

GREENHILL PARK DESIGN GUIDELINES

The Design Guidelines for Greenhill Park must be read in conjunction with the provisions for the Medium Density Residential Area in Section 25H.9, in particular the 25H.9.3 Rules — Activity Status, 25H.9.4 Rules — General Rules, 25H.9.5.2 Restricted Discretionary Activities Matters for Discretion and Assessment Criteria, and 25H.9.6 Rules — General Standards, in the Ruakura Plan Change, Hamilton City Operative District Plan (Waikato Section).

Note —

The above provisions may be subject to change as part of the Ruakura Variation to the Hamilton City Proposed District Plan (PDP), and in the case of any resource consent application the equivalent provisions in the PDP will also need to be taken into account (albeit having less weight than the operative provisions). The Design Guidelines will be updated when the Ruakura Variation to the PDP is made operative.

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INTRODUCTION

The integrated planning and design of houses, roads and open spaces is fundamental to achieving high quality residential neighbourhoods. The design and placement of houses creates the character of the streets.

The relationship between houses and streets are critical in establishing the conditions and characteristics for sunlight, daylighting and privacy as well as the overall neighbourhood character. Well designed houses, streets and open spaces can create excellent liveable neighbourhoods that are highly valued and benefit all that reside there.

The guidelines have been developed to preserve and enhance the value of your property, by maintaining standards across the whole development.

This project is about creating such a place, for those that will live there.

VISION

Greenhill Park is a new Hamilton suburb that will showcase high quality houses, streets and public spaces providing a new way of living. A mixture of lot and house sizes and typologies will be developed to provide choices and value.

Chedworth Properties Limited will develop high quality streets and public places and provide the opportunity for quality houses to be developed. Guidelines will control the quality of the residential development, along with the use of a design panel process ensuring security for those purchasing in Greenhill Park.

Greenhill Park will be one of the most desirable suburbs of Hamilton — it will provide a range of living opportunities and will be available to a wide proportion of the community, including a range of demographics throughout all stages of life.

PURPOSE

The purpose of these guidelines is to control the form and the quality of residential development in Greenhill Park.

By ensuring that a consistent, high quality approach is taken to the design and construction of houses and front yard landscapes at Greenhill Park, builders and residents will have confidence that neighbouring properties will be of equal or similar quality, elevating the quality and value of the entire neighbourhood, as well as the houses within.

STRATEGY

In order to ensure that Greenhill Park delivers on the vision of becoming one of Hamilton's most desirable suburbs, a strategy is required for the design and construction of the suburb, the public amenities and the houses that all contribute to the overall quality of Greenhill Park.

Chedworth Properties Ltd will do this by —

- Ensuring a mixture of house types, section sizes and lot widths, within each street and throughout Greenhill Park.
- Ensuring houses actively face the street, creating an interactive street environment and community.
- Providing excellent public spaces, streets and reserves for the community. These investments will improve the value of the whole neighbourhood and all of the properties within it.
- Creating a design guideline and a design review panel to administer the process.
- Controlling the architecture to create good quality, well designed contemporary homes for a variety of people and families, i.e. not all the same market or community sector.
- Ensuring that there is variety in the streetscape and the architectural treatment of houses.
- Controlling the front yard landscape design and implementation to create a high quality street environment.

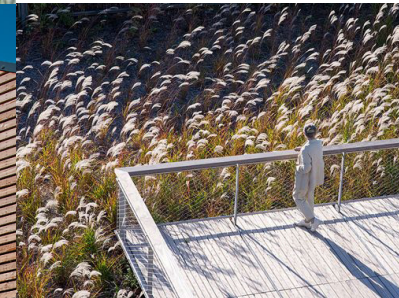


Séban Moreel Tun Architect, Brussel

Martin Luther King Park — Atelier Jacqueline Ostry and Associates



London Studio Architects



TrekFit Outdoor Fitness Solutions

SITE DESIGN

LOTS

The lot sizes and widths are set out in the Subdivision Scheme Plan which fits into the wider Master Plan. The Master Plan has been developed to ensure a range of section sizes and widths throughout each street and each stage. Variety will be encouraged and controlled through the Design Review Panel.

Residential buildings on sites 399m² or less currently require resource consent under 25H.9.3 of the Ruakura Plan Change, Hamilton City Operative District Plan (Waikato Section).

SITE COVERAGE

The maximum site coverage is 50% for all lots.

HOUSING TYPOLOGY

Semi-detached, duplex and terrace housing currently require resource consent under 25H.9.3 of the Ruakura Plan Change, Hamilton City Operative District Plan (Waikato Section).

BUILDING SETBACKS

Transport Corridor Boundary

Arterial Roads, including the Spine Road — 5 metres

Collector Roads and Local Roads, including Local Access Roads and Lanes — 3 metres

Boundary of a Land Development Area or Area Boundary

1.5 metres

FRONT YARD

Where the minimum setback of houses to the front boundary is 3 metres, a front yard of 3 to 5 metres is encouraged to promote a staggered building line along the street while ensuring houses continuously address the street environment.

SIDE YARD

It is the combination of side yards on either side of a boundary line that creates the openness or gaps between houses. The side yards at Greenhill Park open up the space on the north side of the lots. Where lots have side boundaries to the north-east or north-west, the side yards will be a minimum of 2 metres. The side yards on the more southern side of the lot will be a minimum of 1 metre. This relationship creates a minimum 3 metre gap between houses,

favouring sun into open space on the north side of the property. Applications can be made for development to be 'zero lotted' or built to the southern side boundary, provided that there is a separation of 3 metres to the adjacent house. These applications will be assessed on a case by case basis.

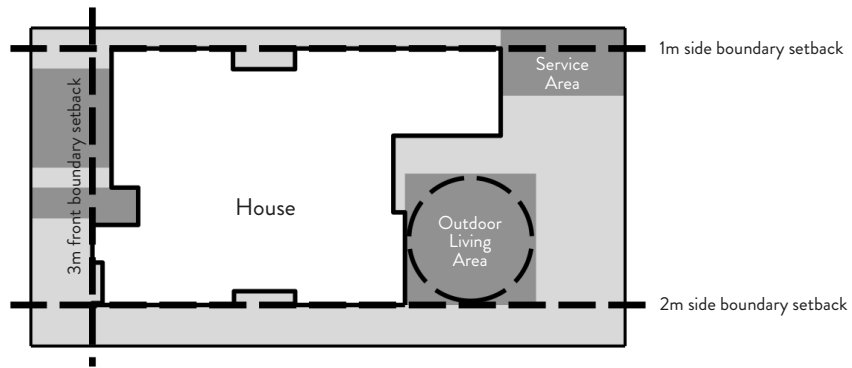


DIAGRAM — 1
Setbacks, Outdoor Living Area, Service Area

DESIGN FOR QUALITY

In order to create the right conditions for the development of a high quality residential suburb, it is important to control key aspects of the neighbourhood. This is called setting the building blocks. The following section outlines the key building blocks to be controlled at Greenhill Park.

SETTING THE BUILDING BLOCKS

- Create a mixture of section sizes and widths that require a variety of built outcomes.
- Create street definition by controlling setback, height and specific street environments.
- Control key aspects of the design that impact on the community feel of the development — corners, street ends, entrances and key sites.
- Build the structures. Deliver excellent streetscapes and reserves that leverage community feel and participation.

MATERIALS

Quality materials will be used in the construction of all facets of the houses, fences, walls and landscape features to ensure durability and functionality.

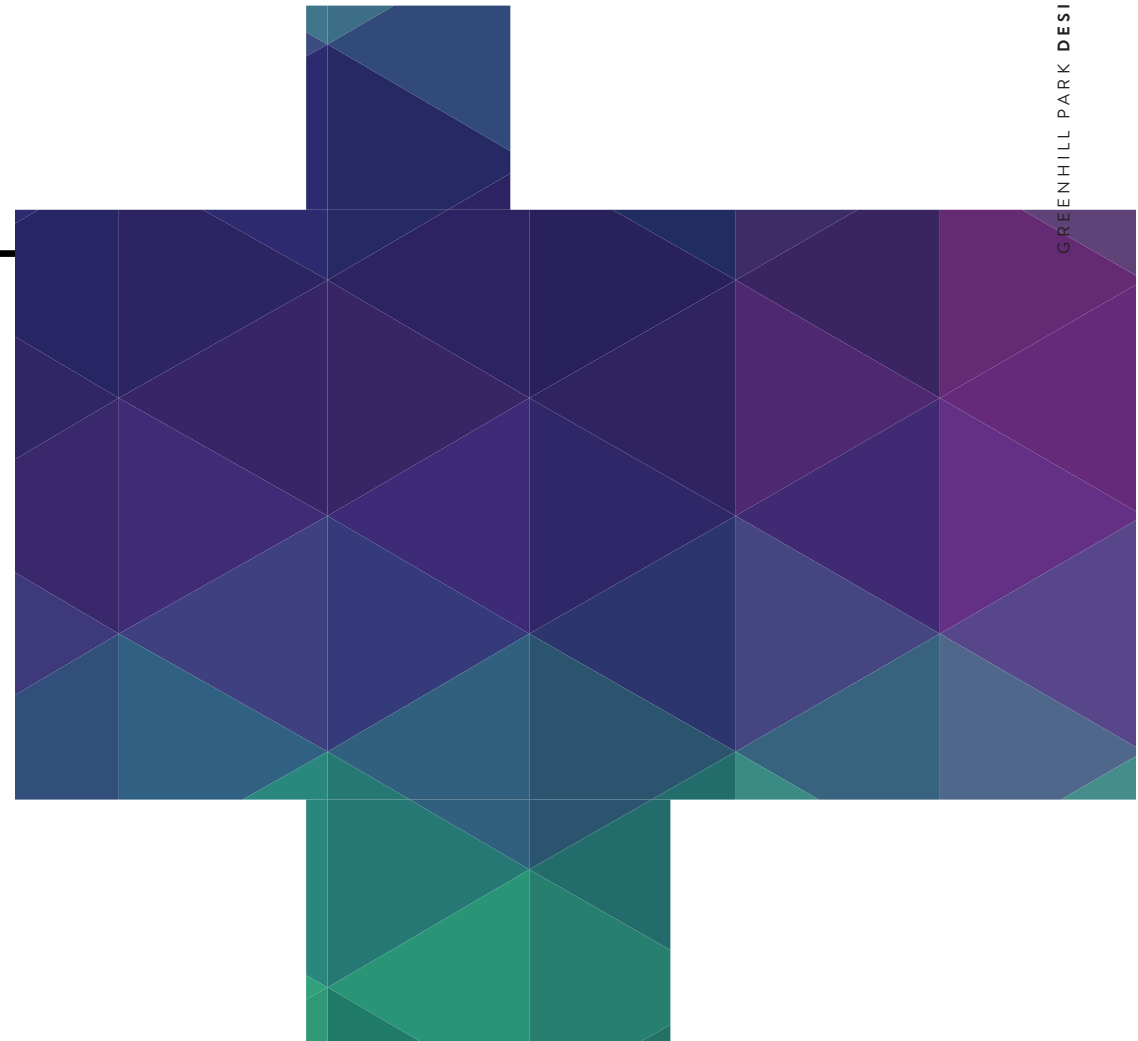
Some materials may lower the quality of the neighbourhood. These materials are discouraged from use —

- Fibre cement board.
- Reflective glass.
- Bitumen coated soft board.
- Unpainted or unstained rough sawn timber.
- Timber or steel framed construction systems supporting monolithic cladding systems (plaster is acceptable on concrete and masonry, including brick veneer).

ARCHITECTURE

The following elements are required to comply with minimum standards —

CORNER LOTS
STREET ENDS
NARROW LOTS
HOMESTAR RATING
BUILDING HEIGHT
GARAGE DOORS
HOUSE ORIENTATION
ROOF FORM
VARIETY
OUTDOOR LIVING AREAS
PRIVACY
SOLAR ACCESS FROM THE NORTH
MASSING
ENTRANCE
WINDOWS
VERANDAS AND BALCONIES
OUTBUILDINGS AND STRUCTURES
TV AERIALS AND MASTS



CORNER LOTS

The design of the lot and the house should address both streets, with windows and outdoor living areas. Corner lots should be considered carefully to ensure that the house addresses both streets and wraps around the corner.

Indoor living areas should be placed and designed to interact with both sides of the corner lots.

STREET END LOTS

Houses at the end of the streets forming the focus of the view down the street are encouraged to be two storey. These should be premium homes — larger with a high quality level of finish.

NARROW LOTS

Paying special attention to the orientation and design on narrow lots, less than 15 metres wide, is important — garages on the south side of the lot, outdoor living areas on the north side and ensuring good solar access to the north side are all important.

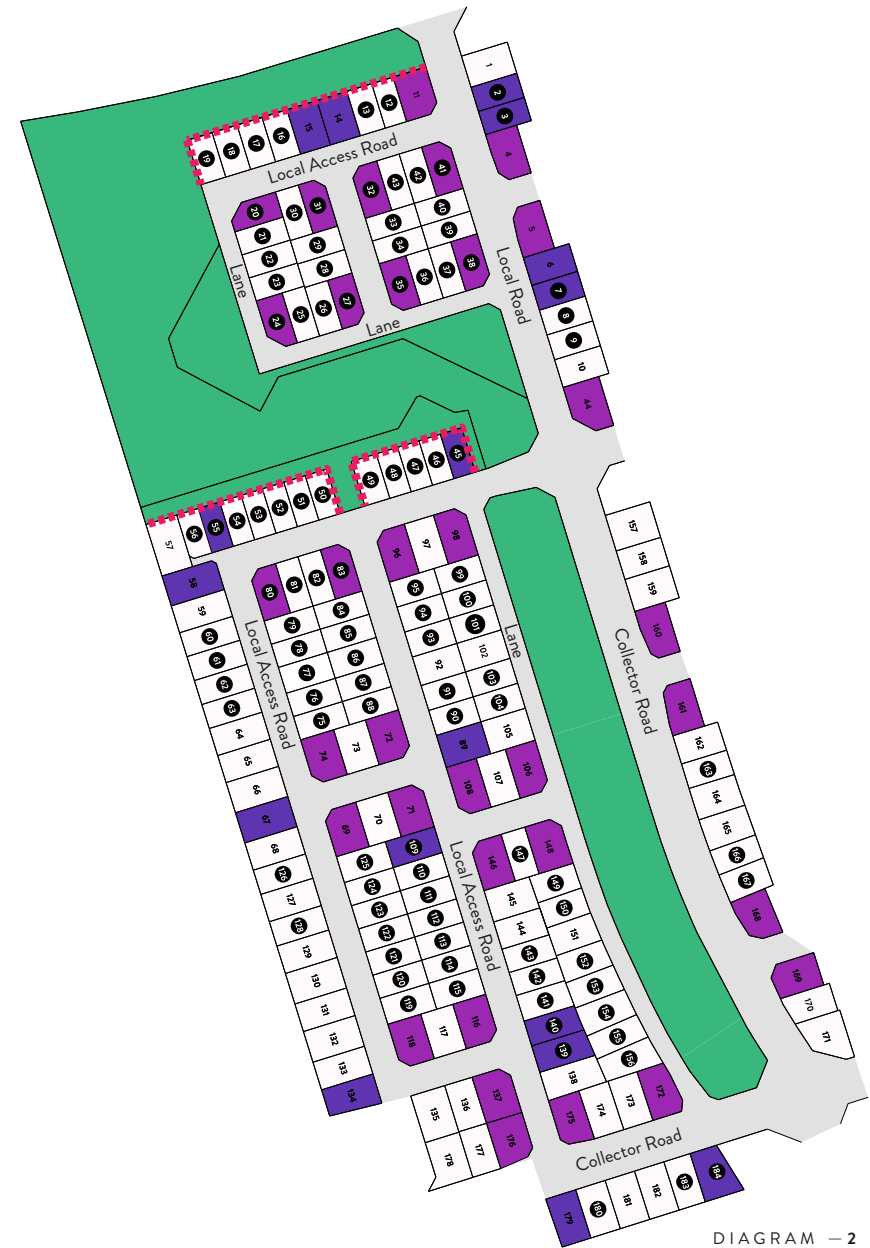


DIAGRAM — 2

- Key**
- Corner lots
 - Street end lots
 - Lots fronting open space
 - Narrow lots — less than 15 metres wide
 - Open space

HOMESTAR™ RATING

All houses will be designed to achieve a Homestar™ Rating of 6.

BUILDING HEIGHT

The maximum height of buildings shall comply with the Ruakura Plan Change (10 metres).

GARAGE DOORS

The design guidelines encourage garage doors to be setback at least 0.5 metres from the front of the house to reduce the dominance of garages on the streetscape. Garage doors should occupy a maximum of 50% of the width of the front elevation of the house and be a minimum of 5m from the footpath edge to ensure space for a car to park.

HOUSE ORIENTATION

Houses should be designed to positively address the street — front doors and indoor living areas should have a relationship with the street. Windows from living areas should be included in the front of each house and should face the street.

ROOF FORM

Roof forms should be designed to emphasize the vertical dimensions — either gables or mono-pitched that face the street. No hip roofs on the front elevation facing the street frontage.

The roof form over the living part of the house should be more dominant than the roof form over the garage, through increasing or stepped height. The residential roof form should be the primary roof form and should include the pedestrian entrance. The roof form over the garage should generally be secondary and less prominent.

VARIETY

Variation is required through form, roofline, massing, materials, colour and detail. No two houses should be of the same or similar design within a sequence of four houses in a street.

* This at the discretion of the Design Review Panel.

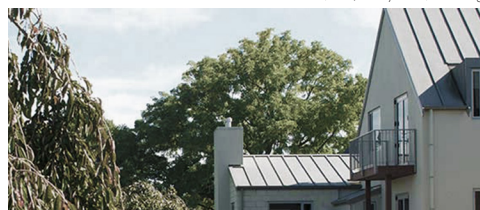
OUTDOOR LIVING AREAS

Outdoor living areas shall be provided on each lot. The outdoor living space shall be a minimum area of 40m² and large enough to accommodate a circle with a minimum diameter of 6 metres. The outdoor living area must be accessed directly from a living area inside the house and face north of east or west.

'Look And Feel' Examples For Architecture

Roof forms designed to emphasise the vertical dimensions

Paua Architects, Le Quesnoy Place, Cambridge



A staggered building line is encouraged along the street



Lots fronting lane and open space

Le Quesnoy Place, Cambridge, by Paua Architects



Seaview House, by Jackson Clements Burrows Architects

Massing articulated to emphasise the pedestrian entrance to the house



Architect Luc Bouliane



Space Division Architects, Auckland

Willemsen U Architects



Low boundary fence interface with open space

'Look And Feel' Examples For Fences, Walls And Letterboxes



DMOA Architecten

Privacy fence

Lots fronting open space

Hobsonville, Auckland



Techne Architecture + Interior Design



Outdoor living areas

Elwood, by Inform Designs



Front doors and indoor living areas with a relationship to the street



Anselmi Ridge



Cambridge Building Services

Proctor And Matthews Architects



Massing articulated to emphasise the pedestrian entrance to the house

PRIVACY

Privacy should be provided for each lot through the use of rear privacy fences, front yard planting and the placement and design of front elevation windows. Privacy fencing in the front yard should be designed to complement the design of the house and only on north facing lots.

See also Landscape — Front Yard, Fences And Walls (p. 16)

SOLAR ACCESS FROM THE NORTH

Houses should be placed and designed to ensure solar access to the north side of each lot and the house. No blank or windowless walls should face north.

See also Site Design — Setbacks, Side Yard (p. 6)

MASSING

Massing should be articulated to ensure interesting steps and forms within the house that relate to the overall design. The mass of the living part of the house should be dominant over the garage or the secondary massing. The mass of the garage should recede from the front of the house.

See also Architecture — Garage Doors (p. 10)

ENTRANCE

The pedestrian entrance to each house should be emphasised through the use of architectural massing, roof form, colour, increased architectural detail and quality around the pedestrian entrance.

The pedestrian entrance to the house should be directly connected to the street i.e. not cut off by a fence or planting. An architectural structure can be placed over the front pedestrian entrance way to give emphasis to the front door and its relationship to the street.

WINDOWS

Windows should be placed and designed to look over the street. The size, shape, proportion and arrangement of the windows should contribute positively to the contemporary form of the house. External features can be used to provide shade over windows, such as louvres.

VERANDAS AND BALCONIES

Verandas and balconies should be strong and functioning parts of the front elevation of the houses. Verandas and balconies should be designed to —

- Provide articulated house frontage
- Activate the street and provide opportunity to interact with neighbours
- Provide visual surveillance
- Create a connection between internal and external living spaces

OUTBUILDINGS AND STRUCTURES

The design of outbuildings and structures should complement the design of the main house.

TV AERIALS AND MASTS

TV aerials and masts should not be attached to the front elevation or front roof edge of houses. Aerials and masts should be set back, while still being sited and oriented to be functional.

LANDSCAPE

The following elements are required to comply with minimum standards —

FRONT YARD
FENCES AND WALLS
SERVICE AREAS
LETTERBOXES
PLANTING
ENTRANCE PATHS AND DRIVEWAYS
EXTERIOR LIGHTING
ON-LOT STORMWATER EFFICIENCY



FRONT YARD

FENCES AND WALLS

Fences and low walls should be designed to contribute positively to streetscape amenity and complement the design and materials of the house. Letterboxes should be incorporated into the front fence where possible, complementing the front fence design. All fencing returns or gates visible from the street should match the front fence material or colour.

Materials that are not permitted in the front fence are —

- Unstained or unpainted pine
- Sheet panels (e.g. fibre cement) and acrylic spray finish

Fences on sloping sites should be designed with a sectioned or stepped profile. Retaining walls should be screened with planting and preferably stepped. Pine must be stained or painted.

Exposed pole retaining walls are not permitted.

SERVICE AREAS

Service areas should be readily accessible from each house, with an area of 20 square metres and a minimum dimension of 3 metres.

Service areas (containing rubbish and recycling bins, garden storage, gas systems and bottles etc.) should be contained within side yards or at the rear of the lot and should be screened from view from the street.

LETTERBOXES

Letterboxes should be designed as part of the front yard landscape design and constructed to be complementary to the house. They don't need to be the same, but elements of the colour, form, texture or materials should complement the house.

Letterboxes should not be made from unrelated materials and not be purchased and 'plonked' in front of the house. They should be considered in the design and the implementation of the front yard landscape plan.

FENCE AND WALL DESIGN GUIDELINES

Code	Boundary Fence Interface	Height
A	Front yard onto street	1.0 metres Max*
B	Side yard onto neighbour — within front yard	1.0 metres Max*
C	Side yard onto neighbour — behind front yard	1.8 metres Max
D	Site yard onto street	1.0 metres Max*
E	Back yard onto neighbour	1.8 metres Max
F	Side yard onto parks, reserves, cycleways and walkways	1.0 metres Max
G	Back yard onto parks, reserves, cycleways and walkways	1.0 metres Max*

* PRIVACY FENCE (P)

Fences can step up higher than 1.0 metres only if the yard is north-facing and the fence is designed to complement the design and materials of the house. All privacy fences will have a minimum visual permeability of 50% and should be no greater than 50% of the width of the yard.



DIAGRAM — 3

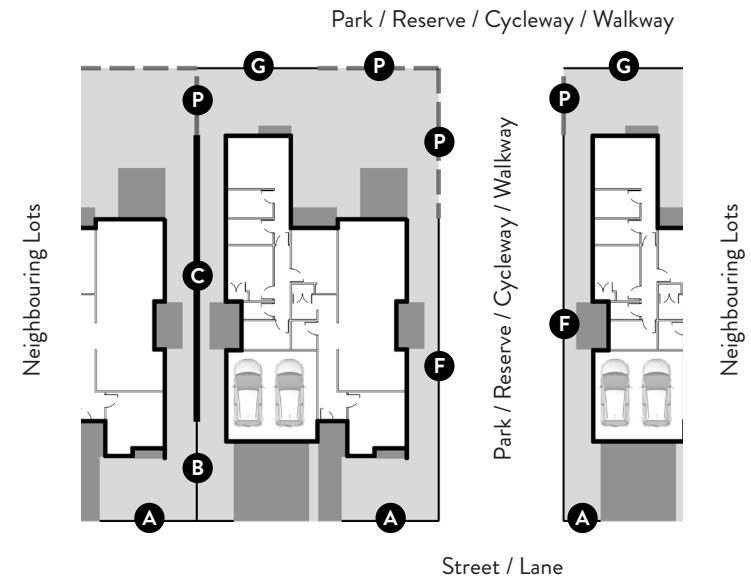


DIAGRAM — 4

'Look And Feel' Examples For Fences, Walls And Letterboxes

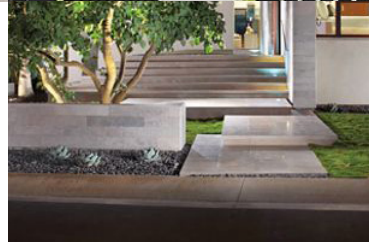
Letterbox designed to be complementary to the house



Low boundary fence interface with street or lane



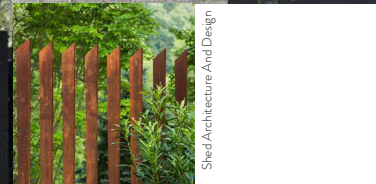
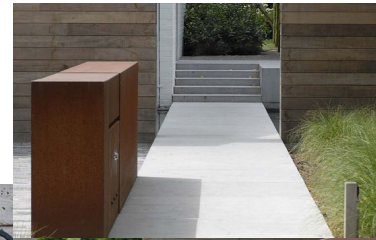
Inarc



Horst Architects

Heartly Design Studio

Filip Van Damme



Shed Architecture And Design

Contemporary Australian Garden Design



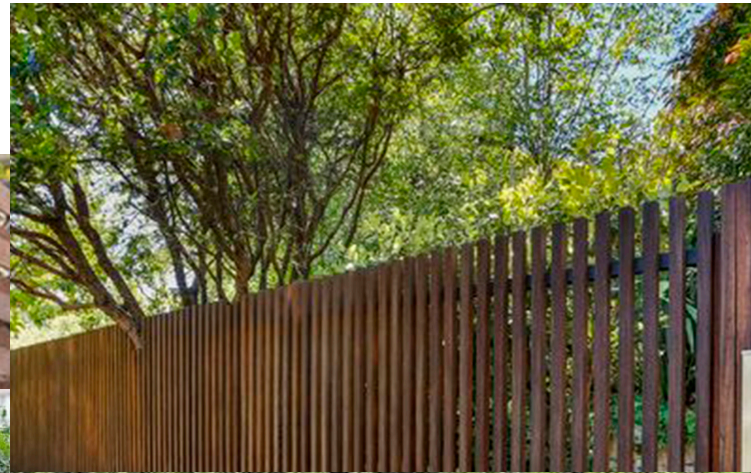
Privacy fence



Wagner Residence

'Look And Feel' Examples For Fences, Walls And Letterboxes

Future Green Studio



Anthony Wyer + Associates



Low boundary fence interface with street or lane



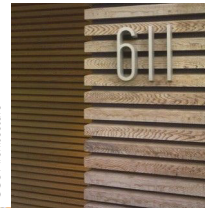
Letterbox integrated in the fence design

Gates should be integrated with the fence design

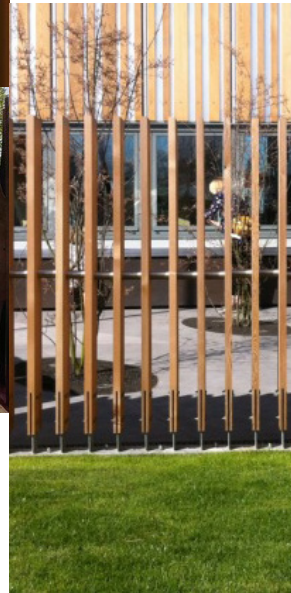
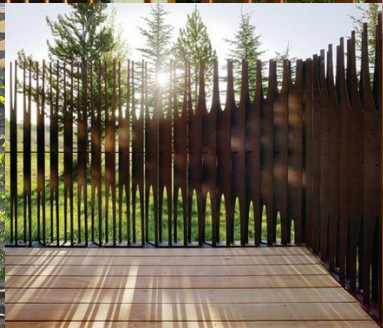
Privacy fence designed to complement the design and materials of the house



'Look And Feel' Examples For Fences, Walls And Letterboxes

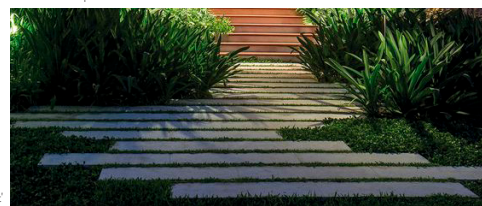


Low boundary fence interface with street or lane

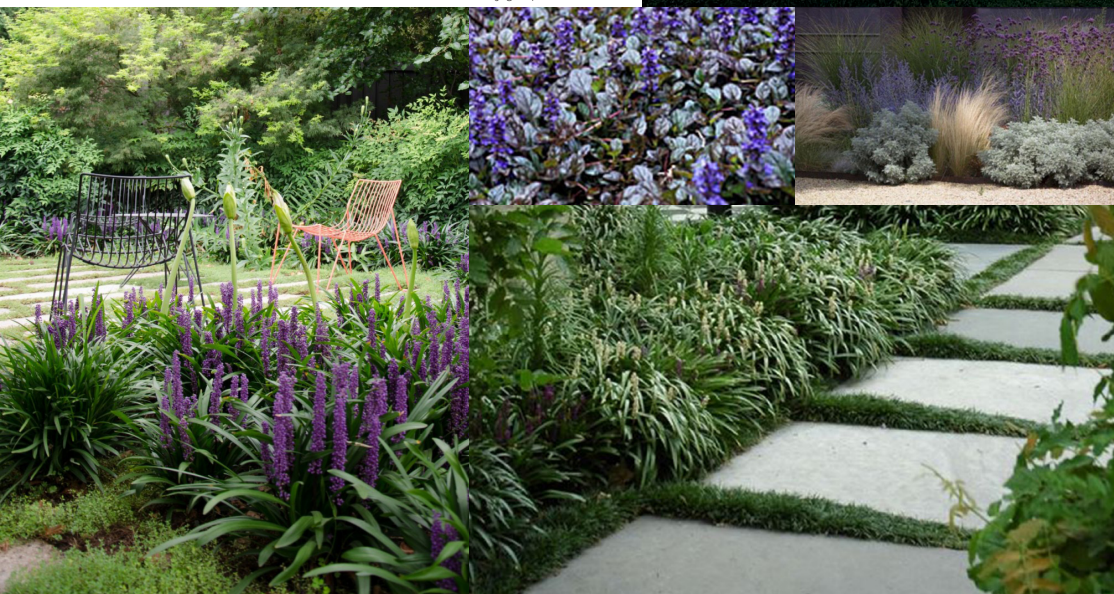


'Look And Feel' Examples For The Front Yard Landscape Design

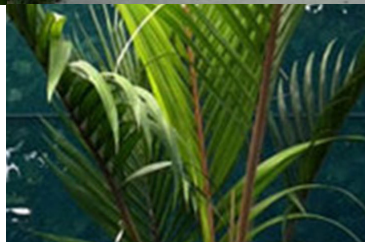
Bernardes Arquitetura



Ajuga reptans 'Catlin's Giant'



Eckersley Garden Architecture



Rhopalostylis chathamica

Eckersley Garden Architecture

PLANTING GUIDELINES

FRONT YARD PLANTING DESIGN

Planting shall be undertaken in the front yard of each lot. The design for each front yard shall be implemented and maintained by the lot owner at the time of construction of the house and completed prior to the occupation of the house.

Specimen tree and plant species for the front yard planting design are to be selected from the Greenhill Park Plant List.

* Other plant species can be approved at the discretion of the Design Review Panel.

Planting should be selected for optimum growing conditions and not require an unnecessary amount of maintenance to get it established or for it to thrive in the long term. Planting should define front boundaries, reinforce entrances, frame views from the house onto the street, provide privacy and separation between each lot and allow solar access to windows and living areas.

Due to the compact size of each lot, plants should be setout in layers of height to maximise the perceived depth of the planted borders. All plants should be arranged so that they touch when they reach their mature size.

Plants should be setout with layers of height in mind. Tall species should typically be arranged at the back against walls and fence lines graduating to smaller species in the front of the border. In very narrow borders where there is little room to layer, layer heights from side to side instead.

'Look And Feel' Examples For The Front Yard Landscape Design

All front yard planting, other than specimen trees, must be 1.2m maximum in overall height at maturity or maintained as a 1.2m high hedge to maintain outlook to the street.

Spread organic mulch thickly to a depth of at least 75mm around the plants following planting to provide good weed suppression and keep the soil as moist as possible.

All work undertaken should be of a very high quality and appearance. All setout should be set square and aligned perpendicular to the house.

SPECIMEN TREES

Each front yard shall have at least one tree planted as part of the overall design and implementation of the front yard plans. The tree is to be a minimum grade of Pb 150 and 2+ metres high at the time of planting. When planting a tree, consideration should be given to the mature size of the tree, and to the use of root barriers when planting in close proximity to houses, hardscapes or services. Trees should be positioned between side boundaries and as close as possible to the front boundary. Trees should not be planted in a hedge.

CORNER LOTS

The front yard treatment should continue around the corner for at least one third of the total side elevation. There should be at least one tree planted on each outward facing yard on corner lots.

See Greenhill Park Plant List (p. 26–30)

BACK YARD

It is encouraged that fruit trees are planted in each back yard.

See Greenhill Park Plant List (p. 26–30)



Pachysandra terminalis

Matthew Cunningham Landscape Design LLC

Christian Fournet



Ophiopogon planiscapus 'Black Dragon'

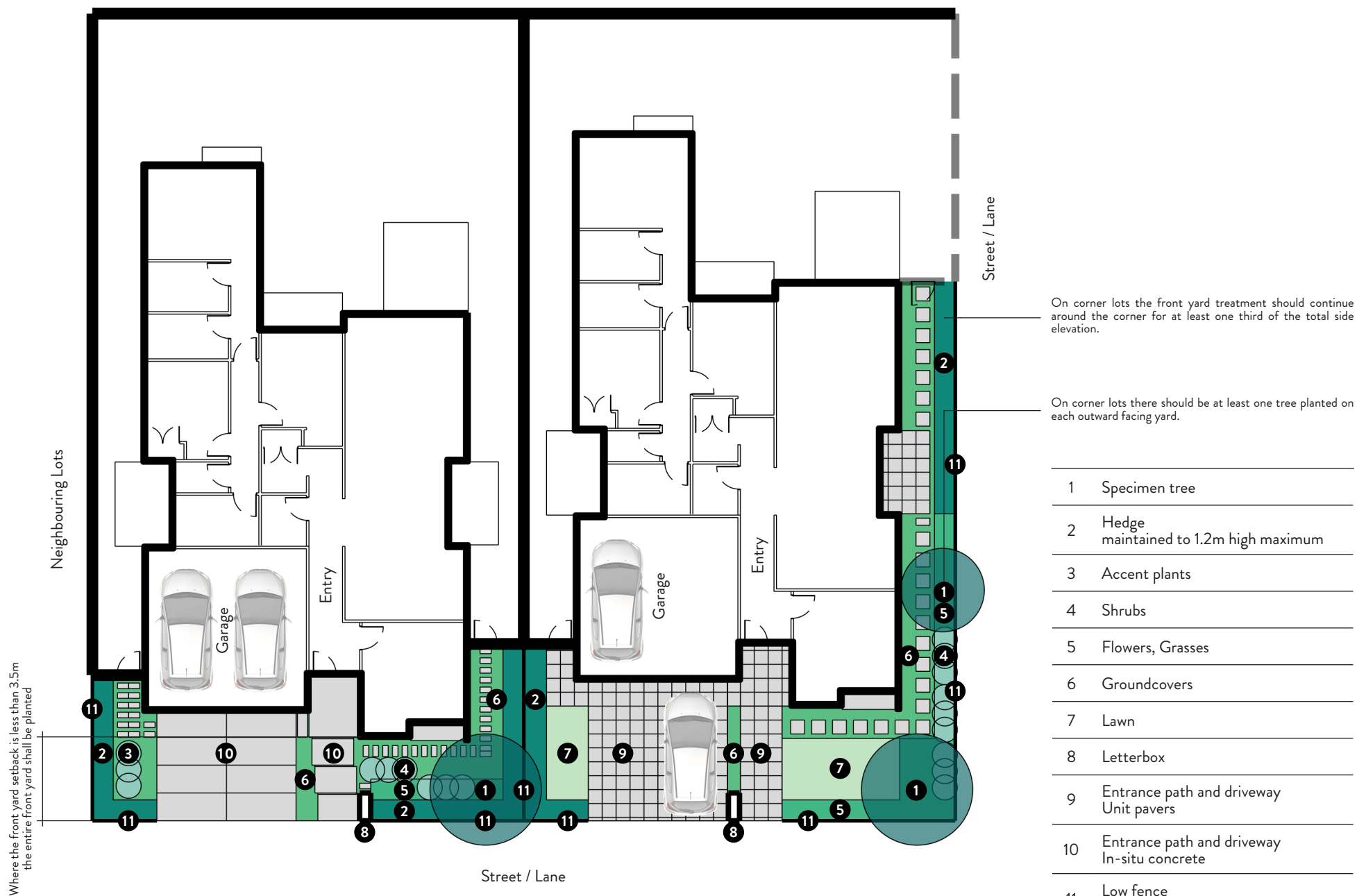


DIAGRAM — 5
Indicative Landscape Concept Plan

ENTRANCE PATHS AND DRIVEWAYS

Entrance paths and driveways should be high quality hard surface materials. Entrance paths should be constructed to directly link the entry of the house to the street, with no interference from parked vehicles.

Materials that are permitted are —

- In-situ concrete with a black colour oxide at 8% dosage rate and an exposed aggregate finish. A broomed concrete finish is not permitted.

Control joints for driveways should be at 3m centres maximum. The width of the entrance path will determine the centres for control joints along the path e.g. if the path is 1.5m wide, the control joints could be at 1.5m centres to create a square grid or 3m centres to create a rectangular grid (the maximum length to width ratio should be 2:1).

- Unit pavers
- Stone

* Other materials can be approved at the discretion of the Design Review Panel.

EXTERIOR LIGHTING

Exterior lighting should be carefully designed with regard to placement, intensity, timing, duration and colour. All light fittings should be integrated into the architecture or landscape. Louvres, hoods and other attachments designed to direct light and minimise light pollution are required for any exterior lighting.

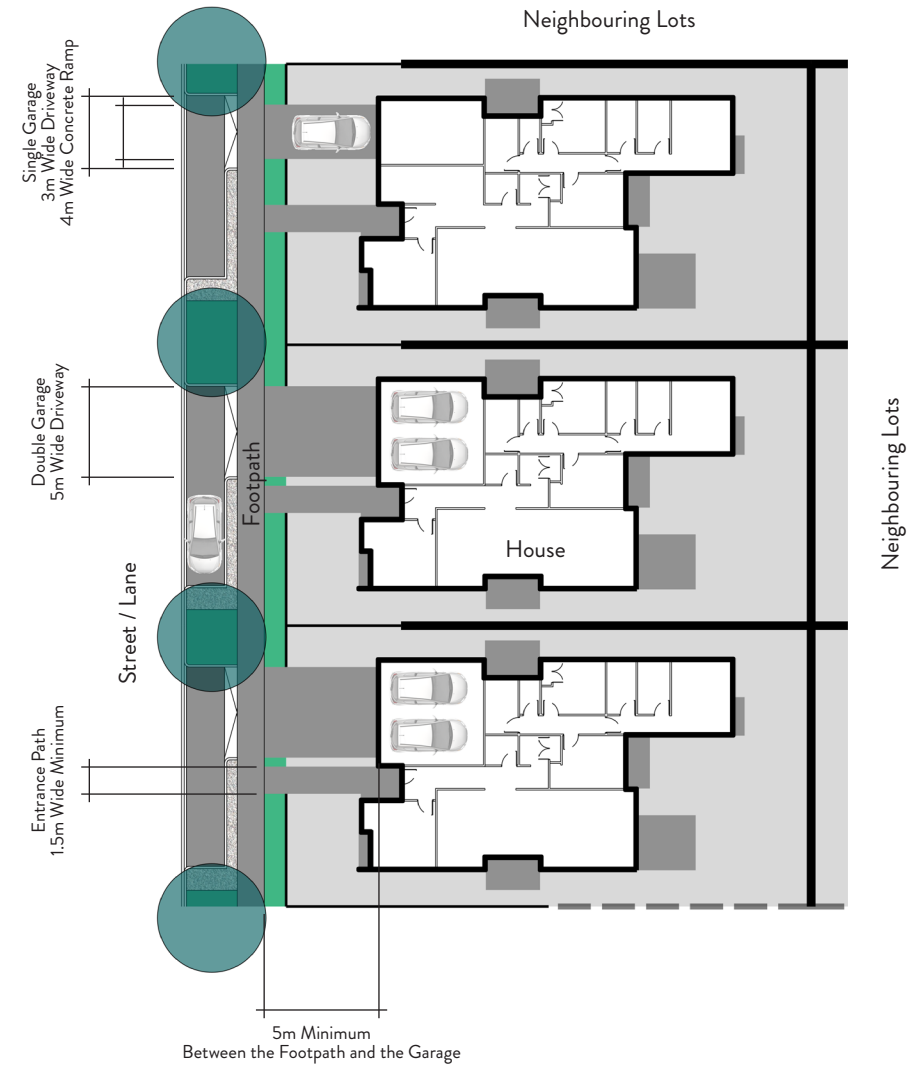


DIAGRAM — 6
Entrance Paths And Driveways

'Look And Feel' Examples For Entrance Paths And Driveways

In-situ concrete with an exposed aggregate finish



In-situ concrete with a coloured oxide added, and an acid washed finish



Horst Architects

Irregular stone flagstones



Houston Landscapes



Inarc

Stefan Morael Tuin Architect, Brussel



In-situ concrete with an acid washed finish

Scott Lewis Vineyard Retreat















Stone tiles

Unit pavers

GREENHILL PARK PLANT LIST

SPECIMEN TREES

		Botanical Name	Common Name	Evergreen	Deciduous	Sun	Partial Shade	Shade
		Acer palmatum	japanese maple		•	•	•	
		Acer palmatum 'Bloodgood'	japanese maple		•	•	•	
		Cercidiphyllum japonicum	katsura tree		•	•	•	
		Cercis canadensis 'Forest Pansy'	redbud		•	•	•	
		Cornus contraversa	dogwood		•	•	•	
		Cornus florida 'Cloud 9'	dogwood		•	•	•	
		Magnolia grandiflora 'Little Gem'	evergreen magnolia	•		•	•	
		Magnolia 'Cleopatra'	magnolia		•	•	•	
		Magnolia 'Star Wars'	magnolia		•	•	•	
		Magnolia 'Yellow Bird'	magnolia		•	•	•	
		Pyrus calleryana 'Candelabra'	ornamental upright pear pvr		•	•	•	
		Styrax japonicus	japanese snowbell		•	•	•	

All front yard trees to be a minimum grade of Pb 150 and 2+ metres high at the time of planting.

BACK YARD FRUIT TREE



Such as — Apple, Citrus (lemon, mandarin, grapefruit), Crabapple, Feijoa, Nectarine, Peach, Pear, Plum.
Ensure you select a cold-hardy variety.

HEDGES



Botanical Name	Common Name	Evergreen	Deciduous	Sun	Partial Shade	Shade
Camellia sasanqua 'Setsugekka'	camellia	•		•	•	•
Corokia 'Geenty's Green'	korokio	•		•		
Corokia 'Bronze King'	korokio	•		•	•	
Griselinia littoralis	broadleaf	•		•		
Michelia figo	port wine magnolia	•		•	•	
Laurus nobilis	bay tree	•		•	•	
Lonicera nitida	box honeysuckle	•		•	•	
Prunus laurocerasus	cherry laurel			•	•	
Teucrium fruticans	tree germander	•		•		
Viburnum tinus 'Eve Price'	laurustinus	•		•	•	•

All hedges should be a minimum grade of Pb 12 at the time of planting, a single species and maintained as a maximum 1.2m high hedge to maintain outlook from the house to the street.

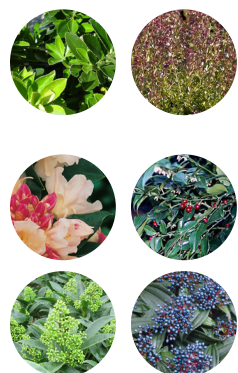
ACCENT PLANTS



Botanical Name	Common Name	Evergreen	Deciduous	Sun	Partial Shade	Shade
Buxus species	box	•			•	•
Cotinus coggygia 'Royal Purple'	purple smoke bush		•	•	•	
Hydrangea paniculata 'Levana'	panicle hydrangea		•	•	•	
Hydrangea paniculata 'Tardiva'	panicle hydrangea		•	•	•	
Malus 'Ballerina Waltz' PVR	waimea nurseries columnar apple		•	•		
Pseudopanax crassifolius	lancewood	•		•	•	
Rhopalostylis chathamica	pitt island / chatham island nikau	•		•	•	
Syringa 'Alice Eastwood'	lilac		•	•	•	
Viburnum opulus 'Sterile'	snowball tree		•	•	•	•

All accent plants to be a minimum grade of Pb 12 at the time of planting.

SHRUBS



Botanical Name	Common Name	Evergreen	Deciduous	Sun	Partial Shade	Shade
Euonymus 'Emerald Gem'	dwarf euonymus	•		•	•	•
Lonicera nitida 'Honey Hedge Ruby'	box honeysuckle	•		•	•	
Rhododendron species — to 1.2m high maximum	rhododendron	•			•	
Sarcococca ruscifolia var. chinensis	chinese box	•			•	•
Skimmia 'Kew Green'	skimmia kew green	•			•	•
Viburnum davidii	david viburnum	•		•	•	•

All shrub plants to be a minimum grade of Pb 8 at the time of planting.

FLOWERS



Botanical Name	Common Name	Evergreen	Deciduous	Sun	Partial Shade	Shade
Alstroemeria species	peruvian lily		•	•	•	
Anemone x hybrida	japanese anemone	•		•	•	
Dietes iridioides	wild iris	•		•	•	
Helleborus species	winter rose	•		•	•	
Iris germanica	bearded iris and hybrids		•	•		
Liriope muscari 'Evergreen Giant'	lily turf	•		•	•	•
Liriope muscari 'Monroe White'	lily turf	•			•	•
Liriope muscari 'Samantha'	lily turf	•		•	•	
Rosmarinus officinalis	rosemary	•		•		

All flowering plants to be a minimum grade of Pb 5 at the time of planting.

GRASSES



Botanical Name	Common Name	Evergreen	Deciduous	Sun	Partial Shade	Shade
Carex dipsacea	teasel sedge	•		•	•	
Carex testacea	orange sedge	•		•		
Poa cita	new zealand silver tussock	•		•		

All grasses to be a minimum grade of Pb 5 at the time of planting.

GROUNDCOVERS



Botanical Name	Common Name	Evergreen	Deciduous	Sun	Partial Shade	Shade
<i>Acaena inermis</i> 'Purpurea'	purple bidibid	•		•		
<i>Ajuga reptans</i> 'Catlin's Giant'	blue bugle	•			•	
<i>Dianella nigra</i>	turutu	•		•	•	
<i>Farfugium japonicum</i> var. <i>giganteum</i>	tractor seat	•			•	•
<i>Leptinella squalida</i> 'Platt's Black'	brass buttons	•		•		
<i>Liriope spicata</i>	lily turf	•		•	•	
<i>Ophiopogon planiscapus</i>	mondo grass	•		•	•	
<i>Ophiopogon planiscapus</i> 'Black Dragon'	mondo grass	•		•	•	•
<i>Pachysandra terminalis</i>	japanese spurge	•			•	•
<i>Thymus serpyllum</i> 'Coccineus'	creeping thyme	•		•		
<i>Trachelospermum jasminoides</i>	star jasmine	•		•	•	

All groundcover plants to be a minimum grade of Pb 5 at the time of planting.

ON-LOT WATER EFFICIENCY MEASURES

WATER SUPPLY AND WASTEWATER DISPOSAL

The efficiency of taps, showers and toilets contribute to how much water we use. A reduction in the use of potable water by each house directly relates to the amount of wastewater generated (i.e. reduced water use results in reduced wastewater generation). To reduce potable water demand and the amount of wastewater generated, as a minimum, each house is required to install low demand fittings for kitchen, bathroom and laundry facilities.

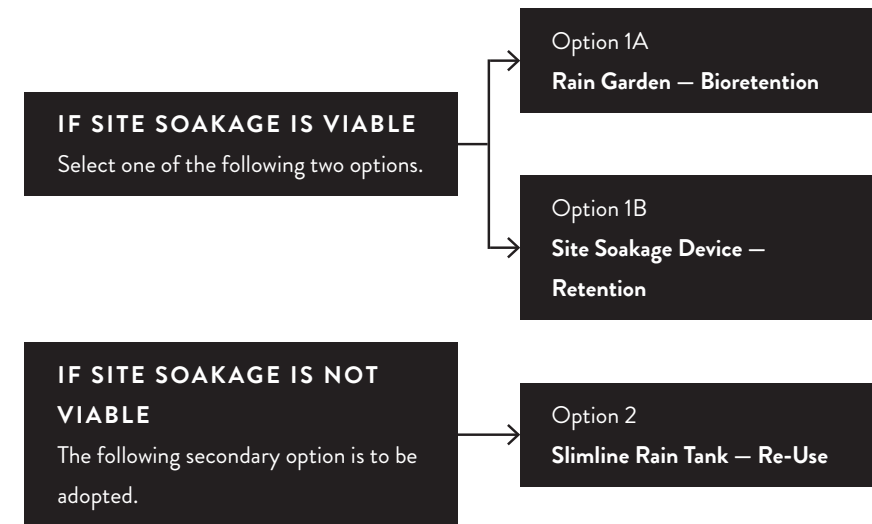
All household fittings are required to have a minimum 3 Star Rating.

STORMWATER DISPOSAL

Each lot is required to adopt an on-lot stormwater efficiency measure to ensure that surface water runoff is appropriately managed.

First, the suitability of the site for soakage needs to be assessed. Soakage is the process of helping stormwater soak into the ground using specially designed soakage devices. Soakage allows for the infiltration of stormwater into the soil which recharges the groundwater table below.

A site infiltration test is mandatory for all lots to confirm the in-situ soils are capable of achieving the minimum percolation rates. Refer to Hamilton City Council 'Three Waters Practice Note HCC 03: Soakage' for guidance on soil testing.



* Other alternative stormwater efficiency options will also be considered subject to approval by Greenhill Park and Hamilton City Council.

The selected option is to be designed by a suitably qualified Engineer and approved by the Hamilton City Council Building Control Unit. Refer to page 33 to 36 of these guidelines for further information of the design requirements for Options 1A, 1B & 2.

Hamilton City Council also encourages the installation of multiple stormwater efficiency options within a property, where practical.

Option 1A

RAIN GARDEN – BIORETENTION

Design to provide minimum 'live storage' retention for runoff from a 10mm rainfall event for trafficked hardstand areas.

The following table outlines indicative storage volumes and estimated rain garden areas for a range of lot sizes.

Lot Area (m ²)	Live Storage Volume (m ³)	Rain Garden Area (m ²)
300	0.8	4.1
350	0.9	4.7
400	1.1	5.4
450	1.2	6.1
500	1.4	6.8
550	1.5	7.4

Based on hardstand coverage equal to 30% of total lot area

KEY REQUIREMENTS

- Rain garden to be located to capture runoff from main hardstand areas within the lot (as much as practical).
- Maximum live storage depth to be 300mm (safety requirements to be considered when device is at maximum storage capacity).
- A channel and grate to be installed across vehicle entrance to capture hardstand run off and direct it to rain garden.

- Rain garden to be integrated with garden design (refer to page 34 for details).
- Overflow to be connected to stormwater connection provided.

FOR MORE INFORMATION

Refer to Hamilton City Council 'Three Waters Practice Note – HCC04 – Bio-retention (Rain Gardens)' for information on typical design requirements.



DIAGRAM — 7
Rain Garden – Bioretention

GREENHILL PARK RAIN GARDEN PLANT LIST

Native plants are encouraged, but other exotic plant species which complement your front yard planting design could be used. Deciduous plants should not be used as their leaf-fall can block the outflow.

The plants selected need to —

- Be able to tolerate short periods of inundation and longer dry periods
- Be perennial rather than annual
- Have deep fibrous root systems and a spreading growth form
- Form a dense, weed-suppressing cover



Botanical Name	Common Name
Apodasmia similis	oioi
Blechnum penna-marina	alpine hard fern
Libertia ixioides	mikoikoi
Carex dipsacea	teasel sedge
Carex secta	purei
Carex virgata	pukio
Dianella nigra	turutu
Libertia grandiflora	mikoikoi
Lobelia angulata	panakenake
Pimelea prostrata	pinatoro

All rain garden plants to be a minimum grade of Pb 8 at the time of planting. * Other plant species can be approved at the discretion of the Design Review Panel.

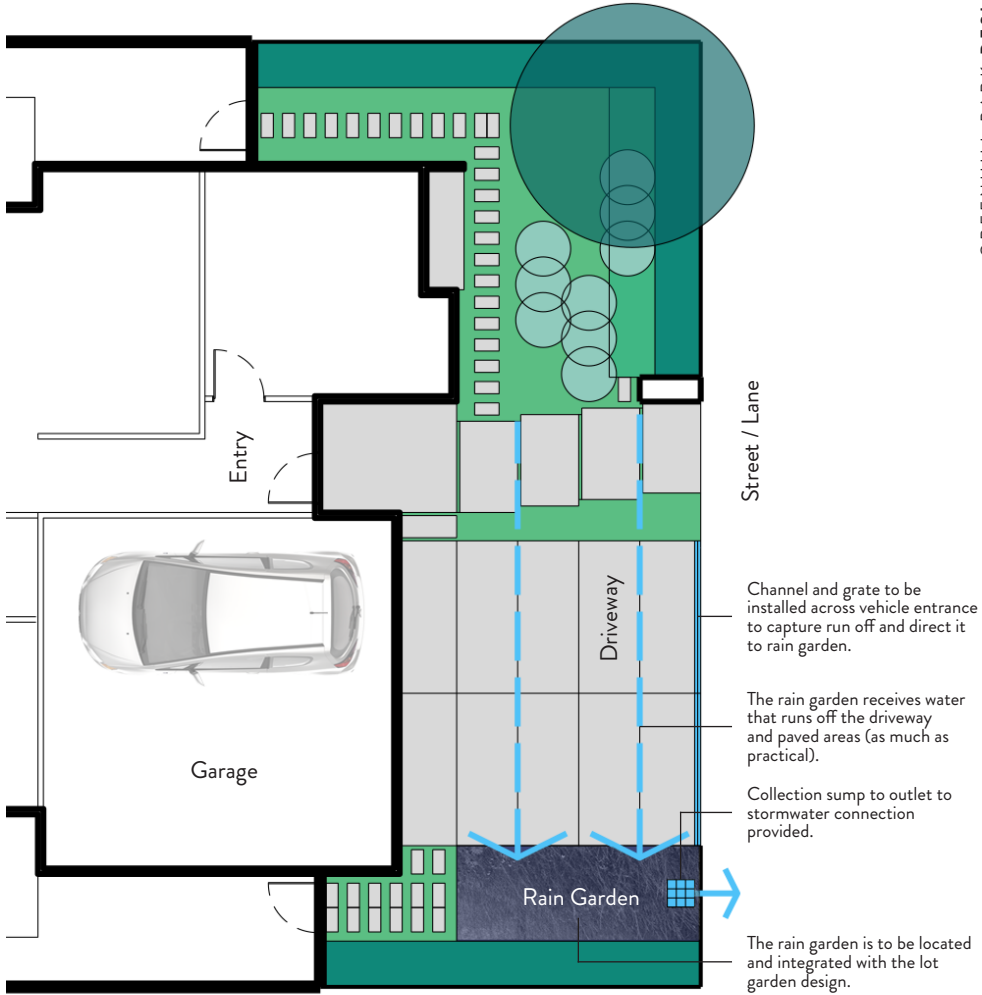


DIAGRAM — 8
Rain Garden Typical Location

Option 1B

SITE SOAKAGE DEVICE – RETENTION

Design to provide minimum 'live storage' retention for runoff from a 10mm rainfall event for roof and trafficked hardstand areas.

The following table outlines indicative storage volumes for a range of lot sizes.

Lot Area (m ²)	Live Storage Volume (m ³)
300	2.2
350	2.6
400	3.0
450	3.4
500	3.7
550	4.1

Based on 80% site coverage (roof and hardstand areas)

KEY REQUIREMENTS

- Soakage device(s) to be located to capture runoff from roof downpipes and hardstand areas (as much as practical).
- A channel and grate to be installed across vehicle entrance to capture hardstand run off and direct it to soakage device.
- Soakage device to be integrated with garden design.
- Overflow to be connected to stormwater connection provided.

FOR MORE INFORMATION

Refer to Hamilton City Council 'Three Waters Practice Note HCC 03: Soakage' for information on typical design requirements.

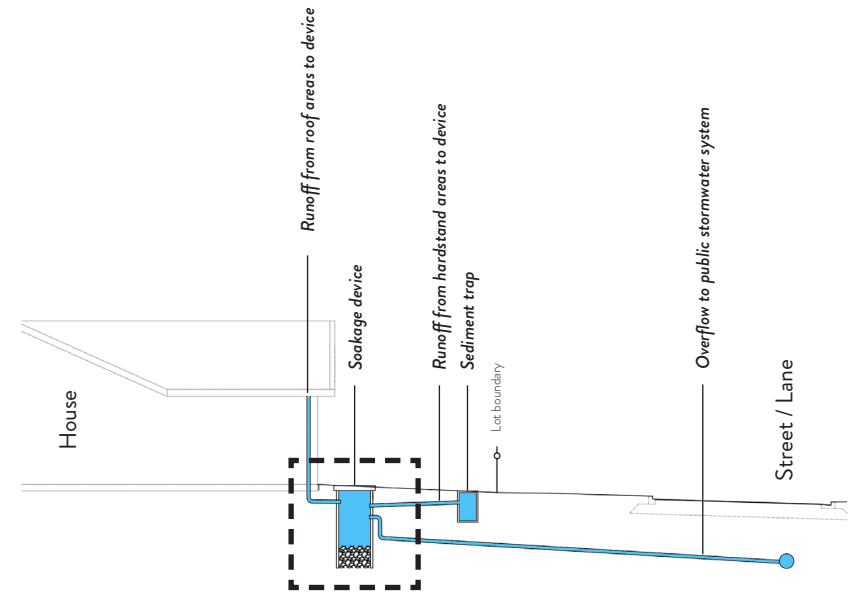


DIAGRAM — 9
Site Soakage Device – Retention

Option 2

SLIMLINE RAIN TANK – RE-USE

The slimline rain tank is to be connected to a separate grey-water household re-use system with a minimum capacity of 5,000L.

KEY REQUIREMENTS

- Rain tank to be connected into a fully integrated grey-water re-use system within the main dwelling with connections to toilets, laundry and irrigation systems.
- All roof run-off is to be captured by rain tanks and available for re-use. Run-off from hardstand areas (driveways and paving) can be discharged directly into stormwater connection provided.
- A maximum of two (2) tanks may be used to achieve the required storage and align with downpipe locations.
- Overflow to be connected to stormwater connection provided.

LOCATION AND INSTALLATION

Slimline rain tanks should be placed in the rear or side yard of the lot as unobtrusively as possible. Care should be taken, where tanks are placed next to the house, to ensure they are placed adjacent to a blank wall and not in front of a window.

COLOUR

The colour of all rain tanks should match the colour of the homes exterior wall cladding adjacent to the tank.

* Colours that do not match but are complementary to the design and materials of the house can be approved at the discretion of the Design Review Panel.

FOR MORE INFORMATION

Refer to Hamilton City Council 'Three Waters Practice Note – HCC02 –Rainwater Re-use Systems (Rain Tanks)' for information on design requirements.

APPROVED RAIN TANK PRODUCTS

Tanksalot® Slimline Tank www.tanksalot.co.nz

ThinTanks™ NZ Slimline Rainwater Poly Tank www.thintanks.co.nz

* Other rain tank products will also be considered subject to approval by Greenhill Park.

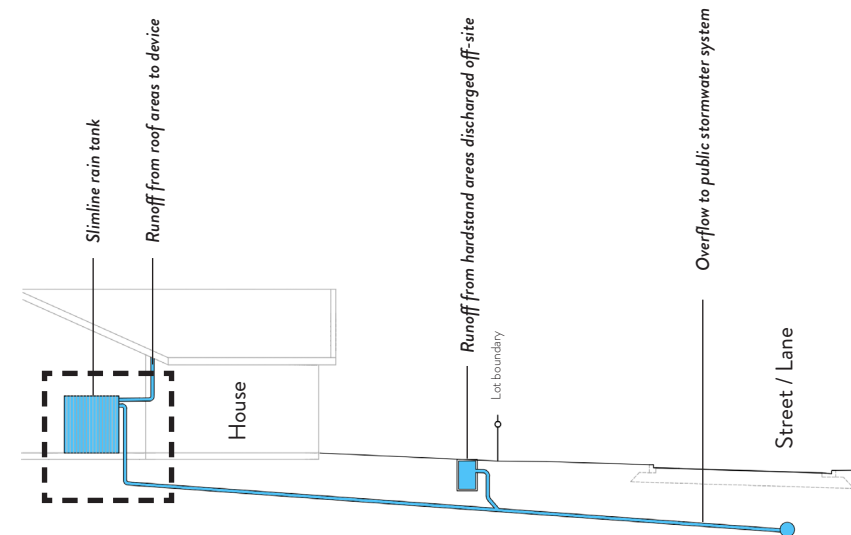


DIAGRAM – 10
Slimline Rain Tank – Re-use

DESIGN REVIEW PANEL

INTRODUCTION

The Greenhill Park Design Guidelines control the architectural and development quality, including the front yard landscape design, for all lots.

The Design Review Panel (DRP) is the process by which the designs for each lot shall be received, reviewed and approved. The Design Review Panel can approve anything at their discretion.

The DRP will receive designs in three stages —

STAGE 1 FEASIBILITY

STAGE 2 CONCEPT DESIGN

STAGE 3 DEVELOPED DESIGN

Each stage needs to obtain approval from the DRP, however the Feasibility Stage may not be required if the applicant is confident to proceed straight to the Concept Stage.

The DRP will meet with the applicant for each of the Concept Design and Detailed Design processes and provide a simple Design Panel Report, identifying any issues in the following categories. The feasibility review can be undertaken without needing a meeting.

The Design Review Panel will identify three types of issues —

FUNDAMENTAL

The application has design issues fundamental to its approval. Approval is not given and the issues need to be addressed and the applicant re-apply for approval of the design at the same design stage.

SIGNIFICANT

The Design Review Panel believe the design has significant issues and these need to be addressed at the next stage of the Design Review Panel process.

OTHER ISSUES

The Design Review Panel provides comment on ways the design can be improved. The applicant is encouraged to take these comments on board but the design is approved.

DRAWING AND INFORMATION REQUIREMENTS

All plans and drawings provided for each stage should be legible and to scale, with a north arrow, and the following lot information —

Lot / DP number, street name, applicant name and contact details including, postal address, phone number and email address.

Please tick

STAGE 1 FEASIBILITY

The feasibility check is the first pass. Enough design detail to secure an overall design for the site so you know it can work. This would normally be a 'pre-purchase' level of design, so a lot can be purchased with confidence. Compliance with the main controls — height, setbacks, side yards, etc., must be illustrated.

STAGE 2 CONCEPT DESIGN

SITE PLAN

With setbacks, contours, house and garage footprints, entrance path and driveway.

FLOOR PLANS

ELEVATIONS

3D RENDERED IMAGES

A3 full colour, high quality renders, based on a 3D computer generated model of the house and front yard landscape design including fencing.

LANDSCAPE PLAN

A landscape plan is required for the front yard of all lots. A landscape plan will also need to be prepared for the side yard if the lot is a corner lot or adjoins an open space.

PRELIMINARY MATERIALS, COLOURS AND FINISHES SCHEDULE

LIST OF ALL NON-COMPLIANCES

It is the designer's responsibility to provide a list of all non-compliance issues with the Rules and Design Guidelines.

Please tick

STAGE 3 DEVELOPED DESIGN

All drawings provided to be A3 CAD plans, at an approved scale.

The Design Review Panel is particularly interested in how the front elevation and street frontage works. Including the front facade, front door, entranceway, garage door, driveway and car parking. The design should accurately establish the finished floor levels of the house and garage slabs and resolve any level changes that front the street.

SITE PLAN

With setbacks, contours, house and garage footprints, entrance path and driveway.

FLOOR PLANS

ELEVATIONS

3D RENDERED IMAGES

A3 full colour, high quality renders, based on a 3D computer generated model of the house and front yard landscape design including fencing.

LANDSCAPE PLAN

A landscape plan is required for the front yard of all lots. A landscape plan will also need to be prepared for the side yard if the lot is a corner lot or adjoins an open space.

MATERIALS, COLOURS AND FINISHES SCHEDULE

Materials, colours and finishes of all exterior finishes shall be nominated.

LIST OF ALL NON-COMPLIANCES

It is the designer's responsibility to provide a list of all non-compliance issues with the Rules and Design Guidelines.