plans, Te Runanga o Ngai Tahu 2013
- Trees and powerlines, Transpower New Zealand Ltd.

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