

SUBDIVISION DESIGN GUIDE – TABLE OF CONTENTS

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1.0 Introduction

Wellington gained its original central area structure with the imposition of the original "town acre" pattern in the middle of the nineteenth century.

The method of subdivision used was characteristic of much of what was to follow, and that continued for many years, and even occurs occasionally today. That is, the subdivision of land with little or no regard to the qualities or potential of the underlying topography or to the quality of the residential area that results.

Following early development of what is now the central area of the city, expansion in the 1920s and 1930s tended to be over flatter, more easily developed country, with the quarter-acre section as the desired model.

Since 1945, increased use of the private motor vehicle has encouraged expansion into the more peripheral, hilly areas of the city. Subdivision economics, coupled with difficult topography and roading standards seen as essential, often led to the use of cut-and-fill techniques to create suburban residential areas.

Most of the easily developed land in Wellington has already been put to residential use. Now, demography, social structures and user requirements have changed, and more intensified use of land is sought. These changes - whether applied to infill sites in established areas or greenfield sites on the margins of the city - combined with the need to respond to the greater variety of household types and a demand for choice, shift the emphasis in subdivision to a focus on quality. Intensification of land use gives people the chance to live in the inner city close to work or avoid being tied into a regime of garden maintenance. The greater density of population and construction that results, however, places greater emphasis on the quality of the public environment and the means by which it supports the private environment, and meets the many and varied needs of its inhabitants.

Council is required to control subdivision. It seeks to achieve residential environments that meet user needs that are consistent with the development of the identity of Wellington City, and that respond in a positive way to their physical and ecological context. This Design Guide, setting out explicit objectives and guidelines for assessment, is intended to assist this process.

2.0 Intention of the Design Guide

Where the subdivision of land is provided for as a Discretionary Activity in the District Plan, this Design Guide provides the criteria against which applications will be assessed.

Applicants will be required to demonstrate an understanding of the existing attributes of the development site and its place within the context of the landscape and the wider city, and take this into account in planning and design. Strategies will be required that ensure a considered connection with the wider city and the underlying landscape and which create a setting that has an attractive visual character and is responsive to a multitude of user needs. The intention of the Design Guide is to create residential areas that are better places to live in.

Qualitative Emphasis

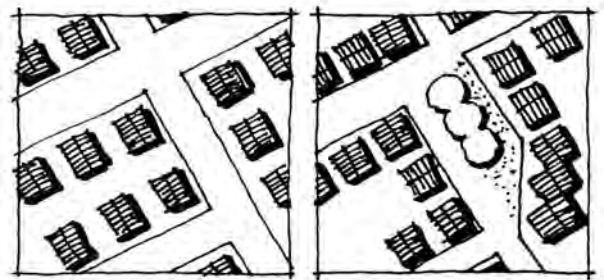
Careful consideration of the identified elements of street and public space design can provide the physical and visual qualities needed for a residential area to be successful.

This Design Guide places emphasis on amenity value and quality, rather than technical criteria. It is intended to encourage innovation and responsiveness to the physical context of the site and city, and to the needs and aspirations of the people who will inhabit residential areas. Recognising that the physical character of development sites varies widely in a city such as Wellington, the guide will be applied with discretion, will allow variation and the development of the environmental qualities that are most appropriate to any given situation.

The qualitative emphasis of this guide means that it allows developers to vary the shape of the public space structure, not in an arbitrary or abstract way, but in a way that either relates to a specific topographical feature or creates a sense of place or both. For example, while streets will be required to have certain widths for their carriageway and road verges, the public space structure within a development need not, and in many cases, should not be comprised of linear spaces of a standardised width. A case may occasionally be made for the narrowing of road reserve if it meets the aims of this Guide, provided that some or all of the land area saved is amalgamated into, for example, a large central open space or a well-sited recreational reserve.

The test will be whether the quality of the residential area created is improved and is consistent with the objectives of this Guide.

The appearance of dwellings and other buildings in their street setting and the quality of that setting is a major determinant of resident satisfaction. Furthermore, in greenfield developments, the developer who lays out the roading pattern and lot boundaries determines both the shape and quality of the public space structure and the streetscape. Good design can maximise the



Consistent road reserve width can lead to visual monotony

Variable widths and amalgamation of space to form a pocket park. Enhances local character and recreational opportunity

potential of the site and create an environment that makes a positive contribution to the life of its residents and to the amenity of the city as a whole.

The Value of the Streetscape

The streetscape is the character and appearance of streets and other public spaces in residential areas. It is determined by the fundamental structure and spatial qualities of the street system and is influenced by the siting and design of buildings, surface textures, planting and other landscape elements.

The physical and visual character of the streetscape contributes significantly to the identity and amenity of residential areas and is fundamental in determining the way people view the quality of residential properties. The streets and other public spaces are the framework for the life and activity within a suburb, and streetscape qualities are important to people.

The Determinants of Quality

The quality of streets and public spaces is dependent on the existence of appropriate visual character, the development of identity or a particular sense of place. Streets should also offer their inhabitants choice and opportunity for a variety of activities.

Consideration of Context

A developer's wish to extract the maximum number of sections from a site is no excuse for arbitrarily piping waterbodies, removing bush or trees, slicing the tops off hills or filling gullies. Development should recognise that the ecosystems and habitats of the natural environment are an important resource. Where they overlap with the built environment of the City, they should be incorporated into the design of the subdivision to achieve an integration of natural and built environments.

When landforms or landscapes are modified in any major way, it usually results in residential areas that are lacking in character and in individual identity, merely resembling many others throughout the country. In contrast, a regard for the particular qualities of the existing site and retention of selected character elements can generally advance the feeling of maturity and belonging to the landscape which characterises places that have been well sited and lived in for a long time. Subdivision should always aim to develop a new neighbourhood's identity by connecting it with the underlying landform and ecosystems.

3.0 Scope

This Design Guide applies to most subdivisions that are Discretionary Activities. It deals with the amenity qualities of streets and public spaces in suburban residential areas. It is separate from and complements the Code of Practice for Land Development, which describes the technical and engineering criteria for land development.

The four design elements dealt with are:

- public space structure
- vegetation and planting
- street design
- building scale and location.

The visual and functional amenity of a residential area is dependent on its three-dimensional form.

Because of this, the location and scale of any proposed development and the relationship of buildings to each other and to public space will require examination. This planning and siting of buildings in non-comprehensive development will be provisional and is intended to ensure not only that the aggregate and cumulative effect of buildings on the quality of a residential area is considered, but also that the proposed allotments are suitable in shape, size and topography for the provision of a dwelling.

4.0 Design Elements

Public Space Structure

Analysis

A residential area is more than an assembly of private housing lots or dwellings. It has a public quality that emerges from the relationship between buildings and the spaces linking them. Its visual character will be largely derived from the three dimensional qualities of the public space structure - the streets, roads and any other associated open spaces.

Design Considerations

The overall image of a development is important, and springs from its identity and place within the context of the city as a whole. The degree to which the detailed character and layout of its streets makes them legible and understandable, allowing people to find their way around, must be considered. Accessibility - the degree to which the form and structure of the street system allows and encourages use by residents - is also critical. The public environment should provide an appropriate setting for life, including outlook from private property. Public space design must always make provision for recreational activity.

Furthermore, even though the design characteristics of a suburban residential development must recognise that it provides a living environment for people, they should also recognise that it also occurs in a natural context. While a subdivision is being actively developed and as it matures into an established residential area, it will impact on the natural environment. The planning and design of residential areas should minimise any harm to the environment.

The principle to be followed in design is that the residential area should be structured from the outset so as to achieve the identified visual and physical amenity qualities and to accommodate natural landform and landscape features, rather than being set out as a series of allotment boundaries with an attempt to design in environmental quality at a later stage.

Analysis of Context

The visual, physical and historical characteristics of the surroundings and of the development site itself should be assessed. Assessment should seek to determine those features that can be used to provide the visual cues in new development, with the aim of giving appropriate character and allowing an understandable layout to be achieved. These broad design issues that relate to the structure of a residential

area must be addressed before the detail - individual building form and setbacks, surface finishes and planting - is considered.

Landform and Landscape Features

The visual quality of the streets and public space structure, and the area in general, when viewed both from within and without will be influenced by the shape of the underlying land form. To be consistent with earlier development in Wellington and maintain the unique identity that Wellington has as a "hilly" city, development should generally retain the appearance of the dominant land form and keep a visual link with the existing and surrounding landscape.

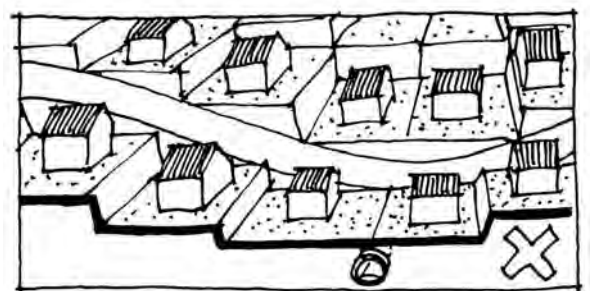
Generally development will fit in with the landscape when it substantially retains the existing land form or is based on a modification consistent with what the natural landform might have been. When re-contouring to achieve access and reasonable sites for dwellings, particular consideration should be given to avoiding those large-scale obvious signs of contour modification which cannot be visibly softened by planting or other means and which create a major inconsistency with the natural land forms when the area is viewed from a distance.

The principle that should always be followed is the avoidance of unnecessary loss of landform and natural features. Landforms should be considered from the point of view of their intrinsic character and their relationship to other landforms. Attempts should be made to retain significant features of the landform such as ridges, rock outcrops, gullies, streams and plateaus. Ecosystems or habitats significant for their size or rarity should be considered, along with catchment form and native vegetation.

In creating a residential area, any of these features may be affected. In certain areas it may be inappropriate to significantly retain natural features as part of the subdivision. However, where it is not necessary to alter the existing landform significantly or remove natural features, these should be retained to provide a new residential area with character and identity, for their intrinsic amenity value and for the potential use of future generations.

For example, existing topography and contours can be used to define roading patterns. Instead of culverting streams, they can be used to mark boundaries or form the basis of reserve area. Areas of native bush, possibly with enhancement planting, may be integrated into a development for a similar purpose, or may be used to provide a positive visual link with nature for the residents of the area.

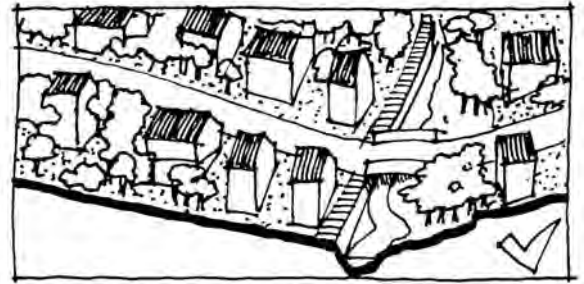
An approach which exploits the benefits of the natural features that the site has to offer will tend to encourage a richness in the visual and physical character of the streets and other public spaces, and diversity in the shape and size of lots. This richer environment gives the inhabitants and the lot purchaser a greater degree of choice.



Natural features eliminated

Although retention of landforms must usually be a first principle, it is recognised that the city is a built artefact rather than a natural creation. It may be appropriate to give landmark status to an important public part of a large development, by altering the landform to contrast. Such contrast would be acceptable only where it clearly improves the physical amenity of the area and helps in developing identity and a sense of place for the local community.

Contrast with existing landforms is not appropriate in many situations, particularly for small developments, or where it destroys a highly valued and significant underlying landform. Contrast must be a carefully considered exception to the rule, rather than the norm.



Natural features seductively retained and integrated into development

Accessibility

The degree of choice and convenience offered to residents is to a large extent governed by the area's accessibility. While most people travel by car, many do not have the use of a vehicle, and for them accessibility by foot, bicycle or public transport is important. For this reason the street and public space structure should have good interconnections both within the area and outside. Consideration should be given to optimising accessibility to public transport systems and to features such as schools, local shops, community and recreation facilities that people use often.

Legibility

Not only should the public space structure provide access, this access should be obvious and its layout should be "legible" - that is, understandable for the people that use it.

These qualities depend on the existence of key physical elements that allow people to differentiate one place from another and understand how that place relates to the wider context. These include nodes (focal places such as junctions of paths or streets), edges (rivers, streams, ridges, railways, motorways), paths (both pedestrian and vehicle ways), landmarks (point references which people experience from outside), and districts (medium to large sections of the city which are recognisable as having some particular identifiable character).

For example, a structure of curvilinear streets on a flat site can be disorientating for drivers as it prevents the eye from focusing on anything for longer than a fraction of a second. In contrast, curved streets on steep development sites which relate to the contours of the site, and its changes of level, give views out over other parts of the city and allow viewers to orientate themselves.

Many of the major elements that support legibility will already exist in the surrounding suburban fabric and in the natural features of the site, and these should be recognised and integrated into the development.

Functional Amenity

A good residential environment will generally meet the various (and indefinable) needs of its various inhabitants. It will offer them choice, and will be helpful rather than limiting in its effect on their socially responsible actions. The streets and public space structure should provide people not only with access but with other amenities essential for a good neighbourhood, such as a reasonable likelihood of safety and the opportunity for recreation and community interaction.

The range and type of spaces and provision for community facilities within any development will take into account the features of the surrounding context, so that new development supports and complements its surroundings.

Visual Amenity

The streetscape gains life, identity and character through visual contrast or juxtaposition. Excessive repetition and lack of character can lead to visual monotony. A very long straight and flat road, for example, has little positive streetscape impact for the pedestrian or cyclist because the initial view is quickly comprehended and becomes monotonous. Irrespective of actual street form, the repetition of identical streets can lead to monotony as well as the reduced legibility that arises from a lack of local identity. Such streets require some differentiation from each other. This may be achieved by measures including integration of existing local landscaping features into the development and expression in the design of each street of its place in the roading hierarchy.

Articulating the system of local and arterial streets with the specific character, understood in that area as belonging to particular street types, will help make the physical organisation of the city easier to understand and will provide a visual link with other parts of the city. A degree of consistency of street type is desirable, and characteristics such as carriageway width, verge and footpath treatment, landscaping and lighting standards for example will work to define street type. Variation and differentiation are nevertheless needed to give the distinct character that builds a degree of identity for a development.

Objectives

Landform and Landscape Features

- 01** To substantially maintain the general appearance of the natural topography, both significant features and the general landform.
- 02** To maintain and capitalise on the significant natural and historical attributes of the site.

Accessibility

- 01** To promote accessibility and permit a choice of modes of access and a choice of routes.
- 02** To connect with and relate to the visual character of existing adjacent streets and accessways.
- 03** To promote the safety of all users of the street environment through the use of appropriate design measures.

Legibility

- 01** To develop a legible (understandable) layout.
- 02** To develop a sense of place within residential areas that is compatible with their location within the wider context of the city as a whole.

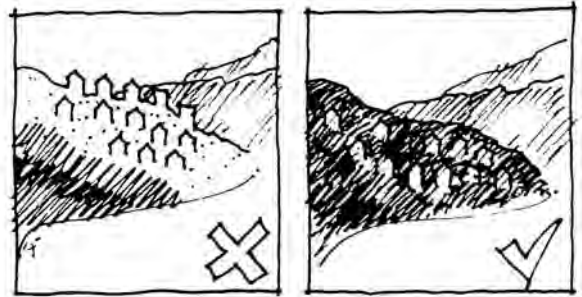
Functional and Visual Amenity

- 01** To provide a good place to live, a place that is responsive to user choice, that works well and looks attractive.
- 02** To optimise the quality of the streets and public spaces within a subdivision.
- 03** To develop public spaces that support not just vehicle access but a wide variety of user activity.
- 04** To provide conveniently located educational, social, recreation, community and commercial facilities bearing in mind user demand and the location of any such facilities existing nearby.

Requirements

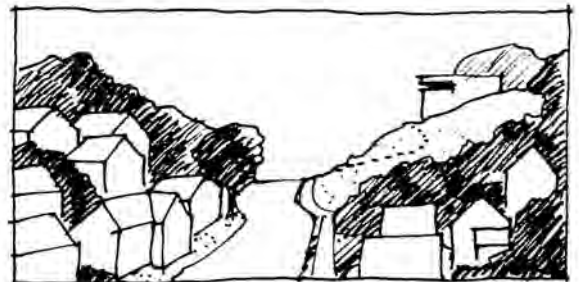
Landform and Landscape Features

R1 Maintain the general appearance of the natural landform by avoiding the unnecessary loss of landforms or landscape features. Re-contouring, subject to modification allowing for roading and the provision of reasonably flat building platforms and useable open space, should be consistent with what the natural landform might have been.



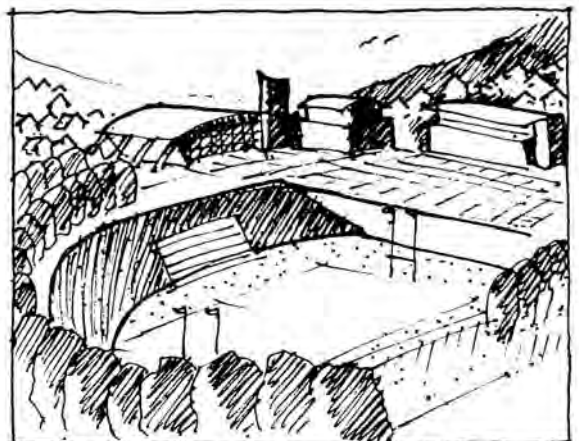
Integration into the landscape

R2 Utilise any existing significant natural landscape features and notable or historically significant existing structures, sites and buildings in public open space to give character and a sense of identity to the development. Features include notable land forms (rock outcrops, gullies, streams), existing significant trees or groups of trees, structures such as bunkers or war memorials, and sites of significance to the Maori community.



Use of existing landscape features to give character and a sense of place

R3 Obvious large-scale signs of contour modification that contrast with the predominant landform are acceptable only where they make a positive visual impact in the context of surrounding landform and clearly enhance the physical amenity and quality of an important public part of the development



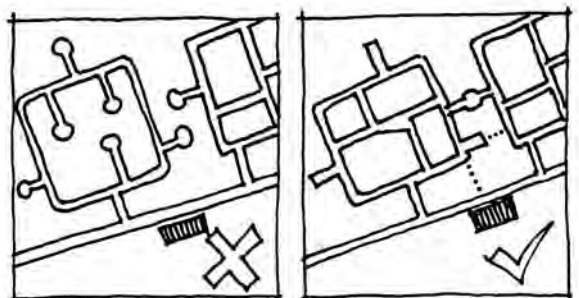
Contour modification acceptable for publicly significant facilities

Accessibility

R1 Connect new streets and accessways to the existing street structure to meet anticipated demand for pedestrian access.

R2 Provide public accessways that link residential areas with public transport services, schools, recreational spaces, shops and other activity centres.

R3 Encourage by design a speed regime that is consistent with the road function of individual streets and the character of adjacent land uses.



Connection within and between areas

- R4** Integrate access for pedestrians and cyclists into the main street network. Separate pedestrian-only routes are acceptable only where they are part of a public recreational space or where interconnection would be desirable and gradients or existing land tenure preclude full street access.
- R5** To consider energy efficiency in the layout of roads.

Legibility

There are no requirements relating to legibility.

Functional and Visual Amenity

- R1** Integrate suitable space for recreational activity into the public space structure.
- R2** Design the public space structure and street system to support use by people on foot or on bicycles as well as by people using cars or public transport.
- R3** Use public open space to form a centre for a development, giving an attractive outlook for dwellings and potential space for recreation.
- R4** Locate and design public open spaces, including bush reserve areas, with consideration of visual and physical connection with the community, outlook, sun exposure, visibility and safety relative to their likely functions and uses.

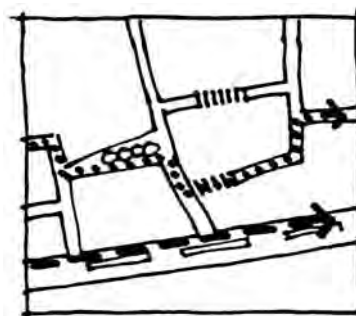
Guidelines

Landform and Landscape Features

There are no guidelines relating to landform and landscape features.

Accessibility

- G1** Avoid a predominance of cul-de-sacs within a development in order to maintain reasonable accessibility and interconnection. Where cul-de-sacs are necessary because of topography or desirable as a means of restricting traffic or providing relative seclusion, interconnect cul-de-sac heads wherever possible to allow convenient access for pedestrians and cyclists.
- G2** Discourage unintended through traffic in residential areas by ensuring that main through routes are more direct or more easily accessed than unintended through routes.
- G3** Use planting, street furniture, narrow carriageway width, changes in direction and other traffic-calming measures to control traffic speeds. (Refer Design Requirements, Street Design).



Legibility

- G1** Use intersections and changes in direction as an opportunity to develop character.
- G2** Use changes of direction to reduce vehicle speeds and to create changing views within the streetscape as well as visual openness and views out at various points.
- G3** Avoid repetitive curvilinear streets on flat sites.
- G4** Reflect the function and characteristics of the street types in the network of which a development is part, complementing relevant attractive local streetscape.

Functional and Visual Amenity

- G1** Identify worthwhile views, buildings or landmarks and align streets or plan significant public spaces to relate to or focus on these.
- G2** Provide visual focus or terminate vistas with significant landforms, views, buildings or enclosure at the end of streets.

Vegetation and Planting

Analysis

Planting is essential to the suburban streetscape. Large-scale planting can greatly reduce the visual impact of discordant elements in suburban areas. Well-sited and selected planting can not only make a significant visual impact in its own right, but can make a major contribution to the appearance and the quality of experience of streets and public spaces.

Existing Trees and Vegetation

Existing trees and vegetation should be valued for the opportunity they present to enhance the visual quality of a development, and should be retained wherever practicable. The presence of existing mature trees or significant native vegetation on a site allows the new development to look well-established and to maintain a sense of continuity. This is in addition to the environmental benefits of retention, such as the maintenance of ecosystems or habitats, where these are significant. They can be incorporated in development to create an instant "arcadian" character.

Full or partial retention is particularly important where vegetation has a visual, environmental or historical significance beyond the confines of the development site. Any large-scale planting should be done with native species where this is appropriate to the surroundings. Riparian land adjoining waterbodies, lakes or ponds often represents a significant part of the local ecosystem, and offers the opportunity for improving the outlook over natural features from residential properties and for the development of reserves with specific local natural character. Such land and its natural vegetation should be retained and integrated into development wherever appropriate.



Trees retained to add maturity and character to a new development

The Value of Street Planting

The overall effect of planting is instrumental in determining the image and identity of an area. It is generally valued by residents and, if sensitively implemented, can increase the overall quality of a residential area and provide a more attractive setting for the homes within it. In the suburbs where buildings are likely to be relatively small in scale, street trees and other planting are often the primary determinants of character and can present the best means of achieving enclosure or definition of public space where this is seen as appropriate. Trees and planting also provide valuable shelter in windy, exposed areas.

Residents tend to prefer a moderate rather than intensive level of planting, with research showing that intensifying planting beyond certain levels does not lead to a major increase in residents' satisfaction. Planting close to important pedestrian and vehicle routes should not obscure visibility or provide criminals with a place to hide. The safety of the streets, particularly for pedestrians and cyclists, should always be borne in mind when planting is planned.

Planting

Planting, either existing or imported, in public spaces allows visual links to be made with other parts of the city. Where a pattern of street planting is consistently used to denote a particular type of street or road elsewhere, this pattern may be used on a similar street in new development to obtain a visual link and establish the place of new streets in the roading hierarchy of the city, thus helping people find their way around (legibility). Conversely, a widely divergent or contrasting character expressed in street planting can, by creating a unique sense of space, also assist legibility for users. The former approach is most applicable for small-scale development, whereas the latter is appropriate when a development is large, and it is considered important to develop local identity.

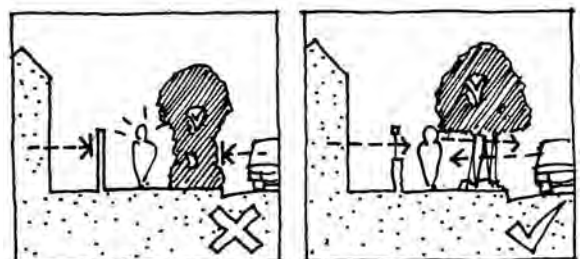
The emphasis in landscape and planting should be on getting the amount and the design of planting right for the location, and these vegetation and planting design guidelines seek to show how this might be done.

Objectives

- O1** To retain and utilise existing significant trees and vegetation where these can make a positive contribution to the visual character and amenity of an area.
- O2** To encourage the integration of planting into the streetscape to give character and identity, and to signal the role of the street within the network as a whole.

Requirements

- R1** Integrate into the design any areas of native planting or mature trees that are characteristic of the natural landscape, and that are recognised by the community as having a significant ecological, visual or historical significance beyond the confines of the development site.
- R2** The foliage type, height and placement of planting in public areas close to important pedestrian ways and vehicle accessways should be such that it minimises the opportunity for concealment and does not materially obstruct car drivers' vision of pedestrians or other vehicles and vice versa.
- R3** Planting to streets and public spaces should make reference to and be consistent with the established patterns of street landscaping within the city where such patterns can be identified and create an effect which is desirable.



Planting should allow views of the street and minimise the opportunity for concealment

Guidelines

- G1** Utilise existing trees and areas of planting as settings for recreational and play areas, and take advantage of their aesthetic qualities as a feature within the development.
- G2** Retain significant existing trees both in public space and on private lots with minor modification as necessary to allow visibility and reduce the opportunity for concealment, to allow sunlight penetration, or to make provision for building sites.
- G3** Make use of larger-scale, designed landscape elements such as avenues, rows or groups of trees and shrubs to provide a distinctive open-space structure for residential areas. These introduced landscaping elements should complement the existing natural features of the area and relate to prominent views, reserves and recreational areas. They should support the enclosure and definition of public space, the enhancement of existing character and the development of character in otherwise featureless areas.
- G4** Select trees of distinctive character (in species or size) to act as landmarks in particular locations.
- G5** The shape, species, height and placement of trees can be used to denote different types of street. The difference in function between residential cul-de-sacs or access roads and those streets intended to be more heavily used as through roads may be expressed with different design and landscaping treatments. Slight differences in tree types are not likely to be recognised by most people; to be effective the differences must be sharp.
- G6** Those through streets intended for heavier and faster vehicle flows can be appropriately expressed by planting in a pattern that maintains a continuous even rhythm. The faster the traffic flow, the longer the length of the repeating design or planting module and the more open the street should be.

Street Design

Analysis

This element describes the basic requirements that relate to the planning and layout of the street carriageway. The technical criteria contained here will need to be considered at the same time as shape is given to the public space structure.

People come before cars. Residential areas must be designed to meet residents' needs for safety and amenity ahead of requirements for traffic efficiency. The detailed design of the

street network should therefore be considered, but not before dealing with all of the other factors necessary to make an area a good place to live. Traffic efficiency is of lesser priority than visual character, convenience, safety and environmental protection.

Nevertheless, the design of the street will be required to ensure that it is engineered to the appropriate standard and that such features as gradients, crossfalls, verge widths, sight distances and traffic management devices are all suitable.

The appropriate surfaces and detailing should be incorporated as required by the function of the road or street. To this end, reference should be made to the technical criteria contained within the Wellington City Council Code of Practice for Land Development at the stage of detailed design.

Safety and Amenity

While residential streets must provide access for vehicles and for reticulation of services, they are also put to a great many other uses by the people that live there. The safety of people on foot and on bicycles in the streets is critical, although opportunity for a range of types of behaviour and activity should be provided.

Vehicular traffic volumes and speeds on streets providing direct access to dwellings should be encouraged to be kept at a controlled low level. In residential areas where significant amounts of through traffic are to be discouraged, the surfaces and detail of the street should be designed to restrict vehicle speeds to a level appropriate to the function of that street in the roading network and provide a safe amenable environment for a range of activities.

Shared Street spaces

The provision of shared street spaces for residential access places and access streets may be considered, with a view to creating places of special character, minimising vehicle speeds and maximising potential for the use of street spaces by pedestrians. Such shared street spaces are only possible at the end of any roading hierarchy, where traffic flows are less than 250 vehicles per day and the majority of traffic has its destination within the area itself.

Objectives

- 01** To provide a safe and pleasant environment for residents and other users.
- 02** To provide sufficient width of carriageway and verge to allow streets to perform their designated functions within the street network.
- 03** To create conditions under which the majority of drivers will drive with care and without undue frustration.

- O4** To minimise street construction and maintenance costs without compromising objectives relating to amenity.

Requirements

- R1** Design the carriageway to discourage motorists from travelling above the intended speed for the function of the street. Refer to Appendix 1 for the desired maximum street speeds and carriageway width appropriate for each street type.

This may be accomplished by specific design by a qualified traffic engineer or by reference to the Street Design guidelines. In both instances the WCC Code of Practice for Land Development provides relevant engineering and technical information.

- R2** The width of streets and roads will relate to their status and place within the traffic hierarchy. Refer to Appendix 1.

- R3** Shared street spaces can only be used where traffic flows are less than 250 vehicles per day and the majority of traffic has its destination within the area itself. Shared street spaces can be developed in cul-de-sacs or through roads. The surround street system must be designed to limit traffic volumes to those compatible with shared street space.

Where shared street space is to be developed, its design should include:

- speed control measures as set out in R1 above
- provision for two-way traffic (to reduce vehicle speeds)
- a narrow carriageway with occasional widening for passing places
- adequate parking for residents and visitors
- some on-street parking of right angle form (demanding greater attention from drivers and providing better recreational space when cars are absent)
- general removal of kerbs between hard paved surfaces. Kerb distinctions, given their emphasis on separating vehicles from pedestrians, should be eliminated and paving provided to reduce the linearity of space
- appropriate kerbs placed at the margins between paving and planted or grassed areas
- street furniture and planting, designed so as not to significantly obstruct visibility between 0.6m and

2.0m above finished ground level, so that drivers can see pedestrians and other vehicles.

In addition:

- The paving may be divided into several different patterns and textures to delineate different areas within the shared street space and give the appearance of a private accessway rather than a typical street.
- These and other devices will work to reduce vehicle speeds and give the clear message that the street is for people, not just vehicles.
- It is important that the design elements of the shared street space are not seen by drivers as arbitrary speed restrictions. They must clearly appear to give advantages to other uses for the street - children's play equipment, benches and seating, trees and parked cars.

R4 Utilise established conventions for the design of elements within the street - paving types, crossings and items of street furniture - in order to increase safety by increasing the ability of both pedestrians and motorists to predict how others will use the street.

R5 Access for pedestrians should be provided along streets through the use of footpaths, planted areas, shared street space, or other public space.

Guidelines

G1 Manipulating geometric features such as carriageway width and length and the introduction of bends and slow points reduces the average speed of vehicles through an area. They should also be used with consideration of their aesthetic impact and the opportunity that they give to create character and identity.

G2 The geometry of the street system can be altered to influence vehicle speeds. The following characteristics of street layout may be considered when planning to achieve target design speeds:

• **Street Leg Length**

This is the length of a straight section of street measured between end points, bends or slow points. Table 1 outlines the maximum leg length to achieve various design speeds.

STREET LEG LENGTH AND DESIGN SPEED

Street Leg Length (metres)	Design Speed (km/h)
40	25
75	30
100	35
120	40
140	45
155	50

Table 1

• **Slow Points**

Slow points are geometric features which limit the travel speed of vehicles. These include (but are not limited to) constrictions to the carriageway width, bends, intersections and humps. Table 2 shows the speed at slow points or bends and the length of street between slow points or bends.

RADIUS OF BEND AND MAXIMUM SPEED

Desired Maximum Vehicle Speed (km/h)	Appropriate Continuous Series of Bends (metres)	Curve Radius Isolated Bends or in a Chicane (metres)
20	15	10
25	20	15
30	30	20
35	50	30
40	90	40
45	105	50
50	120	60
55	140	70
60	160	80

Under some conditions, slow points are not appropriate: for example, a carriageway should not be narrowed on the crest of a hill. Careful detailed design is required to ensure safety and convenience for all road users.

Table 2

• **Bends**

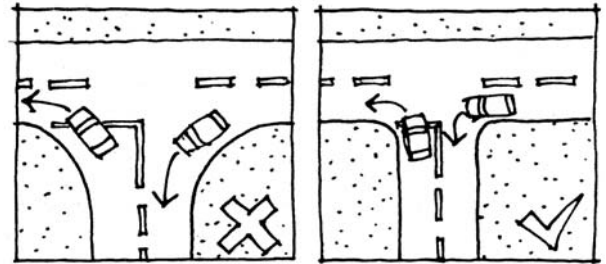
The geometric characteristics of bends determine the speeds at which vehicles can travel through them. Table 3 relates desired maximum speeds through bends to appropriate curve radii.

SPEED AT SLOW POINT OR BEND AND LENGTH OF STREET BETWEEN SLOW POINTS OR BENDS

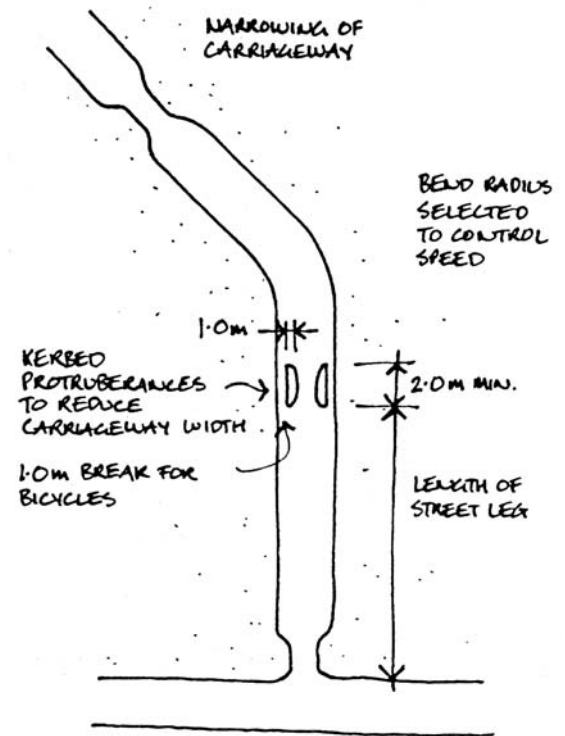
Speed at slow point/ bend, etc (km/h)	Length of street (m) between slow points/bends to limit maximum street speed to (km/h)					
	25	30	35	40	45	50
20 or less	40	75	100	120	140	155
25	-	45	60	80	100	135
30	-	-	45	65	80	115
35	-	-	-	50	65	100
40	-	-	-	-	55	80
45	-	-	-	-	-	60

Table 3

- G3** Keep kerb radii at intersections to a minimum in order to control the speed of turning vehicles and minimise pedestrian crossing distances.
- G4** The surfaces, signage and street furniture of each type of residential street should convey its primary function and encourage appropriate driver behaviour.



Minimise kerb radius to control vehicle speeds



Building Scale and Location

Analysis

The design guidance on building form and setbacks is not intended to set arbitrary restrictions on private development beyond that which is already required by other provisions of the District Plan. Rather, it is intended to encourage developers to consider what impact the placement of buildings on private land may have on public areas. It recognises that building form in suburban residential situations is often of a scale that is subordinate to trees and other large scale planting but nevertheless, that most buildings will have a public front that is viewed from the street.

The Significance of Building Fronts

The public fronts of buildings define public space and help determine the visual character of the streetscape. The detailing of the publicly visible part of any individual building - including its general form, scale, aspect to the street and positioning relative to street boundaries - may have a small effect on the way the

street looks and the way people use and enjoy it. The combined effect of many such buildings is, however, significant and effectively defines the character of the street.

The scale and positioning of buildings relative to each other and to public space must be considered at the site planning stage of design. Building fronts should be positioned to complement and relate to each other in a way that creates a coherent public space structure that is visually attractive, and useful and enjoyable for the residents of the area.

The Function of Streets

The streets and other public spaces in a development are the setting for the homes and lives of the residents and they will provide outlook and opportunity for access and recreation. In particular, the opportunity for people to walk comfortably and safely in public space is not only a necessity for many but is an enjoyable recreational activity for people of all ages. The streets will be used by parents pushing prams, by young children walking to school, by older children and teenagers, by people visiting the local shops and by those enjoying the fresh air and exercise of a walk.

While pedestrian use is physically possible in any street, people will be tempted to use the streets only if they are interesting, provide convenient access and are safe. Whereas convenience partly depends on there being a choice of routes (and therefore on the overall structure of the street system), visual interest and safety are primarily determined by a strong visual connection between life and activity on and off the street.

An environment that demonstrates the existence of life - houses with windows facing the street rather than blank walls or expanses of garage doors - projects the presence of people and activity onto the street, creates the safety and security benefits of natural surveillance and is therefore more likely to be used by pedestrians. This issue should be considered in the placement and form of dwellings.

These criteria are most important for a higher density residential area dominated by buildings. They are less relevant in low-density environments, particularly in a bush setting where vitality and natural surveillance of the street might be regarded as less important than the preservation of privacy.

Objectives

- O1** To reinforce a sense of place or local identity by careful consideration of the position of the fronts of buildings to achieve spatial definition.
- O2** To maintain a visual connection between buildings and the street and to project the presence of life and activity onto the street.
- O3** To maintain informal surveillance of the street from the housing and buildings that front it.

Requirements

- R1** Where such facilities are provided, or may be provided in the future, utilise the special scale and form characteristics of buildings of public significance - such as shops, schools, local libraries and other community facilities - to create local landmarks and identity within a development.
- R2** Integrate sites for publicly relevant facilities into new development as determined necessary by the community and the Wellington City Council.
- R3** Plan dwellings and place garages in such a way that there are windows overlooking the street and so that garage doors or walls do not comprise more than one-half of the ground floor street facade width of any dwelling.

Guidelines

- G1** Consider the way in which each building relates to its neighbours and to the street and public space, and locate buildings and trees to define the edges of space.
- G2** Adjust the setbacks of buildings from the street to define tightly enclosed space or to create openness where these qualities are appropriate, and to accentuate or frame key aspects of the streetscape such as important entrances or vistas.
- G3** Create spatial contrast and differentiation where appropriate by varying the degree of enclosure of public space. Spatial enclosure can be achieved with the positioning of building fronts and the location of trees and other large elements of the streetscape.
- G4** Group publicly relevant facilities to form a distinctive centre and, where such a centre is proposed, arrange the fronts of buildings to define and give spatial character to the development.

Appendix 1. Road Widths Table

Type of Road	Traffic Volume (v.p.d.)	Design (km/hr)	Road Width		Berm width (metres)	Carriageway Width			
			Minimum (metres)	Average (metres)		Parking (metres)	Traffic (metres)	Total (metres)	
Arterial	Over 7000	50	Specific design						
Principal	3000-7000	50	21		4	2 x 2.5	2 x 3.75	12.5	
Collector	800-3000	50	19		4	2 x 2.0	2 x 3.5	11	
Sub-collector	200-800	40	15		3.5	2 x 2.0	1 x 4.0	8.0	
Local Roads									
Minor access/Long cul-de-sac (over 100m)		30	12		3	1 x 2.0	1 x 3.5	5.5	
Short cul-de-sac (under 100m)		20	10.5		2.5	1 x 2.0	1 x 3	5.0	
Private way		10	3.2		0.25	-	1 x 2.7	2.7	

Notes:

- The widths given in this table are to be taken as the minimum generally acceptable although these may be reduced upon site examination and subdivisions design assessment.
- Traffic volumes are meant as a guide. One household unit can be expected to generate between 5 to 7 vehicle movements per day where there is no public transport.
- Road widths may vary along the road to provide flexibility for tree planting, traffic calming measures, parking and landscaping.
- Berm width includes the footpath and the kerb.
For carriageway widths, extra widening is required for horizontal curves.
- In all residential roads with carriageway width less than 8 metres, parking may need to be restricted to one side only. Where traffic calming measures occupy required parking space, additional angle parking space should be considered.
- Additional road widths for turning area requirements shall not be used when calculating the average width.

[Individual Lot Design

This section requires the potential development achievable on each lot to be planned so that the lot and its subsequent building development will offer a high level of amenity and not unduly compromise the amenity of neighbours or character of the wider neighbourhood. These guidelines apply to both Greenfield development and infill subdivision, but are particularly applicable to small-scale infill within established neighbourhoods.

Objectives

- O1 To create acceptable qualities of amenity on each new lot.
- O2 To maintain the amenity of neighbouring properties.

Guidelines

Shaping the lot

- G1 Shape lots to be generally compact and regular in shape, allowing for outdoor areas to be accessible from proposed dwelling sites.

Random and arbitrary lot shapes, particularly those extensions or shapes that contribute nothing to the usability and amenity of the lot are not acceptable. This is because the random alignment of dwellings and boundary fences that results, will often create odd, unusable or inaccessible spaces on the lot, and have a detrimental effect on neighbourhood character, particularly in neighbourhoods with a relatively regular lot layout.

Long linear extensions of lots are acceptable only when they are part of a shared accessway, or there can be seen to be a compelling character, open space amenity or landscape reason for that shape. Deviations from this guideline may be justifiable only where this is to preserve a significant landscape or building feature.

Lots should be shaped to avoid unnecessary earthworks, and major and sudden changes in the contours of a site should be avoided. Where necessary, such changes should be used to separate lots, rather than occur within a lot.

Useable outdoor space

- G2 Plan for building footprints that allow for at least one primary outdoor space of reasonable size with northerly exposure on each lot.

This space is to provide for short-range outlook from the dwellings, and private recreation and service space.

Open spaces on lots should be close to and readily

accessible from the dwelling. They should be located to the north, east or west of and connected to the anticipated main living floor of indicative future dwellings on the lots.

- G3 Where possible, co-locate the primary open spaces associated with new lots to give outlook both for new dwellings and neighbours, and allow the integration of large trees.

Where it is achievable, an open space that connects with others on neighbouring lots can provide a pleasing sense of openness within an intensively developed area. It also allows the large trees that are often not possible within smaller enclosed spaces.

Access to the lot

- G4 Provide for vehicle access and future garaging in a location and configuration that minimises earthworks and does not dominate either the streetscape or the interior of the development.

Street edges and other open spaces will be poor if dominated by garage doors, or hard paving, retaining walls and fences. Careful placement of accessways and garaging so they are not visually dominant should be considered first, followed by landscaping to mitigate adverse effects.

- G5 Offset or otherwise articulate long vehicle accessways to reduce vehicle speeds, and to landscape them to make them visually attractive.

Avoid long narrow lanes or expanses of asphalt that are unrelieved by landscape elements. Enhance the visual appearance of these spaces for users and neighbours with landscaping or other design elements. This will also help to minimise the impact on neighbouring lots of passing cars.

- G6 Where possible, combine accessways to rear lots to minimise the visual impact of these and associated kerb crossings on the neighbourhood.

Use of shared accessways minimises the amount of land required for access and by reducing the number and width of accessways at the street edge also reduces conflict with pedestrians.

Where opportunities exist, consideration might be given to providing access to the rear of sites with shared rear or side accessways, thereby maximising potential for buildings to front the primary street.

Landscaping

- G7 Retain significant large trees and vegetation on new lots.

Retaining mature vegetation gives a sense of the development being well-established, allows new dwellings to assimilate into the neighbourhood, thereby helping to maintain the character of the

neighbourhood.

- G8 Provide planting within new development that is suitable for situation, wind and sun exposure and soil type, placing this to enhance amenity.

Well placed trees and planting provide benefits of visual interest, privacy, shelter and shade for both dwellings and associated outdoor areas. Planting with a scale and growing habit appropriate to site and situation is required to provide any necessary screening within any subdivision and for neighbours while allowing reasonable sun and daylight to dwellings and open spaces. In order to achieve visual integration, consideration should be given to species that extend the planting and landscape patterns of the wider setting.

- G9 Design any necessary retaining walls to be both integrated into the development and not visually intrusive.

The most effective approach is to minimise earthworks and need for retaining walls by planning the lot so that it is in harmony with the landform.

Retaining structures are often utilitarian and unsightly, and can be prominent in views across a neighbourhood, particularly where these replace areas of dense planting. These also impact on the outlook from the dwelling they serve. Their quality of construction and appearance is important.

Where retaining walls will not be entirely screened by future buildings, their appearance should be mitigated with measures that might include screening planting, subdivision into modules of dimensions that can be perceived from distant views, and fine texture that is perceived in close range views.

- G10 Incorporate on-site water quality treatment measures where practicable.

This may involve retention swales, soak pits and permeable surfacing for driveways and areas of on-site carparking. The nature and stability of sub-terrain conditions should be assessed to determine if such measures are practicable.

Privacy, sun and outlook for neighbours

- G11 Provide for placement of buildings where they may avoid unreasonable compromises to privacy, sun and outlook for neighbours as well as, where these are significant, reflecting established neighbourhood patterns.

If the potential to place buildings and the relation of these to neighbouring dwellings is considered at the lot layout stage, there is often potential to mitigate the amenity effects of infill. In many cases only subtle shifts in building location or orientation can address cross-boundary issues.

It is likely that subdivision to create infill at the rear of lots will lead to situations where people in new buildings will be able to look down into existing rear yards. To address this, the location of buildings, open spaces and planting on the new lot to contribute to privacy should be considered. In such situations it is not expected that existing levels of privacy will be maintained, however consideration should be given to providing privacy to parts of neighbouring existing lots that are connected to the dwelling.

If neighbouring properties enjoy a significant outlook, consideration should be given to placing building footprints where at least part of that view is retained.^{PC56}