Sunfield

Design Controls & Design Guidelines

For Residential Precincts

February 2025

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BEST BY DESIGN

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What are the Residential Neighbourhoods?

The Residential Neighbourhoods aim to provide residents with a diverse range of high-quality housing options within well-defined precinct clusters. These clusters are designed to meet residents' domestic needs by offering warm, dry, and functional homes in a predominantly car-free environment.

The key objectives of Residential Neighbourhoods include providing:

Housing Variety
A range of housing choices that cater to different lifestyles, family sizes, and affordability levels - supporting inclusivity and diversity within the community alongside the wider Sunfield strategy.

Attractive Public Spaces
Architecture and landscape design that create appealing public spaces which integrate seamlessly with the surrounding context and supports the needs of the local residents.

Local Functions
Provision for micro-scale local amenities that support the functionality of the neighbourhood, such as urban play areas, service hubs, and shared rubbish collection points.
Open spaces and local hubs foster community identity and social stewardship.

Walkability
A highly walkable and cyclable environment supported by an extensive, pedestrianised and cycle laneway network.

Introduction:

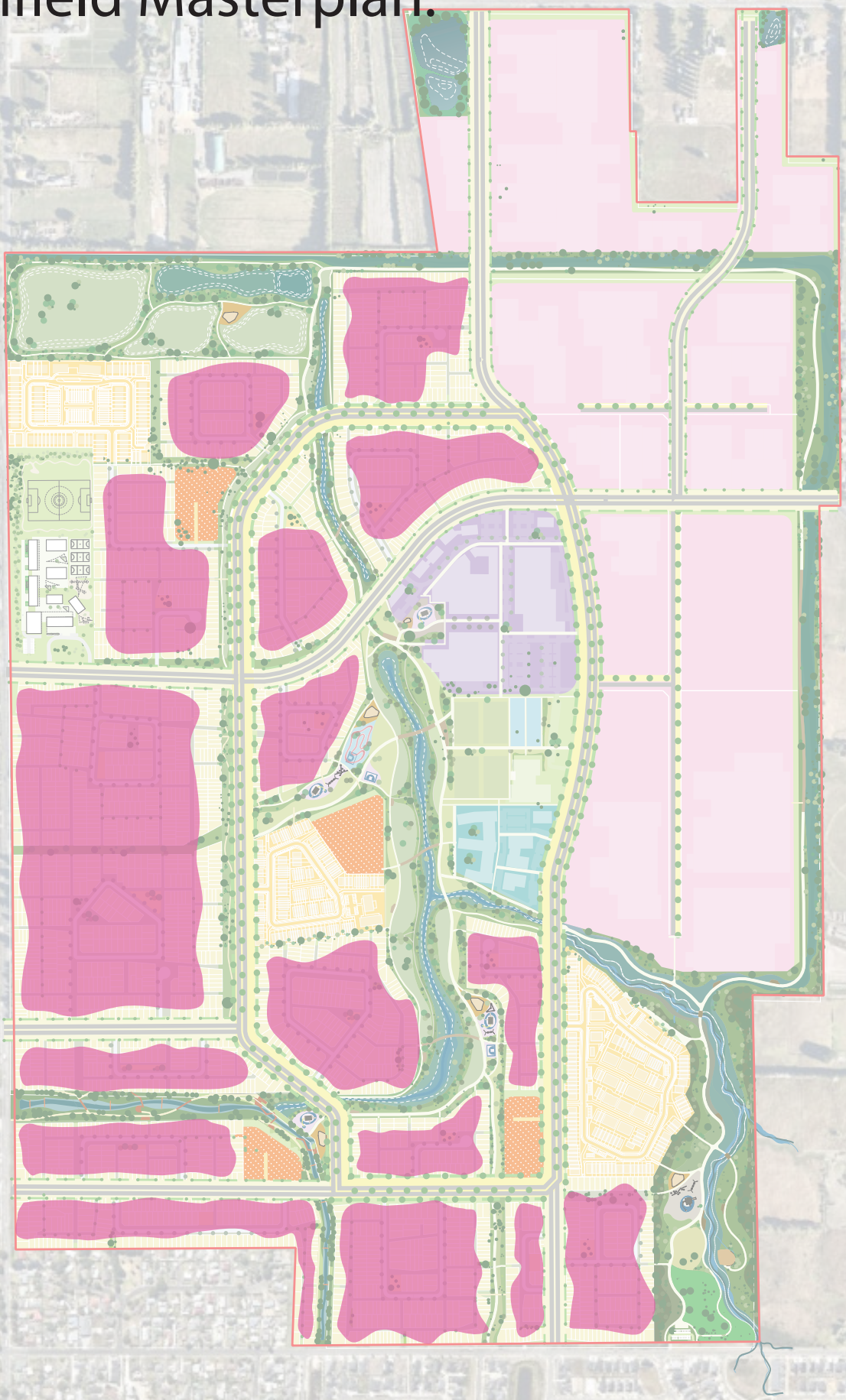
The Sunfield Masterplan Design Controls and Design Guidelines will ensure development is carried out in an integrated and considered manner, both with the surrounding environment and between the site's precincts.

The controls intend to provide a co-ordinated design approach that will foster a unique sense of place and deliver on Sunfield's foundational Design Principles outlined in the Sunfield Masterplan.

This document - Residential Area Design Controls and Guidelines - relates to buildings and landscaping within the Residential Precincts, including the connecting laneways and neighbourhood service hubs.

The objective of these Residential Design Controls and Guidelines is to ensure that development on the private lots within the precinct is carried out using best practice urban design principles. This will encourage high-quality housing variety that is safe for and appealing to a range of people.

Sunfield Masterplan:



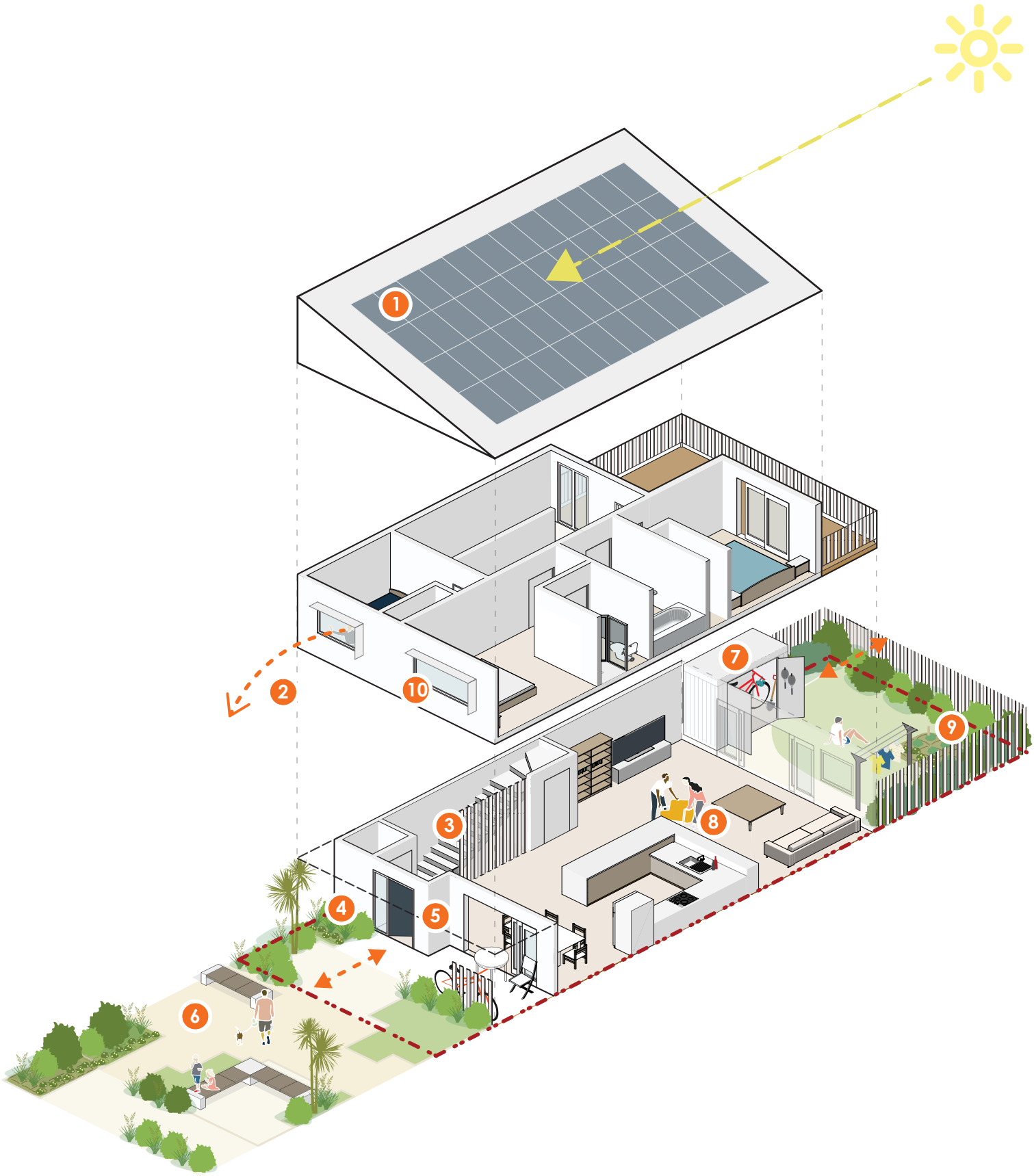
Residential Neighbourhoods

my home

compact sustainable living

My home:
- Is warm and well insulated
- Is connected to the community
- Meets my individual needs

1. solar panels
2. passive surveillance
3. variety of designs, incuding multi-generational
4. a front yard that opens onto a quiet, shared pedestrian lane or street
5. weather protection designed for Auckland's climate
6. connected to well landscaped public spaces
7. lock up storage space
8. warm, bright and well insulated
9. private yard space
10. passive design principles

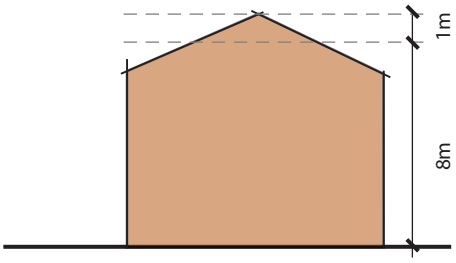


Example of a Sunfield home

Building Controls:

These building controls apply to all private lots within the residential area. A number of additional controls are location specific, and can be found within the 'Location Specific Building Controls' section.

Unless otherwise stated, these and all further controls and standards adopt the definitions of the Auckland Unitary Plan (AUP).

Standard	
Density and yield mix	The number and size of dwellings per lot shall be in general accordance with Residential Precinct Document.
Maximum Height	Buildings must not exceed 8m in height, except that roofs with a pitch of 15 degrees or more may exceed this height by 1m. Dwellings must not contain more than 2 stories with habitable spaces. Accessory buildings must not exceed 3m in height. 
Impervious Area	Impervious area must not exceed 60% of the site area.
Dwelling Size	Dwellings must have a minimum internal floor area of $30m^2$.

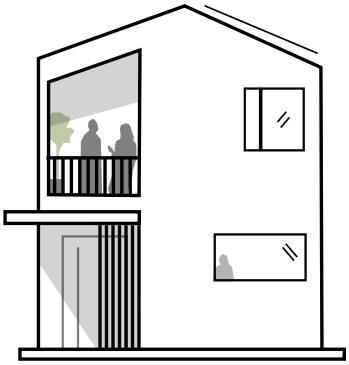
Standard	
Primary Outdoor Space	A dwelling must have an outdoor living space on ground level that is sized appropriately for the number of bedrooms as per below: • At least 20m^2 (2 bedroom), 25m^2 (3 bedroom), 30m^2 (4+ bedroom). • Be able to accommodate an unobstructed ground floor outdoor dining/play area with no dimension less than 2.5m Additionally, the primary outdoor living space must, • Have a gradient not exceeding 1 in 20, • Be accessible from the dwelling, and • Be free of buildings, structures, bin storage, parking spaces, services, and manoeuvring areas. Note vegetation, trees, and lawn may be included in the primary outdoor living space.
Outlook Spaces	Every habitable room (excluding study nooks within other areas such as corridors) must have a exterior window and an outlook space. Minimum dimensions of outlook spaces are as below: • 6m (d) x 4m (w) from the main living room or dining area (or kitchen if open plan/coupled with a living or dining room), • 3x3m from the main bedroom, and • 1x1m to all other habitable rooms. Outlook spaces must be clear of buildings, parking spaces, and fences over 1.2m high. Outlook spaces must not overlook any adjoining private property.
Car and Vehicle Parking	Vehicle access and parking spaces shall only occur on lots identified in the Residential Precinct as having an on-lot car park. A lot may contain at maximum a single width vehicle access and a single car park. Garage doors cannot be set forward of the building frontage. Minimum on-lot parking sizes: General: 5.6m x 2.4m Accessible: 5.6 x 3.5m (width over 2.4m can include a pathway)
Windows to the Street	Ground level and upper level frontages must both have a window or glazed door to a habitable room.
Weather Protection over Doors	Main entrances and at least one door to the main outdoor living area needs to be weather protected by a canopy which is sized appropriately for the opening and expected number of occupants.
Work/Live Overlay	Any dwelling may be occupied by an occupation, business or homestay activity which is secondary to the use of the site as a dwelling.

Standard	
Front Entrance Pathways	All main dwellings must have a 1.2m clear thoroughfare and landing area (including being free of services, downpipes and sumps, etc) to the primary entrance. Ground surface material within 1.2m of front door must be made of a durable hardscape surface (such as decking or pavers) and drain to be free of surface water.
Visibility of Ancillary Items	Rainwater tanks must not be placed within the outdoor living spaces or outlook spaces unless fully underground. They must not be within front yards, unless they are of a height where they can be hidden by the front yard fence. If visible from the street or lane, tanks must be fully screened by planting or solid fencing. Ancillary items such as water tanks, bin stores, and mechanical services units (including heat pumps, airconditioning, hot water cylinders, toilet stacks, conduits, and ducting shall not be located in front yards and shall not be visible from streets, laneways, or public spaces. Down pipes and extract vents shall be visually recessive so that they do not distract from the main building cladding material.
Landscaped Area	Each dwelling should include provision of vegetation amenity which: • Covers a min. of 25% of the total lot yard area (calculated as the lot area less building footprint). Note, for this calculation, any storage sheds are considered part of the building footprint. Vegetation in the minimum 'Front yard landscape area control' (see below) can be included. • With no dimension less than 0.4m Front yard landscape area control All front yards must contain a planted landscaped area of at least 40% of the front yard. The front yard is as calculated from the front boundary to the nearest face of the building (including an attached veranda or canopy) that is greater than 40% of the building frontage width. Free-standing storage sheds are not included in the size of the front yard calculation. The landscaped area may include a path or ramp up to 1.5m wide so long as it leads directly to an entry or the rear yard. Planting In addition, all front yards must have a specimen tree with a minimum size of 80 litres and which is a species as per the approved Sunfield Planting Schedules Document. All specimen trees are to have a minimum soil requirement of 1m deep and no plan dimension smaller than 1m. All other planted landscape areas must be a minimum of 0.4m and wide have a minimum soil depth of 0.4m.

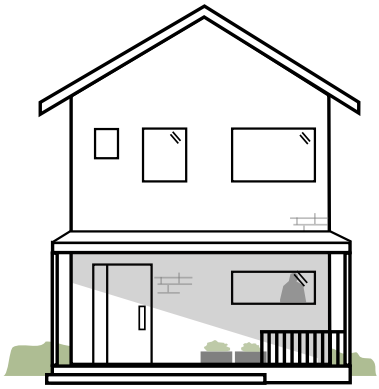
Standard	

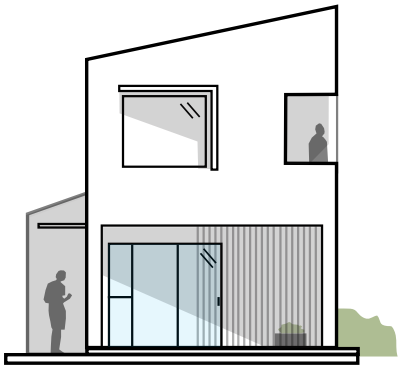
Fences	Fences must not exceed the height specified below, measured from ground level at the boundary:
	
	• Fences along common boundaries in the rear yard can be up to 1.8m high.
	• Fences along common boundaries in side yards can be up to 1.8m high, with the following exclusions:
	  • In the 'frontage zone' (measured from 2 metres beyond the front face of the building to the front boundary), fences must comply with the height restrictions for the relevant front boundary fences (refer Edge Condition Controls). This does not apply in the case of a side yard against a neighbourhood service hub.
	  • If the primary outdoor space is located between the main dwelling and the front boundary:
	  • Side yard fences must comply with the 'frontage zone' requirements above.
	  • On lane conditions, the fence thereafter can be a maximum of 1.2m high.
	  • On all other conditions, fences thereafter must comply with the height restrictions for front boundary fences as per the 'Edge Conditions' chapter.
	
	Further controls apply in the Edge Conditions chapter.

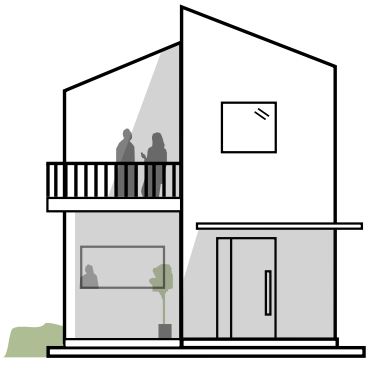
Gates	All entrance gates in fences must be differentiated from the fence by either one, or a combination of, the following: height, alignment in plan, visually permeability as viewed perpendicular to the front boundary.
Design for 'Age in Place'	Entries, corridors, and stairwells shall be a minimum of 1080mm wide (framing to framing). Lots noted 'accessible' in the Residential Precinct Plans Document must include; • A ground floor bedroom and bathroom which are designed to be accessible to NZS 4121, • A kitchen which can accommodate a 1.5m turning circle, • A laundry zone or room on the ground floor which can be utilised by a wheelchair user, and, • An accessible route from an entrance at the property boundary to a nominated accessible bedroom on the ground floor.
Privacy and Passive Surveillance	Each dwelling must be designed to balance privacy and passive surveillance by the following means: • Dwellings must not use floor-to-ceiling glass above ground floor, with the exception of doors to balconies. • Dwellings must not use reflective glass. • Balcony designs shall have privacy screening to mitigate overlooking of any neighbouring property's main private outdoor living space. • Upper level balconies cannot occur on elevations facing neighbouring side or rear yards. • Windows above ground floor neighbouring another private property's rear or side yards must have a minimum sill height of 0.8m.



Examples of possible homes:





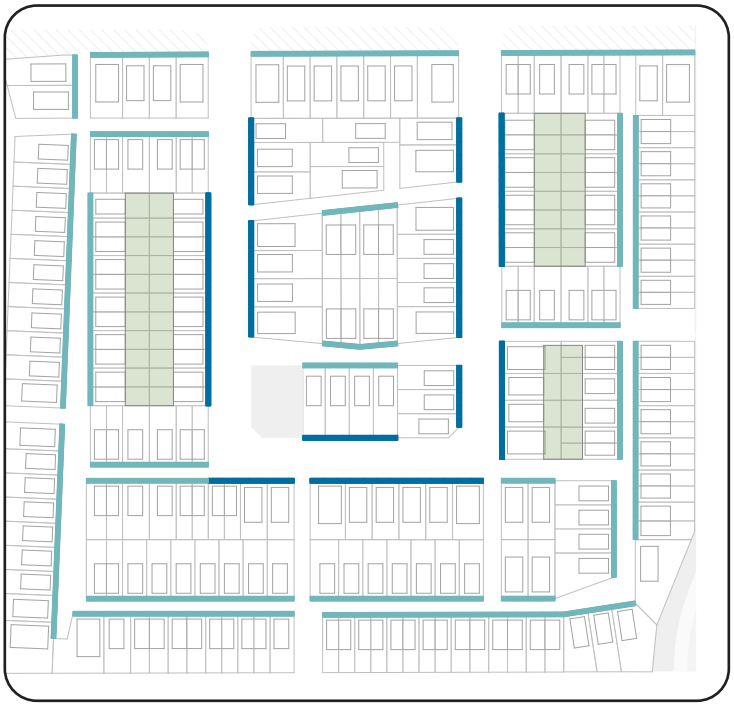


Location Specific Building Controls

'Location Specific' controls are building controls relevant to unique frontage conditions. The locations of these conditions are determined through the Residential Precinct document and boundary orientation diagram.

These controls support the key objectives of the neighbourhoods by designing a coordinated and considered boundary approach that suits both the residential lots and the use of the adjoining areas.

Location specific controls include yard setbacks and height plane restrictions.



Example Neighbourhood 'Building Frontage Setback' Diagram. Refer Residential Precinct Documentation.

Yards/ Building Setbacks:

General
All building elements excluding fences must be set back from the relevant boundary by the minimum distance listed below:

Front yards on primary roads: 3m
Front yards on all other roads: 2m
Front yards to lanes: 1.2m.
Side yards: 1.2m
Rear: yards No minimum, refer also Back To Back Setback Conditions in the following section.

Except that on lanes, structures providing weather protection and/or access such as verandas, covered canopies, and ground-level decks may extend into the front yard, up to 0.5m from the front boundary.

Eaves, gutters, and downpipes may extend into the side and rear yards by a maximum of 0.6m.

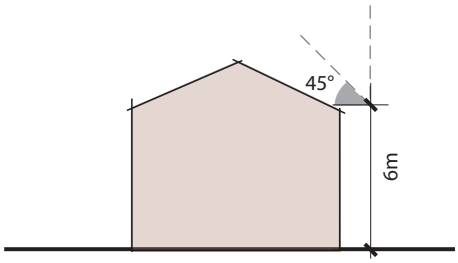
Canopies on ground floor required by the 'weather protection' control may extend into yard spaces, so long as no more than 1.8m^2 of area in plan is within the yard setbacks.

Refer 'Lane Design Principles' for further requirements for houses fronting the lanes.

Corner Sites
Front yard setbacks on corner sites to roads apply only to one nominated boundary, except that the nominated boundary cannot be a chamfered or rounded corner. The yard setback distance to the other non-nominated corner boundaries is 1.2m.

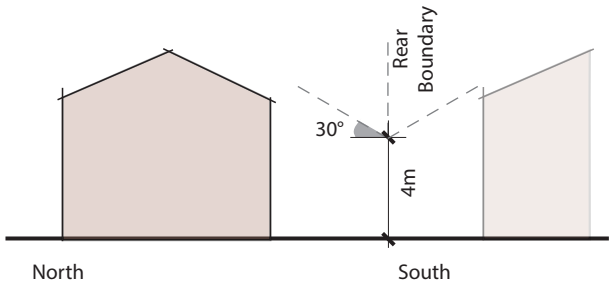
Height in Relation to Boundary:

- Height in Relation to Boundary controls do not apply to common party walls, and boundaries to vested roads, lanes, or open spaces.
- Boundaries to neighbouring residential zones outside of the Sunfield site shall adopt the recession plane rule of the neighbouring Unitary Plan zone.



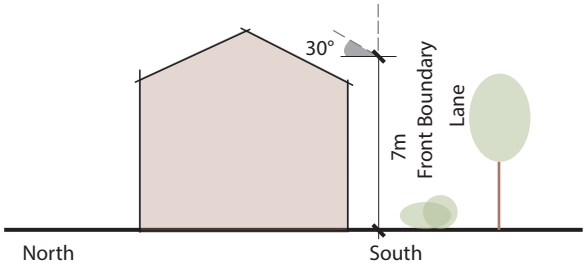
General Height in Relation to Boundary

- Buildings must not project beyond a 45 degree recession plane measured from 6m vertically above ground level.
  - Exemptions to the General Height in Relation to Boundary rule apply for 'North-South Facing Rear Yard Boundaries', 'South Facing Lane Boundaries' and 'Specific Back-to-Back Setback Conditions' listed below.



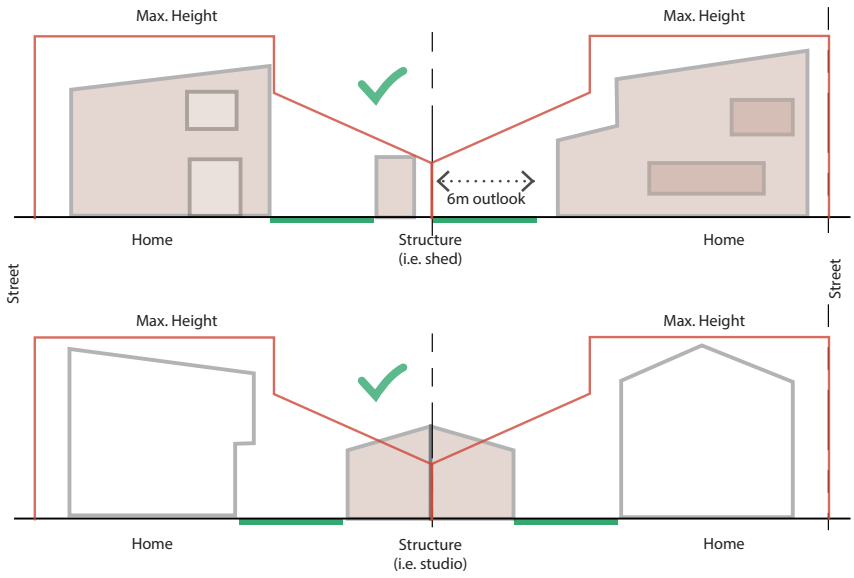
North-South Facing Rear Yard Boundaries

- Where a southern rear yard boundary is adjoining another rear yard, buildings in both must not project beyond a 30 degree recession plane measured from 4m vertically above ground level.



South Facing Lane Boundaries

- Where the boundary is south facing and fronting a lane, buildings must not project beyond a 30 degree recession plane measured from 7m vertically above ground level.



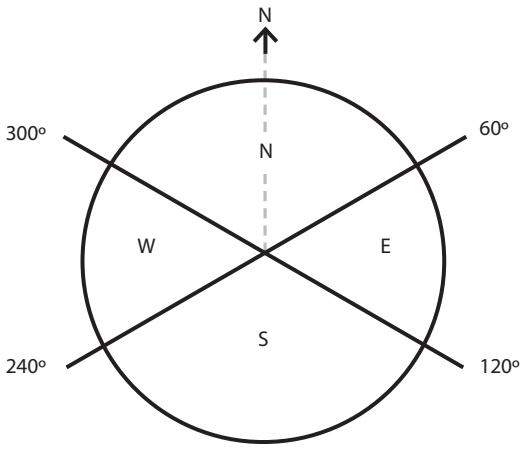
Specific Back-to-back Setback Conditions

- Refer Residential Precinct Document Setback Plans for locations of the Back To Back Setback Condition.
- In the rear yard setback zone 2m up, 7m horizontal (30º), then up vertical.
- Does not apply to common wall boundaries.

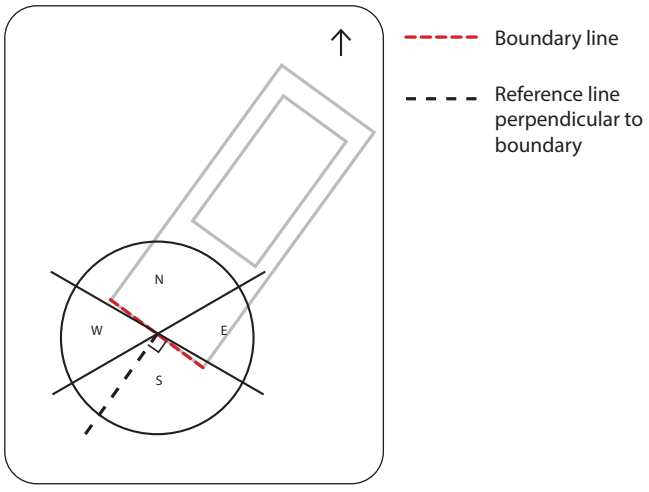
Indicative plan illustrating different height in relation to boundary condition locations:

Boundary Orientation

- The orientation of a boundary is determined by the Boundary Orientation Diagram.
- The true north bearing is used. To use the diagram, a perpendicular line is drawn outwards from the boundary, and lands within an orientation sector.



Boundary Orientation Diagram



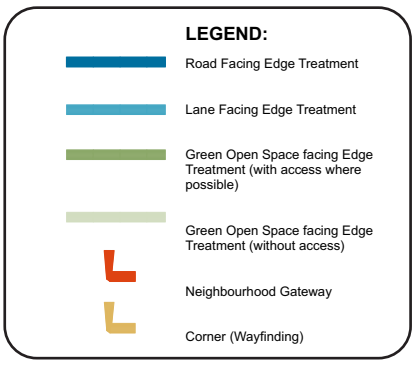
Example use of the Boundary Orientation Diagram showing a boundary classed as facing south

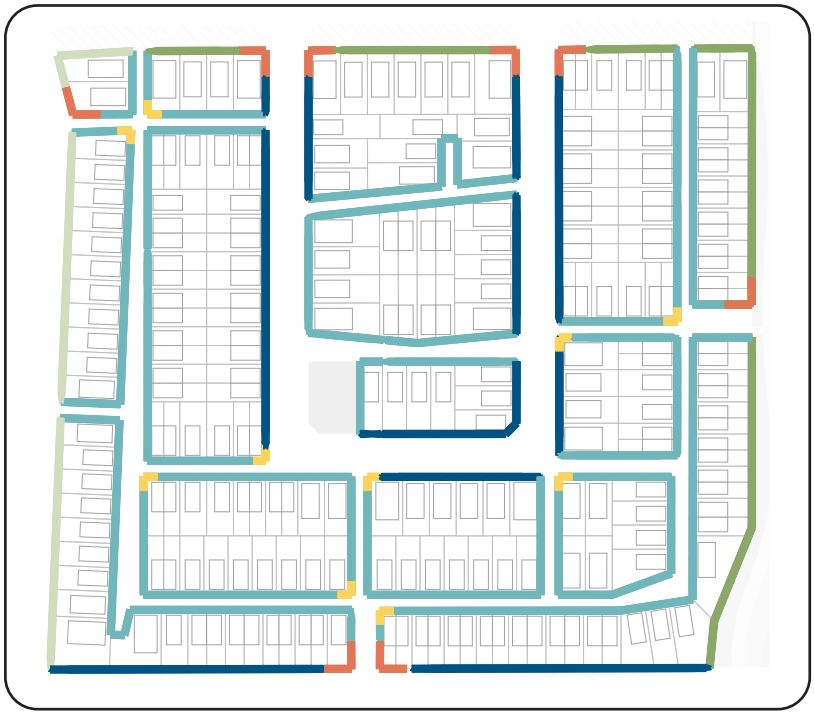
Edge Condition Controls

The Neighbourhood Framework Plans have proposed various Edge Conditions that are strategically positioned in each neighbourhood.

This section includes controls on fence heights and design across the edge conditions as well as the provision of corner wayfinding walls.

It also includes a number of controls on the design of yards on the lanes.

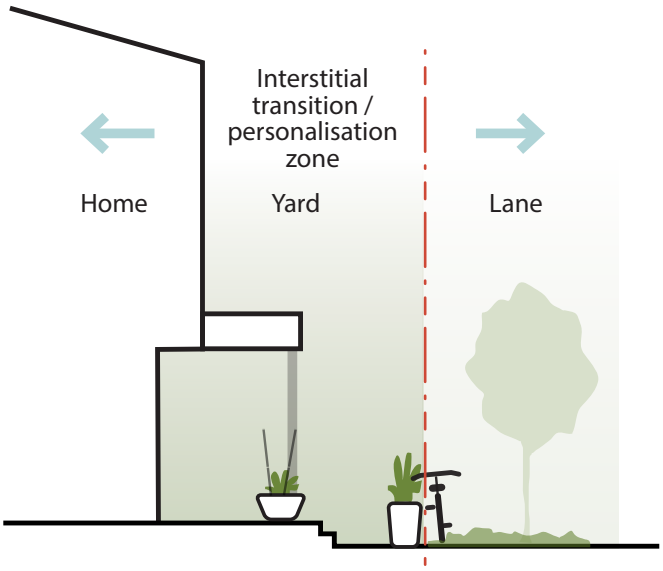




Example Neighbourhood 'Edge Condition and Threshold Treatments' Diagram. Refer Residential Precinct Documentation.

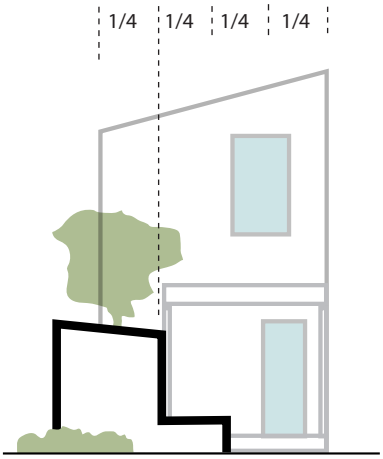
Laneway Edge Condition:

The intention of the laneway edges is to create an interconnected lane and yard space with minimal fencing to allow for easy connectivity and passive surveillance.
The front yards shall be designed to support personalisation of the private space, as well support a sense of custodianship over the adjacent lane.

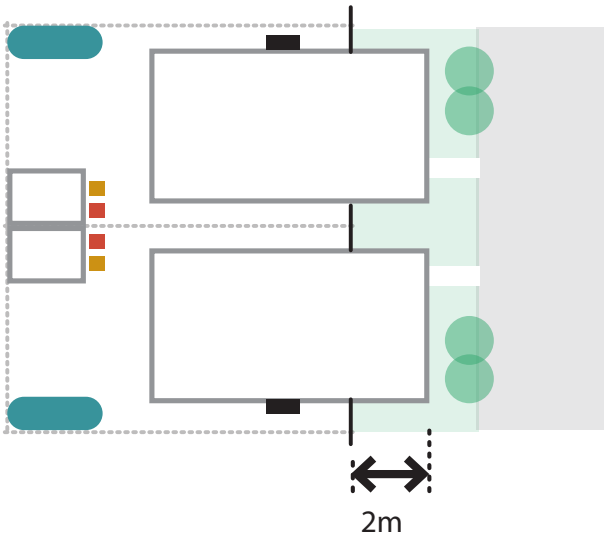


Design front yards to encourage a 'personalisation zone'

Storage Units:

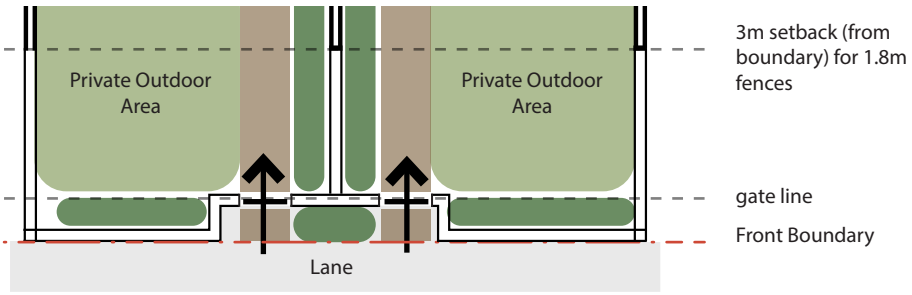


- Storage units may be integrated into the building or landscape wall elements.
- They must not obscure more than 1/4 of the building frontage width.
- They shall not obscure windows into habitable spaces.



Front yard fences and ancillary items

- Lots facing a lane must not construct a fence along the front boundary or within the front yard.
- All fences must be set back at least 2m from behind the front building line. Beyond this point, fences must be no more than 1.8m high.
- No bin storage may be erected forward of the building.

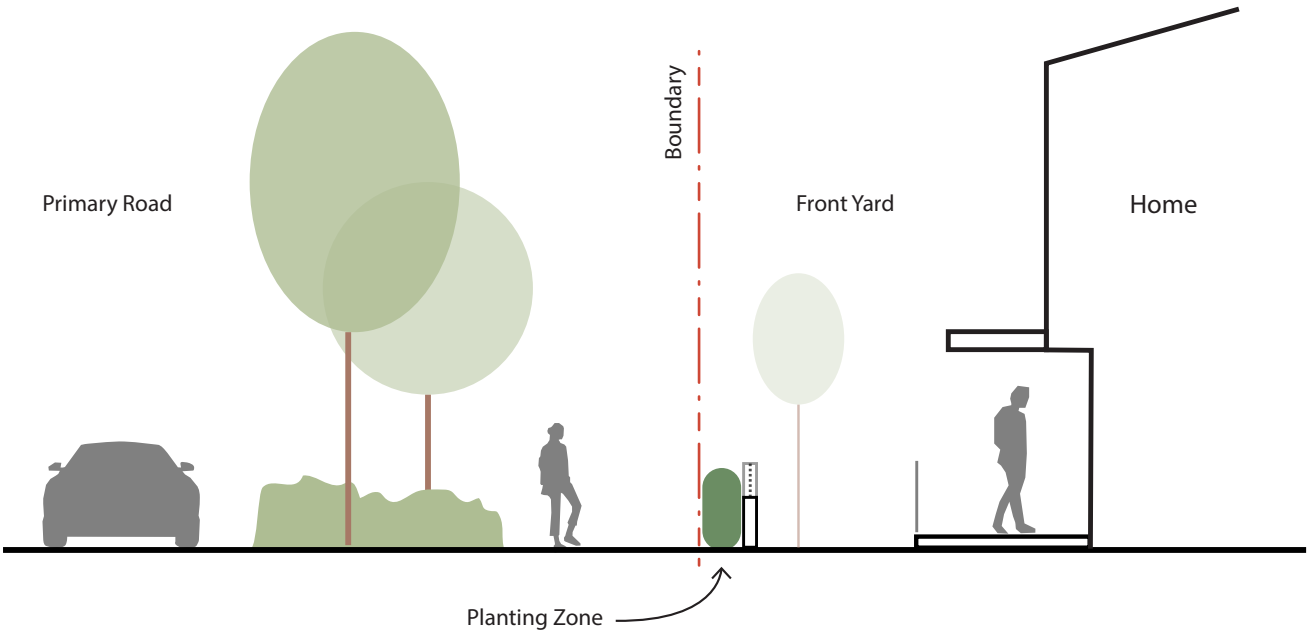


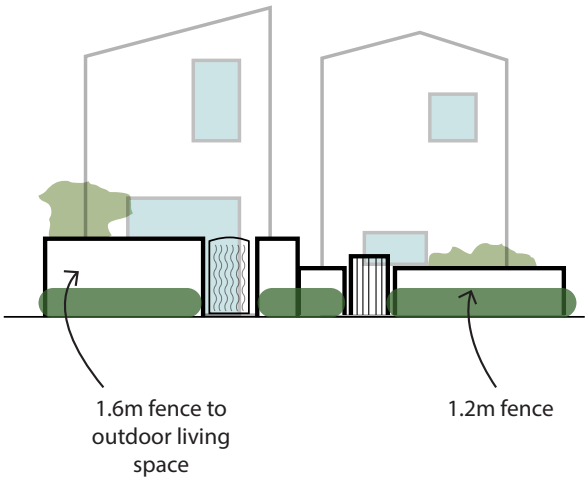
Private outdoor areas facing the lanes:

- Where private outdoor areas are located between the building and the front boundary on a lane, fences with a maximum height of 1.2m are permitted in the front yard.
- Side boundary fences must be a max. of 1.2m high within 2m from the front boundary.
- An entry pathway must be clearly legible, and any associated gate must be offset either back or forward from the main fence line by at least 0.6m.

Primary Streets

Frontage Condition





Planting Zone to Primary Roads

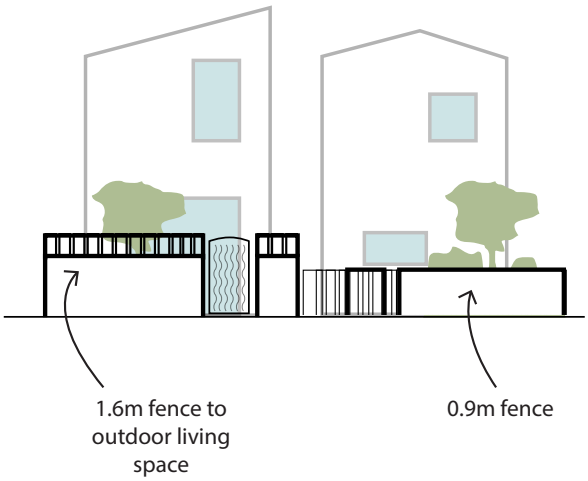
- All fences to primary roads must include a minimum setback from the boundary of 0.3m and be planted on the road side.
- A min. of 80% of the planting choice must be as per the Sunfield Planting Schedules Document.

Front Fences to Primary Roads

- Front yard fences to primary roads can be a max. height of 1.2m.
- However, fences around primary outdoor spaces between the dwelling and the road may have a max. height of 1.6m.
- The fence elevation in total (including gate) must be at least 10% visually permeable.
- Along Sunfield Loop, the fence elevation must be a minimum of 50% solid construction such as stone, brick, concrete, or masonry.

Local Road

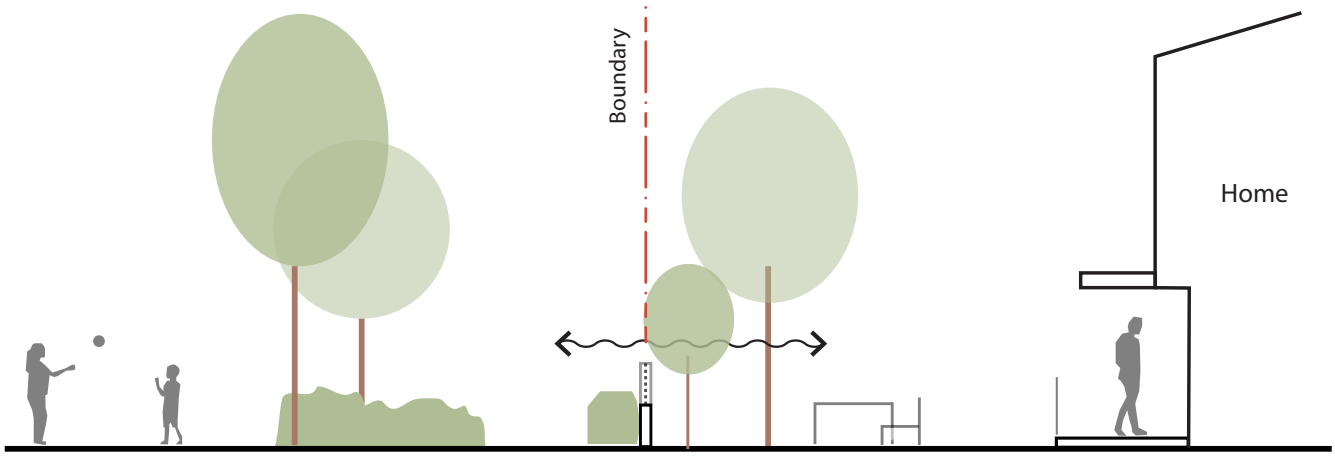
Frontage Condition



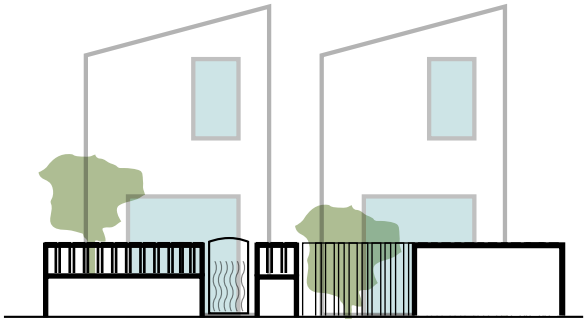
Fences fronting local roads:

- Front yard fences to local roads must be a max. height of 0.9m.
- However, fences around primary outdoor spaces between the dwelling and the road may have a max. height of 1.6m.
- The fence elevation in total must be a min. of 20% visually permeable.

Open Space Condition



Open space (example)



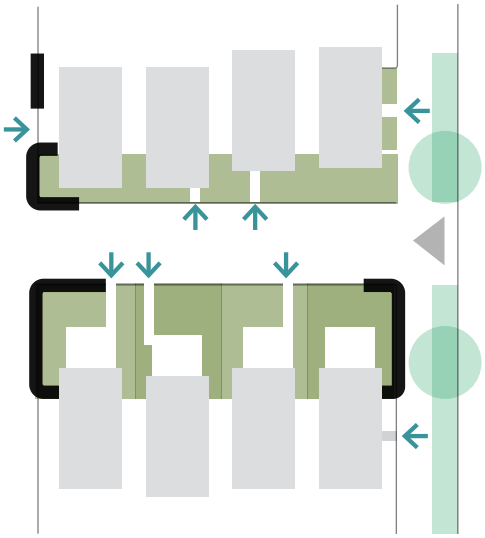
Fences to open spaces:

- Fence requirements for boundaries to open spaces must be a max. height of 1.6m. The fence elevation must be a min. of 35% visually permeable.
- On boundaries identified as 'Open Space Facing Edge Conditions (without access)', gates/access to the adjoining public property is not permitted.
- Access gates must be aligned with a public pathway if already present. Only one gate per frontage. The gate must be located within 1.5m of a side boundary and near to a neighbouring property's gate.

Corner and Neighbourhood Wayfinding Walls:

Some thresholds into Sunfiled and within the laneway network have important wayfinding functions. A distinct feature wall design language will help to make the development easier to navigate and define the character of the area.

- Wayfinding walls requirements (which includes both corner walls and Neighbourhood Gateway Walls) have precedence over other fencing rules.
- Refer to the Residential Precinct Document for strategic locations of lane corner and gateway walls.

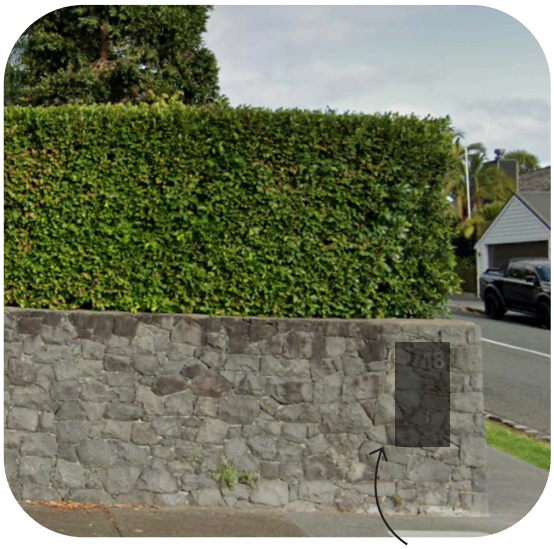


Wayfinding walls

'Hold the lane' Wayfinding Walls

- Tall and solid landscape walls

Example of wayfinding wall designs



signage

Corner walls create strong visual cues for wayfinding

- Lane corner walls must be minimum 1.6m high and no more than 2m high.
- They must extend at a minimum of 3m from the corner, and a maximum of 12m.
    - (Exemptions for Neighbourhood Gateway Walls, see below)
- They must not infringe on any primary outlook pace.
- Utilising the same or similar materiality and design language for walls on the same corner or lane is encouraged.

Materiality of lane corner walls

- Must be of solid and robust and hard-wearing materials, such as stone, concrete, brick, or similar.
- Must be designed to a high architectural standard.
- Must not be visually permeable (except for in the case of a gate or vision window).

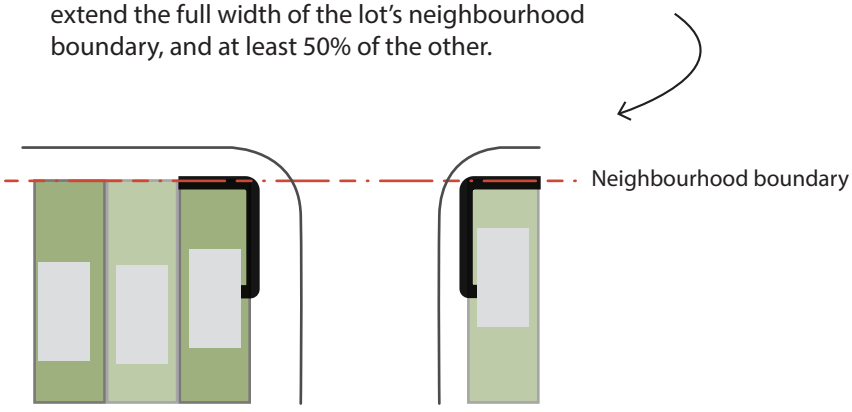
Functionality

- Must be appropriate for signage.
- Hedges and planting (including climbing plants) outside of the wall are permissible so long as any signage can still be easily installed, read and maintained.
- Walls may include a gate or vision window up to 1.5m wide. Gates and windows must not be located within the first 3m from the corner.

Neighbourhood Gateway Walls

Landscape elements that define entries to Sunfield and its neighbourhoods

- Neighbourhood Gateway Walls shall comply with the standards above, however they must extend the full width of the lot's neighbourhood boundary, and at least 50% of the other.



Materiality Architecture

Sunfield Material Strategy
A common sustainability-focused material palette is shared across all neighbourhoods.

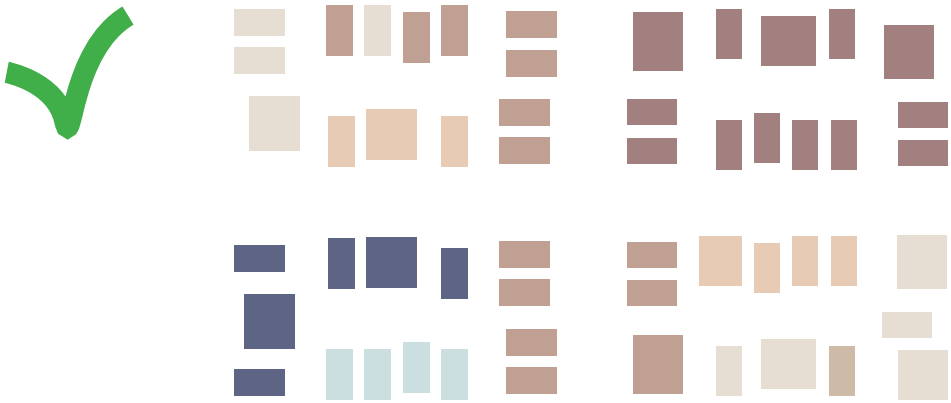
- Use materials with low-embodied carbon.
- Building cladding and roofing materials shall be (or be coated in) colours with a light reflectance value of between 20% and 90%. Dark colours less than 20% are to have Total Solar Reflectance value greater than 25.

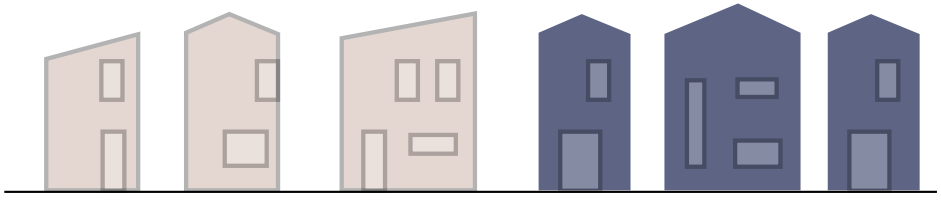
Colour and material scheme concept:

- Use a variety of materials and colours coatings. Variety may be expressed in clusters of houses or individually (as per diagrams below).

Downpipes

- Downpipes and other external services should be recessive in colour (matching the main dwelling material palette) and located away from the frontage.





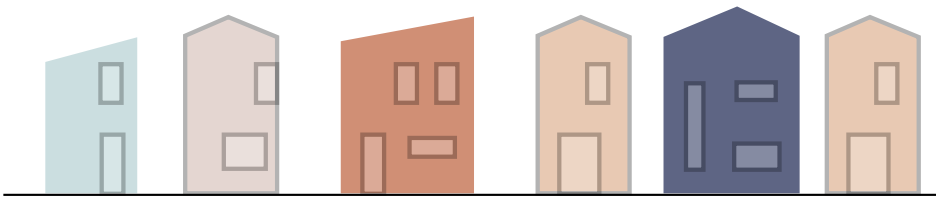
Example diagram of housing clustered by materiality or colour

Letterboxes / house identification:

- All dwellings must have identification easily visible from the road or lane on which it fronts.

Stone

- Any stone used must be reflective of Auckland's geology. ie. South Island Schist is not appropriate.



Example diagram of a high level of variation in materiality or colour

Laneway Design

A network of safe, connected, and high quality laneways are the defining characteristic of Sunfield.

These are flexible spaces designed for people to enjoy without cars.

The laneways will make up the majority of the Sunfield street-based public realm environment.

Achieving successful lanes is fundamental to achieving good liveability outcomes for compact and car-less living in Sunfield.

Laneway characteristics:

An informal landscape approach that incorporates thoroughfares and placemaking amenity (such as seating, informal play, vegetation).

Together, the architecture and street achieve a balanced sense of custodianship for residents to personalise and occupy their frontage, whilst supporting public access.

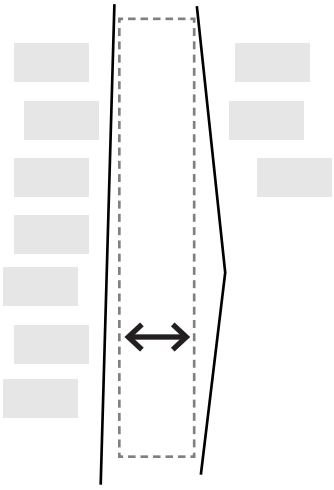
They feel green and lush with a mix of both low- to mid-level planting which creates privacy to residents in what is a compact living environment. Tree canopy coverage provides shade, outlook amenity, and privacy (at both ground and upper levels).

Homes on the lane have a mix of ground and first level interstitial spaces facing the lanes to support vibrancy and custodianship.

The lanes offer legible thoroughfares which enables active transport and, where required, occasional service vehicles.

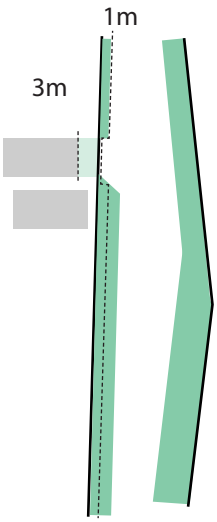
The lane has a personality consistent with the surrounding neighbourhood and wider area.

Lane Design Principles



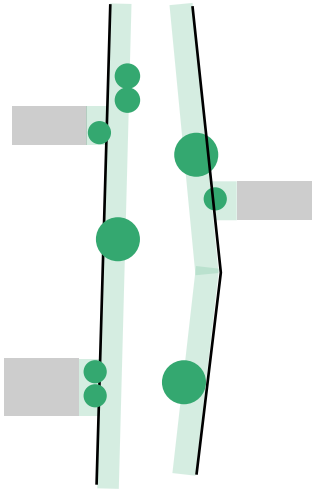
Width

- Laneways must be minimum of 6m wide`



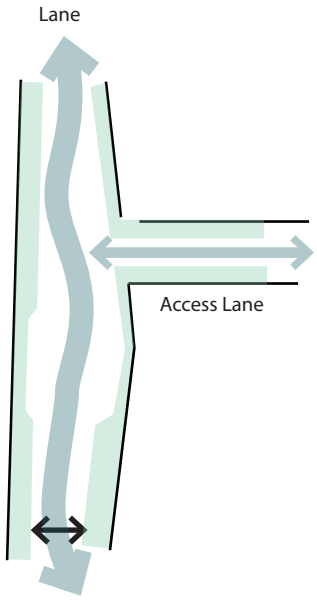
Planted edges

- Must be 1m (min.) excluding where adjacent to frontages with 3m+ deep yards.
  Note: verandas are not included in the yard depth.
- Primarily mid-level planting, with supplementary low level planting.
- Min. planting density of 4 plants per square metre.
- 80% of selected planting must be from the Sunfield Planting Schedules Document.



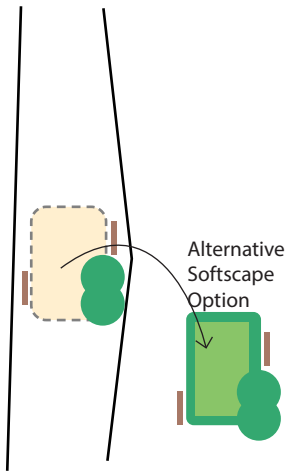
Mix of vegetation

- A blend of 35 litre and 80 litre specimen trees at 20m max. spacing.
- 80% of selected planting must be from the Sunfield Planting Schedules Document.



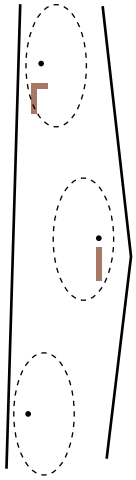
Movement functions

- Min 3.5m thoroughfare on Trafficable and Pedestrian Lanes.
- 2.5m min. thoroughfare on Pedestrian Access Lanes. Refer to the Transport Network Diagrams in the Residential Precinct Document for locations.



Informal urban play spaces

- Lanes shall incorporate moments of lane widening for informal play. Refer to the Residential Precinct Document for locations.
- Informal play spaces should be approx. 80m^2 min. of usable lawn/court space, with a min. 6m width. Provide seating and vegetation which will create shade.



Other amenity

- Refer Planting and Street Furniture.
- Lighting as per Lighting Section.

Front yard and lane relationships:

Where creating informal urban play areas use deeper front yards with layered vegetation to achieve sufficient landscape amenity

Provide more vegetation in the lane when there are adjacent narrow yards which have limited room for planting.

Lane surfaces

The lane surface:

- All thoroughfares on the lanes shall be a durable all-weather surface and of a design that emphasises that the lanes operate as a pedestrian and bicycle space.
- Lanes shall have a slip resistance compliant for access routes to which the public has access, as per the New Zealand Building Code.
- Laneway paving must have accent banding at intervals no more than 6m.
- Obvious variation and higher quality of materials (i.e. paving features) shall occur at key locations including at minimum lane intersections and urban play areas.
- Obvious variation in surface finish shall occur where a trafficable lanes meet a road to assist with traffic calming.

Planting and street furniture

Landscape furniture:

- Landscape seating and sheffield bicycle parking shall be incorporated at every ~75m max.
- All furniture shall be made of durable materials.
- Bicycle parking shall be strategically located at key areas (such as urban play) as well as distributed throughout the lanes for use as visitor parking.
- Street furniture such as benches or low walls shall be designed to allow the lanes to be used as public play and relaxation space.

Laneway - Informal Urban Play Space

Neighbourhood Service Hubs

Neighbourhood Service Hubs provide space for additional services, bringing them within reach of more homes. They provide at minimum;

- Shelter structures for pick up and drop off services
- Dedicated parking for shared vehicles
- Accessible visitor parking
- Loading and unloading zones

But may also include other supporting amenities.

These controls apply to lots zoned within the Service Hub area.

Building setbacks:
From residential boundaries, service hub structures must maintain a setback of2m min. Does not apply to lights or street furniture.

Vehicle access:
No more than 2 vehicle access points/vehicle crossings shall be allowed per service hub.

Parking:
Min. parking lot size as per New Zealand parking and manoeuvring standards.
Min. 2 accessible visitor parks per service hub.

Bicycle Parking:
Min. 2 sheffield stands for 4 bicycle parks.

Fencing:
Fencing must not be used on boundaries adjacent to public roads or lanes.

Hedging, planting, and furniture may be used along boundaries so long as it does not exceed a height of 1.0m. This heigh restriction does not apply to trees.

Sections of fencing/walls that are no longer than 3m may be incorporated so long as they are designed to positively support way finding and CPTED.

Water treatment / stormwater:
All stormwater in the parking and manoeuvring areas are to be treated (i.e. via rain garden, swale, or engineered stormwater filtration).

Height in Relation to Boundary:
Where a service hub boundary is adjoining a residential boundary, buildings must not project beyond a 30 degree recession plane measured from 4m vertically above ground level.

Drop off and Loading Zone:
Each service hub must include a drop off zone (with an associated shelter) and a loading zone. These may be combined into one or multiple areas.

If occupying the same area, there shall be obvious markings or other separation between the two, and the different functions of the area must be clearly denoted.

The loading zone must accommodate at min. space for a furniture delivery truck and based on the current version of the AUP.

Loading areas to be designed so that manoeuvring of vehicles onto or off the road does not occur in situations which will compromise safety or the usability of the street or it's users.

Planting:
20% vegetation cover incorporating low level planting and trees.
80% of selected planting must be from the Sunfield Planting Schedules Document.

Materiality and surfaces:
Slip resistance as per New Zealand Building Code.

Pedestrian paths:
Pedestrian access and paths shall be clearly defined from vehicle manoeuvring and parking areas.

Shelter:
A shelter located with a pick up/drop off zone shall be provided. The shelter should;

- provide weather protection from above and on 3 sides.
- be a min. internal dimension of 2m deep and 4m long, except in very constrained sites.
- be positioned and lit to encourage CPTED.

Lighting:
Refer Lighting section

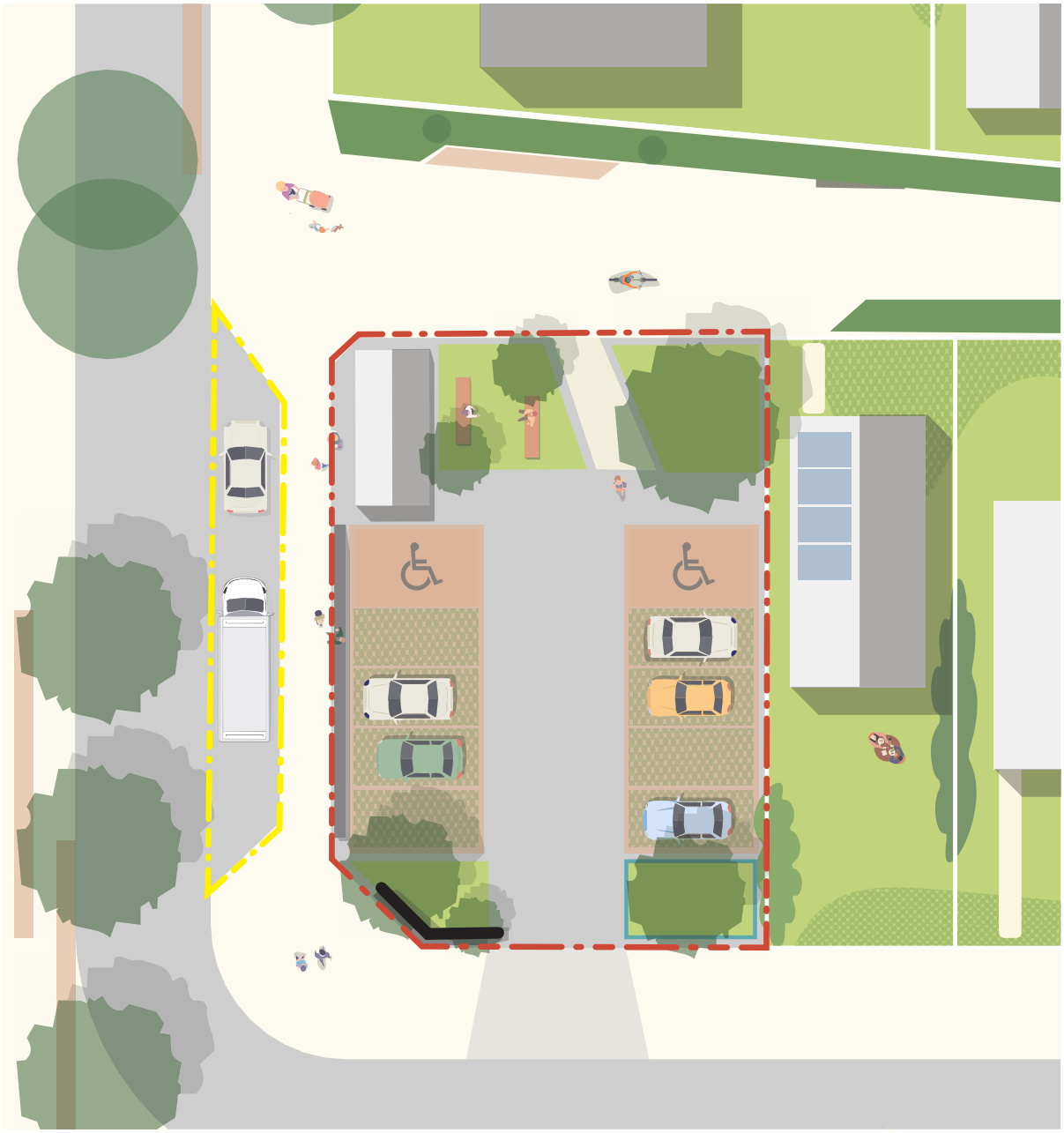


Diagram of potential neighbourhood service hub design

Lighting

Adequate lighting shall ensure that the development caters for and encourages all forms of transportation.

It will also support an neighbourhood that the residents and users feels safe in at all times of the day and night.

Public Lighting (Roads to be Vested)

Public Lighting on the roading network to be vested shall be provided with designated Road Classification and Sub-Categories identified by Auckland Transport Street Lighting in the provision of a Lighting Design Brief specific to the project for the roads identified below. Additionally any existing roads impacted or that interface directly with the Sunfield Development, the lighting design shall ensure that an integrated Public Lighting system is provided for both vehicular and pedestrian traffic to maintain road safety considerations.

1. 32m Road Reserve – Sunfield Loop
2. 32m Road Reserve – Sunfield Loop (Industrial)
3. 25m Road Reserve – Hamlin Road
4. 20m Road Reserve – Road 1 (North) and Road 7 (Industrial)
5. 20m Road Reserve – Road 1 (South) Road 2 and Road 4
6. 16m Road Reserve – Internal Neighbourhood Local Road

The lighting design for the above identified Sunfield Development and any impacted existing roads shall demonstrate compliance with the following:

a. The current version of the Auckland Transport - Transport Design Manual (AT-TDM) and any Specific Requirements as defined in the Lighting Design Brief.
b. Lighting on designated Category V Roads shall comply fully with the requirements of the current version of AS/NZS1158.1.1 Lighting for Roads and Public Spaces Vehicular Traffic (Category V) Lighting - Performance and Design Requirements.
c. Lighting on designated Category P Roads shall comply fully with the requirements of the current version of AS/NZS1158.3.1 Lighting for Roads and Public Spaces Pedestrian Area (Category P) Lighting - Performance and Design Requirements.
d. All Lighting both Category V and Category P shall meet the specific requirements detailed in the approved version of the Proposed Sunfield Development – Ardmore Airport Safeguarding – report prepared by Lambert & Rehbein (SEQ) Pty Ltd.

Private Lighting

Lighting to pedestrian access and vehicle access serving dwellings which will be used during the hours of darkness shall be provided for pedestrian and vehicle areas and shall be based upon the current versions of the Auckland Unitary Plan (AUP) E27 Transport and E24 Lighting, designed and certified in a statement by a suitably qualified and experienced lighting professional be calculated in accordance with the methods described. The lighting design shall demonstrate compliance with the following:

a. Lighting shall comply fully with the requirements of the current version of AS/NZS1158.3.1 Lighting for Roads and Public Spaces – Pedestrian Area (Category P) Lighting Performance and Design Requirements
b. Lighting shall as a minimum provide the lighting subcategory performance determined in accordance with AS/NZS1158.3.1, but not less than the following minimums lighting subcategories designated in AUP E24.
c. Private Lighting shall meet the specific requirements detailed in the approved version of the Proposed Sunfield Development – Ardmore Airport Safeguarding – report prepared by Lambert & Rehbein (SEQ) Pty Ltd.
d. All luminaires when installed shall not project any light at or above the height of its light source.
e. All light emitted from luminaires shall have a correlated colour temperature of 3000K (Kelvin) or less.
f. Spill Light and Glare assessment from the lighting shall be included on windows of lawfully established inhabited dwellings within the site.
g. The lighting is to have automatic daylight controls such that the lights are on from dusk to dawn, except that automatic presence detection may be included to ensure the lights are only on when presence is detected, maximum on time of 5 minutes but the use of presence sensor control is not always appropriate and therefore requires a CPTED assessment to determine if it is appropriate.
h. Lighting to be supplied from a common supply which cannot be disabled by residents.
i. Where solar lighting is proposed, such lighting will require clear written confirmation of their quality, performance, design, unshaded PV panel locations and maintenance plan.
j. The lighting installation is to be maintained in accordance with requirements as defined in the Auckland Transport Street Lighting Maintenance Contract applicable at the time of the required maintenance is to be undertaken.

Appendix

Storage Examples

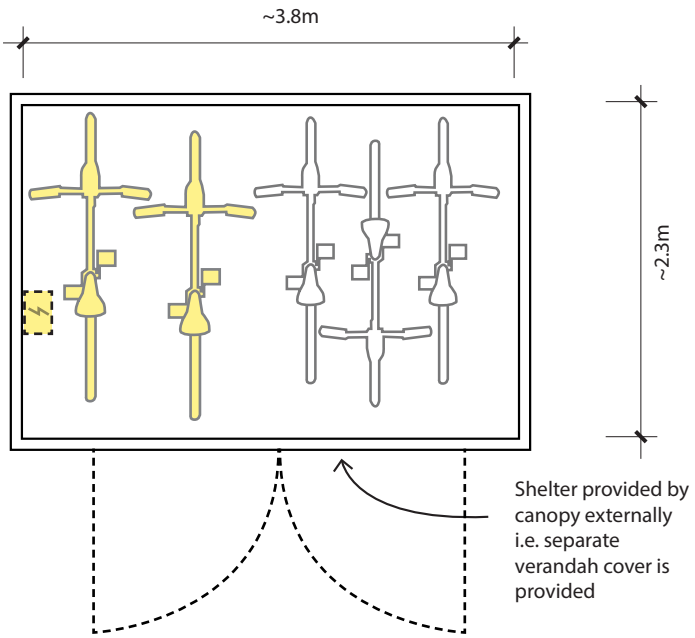
Reference Typologies

Sample Elevations

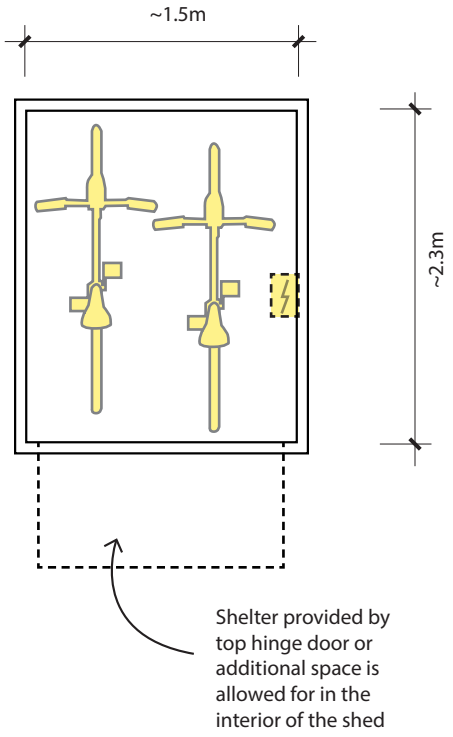
Bicycle and Micro-Mobility Storage Examples

Examples of potential bicycle storage solutions are shown below.
Plan dimensions are from internal surfaces, and shown are indicative only.
Micro mobility and bike storage may also be integrated into a dwelling.
Refer to standards table for further size and location requirements.

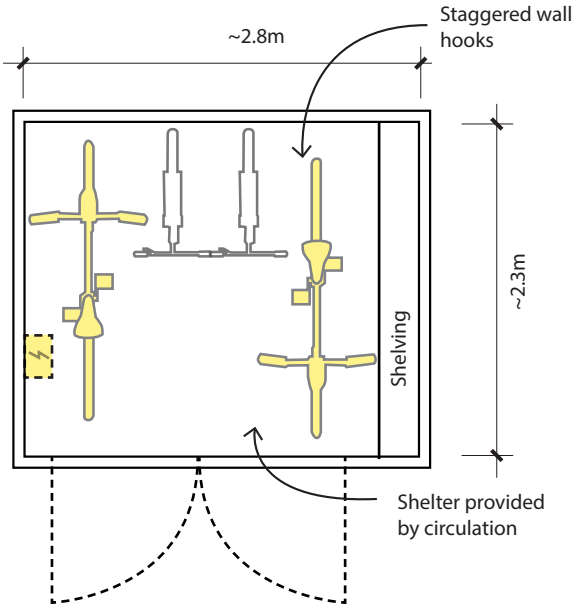
5-park shed



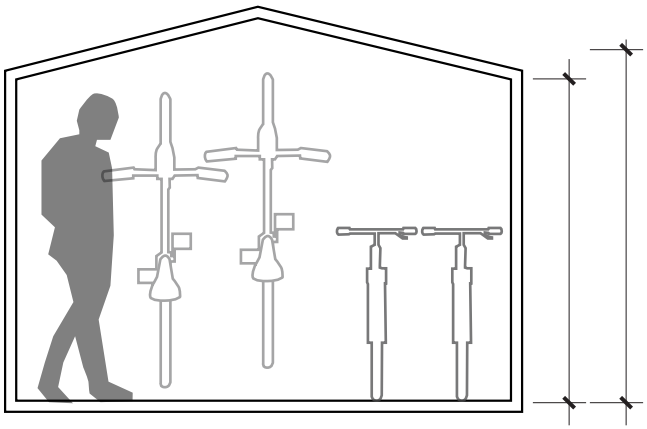
2-park shed



4-park shed



Internal Section

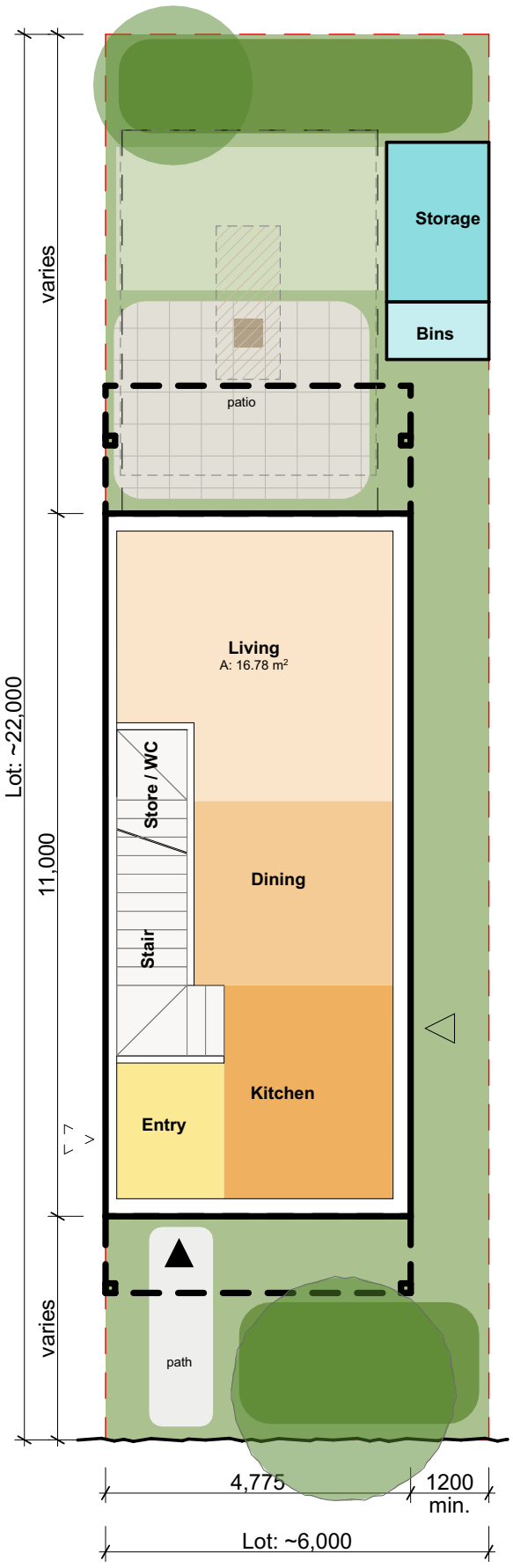


Height restrictions

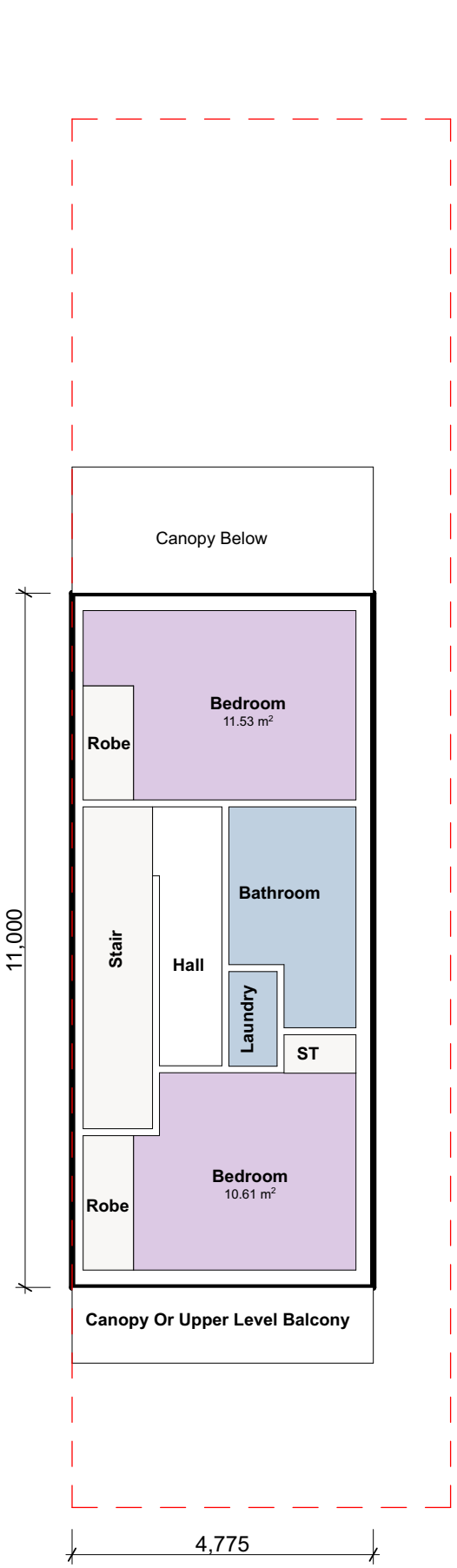
Within 1m of a side or rear boundary, height of the shed shall be no taller that 1.8m

Internal clearance for bicycles stored vertically (ie. wall hooks) must be 2.3m.

Reference Typology 2A



Ground Floor



2 Bedroom Duplex

2 BED | 1 BT

Lot 132m²
6.0 x 22.0m

(lot size indicative.)

LEVEL 1	52.5m²
GROUND	52.5m²

GFA 105.0m²

+ storage + canopy

TYPE 2A

Level 1

GENERAL DESIGN NOTES

Duplex Calculations
Duplexes may be used in stand-alone situations. 'Inter tenancy' wall thickness and site coverage will change to suit.

Internal Planning
Living, dining, and kitchen spaces (and any associated entries) may be interchanged to suit lot layout, shape, and orientation.
Internal room areas are subject to change with structural and service considerations.

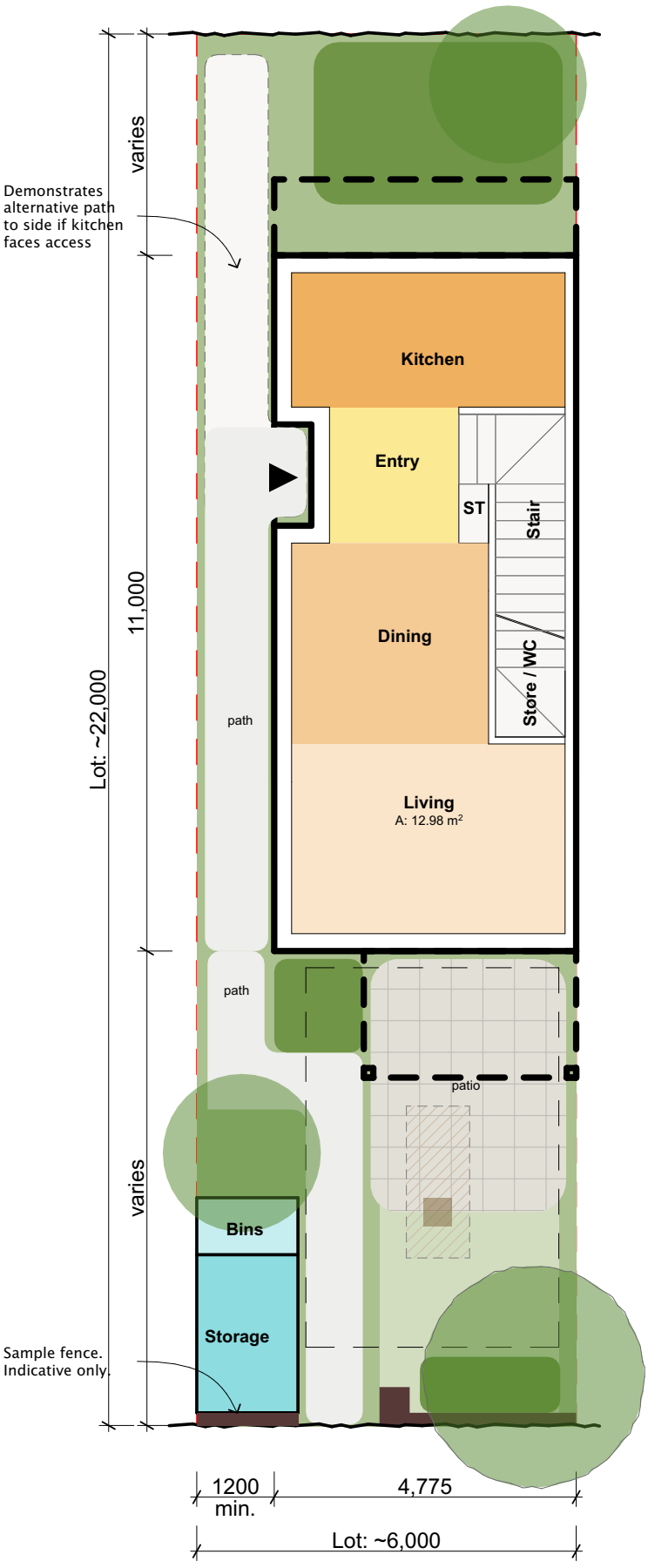
Storage Sheds, Bin Storage, Private Outdoor Space, Yard Depths, Canopies
Location and size is representational only and may vary to suit lot layout, shape, and orientation.

Landscape Design and Tree Location
Location and design is representational only, may vary to suit lot and house design.

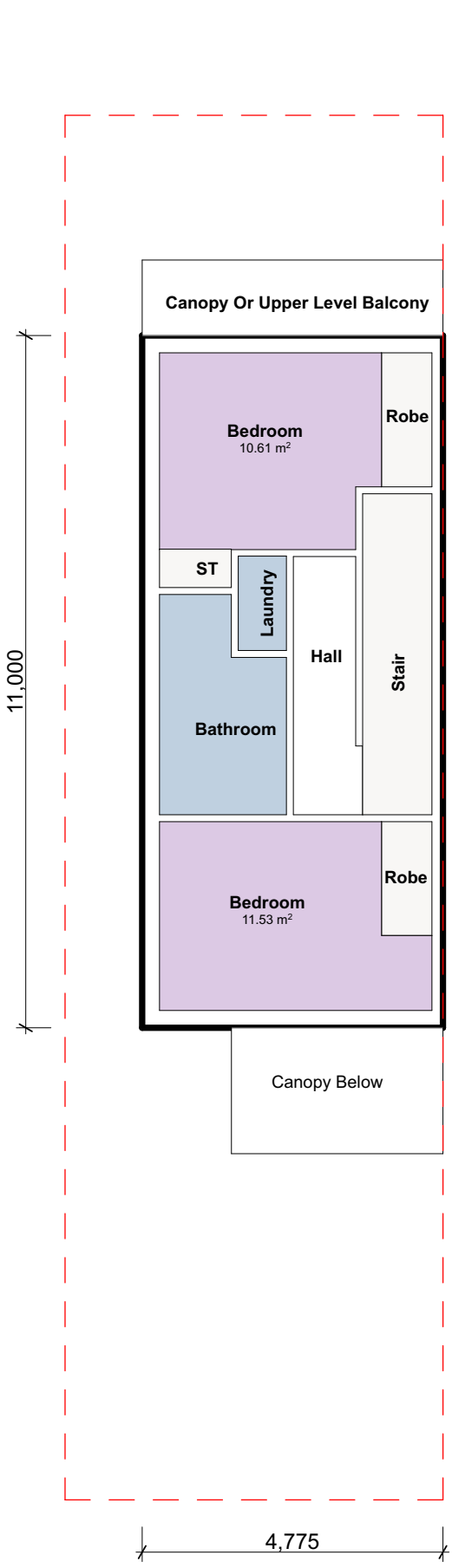
External Wall Thicknesses
Designed to suit current H1 Standards. Wall build-up currently allows 140 framing, cavity, 70mm brick cladding, and internal lining. Thickness may vary with alterations to these materials.

Corridors & Stairs
Designed to a min. of 1080 wide, framing to framing.

Reference Typology 2B



Ground Floor



2 Bedroom Duplex

2 BED | 1 BT

Lot 132m²
6.0 x 22.0m

(lot size indicative.)

LEVEL 1	52.5m²
GROUND	51.5m²

GFA 104.0m²

+ storage + canopy

TYPE 2B

Level 1

GENERAL DESIGN NOTES

Duplex Calculations
Duplexes may be used in stand-alone situations. 'Inter tenancy' wall thickness and site coverage will change to suit.

Internal Planning
Living, dining, and kitchen spaces (and any associated entries) may be interchanged to suit lot layout, shape, and orientation.
Internal room areas are subject to change with structural and service considerations.

Storage Sheds, Bin Storage, Private Outdoor Space, Yard Depths, Canopies
Location and size is representational only and may vary to suit lot layout, shape, and orientation.

Landscape Design and Tree Location
Location and design is representational only, may vary to suit lot and house design.

External Wall Thicknesses
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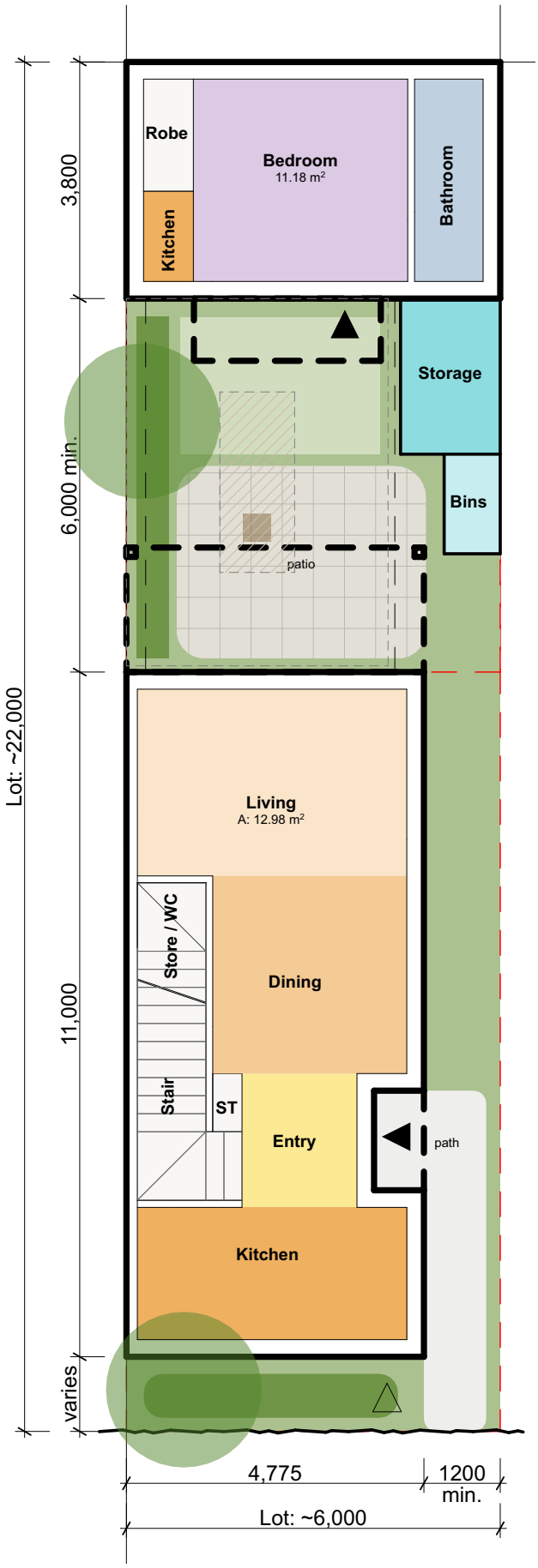
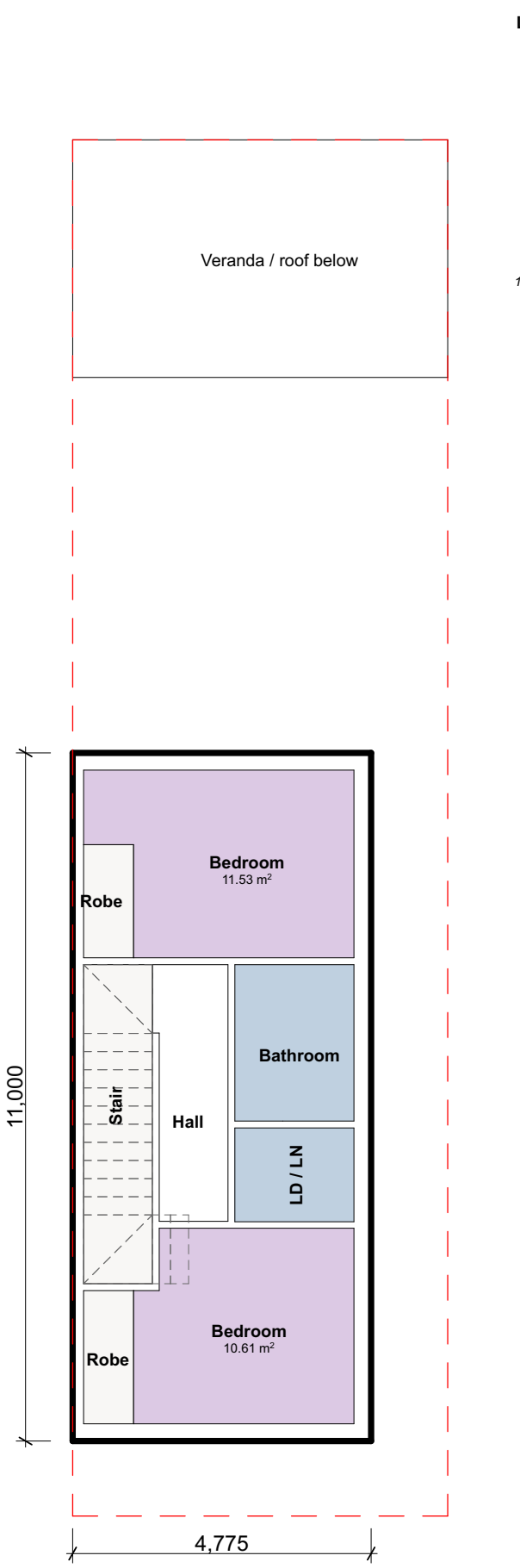
Corridors & Stairs
Designed to a min. of 1080 wide, framing to framing.

Reference Typology 3A



Ground Floor



Level 1

2+1 Bedroom Duplex

3 BED (with studio flat)
2 BT

Lot 132m²
6.0 x 22.0m
(lot size indicative.)

LEVEL 1	52.5m²
GROUND	51.24m²
STUDIO	22.8m²

GFA 126.5m²
+ storage + canopies

TYPE 3A

GENERAL DESIGN NOTES

Duplex Calculations
Duplexes may be used in stand-alone situations. 'Inter tenancy' wall thickness and site coverage will change to suit.

Internal Planning
Living, dining, and kitchen spaces (and any associated entries) may be interchanged to suit lot layout, shape, and orientation.
Internal room areas are subject to change with structural and service considerations.

Storage Sheds, Bin Storage, Private Outdoor Space, Yard Depths, Canopies
Location and size is representational only and may vary to suit lot layout, shape, and orientation.

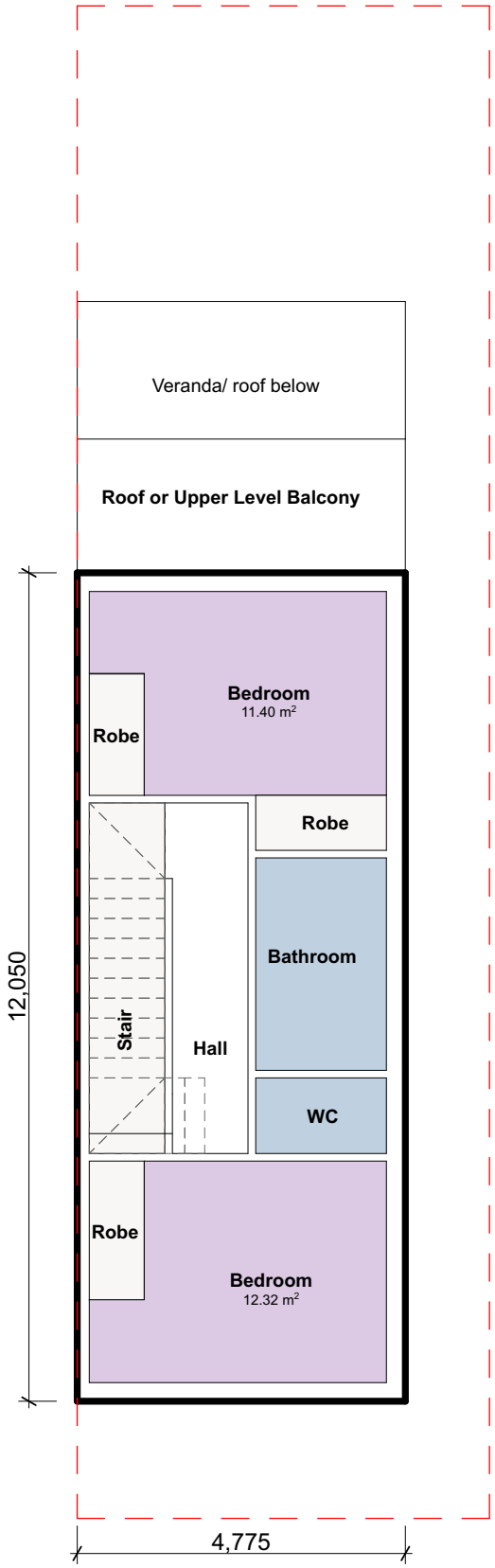
Landscape Design and Tree Location
Location and design is representational only, may vary to suit lot and house design.

External Wall Thicknesses
Designed to suit current H1 Standards. Wall build-up currently allows 140 framing, cavity, 70mm brick cladding, and internal lining. Thickness may vary with alterations to these materials.

Corridors & Stairs
Designed to a min. of 1080 wide, framing to framing.

Reference Typology 3B

Ground Floor



Level 1

LEGEND

Alternative entry location option

Recharge pit (indicative only)

1.5m clearance

DESIGN NOTES:
Bed on ground (not fully accessible). Could be utilised as extended living, work/live or bedroom.

3 Bedroom Duplex

3 BED | 1 BT | 1 WC

Lot 132m²
6.0 x 22.0m
(lot size indicative.)

LEVEL 1	57.6m²
GROUND	65.6m²

GFA 123.2m²
+ storage + canopies

TYPE 3B

GENERAL DESIGN NOTES

Duplex Calculations
Duplexes may be used in stand-alone situations. 'Inter tenancy' wall thickness and site coverage will change to suit.

Internal Planning
Living, dining, and kitchen spaces (and any associated entries) may be interchanged to suit lot layout, shape, and orientation.
Internal room areas are subject to change with structural and service considerations.

Storage Sheds, Bin Storage, Private Outdoor Space, Yard Depths, Canopies
Location and size is representational only and may vary to suit lot layout, shape, and orientation.

Landscape Design and Tree Location
Location and design is representational only, may vary to suit lot and house design.

External Wall Thicknesses
Designed to suit current H1 Standards. Wall build-up currently allows 140 framing, cavity, 70mm brick cladding, and internal lining. Thickness may vary with alterations to these materials.

Corridors & Stairs
Designed to a min. of 1080 wide, framing to framing.

Reference Typology 3C

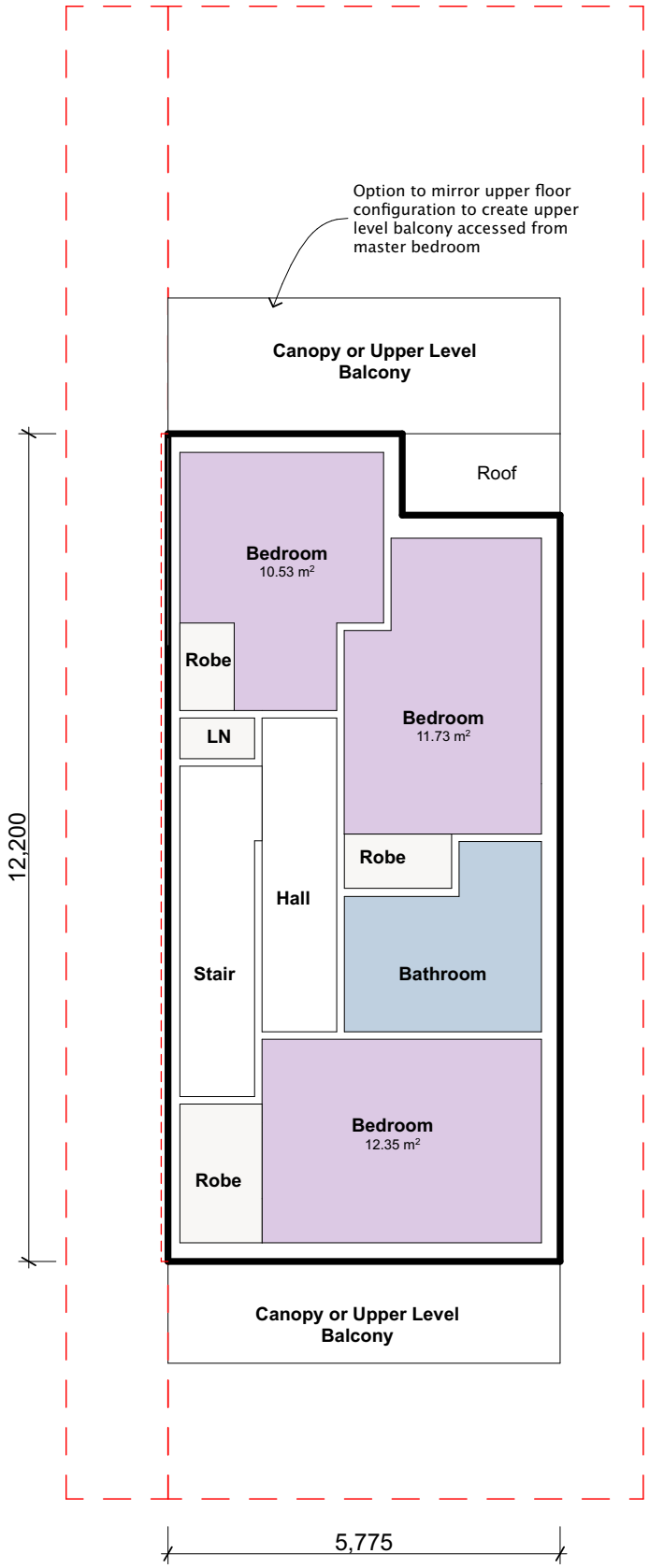
LEGEND

Alternative entry location option

Recharge pit (indicative only)

1.5m clearance

Ground Floor



Level 1

3 Bedroom Duplex or Standalone

3 BED | 1 BT | 1 WC

Lot 154m²

(187m2 when stand alone)

7.0 x 22.0m

(lot size indicative.)

LEVEL 1	67.6m²
GROUND	63.5m²

GFA 131.2m²

+ storage + canopies

TYPE 3C

GENERAL DESIGN NOTES

Duplex Calculations
Duplexes may be used in stand-alone situations. 'Inter tenancy' wall thickness and site coverage will change to suit.

Internal Planning
Living, dining, and kitchen spaces (and any associated entries) may be interchanged to suit lot layout, shape, and orientation.
Internal room areas are subject to change with structural and service considerations.

Storage Sheds, Bin Storage, Private Outdoor Space, Yard Depths, Canopies
Location and size is representational only and may vary to suit lot layout, shape, and orientation.

Landscape Design and Tree Location
Location and design is representational only, may vary to suit lot and house design.

External Wall Thicknesses
Designed to suit current H1 Standards. Wall build-up currently allows 140 framing, cavity, 70mm brick cladding, and internal lining. Thickness may vary with alterations to these materials.

Corridors & Stairs
Designed to a min. of 1080 wide, framing to framing.

Reference Typology 3D

LEGEND

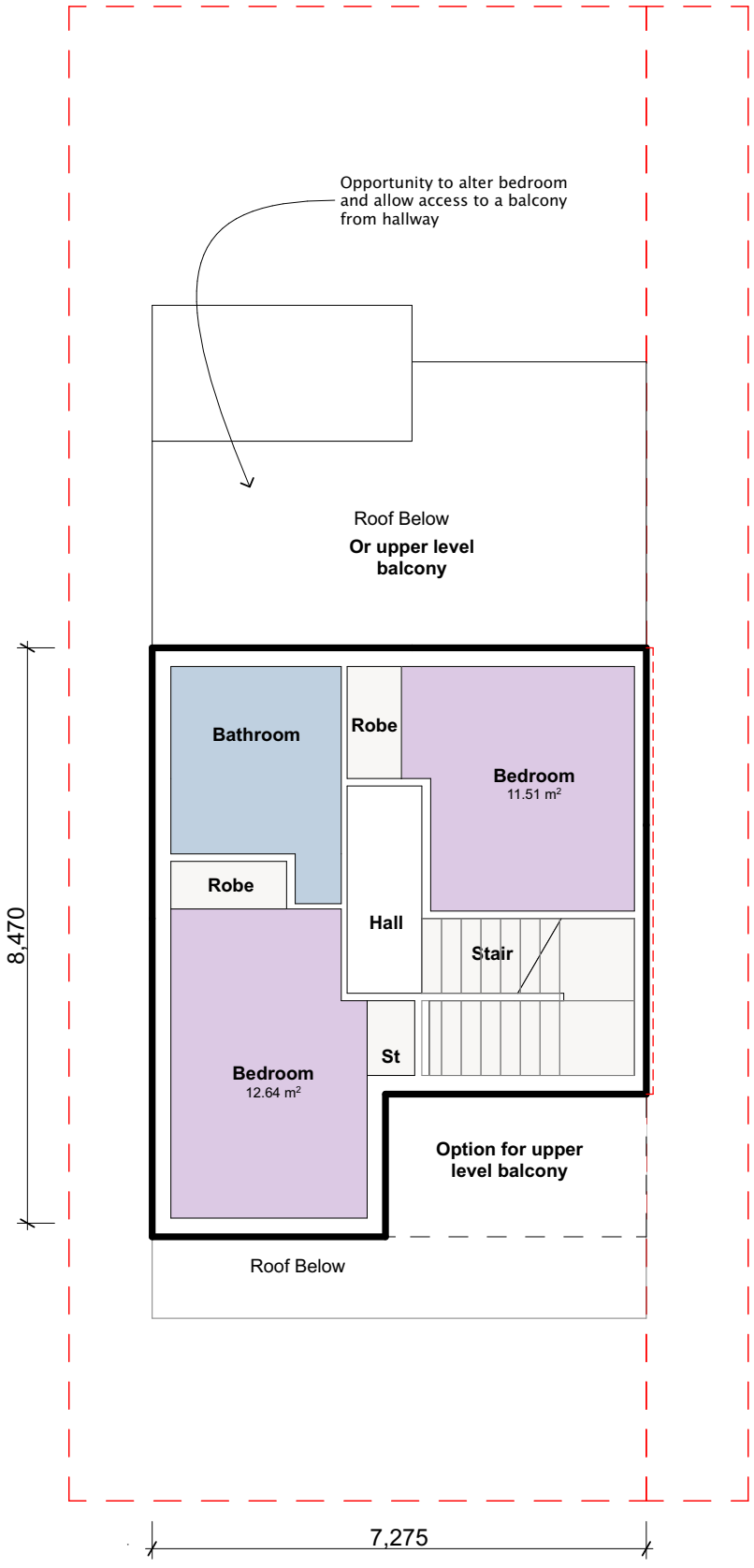
Alternative entry location option

Recharge pit (indicative only)

1.5m clearance

Design Notes:
- On lot carpad may not be required.
- Fully accessible-sized bedroom & bathroom on ground floor

Ground Floor



Level 1

3 Bedroom Duplex or Standalone with Carpark

3 BED | 2 BT
GF ACCESSIBLE BED & BATH

Lot 187m²

(220m2 when stand alone)

8.5 x 22.0m

(lot size indicative.)

LEVEL 1	55.01m²
GROUND	79.92m²

GFA 134.9m²

+ storage + canopies

TYPE 3D

GENERAL DESIGN NOTES

Duplex Calculations
Duplexes may be used in stand-alone situations. 'Inter tenancy' wall thickness and site coverage will change to suit.

Internal Planning
Living, dining, and kitchen spaces (and any associated entries) may be interchanged to suit lot layout, shape, and orientation.
Internal room areas are subject to change with structural and service considerations.

Storage Sheds, Bin Storage, Private Outdoor Space, Yard Depths, Canopies
Location and size is representational only and may vary to suit lot layout, shape, and orientation.

Landscape Design and Tree Location
Location and design is representational only, may vary to suit lot and house design.

External Wall Thicknesses
Designed to suit current H1 Standards. Wall build-up currently allows 140 framing, cavity, 70mm brick cladding, and internal lining. Thickness may vary with alterations to these materials.

Corridors & Stairs
Designed to a min. of 1080 wide, framing to framing.

Reference Typology 4A

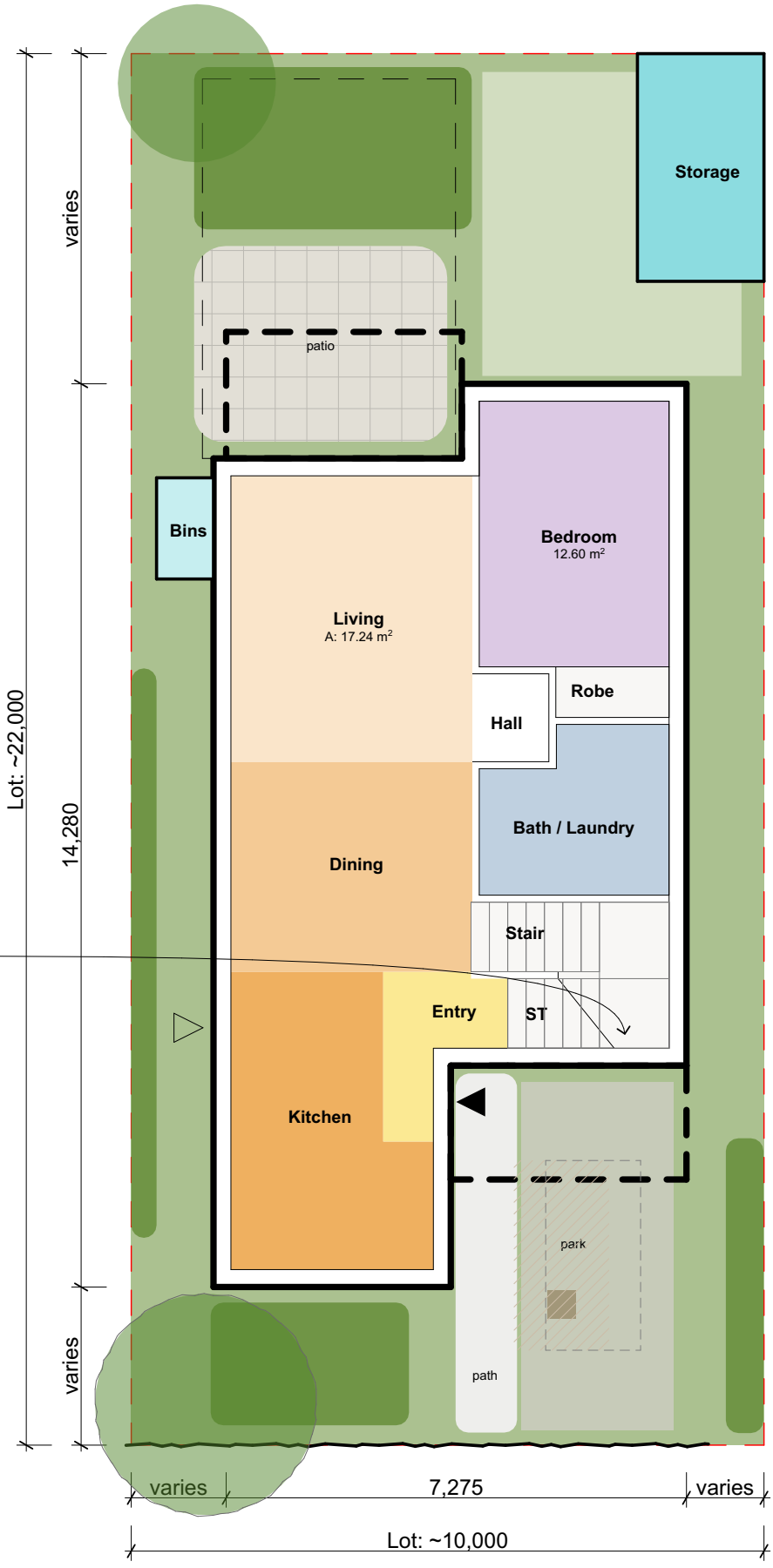
LEGEND

Alternative entry location option

Recharge pit (indicative only)

1.5m clearance

Design Notes:
- On lot carpark may not be required.
- Fully accessible-sized bedroom & bathroom on ground floor as fourth bedroom
- Designed to suit 'back to back' conditions with a carpark



Opportunity to extend building line to incorporate storage unit or larger living where carpad not required

Ground Floor

4 Bedroom Standalone
with Carpark

4 BED | 2 BT | 1 WC
GF ACCESSIBLE BED & BATH

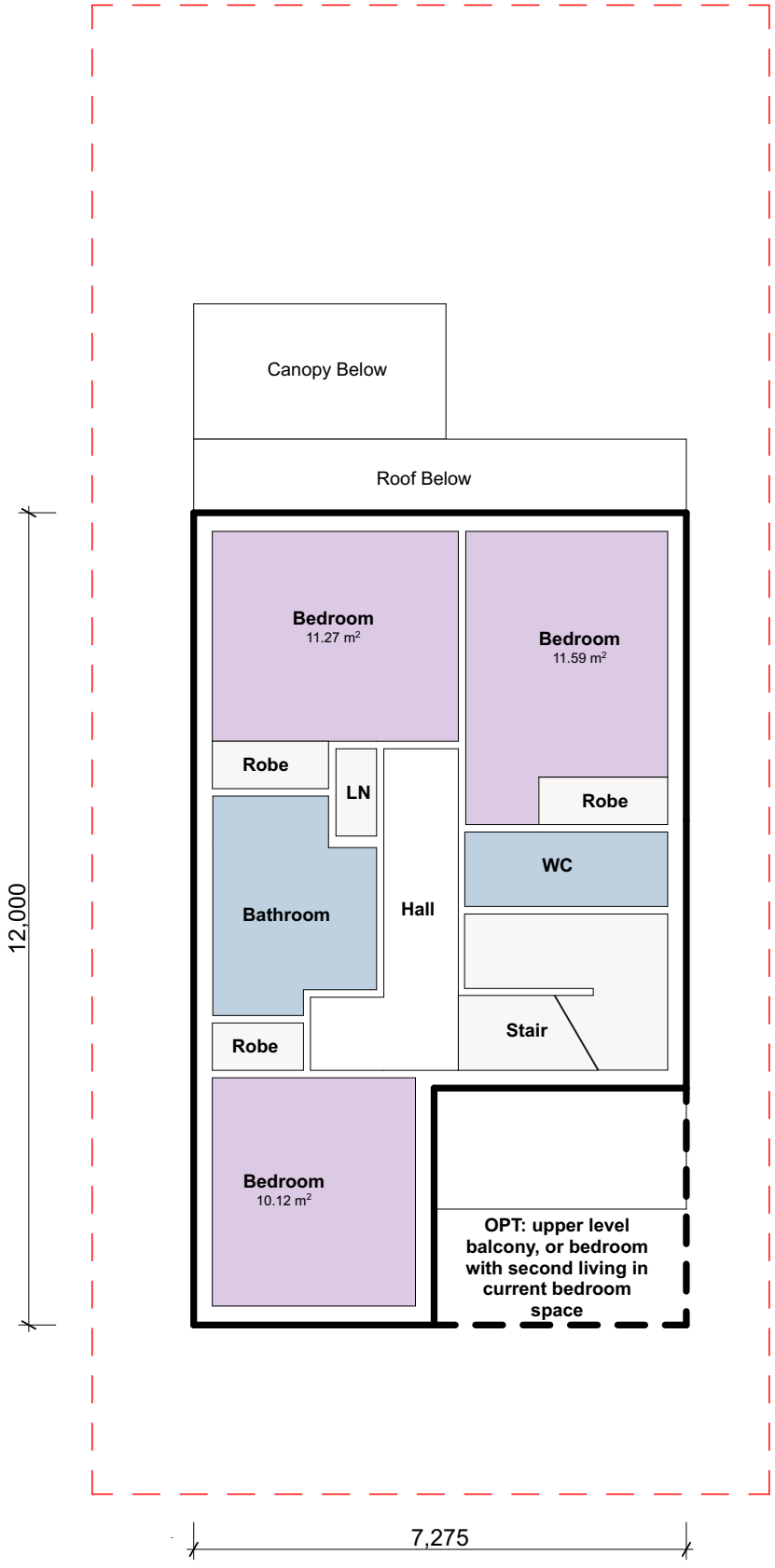
Lot 220m²
10 x 22.0m
(lot size indicative.)

LEVEL 1	74.3m²
GROUND	89.1m²
GFA	**163.4m²**

+ storage + canopies +

opt. second living

TYPE 4A



Level 1

GENERAL DESIGN NOTES

Duplex Calculations
Duplexes may be used in stand-alone situations. 'Inter tenancy' wall thickness and site coverage will change to suit.

Internal Planning
Living, dining, and kitchen spaces (and any associated entries) may be interchanged to suit lot layout, shape, and orientation.
Internal room areas are subject to change with structural and service considerations.

Storage Sheds, Bin Storage, Private Outdoor Space, Yard Depths, Canopies
Location and size is representational only and may vary to suit lot layout, shape, and orientation.

Landscape Design and Tree Location
Location and design is representational only, may vary to suit lot and house design.

External Wall Thicknesses
Designed to suit current H1 Standards. Wall build-up currently allows 140 framing, cavity, 70mm brick cladding, and internal lining. Thickness may vary with alterations to these materials.

Corridors & Stairs
Designed to a min. of 1080 wide, framing to framing.

Reference Typology 4B

LEGEND

Alternative entry location option

Recharge pit (indicative only)

1.5m clearance

Design Notes:
- On lot carpad may not be required.
- Fully accessible-sized bedroom & bathroom on ground floor as fourth bedroom

Ground Floor

4 Bedroom Standalone with Carpark

4 BED | 2 BT | 1 WC
GF ACCESSIBLE BED & BATH

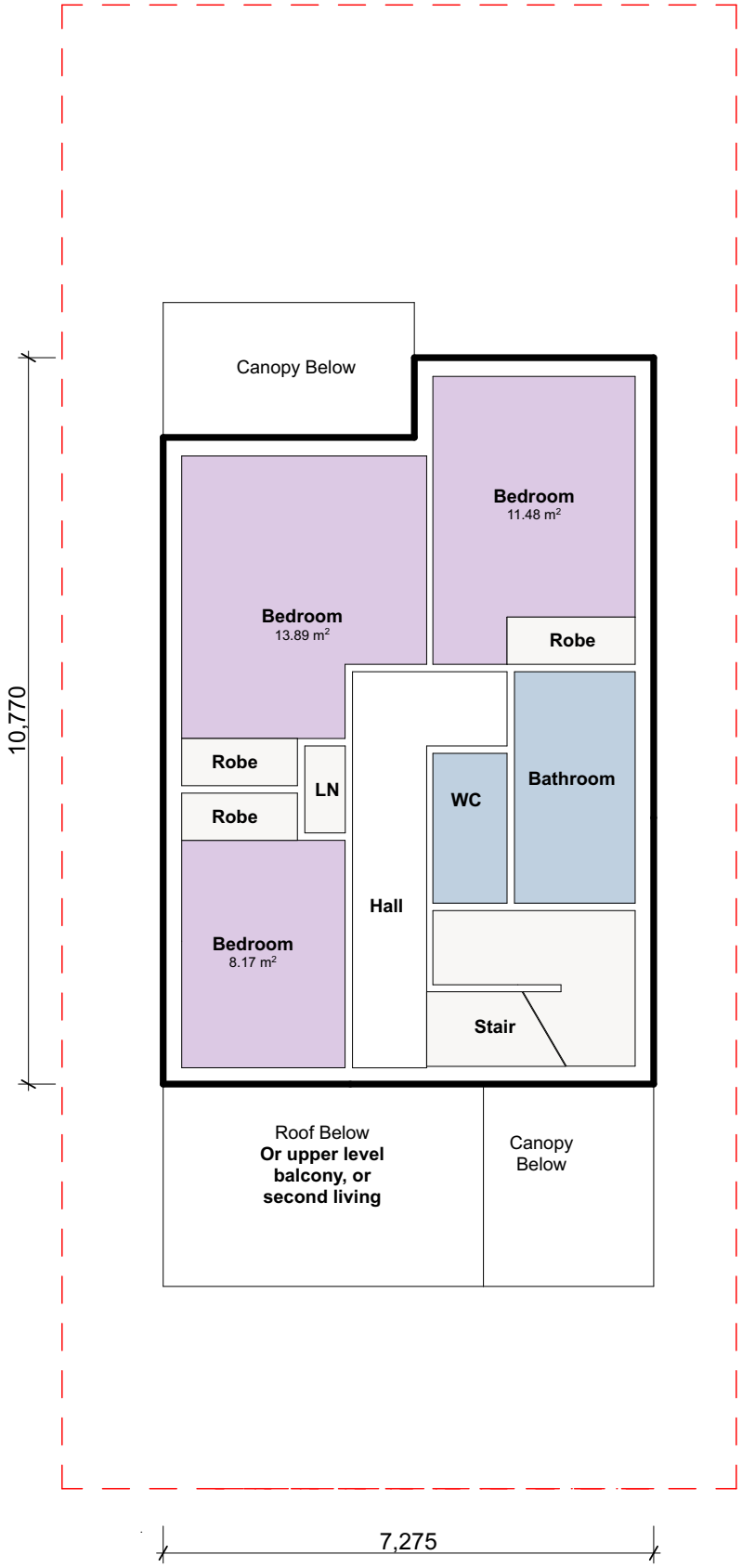
Lot 220m²
10 x 22.0m
(lot size indicative.)

LEVEL 1	73.9m²
GROUND	88.3m²

GFA 162.2m²
+ storage + canopies +

second living

TYPE 4B



Level 1

GENERAL DESIGN NOTES

Duplex Calculations
Duplexes may be used in stand-alone situations. 'Inter tenancy' wall thickness and site coverage will change to suit.

Internal Planning
Living, dining, and kitchen spaces (and any associated entries) may be interchanged to suit lot layout, shape, and orientation.
Internal room areas are subject to change with structural and service considerations.

Storage Sheds, Bin Storage, Private Outdoor Space, Yard Depths, Canopies
Location and size is representational only and may vary to suit lot layout, shape, and orientation.

Landscape Design and Tree Location
Location and design is representational only, may vary to suit lot and house design.

External Wall Thicknesses
Designed to suit current H1 Standards. Wall build-up currently allows 140 framing, cavity, 70mm brick cladding, and internal lining. Thickness may vary with alterations to these materials.

Corridors & Stairs
Designed to a min. of 1080 wide, framing to framing.

Reference Typology 4C

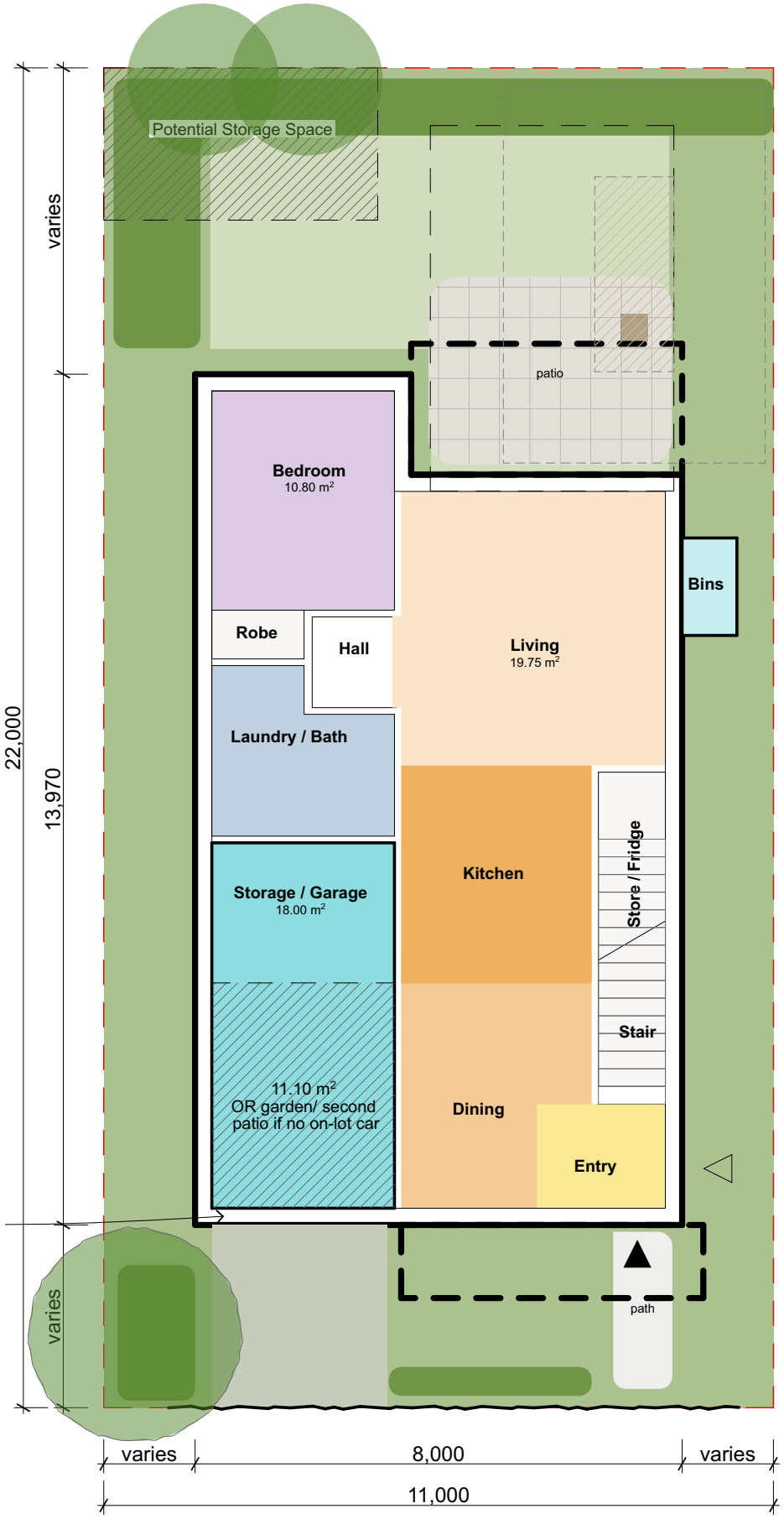
LEGEND

Alternative entry location option

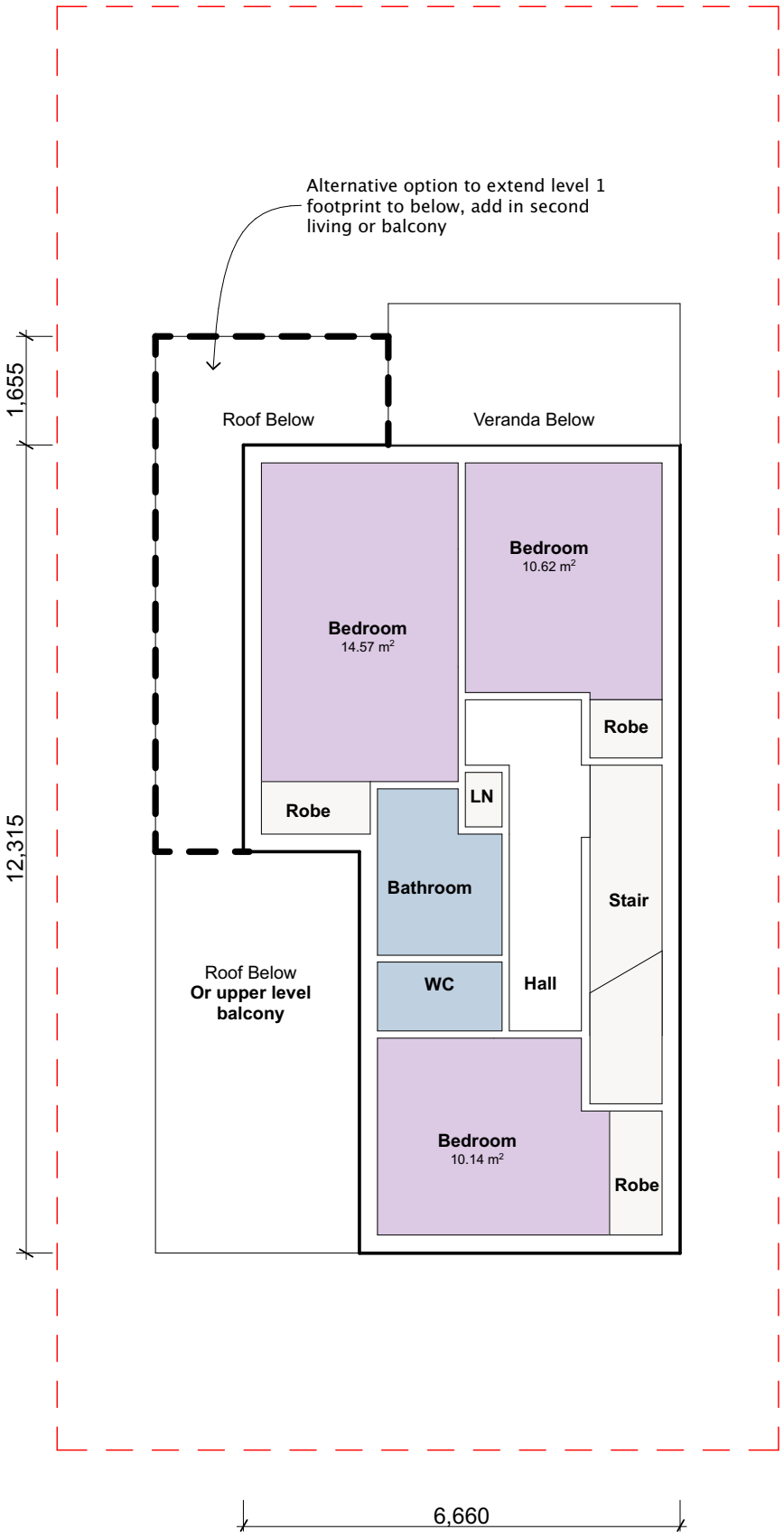
Recharge pit (indicative only)

1.5m clearance

Design Notes:
- Fully accessible-sized bedroom & bathroom on ground floor as third bedroom
- Provides on lot garage, partially covered carport or open carpad. Space may be used as storage, work/live, or extension to other spaces.
- Note: Garage is not the required width for an accessible car park. Carpad option required in this instance.



Ground Floor



Level 1

4 Bedroom Standalone with Garage

4 BED | 2 BT | 1 WC | 1 GGE
GF ACCESSIBLE BED & BATH

Lot 240m²
11 x 22.0m
(lot size indicative.)

LEVEL 1	71.2m²
GROUND	102.2m²

GFA 173.3m²
+ storage + canopies +

opt. second living

TYPE 4C

GENERAL DESIGN NOTES

Duplex Calculations
Duplexes may be used in stand-alone situations. 'Inter tenancy' wall thickness and site coverage will change to suit.

Internal Planning
Living, dining, and kitchen spaces (and any associated entries) may be interchanged to suit lot layout, shape, and orientation.
Internal room areas are subject to change with structural and service considerations.

Storage Sheds, Bin Storage, Private Outdoor Space, Yard Depths, Canopies
Location and size is representational only and may vary to suit lot layout, shape, and orientation.

Landscape Design and Tree Location
Location and design is representational only, may vary to suit lot and house design.

External Wall Thicknesses
Designed to suit current H1 Standards. Wall build-up currently allows 140 framing, cavity, 70mm brick cladding, and internal lining. Thickness may vary with alterations to these materials.

Corridors & Stairs
Designed to a min. of 1080 wide, framing to framing.

Reference Typology 5A

LEGEND

Alternative entry location option

Recharge pit (indicative only)

1.5m clearance

Design Notes:
- On lot carpark may not be required.
- Fully accessible-sized bedroom & bathroom on ground floor as fourth bedroom
- Note: Garage is not the required width for an accessible car park. Alternative design required in these locations.

Ground Floor

5 Bedroom Standalone
with Carpad

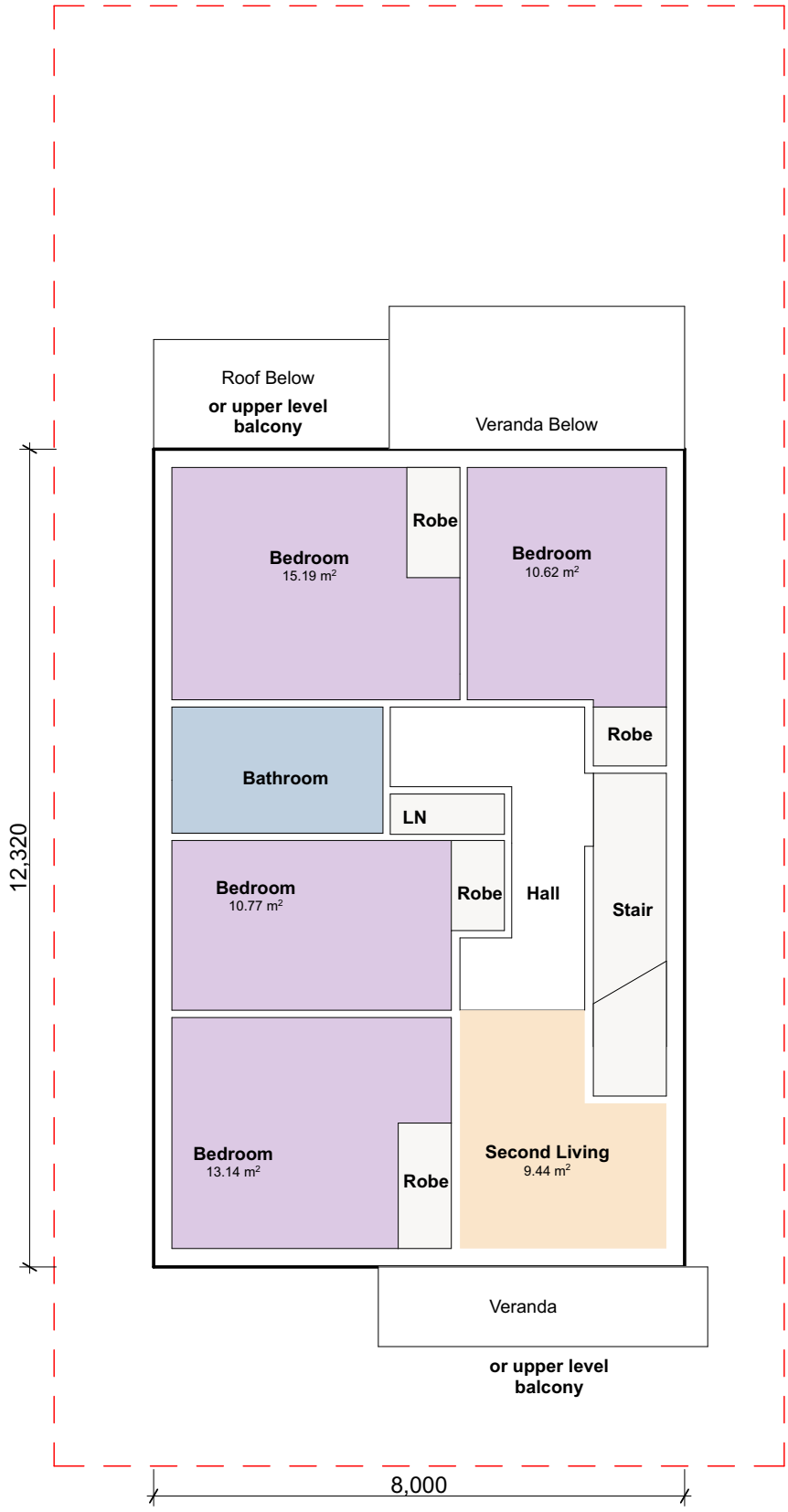
5 BED | 2 BT |
GF ACCESSIBLE BED & BATH

Lot 242m²
11 x 22.0m
(lot size indicative.)

LEVEL 1	98.6m²
GROUND	104.4m²

GFA 202.8m²
+ storage + canopies

TYPE 5A



Level 1

GENERAL DESIGN NOTES

Duplex Calculations
Duplexes may be used in stand-alone situations. 'Inter tenancy' wall thickness and site coverage will change to suit.

Internal Planning
Living, dining, and kitchen spaces (and any associated entries) may be interchanged to suit lot layout, shape, and orientation.
Internal room areas are subject to change with structural and service considerations.

Storage Sheds, Bin Storage, Private Outdoor Space, Yard Depths, Canopies
Location and size is representational only and may vary to suit lot layout, shape, and orientation.

Landscape Design and Tree Location
Location and design is representational only, may vary to suit lot and house design.

External Wall Thicknesses
Designed to suit current H1 Standards. Wall build-up currently allows 140 framing, cavity, 70mm brick cladding, and internal lining. Thickness may vary with alterations to these materials.

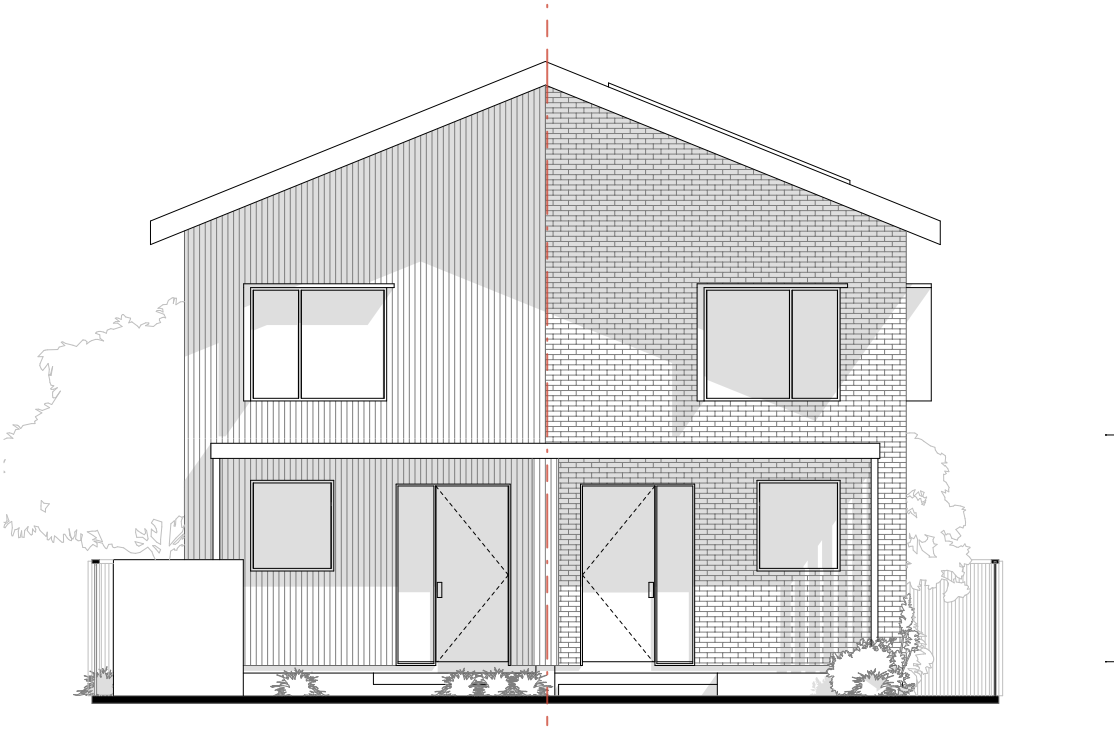
Corridors & Stairs
Designed to a min. of 1080 wide, framing to framing.

Sample Elevations

The following building elevations illustrate potential design outcomes based on a sample of the housing typologies. They have been selected to showcase a range of variable design factors, including the:

- Orientation and location in the masterplan
- Materiality
- Presence or absence of fences
- Roof form and orientation (optimized for solar gain)
- Location and size of openings, balconies, and solar shading elements
- Placement of entrances (front or side), including verandas
- Inclusion of a garage or car pad
- Provision of a storage shed
- And landscaping considerations.

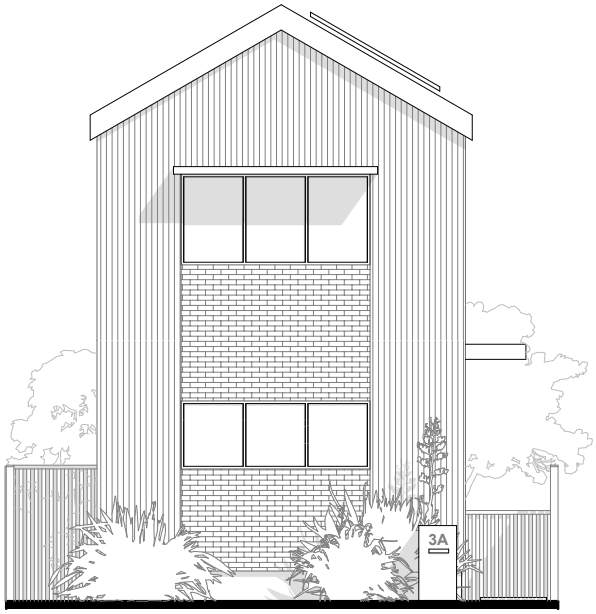
Note, the location and size of services such as gutters, down pipes, mechanical boxes, intake and extract vents etc. which may be required are not shown.



2A - Duplex Front Elevation - 1:100

With shed in front yard.

2A - Duplex Rear Elevation - 1:100



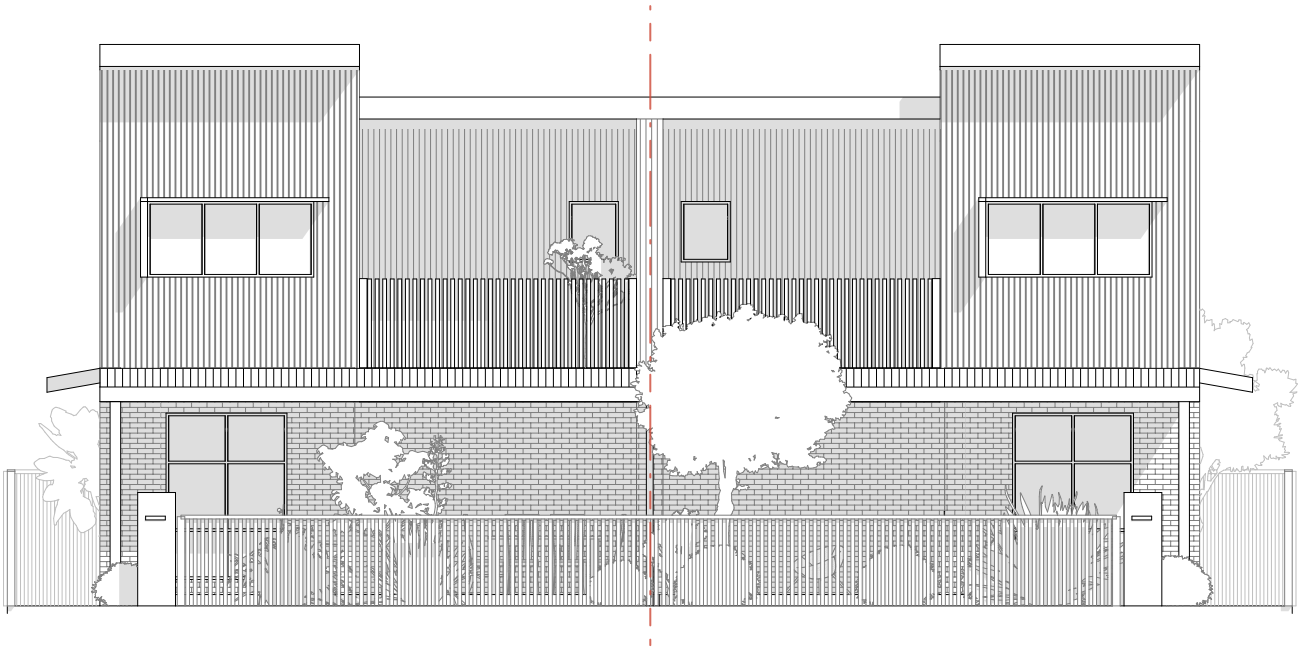
3A - Standalone Front Elevation - 1:100

3A - Standalone Rear Elevation - 1:100

4B - Standalone Front Elevation - 1:100

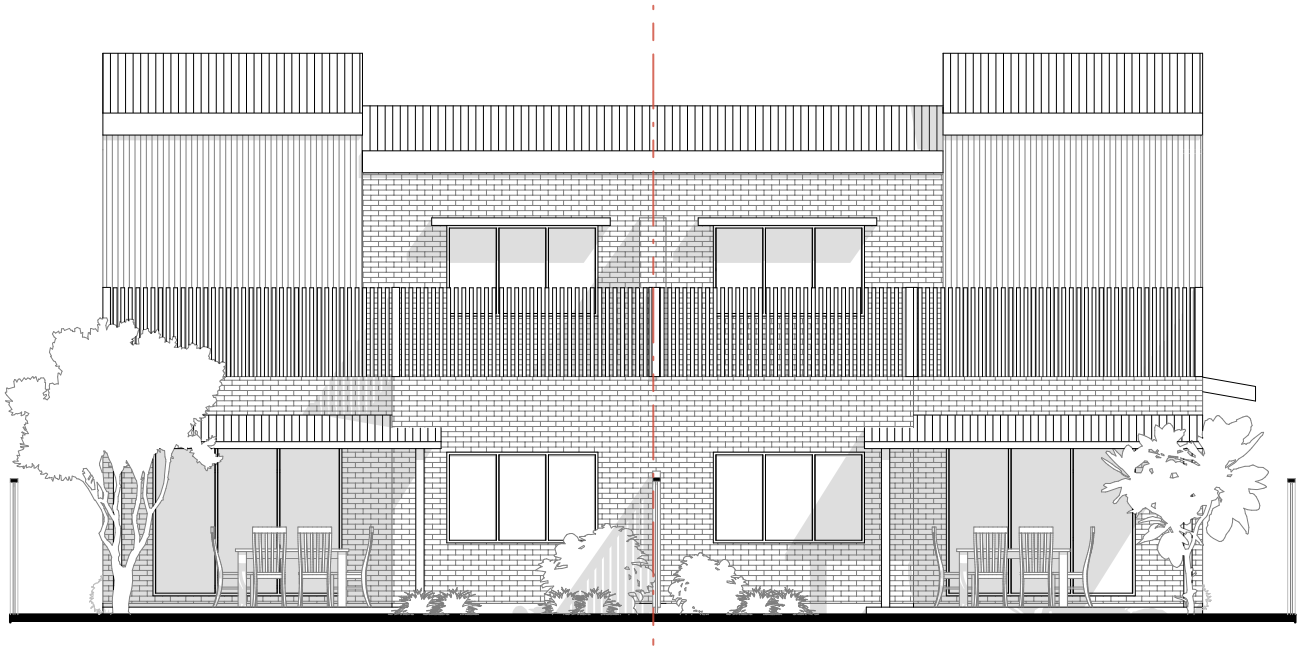
With upper level deck and car pad.

4B - Standalone Rear Elevation - 1:100

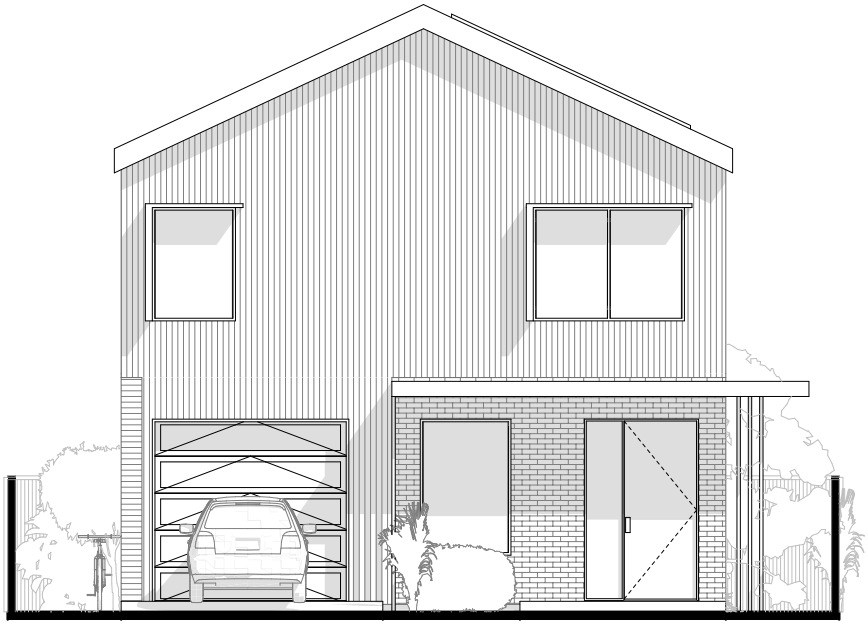


3D - Duplex Front Elevation - 1:100

With upper level deck.
No car pad.



3D - Duplex Rear Elevation - 1:100



5A - Standalone Front Elevation - 1:100

With garage or storage.
Not an accessible design.

5A - Standalone Rear Elevation - 1:100

Sunfield