



Medium Density Housing Study

Fairfield City Council

Prepared for
Fairfield City Council

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We create amazing places



At SJB we believe that the future of the city is in generating a rich urban experience through the delivery of density and activity, facilitated by land uses, at various scales, designed for everyone.

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Contents



1	Introduction	4		
1.1	Background and purpose	4		
1.2	Project objectives	5		
1.3	Study process	6		
2	Policy Review and Planning Controls	7		
2.1	Fairfield Local Environment Plan 2013	8		
2.2	Fairfield Citywide Development Control Plan 2013 - Amendment 20	9		
2.3	Medium Density Housing Code - Part 3B of the State Environmental Planning Policy (Exempt and Complying Development Codes) 2008	10		
2.4	Low Rise Medium Density Design Guide	11		
2.5	SEPP 65 - Apartment Design Guide (ADG)	12		
3	Observations	13		
3.1	Fairfield context	14		
3.2	Centres overview	15		
4	Recent Medium Density Developments	18		
4.1	Recent medium density housing in Fairfield	19		
5	Recommendations	24		
5.1	Principles	25		
5.2	Proposed LEP amendments	26		
5.3	General DCP amendments	27		
5.4	Generic Control Diagram	31		
5.5	Manor Houses	32		
5.6	Multi Dwelling Housing	32		
6	Design Studies	33		
6.1	Assessing typologies against proposed controls	34		
6.2	Typologies	35		
6.3	A1 - Manor House	36		
6.4	A2 - Multi Dwelling - Cul-de-sac	37		
6.5	A2 - Multi Dwelling - Mews	38		
6.6	B2 - Multi Dwelling - Cul-de-sac (Existing Controls)	39		
6.7	B2 - Multi Dwelling - Cul-de-sac (Proposed Controls)	40		
6.8	B2 - Multi Dwelling - Mews (Proposed Controls)	41		
6.9	B2 - Multi Dwelling - Terrace (Proposed Controls)	42		

Introduction

1

1.1 Background and purpose

In March 2020 Fairfield City Council (FCC) appointed SJB Architects to undertake a design study on medium density housing typologies to inform future amendments to the Local Environment Plan (LEP) and Development Control Plan (DCP) controls for development in the R3 Medium Density Housing zone.

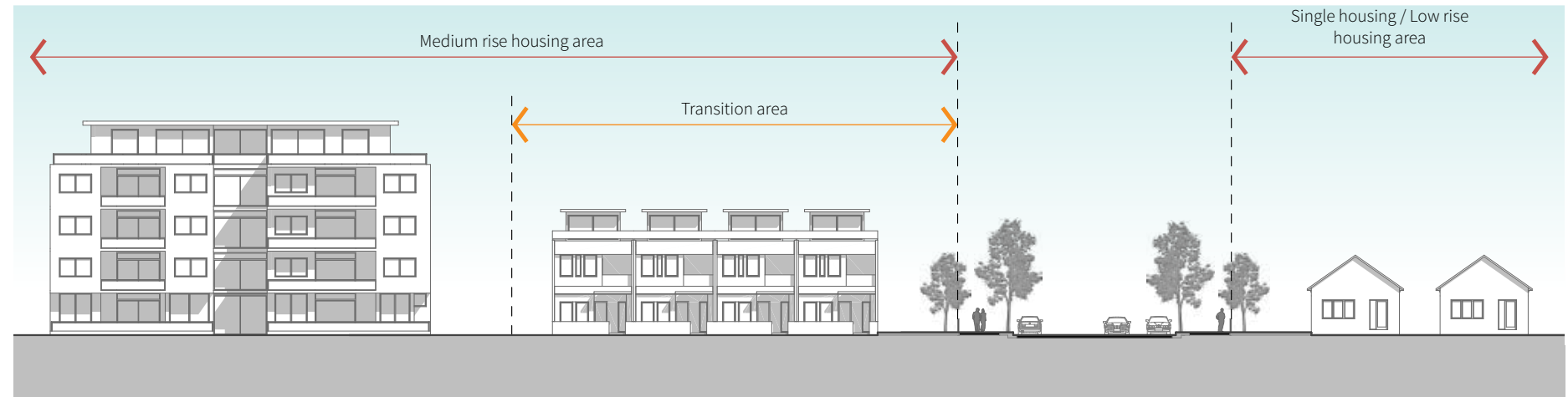
This study is necessary for the following reasons:

- Strategic policy documents (from the Greater Sydney Region Plan through to the medium density housing code and 'missing middle' studies) promote greater housing diversity and highlight the role medium density housing can play in improving urban efficiencies, increasing residential opportunities within the existing urban footprint, addressing housing affordability challenges, supporting local economic activity, creating more sustainable and walkable communities and delivering improved built form outcomes
- Medium density housing encompasses a range of flexible building types which are ideal for families and households which currently comprise the majority of Fairfield residents. These types of medium density development include semi-attached dwellings, attached dwellings (narrow lot development), dual occupancies, and multi dwelling housing (villas and town-houses)
- Large areas of R3 zoned land surround urban centres in Fairfield LGA and property owners are likely to take advantage of the additional development rights enabled through the medium density housing code.
- The charter and quality of some recently proposed and built medium density development in the LGA does not deliver good built form outcomes nor do they meet Council's aspirations for the future

Council wants to ensure that the revised built form controls are relevant to the local context, reflect a balance of amenity and economic viability and support a scale of building and floor space ratios that will help meet Council's housing targets and improve development feasibility for those building new houses.

Key concerns raised by officials at the start of the project included:

- Rental stress and a low socio economic market is driving unauthorised and illegal building activity inducing garage flats, outbuildings, secondary dwellings and garden studios
- Medium density housing and the challenge of amalgamating properties is not as attractive as the development of higher density residential flat buildings
- Sites with narrow frontages (7-20m) and depths of 35 to 50m result in gun-barrel typologies with levels of privacy and amenity compromised
- Units do not address the street or have a positive street address
- Mature tree canopy is often removed and deep soil for large trees at rear of the property is limited
- At grade car parking, driveways and garages results in significant areas of hard pavement and contributing to the heat island effect
- Built proposals are often inefficient in their use of space with significant areas of underutilised space that do not add value to the development or provide amenity for residents



The underlying purpose of medium density housing is that it functions as a transition zone between low density housing and high density areas typically found around urban centres. Medium density housing provides well located and affordable accommodation to the community, improving urban efficiencies and supporting local economic activity. (Source JBA 2016 - Sydenham to Bankstown Urban Renewal Corridor Plan)



Examples of high quality multi dwelling housing in Canley Vale



Typical gun-barrel housing that has a poor street interface and limited privacy and amenity for residents-Carramar

Introduction

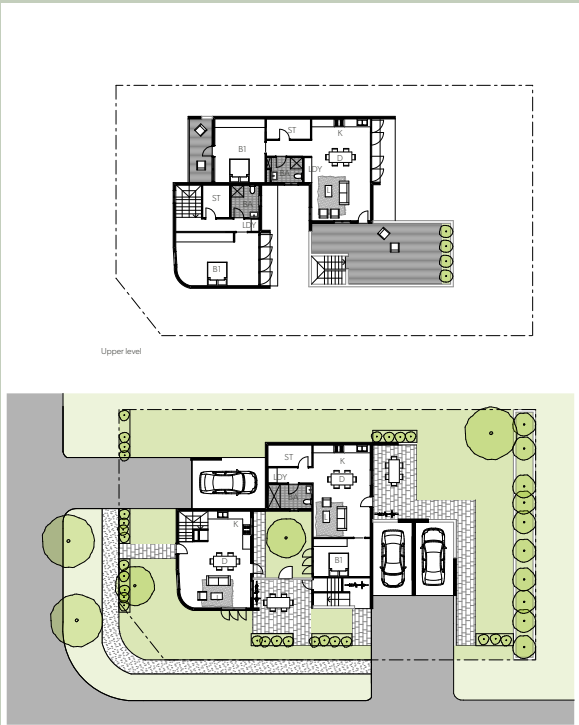
1.2 Project objectives

The intent of this review is make it easier for small scale developers and existing property owners with little development experience to realise the development potential of their land whilst delivering meaningful and lasting change for communities and residents looking to make Fairfield their home.

The primary objectives of this study are to review the existing controls to:

- Make development controls more accessible and easier to understand, implement and enforce
- Encourage greater diversity in the housing product available in Fairfield
- Ensure that controls deal adequately with transition and /or the interface conditions with low density residential
- Investigate the desirability for including a RFB / maisonette typology in appropriate locations where sites adjoin RE1 Public Recreation land or on corner sites
- Developments to address the street with entries, and set back courtyards
- Increase tree canopy cover in the private domain and improve biodiversity through deep soil for landscaping, tree planting or preserve existing trees

- The central questions that this study will seek to answer include:
1. Does the minimum lot / site size for medium density housing need to be reviewed?
 2. Does the existing height and FSR control need to be increased?
 3. What typologies for medium density housing are most appropriate within the Fairfield LGA?
 4. Is there scope to include a low rise 2- 3 storey Strata Title / Residential Flat Building (RFB) typology within the R3 zone; and if so what additional development controls would need to be written into DCP controls (in addition to ADG requirements)
 5. If there is no scope to include 2-3 storey Strata Title RFB / attached housing typologies in the R3 zone what would be the recommendations for the conversion of R3 zoned land to R4 to ensure a suitable transition?

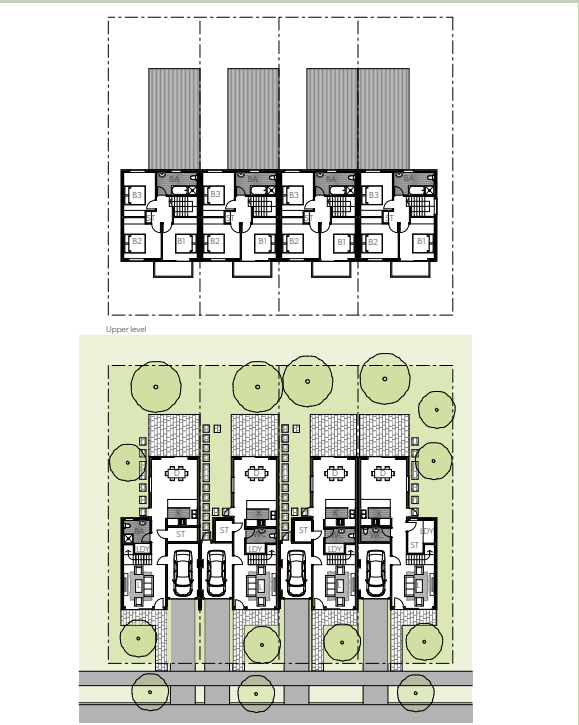


Manor House

A residential building comprising of up to **4 dwellings** where at least one dwelling or one portion of a swells partially to completely above another

This typology can be designed to accommodate the following land tenure system:

- single ownership - all units are owned by a single legal entity and leased
- strata title
- community title

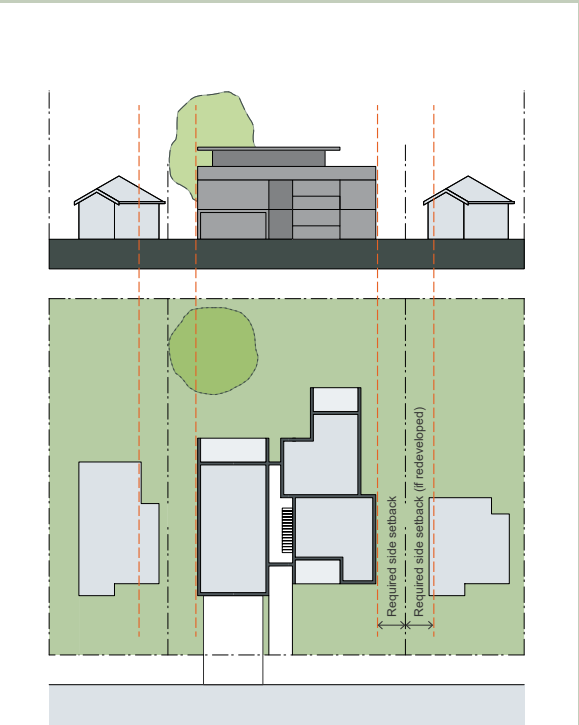


Multi Dwelling Houses

A housing typology that may comprise of three or more dwellings (whether attached or detached) on one lot of land, each with access at ground level, but does not include a residential flat building.

This typology can be designed to accommodate the following land tenure system:

- torrens title
- strata
- community title



Low-rise Residential Flat Buildings

A residential building containing three or more dwellings, where more than one dwelling is located above another, and accessed by shared stairs or lifts and is more than two storeys and less than storeys.

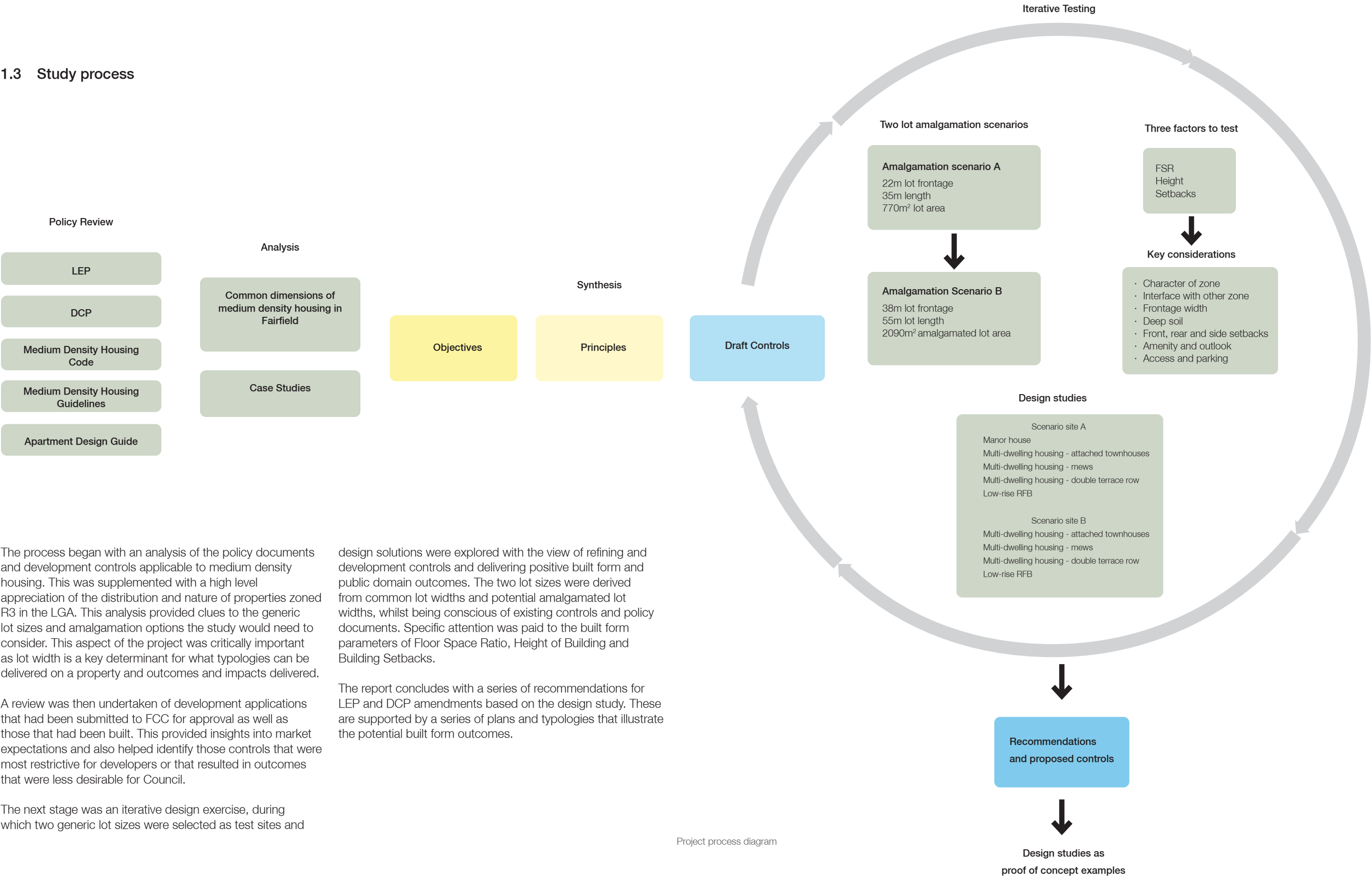
This typology can be designed to accommodate the following land tenure system:

- torrens title
- strata
- community title

Housing typologies explored as part of this study include manor houses, attached dwellings and low-rise Residential Flat Buildings (source: Low Rise Medium Density Design Guide and Apartment Design Guide)

Introduction

1.3 Study process



Project process diagram

Policy Review and Planning Controls

2

In this chapter the key planning controls and policy documents that are relevant to medium density typologies are presented. The purpose of this chapter is to frame the context for the typologies that will be explored and better understand the parameters that need to be reviewed to support more positive urban outcomes.

2.1 Fairfield Local Environment Plan 2013

This study is focussed on medium density development located within land zoned R3 Medium Density Development enabled by the Fairfield Local Environment Plan 2013 (LEP). Apart from providing specific controls for the zone the LEP also gives effect to the City Wide Development Control Plan (DCP) that provides additional guidance and controls for this form of development.

As this study is focussed on the R3 zone, it is important to be aware of the objectives, permitted uses and specific controls associated with the R2 Low Density Residential, R3 Medium Density Residential and R4 High Density Residential in order to understand the purpose and built form outcomes associated within each category. These are summarised below.

Zone R2 Low Density Residential

The objectives of the R2 zone:

- To provide for the housing needs of the community within a low density residential environment.
- To enable other land uses that provide facilities or services to meet the day to day needs of residents.

The R2 Zone permits the following uses:

- Attached dwellings
- Boarding houses
- Group homes
- Manor homes*
- Multi dwelling housing
- Multi dwelling housing (terraces)*
- Respite day care centres
- Seniors housing

* Enabled through the Medium Density Housing Code 2008 - see following section.

Zone R3 Medium Density Residential

The objectives of the R3 zone are to:

- To provide for the housing needs of the community within a **medium density residential environment**
- To provide a **variety** of housing types within a medium density residential environment
- To enable **other land uses** that provide facilities or services to meet the day to day needs of residents

The R3 Zone the following residential uses:

- Attached dwellings
- Boarding houses
- Dual occupancies (attached & detached)
- Dwelling houses
- Group homes (permanent & transitional)
- *Hostels*
- Manor homes*
- Multi dwelling housing
- Multi dwelling housing (terraces)*
- Residential care facilities
- Secondary dwellings (mandated under Affordable Rental Housing SEPP)
- Semi-detached dwellings
- Seniors Housing

* Enabled through the Medium Density Housing Code 2008 - see following section.

Zone R4 High Density Residential

The objectives of the R4 zone are to:

- To provide for the housing needs of the community within a **high density residential environment**.
- To provide a **variety** of housing types within a high density residential environment.
- To enable **other land uses** that provide facilities or services to meet the day to day needs of residents
- To maximise opportunities for increased development on all land by **encouraging site amalgamations**

The R4 Zone permits the following residential uses:

- Boarding houses
- Residential flat buildings
- Respite day care centres
- Shop top housing

Section 4.4A of LEP provides exceptions to the maximum floor space ratio in R4 on a sliding scale relative to the street frontage of the property such that:

- if the building has a street frontage of less than 30 metres a maximum FSR of 0.8:1 is permitted
- if the building has a street frontage of at least 30 metres, but less than 45 metres the maximum FSR permitted is
 - 1.25:1 if the site has a depth of less than 40 metres, or
 - 1.5:1 if the site has a depth of at least 40 metres,
- if the building has a street frontage of at least 45 metres the maximum FSR permitted is
 - 1.5:1 if the site has a depth of less than 40 metres, or
 - 2:1 if the site has a depth of at least 40 metres

The LEP also contain a number of other restrictions around minimum lot sizes for Dual Occupation sites. These vary from suburb to suburb and vary from 300m² to 500m²

Community title lots are also generally restricted to being 450m² and above.

It is worth noting that under the existing LEP, dwelling houses (R2 zone) and medium density development (R3 zone) are broadly subject to the same development standards, namely Height of Building - maximum of 9m and a Floor Space Ratio (FSR) of 0.45:1.

It is also worth noting that the Height of Building (HOB) and FSR controls differ from LGA to LGA. The table below indicates that the FSR controls for FCC is considerably lower than other adjacent Councils.

Council	Height of Building (m)	Floor Space Ratio (X:1)
Western City District		
Fairfield	9	0.45
Liverpool	8.5	0.5 to 0.6
Penrith	8.5	Nil
Campbelltown	9	0.75
Camden	9.5	Nil
Other Western Sydney Councils		
Blacktown	10	Nil
Parramatta	9.5	0.6
Canterbury-Bankstown		
Canterbury	8.5	0.5
Bankstown	10	0.75
Cumberland		
Holroyd	9	0.75
Auburn	9	0.75

Table 01: Comparison between LEP controls of adjacent Local Authorities

Policy Review and Planning Controls

2.2 Fairfield Citywide Development Control Plan 2013 - Amendment 20

The purpose of the Fairfield City Wide Development Control Plan 2013 is to provide controls that apply to a broad range of development types and supplements the Fairfield Local Environmental Plan 2013. The provisions relating specifically to residential development can be found in:

- Chapter 5 Dwelling Housing
- Chapter 5A Dwelling Houses
- Chapter 5B Secondary Dwellings
- Chapter 5C Dwelling houses on Narrow Lots
- Chapter 6A Multi dwelling housing: Townhouses and Villas
- Chapter 6B Dual Occupancy

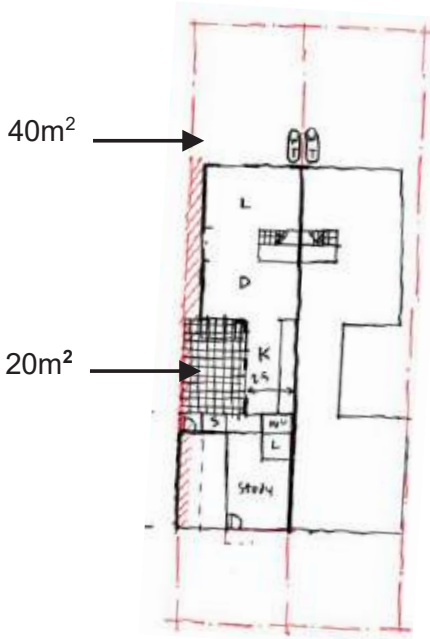
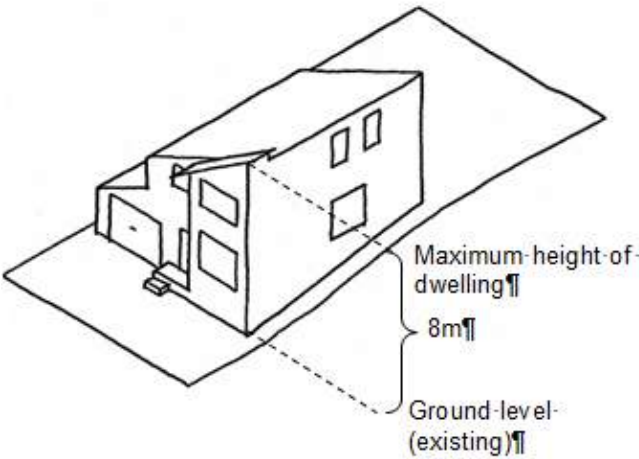
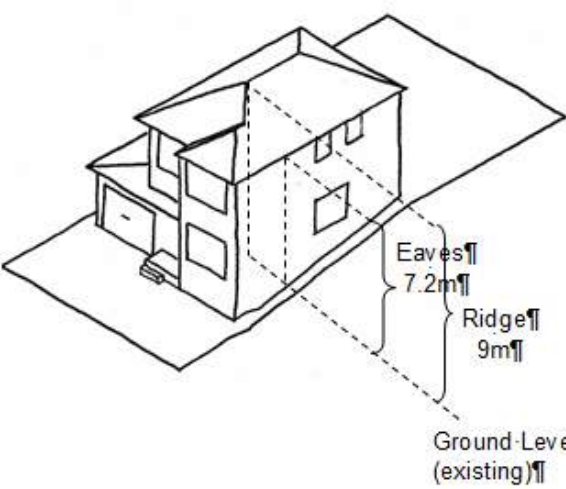
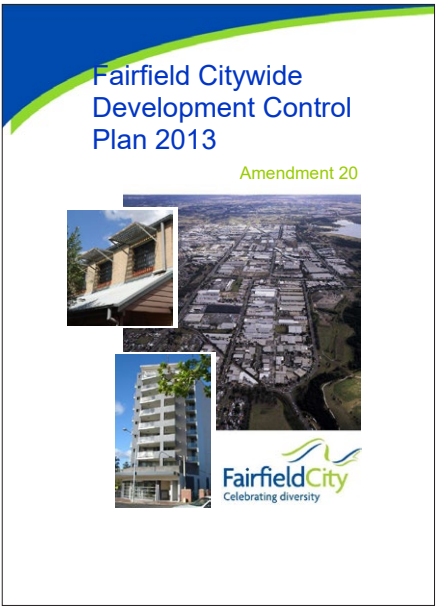
The provisions are detailed and include:

- minimum street boundary setbacks (1.5m - secondary street and 4.5-5m primary)
- side / common boundary setbacks (0.9m)
- maximum heights (7.2-9m)
- minimum lot depth and width of medium density housing typologies
- open space requirements
- parking requirements

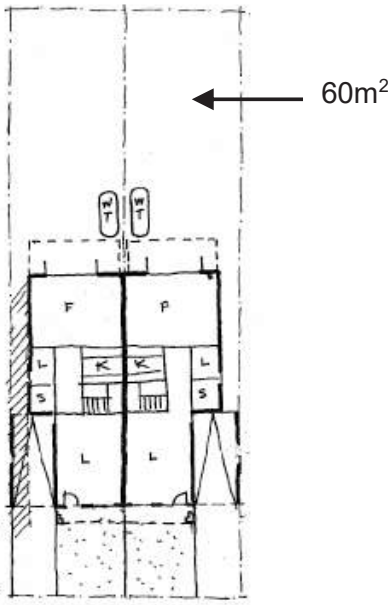
The DCP usefully provides model examples of attached dwellings that set a benchmark for future compliant development. The DCP stipulates the minimum lot size for a secondary dwelling as 450m² and notes that the second dwelling may not be subdivided.

Off-street parking spaces must be provided as set out below. The number of parking spaces required will be determined according to the below table. The greater of the rate will be applied.

Dwelling Size or Number of Bedrooms	Car Spaces per Dwelling	
	A	B
1 - 2 bedroom unit (less than 110m ²)	1	1
3 or more bedroom unit (ie greater than 110m ²)	1.5	2
Add for Visitors per dwelling	0.25	0.25
Dwelling Location		
A – Less than 400m from railway station or major bus station		
B – Greater than 400m from railway station or major bus station		



OR



Each dwelling must have a minimum of 60m² of private open space.

Select diagrams from the DCP

2.3 Medium Density Housing Code - Part 3B of the State Environmental Planning Policy (Exempt and Complying Development Codes) 2008

Section 3B of the SEPP for Exempt and Complying Development (ECDC) 2008 seeks to facilitate small scale intensification and additional guidance is provided through the Low Rise Medium Density Design Guide. The ECDC aims to provide streamlined assessment processes for development that complies with specified development standards by, amongst other things:

- providing exempt and complying development codes
- identifying, in the exempt development codes, types of development that are of minimal environmental impact that may be carried out without the need for development consent, and
- identifying, in the complying development codes, types of complying development that may be carried out in accordance with a complying development certificate as defined in the Act

The Code effectively enables property owners to undertake development in Zone RU5, Zone R1, Zone R2 or Zone R3, without Council approval or input provided it complies with the following definition:

- the erection or alteration of, or addition to, any of the following can be complying development under the code
- any 1 or 2 storey dual occupancy, manor house or multi dwelling housing (terraces) or
- any attached development or detached development related to any building

It is important to note that the Code does not contemplate residential flat buildings as this is dealt with in SEPP 64 the Apartment Design Guide.

Key controls

The policy is structured around three typologies of Low-rise, medium density housing and the controls for each typology are slightly different resulting in different outcomes. Some off the provisions that are worth noting for this study include:

Minimum Site Area

- 400m²

Minimum Frontage

- 12m (Dual Occupancy)
- 18m (Attached dwelling / Terrace)
- Maximum Hight of Building (HoB) - 8.5m

Gross Floor Area / Floor Space Ratio

- Manor House
FSR = 0.25 x site area +150m²
400m² site = 0.62:1
1,000m² site = 0.4:1
- Dual Occupancy
FSR = 0.25 x site area +300m²
400m² site = 1:1
1,000m² site = 0.7:1
- Attached Dwellings (Terraces)
FSR = 0.8

Open Space requirements

The area of principal private open space provided for each dwelling is at least 16m² with a minimum length and width of 3m.

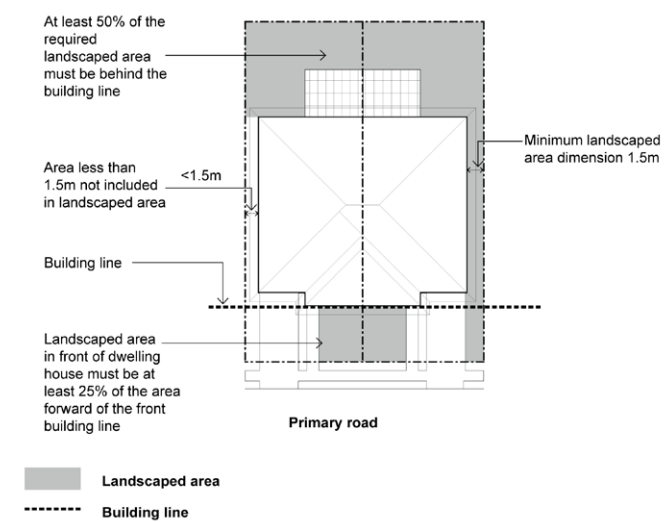
Setbacks

Side Setbacks

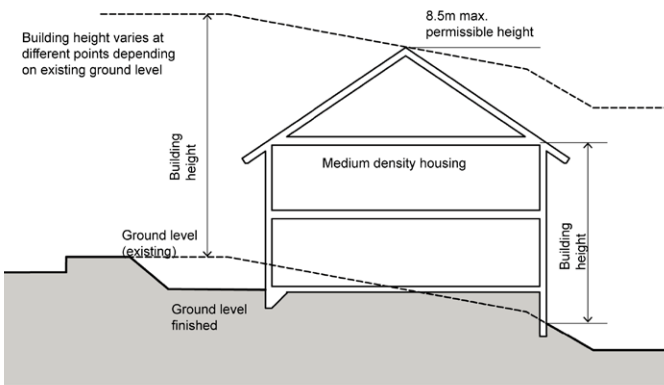
Lot Width at the Building Line	Building Height Minimum	Required Setback
12m – 24m	0m – 4.5m	0.9m
	> 4.5m – 8.5m	= (building height – 4.5m) ÷ 4 + 0.9m
> 24m – 36m	0m – 4.5m	1.5m
	> 4.5m – 8.5m	= (building height – 4.5m) ÷ 4 + 1.5m
>36m	0m – 8.5m	2.5m

Rear Setbacks

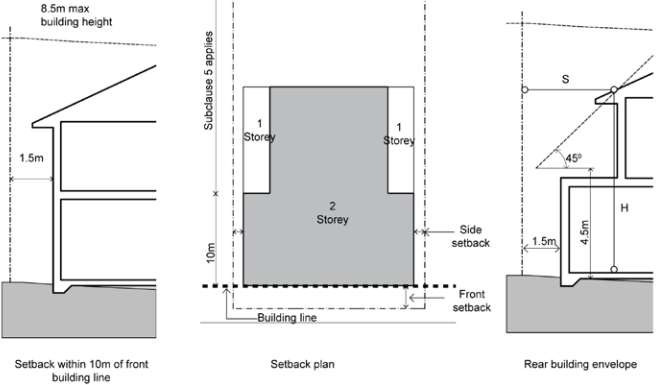
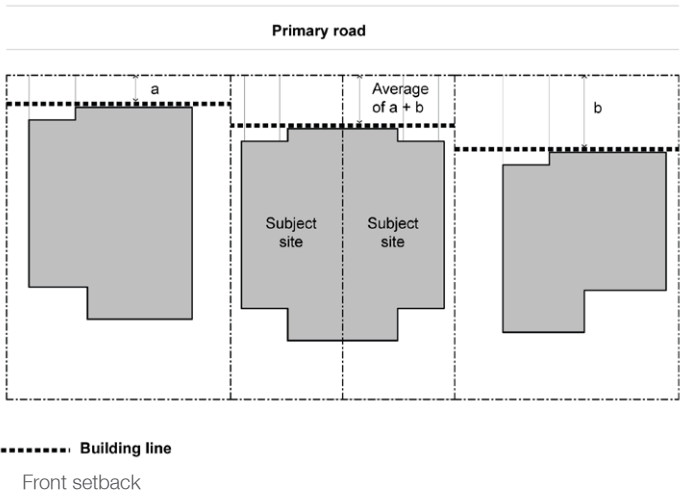
Lot Area	Building Height Minimum	Required Setback
400-900m2	0m – 4.5m	3m
	> 4.5m – 8.5m	8m
>900-1,500	0m – 4.5m	5m
	> 4.5m – 8.5m	12m



Open space requirements



Height of Building
Select control diagrams from the Code



Side setbacks

2.4 Low Rise Medium Density Design Guide

As noted above, the Low Rise Medium Density Housing Code looks to address a lack of housing choice by encouraging greater density and more housing diversity in form of terraces, manor houses or dual occupancies and consequently address affordability challenges for households.

The Low Rise Medium Density Design Guide builds on the Medium Density Housing Code and provides more detailed planning and design standards for low rise medium density residential dwellings. It is intended to help deliver better design and planning outcomes by providing the requirements for designing and assessing these developments as complying developments or as a guide to preparing DCP provisions.

The guidelines are structured on the same basis as the SEPP 65 Apartment Design Guide and provide broad objectives and criteria for a range design aspects - from coverage to setbacks to landscape requirements.

The Guide aims to:

- Deliver better quality design for buildings that respond appropriately to the character of the area, landscape setting and surrounding built form
- Improve the quality of neighbourhoods and precincts
- Improve liveability through optimal internal and external multi dwelling amenity, including better layout, dwelling depth and ceiling heights, solar access, natural ventilation and visual privacy
- Deliver quality landscaping including tree planting for new developments
- Deliver improved sustainability through better transport solutions, greater building adaptability and robustness, improved energy efficiency and water sensitive urban design
- Improve the relationship of dwellings to the public domain including streets, lanes and parks
- Deliver design guidance and assist in providing a diverse housing mix and choice
- Provide guidance to prepare an application for a CDC



2.3E Public Domain Interface

Objectives	Design Criteria
Objective 2.3E-1 Provide activation and passive surveillance to the public streets.	9. The front door of each dwelling is directly visible from the public street. 10. Windows fronting a road from habitable rooms are to overlook the public domain.
Objective 2.3E-2 Front fences and walls do not dominate the public domain instead they respond to and complement the context and character of the area (including internal streets).	11. Private courtyards within the front setback are located within the articulation zones and / or behind the required front building line. 12. Front fences: • Are visually permeable (no more than 50% of the allowable fence area should be solid masonry, timber or metal). • Average height no greater than 1.2m. • Have a consistent character with other front fences in the street. • Are not be constructed of solid metal panels or unfinished timber palings. 13. High solid walls are only used to shield a dwelling from the noise of classified roads. The walls are to have a maximum height of 2.1m and be setback at least 1.5m from the property boundary. Landscape planting is to be provided between the wall and the boundary, with a mature height of at least 1.5m. 14. Retaining walls greater than 600mm high within the front setback are to be softened by planting for a minimum depth of 600mm on the low side of the retaining wall.
Objective 2.3E-3 The secondary frontage of a development positively contributes to the public domain by providing an active edge and semi-transparency to the boundary treatment.	15. Where development adjoins public parks, open space or bushland, or is a corner site, the design positively addresses this interface using any of the following design solutions: • Habitable room windows facing the public domain • Street access, pedestrian paths and building entries • Paths, low fences and planting that clearly delineate between communal/ private open space and the adjoining public open space • Walls fronting the public spaces have openings not less than 25% of the surface area of the wall.

Related Design Principles
Design Principle 4. Sustainability
Design Principle 6. Amenity

Natural ventilation is the movement of sufficient volumes of fresh air through a dwelling to create a comfortable indoor environment. Sustainable design practice incorporates natural ventilation by responding to the local climate, reducing the need for mechanical ventilation and air conditioning. To achieve adequate natural ventilation, dwelling design must address the building orientation, configuration of dwellings and the external building envelope.

Rather than relying on purely wind driven air, natural cross ventilation is achieved when dwellings have more than one aspect with direct exposure to the prevailing winds.

The dwelling layout and building depth will determine the ability of a dwelling to be naturally ventilated. Generally, as a building gets deeper, effective airflow reduces.

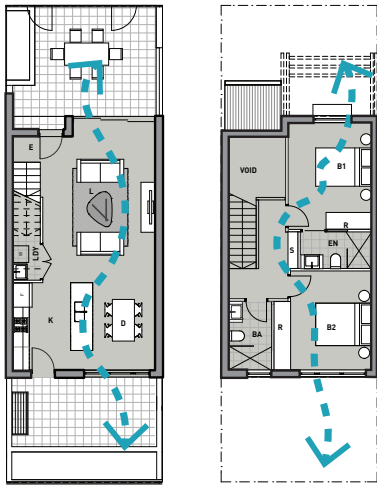


Figure 3-40 Cross ventilated dwelling

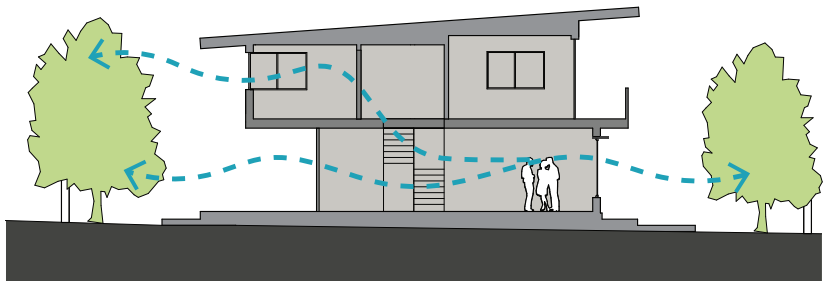


Figure 3-39 Effective cross ventilation is achieved when the inlet and outlet have approximately the same area, allowing air to be drawn through the dwelling using opposite air pressures on each side of the building

Select control diagrams from the Low Rise Medium Density Guide

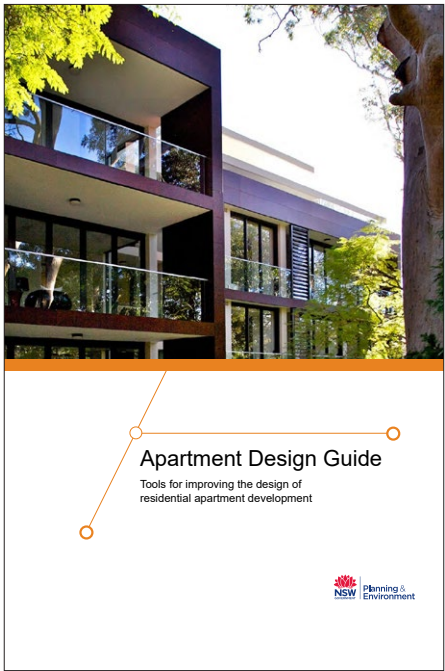
2.5 SEPP 65 - Apartment Design Guide (ADG)

The Apartment Design Guide looks to improve the planning and design of residential apartment development in NSW. It provides critical benchmarks for designing and assessing residential flat buildings.

It is important that the ADG is considered as part of this study as the R3 zone must be considered as a transition zone between low and high density development. Many forms of medium density housing, including multi dwelling houses, low rise residential flat buildings and integrated terrace typologies may be considered appropriate within the R3 zone. In addition, any multi unit development (manor house, etc) over two storeys is required to comply with the provisions of the ADG. This will come into effect if the proposal is to increase permissible height above 9m.

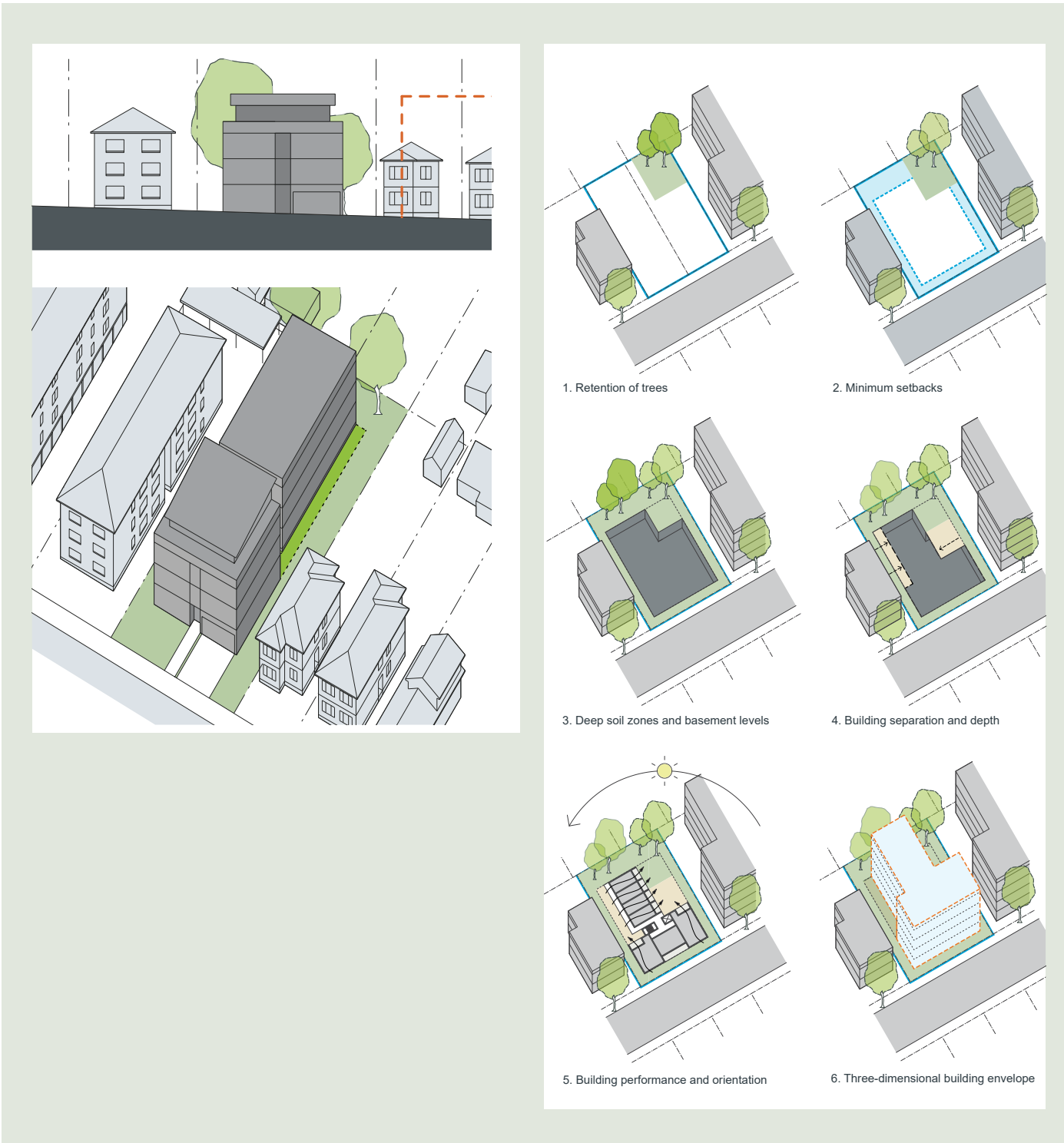
The objectives of the ADG are to:

- deliver better quality design for buildings that respond appropriately to the character of the area, landscape setting and surrounding built form
- improve liveability through enhanced internal and external apartment amenity, including better layout, apartment depth and ceiling heights, solar access, natural ventilation and visual privacy
- deliver improved sustainability through better traffic and transport solutions, greater building adaptability and robustness, improved energy efficiency and water sensitive urban design
- improve the relationship of apartments to the public domain including streets, lanes and parks
- deliver design guidance and assist in the provision of more diverse housing mix and choice
- support councils in developing planning controls and master plans through improved guidance



Key aspects that will need to be taken into account for low rise apartment buildings as part of this study include:

- 3m side/common boundary setbacks for frontages with non-habitable rooms / windows. The narrow width of existing lots in the FCC will preclude these building typologies unless sites are amalgamated
- 6m side/common boundary setbacks for habitable rooms to ensure privacy
- deep soil requirements
- Solar access and cross ventilation requirements



Select control diagrams from the Apartment Design Guide relating to low rise apartments

Observations

3

The following section presents a quick scan of the R3 zoned land in the Fairfield LGA. The objective of this section is to:

- develop an understanding of the distribution of the R3 zone within the LGA
- understand the interface of the R3 zone to with other zones, specifically R2 zoned land
- understand the variety of lot dimensions and sizes across the LGA to inform amalgamation options and minimum lot sizes
- understand the nature of access within the zone (for example if rear lane access is feasible)

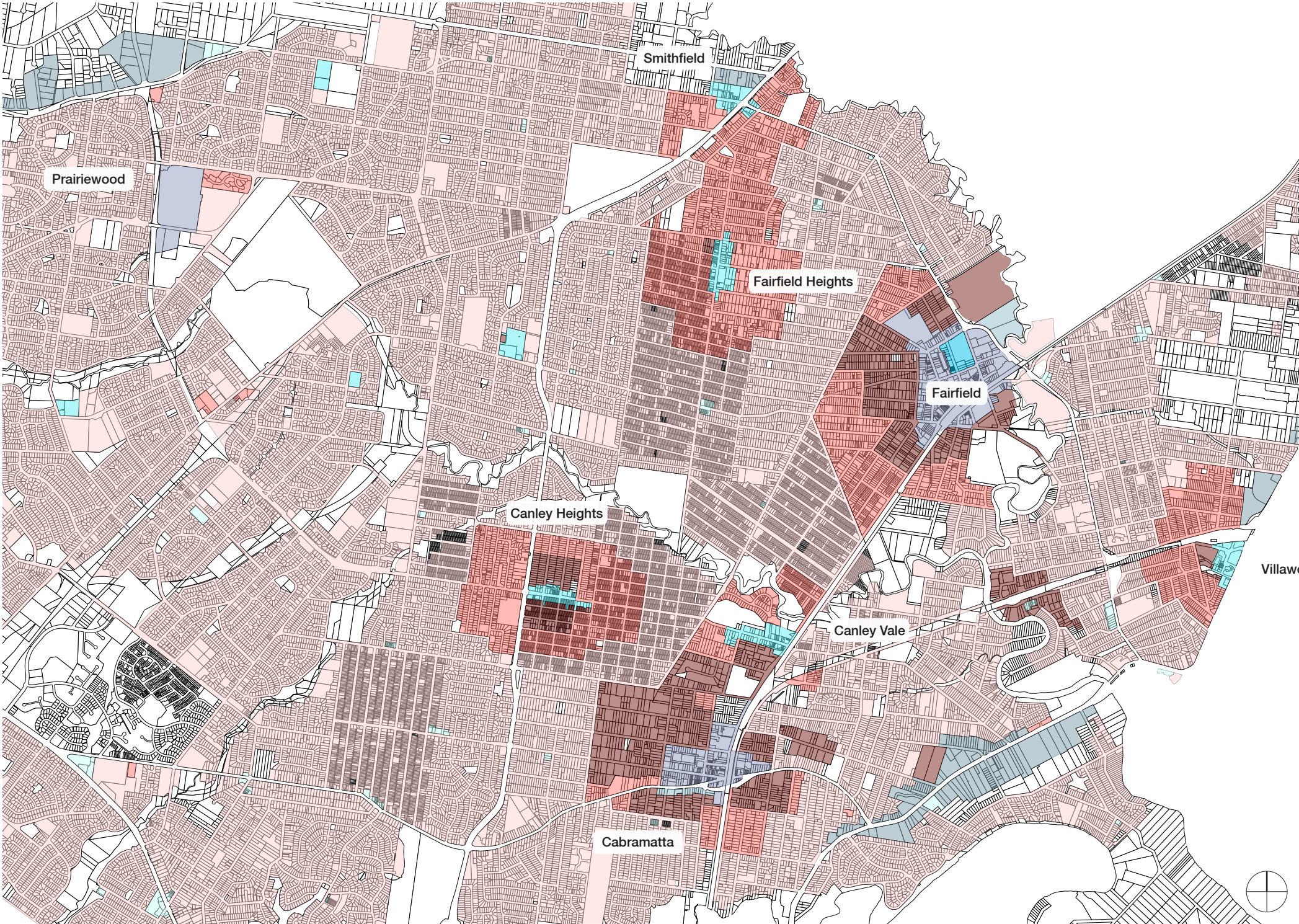
Observations

3.1 Fairfield context

This overview of residential and commercial zones in the Fairfield LGA informs the study. It provides a sense of the location, distribution, scale and nature of land zoned R3 Medium Density Residential within Fairfield. It also provies a snapshot of the dimensions, proportions and areas of lots within the LGA.

The key findings from this mapping are as follows:

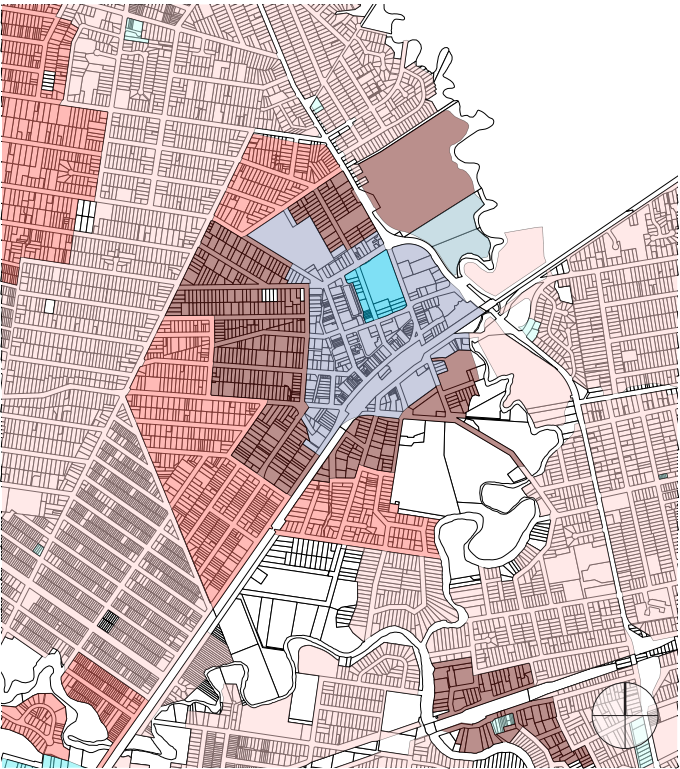
- 1. R3 zoned properties are concentrated around existing urban centres, specifically:
 - Fairfield
 - Canley Heights
 - Fairfield Heights
 - Villawood
- 2. Most R3 zoned land is contiguous and bounded by roads or open spaces.
- 3. There are very few instances where properties zoned R3 abut lower density R2 zoned land or higher density R4 land
- 4. There is typically a street between R2 ad R3 zoned properties
- 5. Lot subdivision in the R3 zone is generally fine grain with narrow (7-22m), deep lots (>35m). These dimensions limit the types of housing that can be built within the lot without amalgamation



Land use zoning within the Fairfield LGA

Observations

3.2 Centres overview

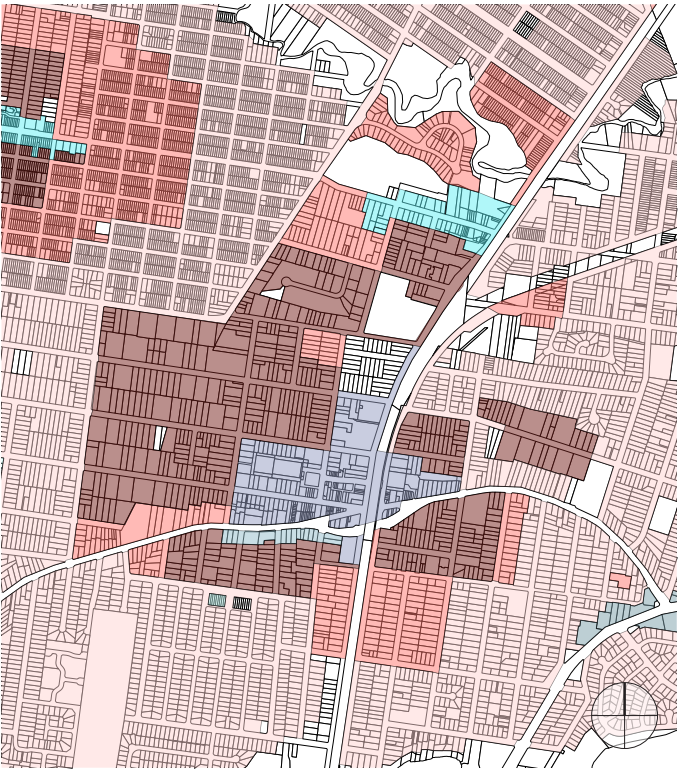


- Fairfield**
- Common R3 lot areas
 - 440m²
 - 750m²
 - 1,000m²
 - Common R3 lot dimensions
 - 9 x 48m (often amalgamated side-by-side to make 18m)
 - 15 x 55m
 - Lack of access to public open space (RE1)

- lot boundary
- R2 zone
- R3 zone
- R4 zone
- B1 zone
- B2 zone
- B3 zone
- B4 zone
- B5 zone
- B6 zone



Aerial photo of a typical block



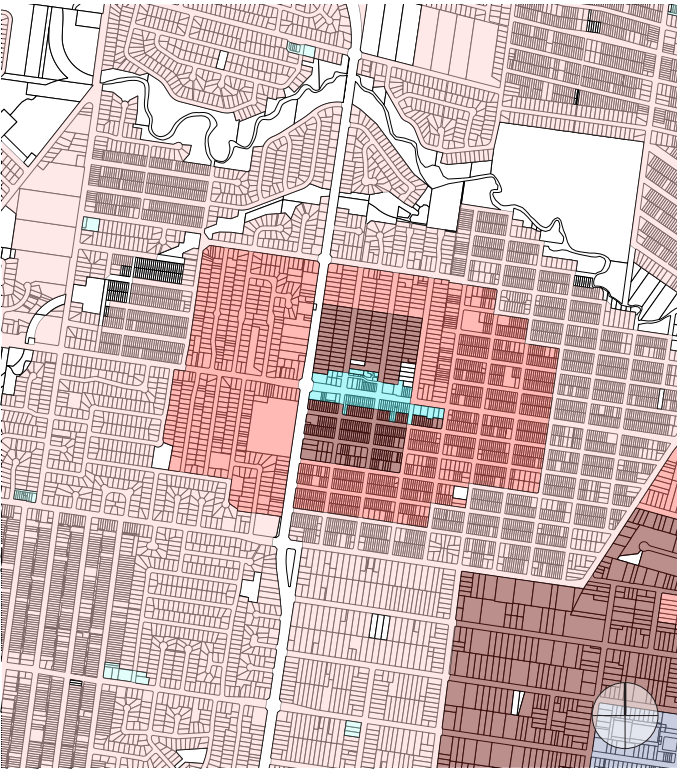
- Cabramatta**
- Common R3 lot areas
 - 600m²
 - 1000m²
 - 1200m²
 - Common R3 lot dimensions
 - 20 x 50m
 - 20 x 60m
 - Large back gardens with some evidence of subdivision
 - Irregular lots along Cabramatta Road

- lot boundary
- R2 zone
- R3 zone
- R4 zone
- B1 zone
- B2 zone
- B3 zone
- B4 zone
- B5 zone
- B6 zone



Aerial photo of a typical block

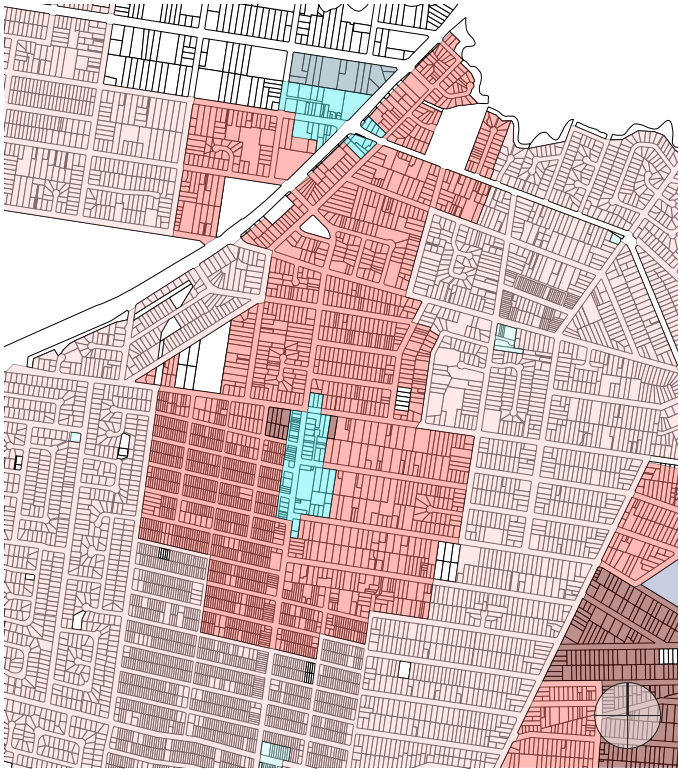
Observations



Land use zoning

- Canley Heights**
- Common R3 lot areas
 - 220m² (often amalgamated side-by-side to make 440m²)
 - 560m²
 - 750m²
 - Significant variation in lot sizes and dimensions
 - Poor access to public open space
 - Common R3 lot dimensions
 - 7 x 34m (often amalgamated side-by-side to make 14m)
 - 17 x 35m
 - 15 x 50m

- lot boundary
- R2 zone
- R3 zone
- R4 zone
- B1 zone
- B2 zone
- B3 zone
- B4 zone
- B5 zone
- B6 zone



Land use zoning

- Fairfield Heights and Smithfield**
- Common R3 lot areas
 - 250m² (often amalgamated side-by-side to make 500m²)
 - 660m²
 - 1,200m² (many already multi-dwelling housing)
 - Significant variation in lot sizes and dimensions
 - Poor access to public open space
 - Common R3 lot dimensions
 - 7 x 35m (often amalgamated side-by-side to make 14m)
 - 15 x 46m
 - 15 x 80m

- lot boundary
- R2 zone
- R3 zone
- R4 zone
- B1 zone
- B2 zone
- B3 zone
- B4 zone
- B5 zone
- B6 zone

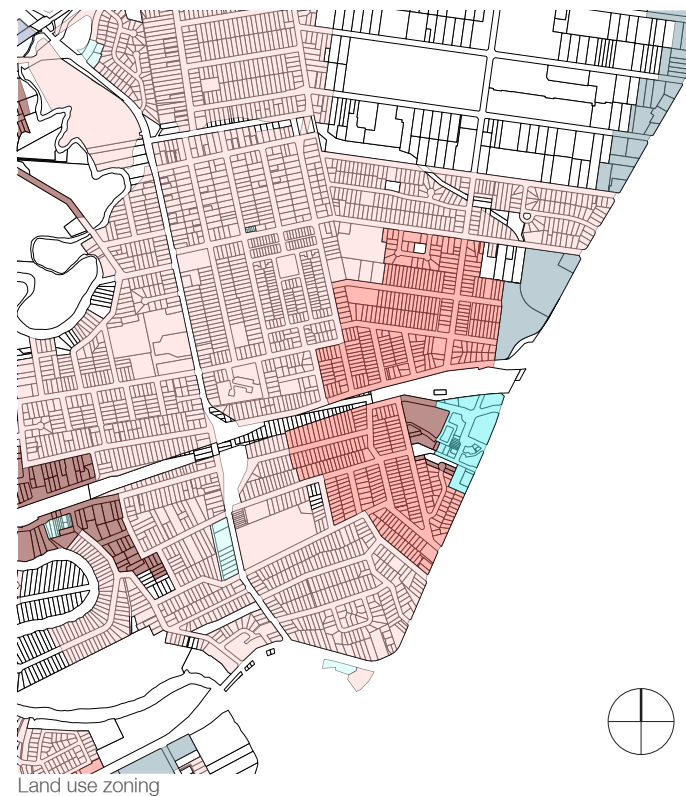


Aerial photo of a typical block



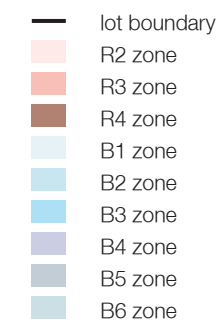
Aerial photo of a typical block

Observations

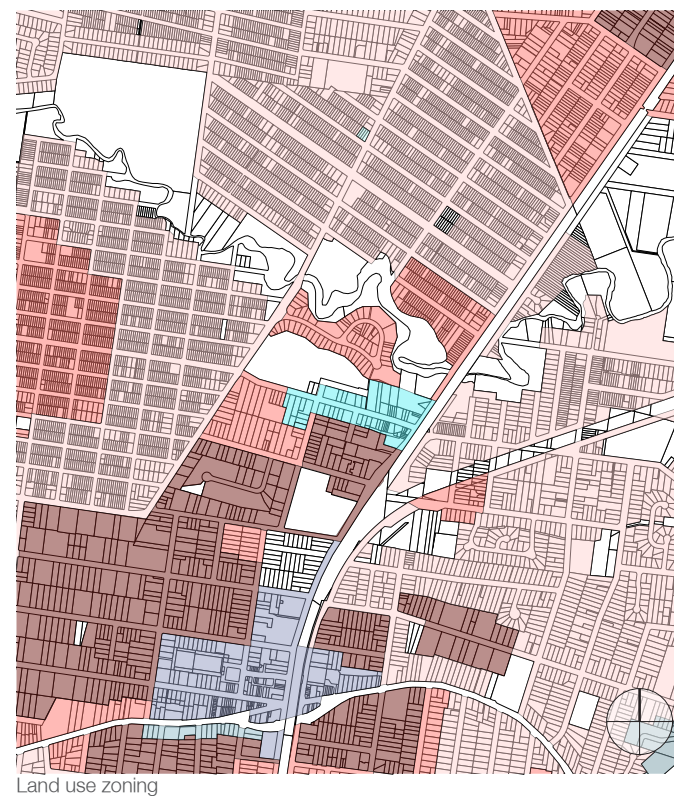


Villawood

- Common R3 lot areas
 - 480m²
 - 670-700m²
 - 800m²
- Significant subtle variation in lot sizes and lengths although common frontage dimensions
- Poor access to public open space
- Common R3 lot dimensions
 - 13 x 40m
 - 13 x 55m
 - 15 x 50m



Aerial photo of a typical block



Canley Vale

- Common R3 lot areas
 - 300m² (often amalgamated side-by-side to make 600m²)
 - 630m²
 - 800m²
- Common R3 lot dimensions
 - 7 x 38 (often amalgamated side-by-side to make 14/15m)
 - 18 x variable



Aerial photo of a typical block

Recent Medium Density Developments

4

This section of the report reviews a number of recent development applications for medium density housing within Fairfield. The objective of this section is to:

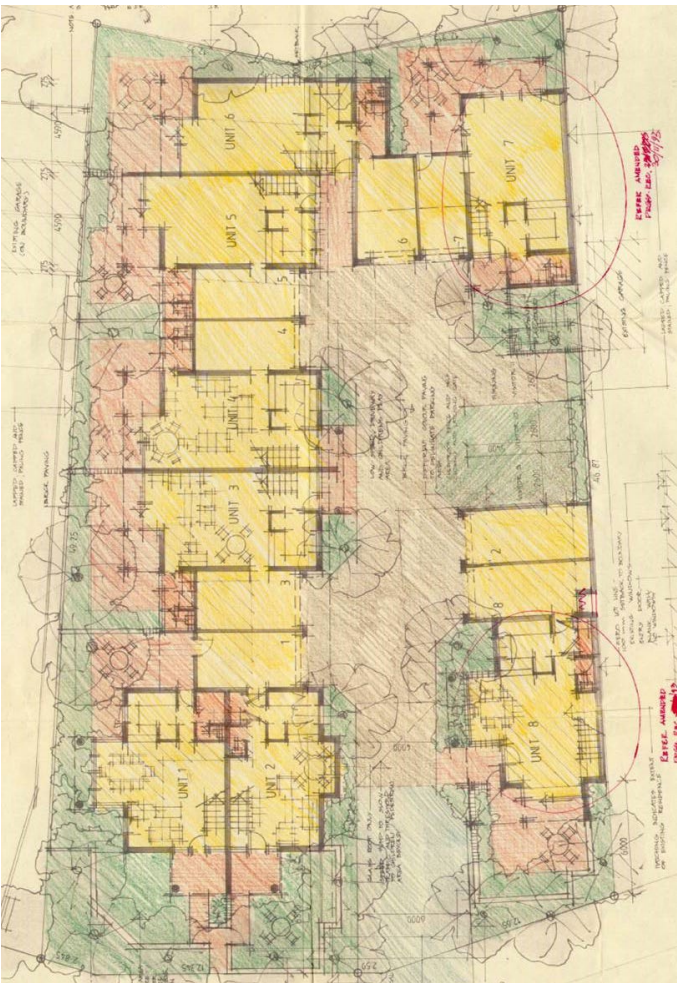
- better understand market dynamics and the typologies that are being delivered in Fairfield
- better understand the challenges experienced by officials assessing these applications
- better understand the development controls that are either driving built form outcomes, those that are being challenged by developers and which controls need to be changed to improve outcomes

Recent Medium Density Developments

4.1 Recent medium density housing in Fairfield

There are a wide variety of medium density housing typologies that have been developed in Fairfield in the recent past. A large number of gun-barrel type town houses were developed through the 1980's and 90's and provided generous, attractive and affordable accommodation for residents. More recent gun barrel typologies have sought to maximise yield and do not deliver the desired outcomes for the community.

Many of the dual occupancies and terraced housing typologies typically target the upper end of the Fairfield market, are more expensive and take the form of modular project homes.



Model example of a medium density scheme on an irregular shaped lot in Fairfield. Units address the street, extensive tree planting is proposed and the internal shared spaces have been designed as intimate communal spaces



Dual occupation project homes in Canley Vale



New forms of co-operative medium density housing in Canley Vale



Medium density housing with a positive street interface (Canley Vale)



Traditional town house development - Fairfield Circa 1990's



A more generous gun barrel typology delivering in Canley Vale - Circa 1990's



Gun Barrel typology delivering in Canley Vale - Circa 1990's



A more contemporary gun barrel typology - Canley Vale - Circa 2018



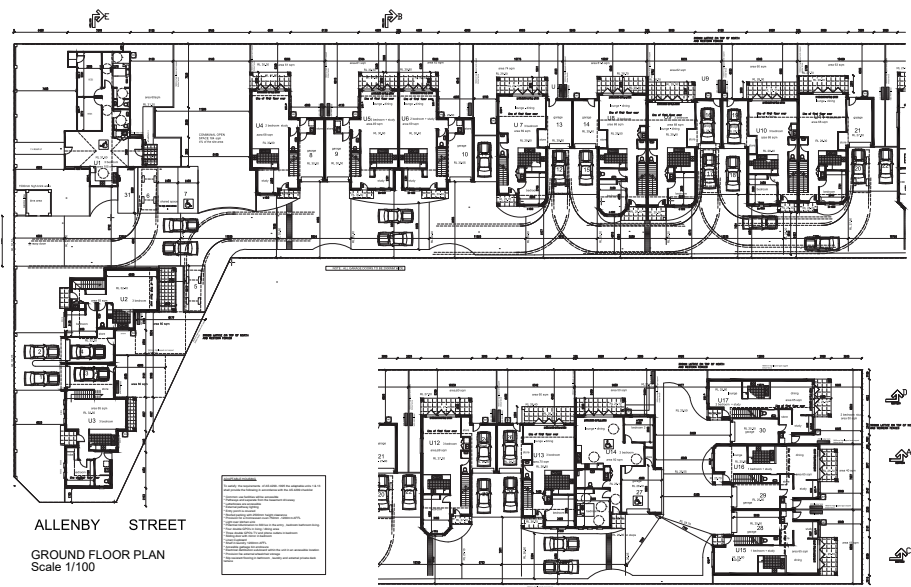
Attached / Terrace typologies Carramar - Circa 2018



Boarding House - Carramar 2019

Recent Medium Density Developments

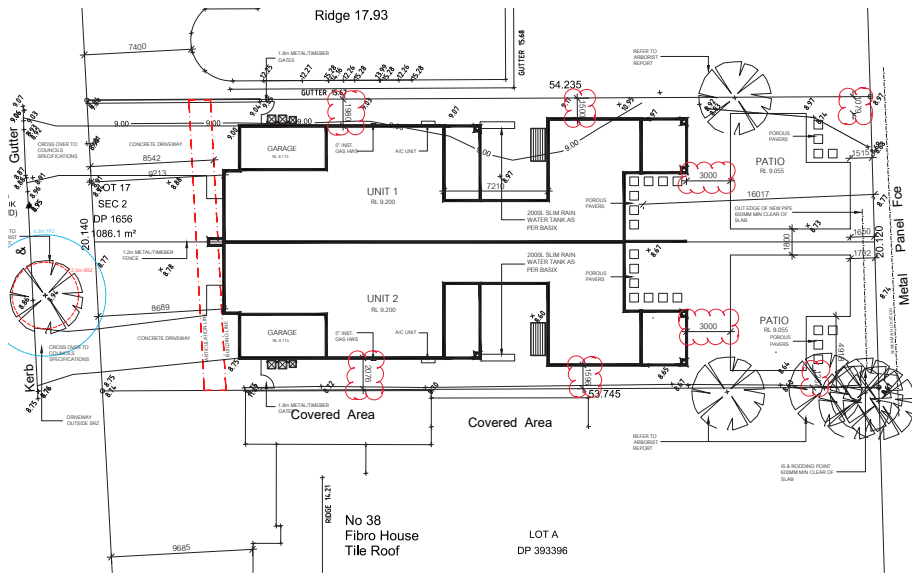
This selection of Development Applications illustrates common medium density housing typologies delivered in Fairfield. Where a development has exceeded the existing development controls this has been identified in red. What is interesting to note is that variations from the LEP FSR controls up to 0.8:1 are common and various departures from the setback controls of the DCP are sought. Additional FSR in some cases is supported through other policies such as the Affordable Housing SEPP and Seniors Living SEPP.



269 Canley Vale Road

Canley Heights
LEP FSR = 0.45:1

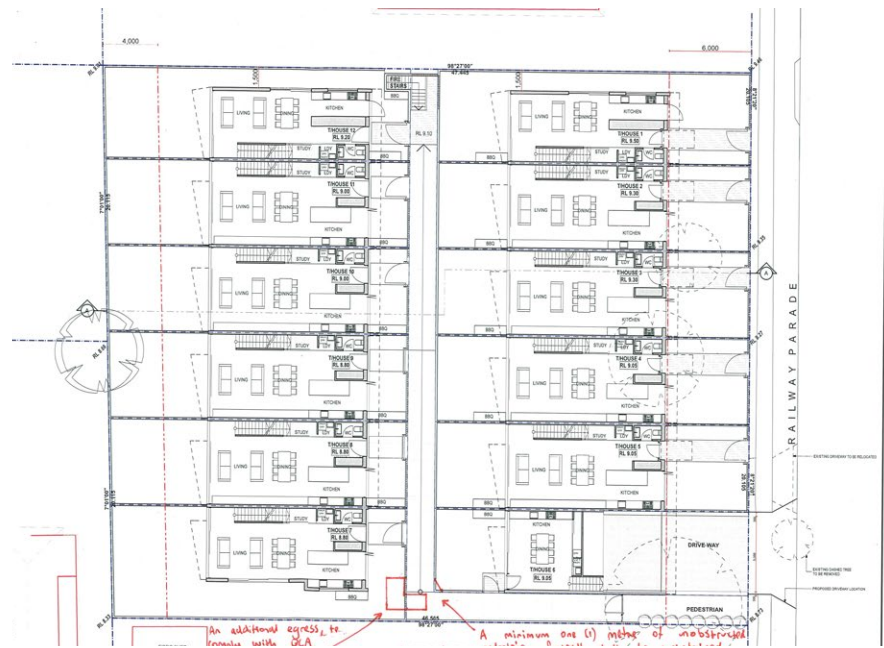
Lot frontage width (narrow end) = 22m
Lot frontage width (wide end) = 51m
Lot area = 4608m²
GFA = 1706m²
FSR = 0.37:1



36 Church Street

Cabramatta
LEP FSR = 0.45:1

Lot frontage width = 20m
Lot length = 54m
Lot area = 1086m²
GFA = 571m²
FSR = 0.52:1 deviates from LEP



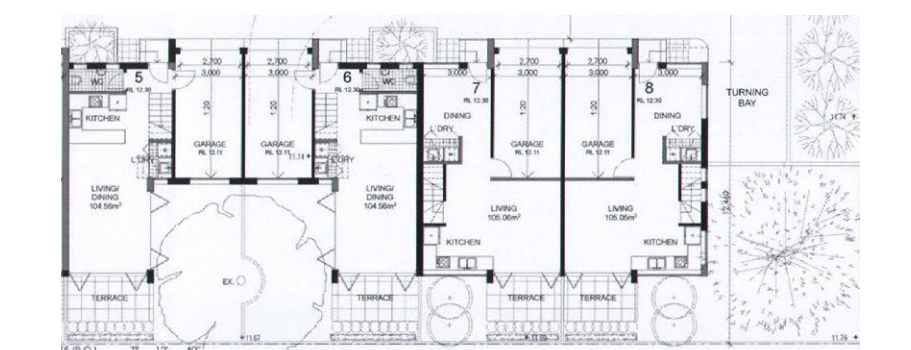
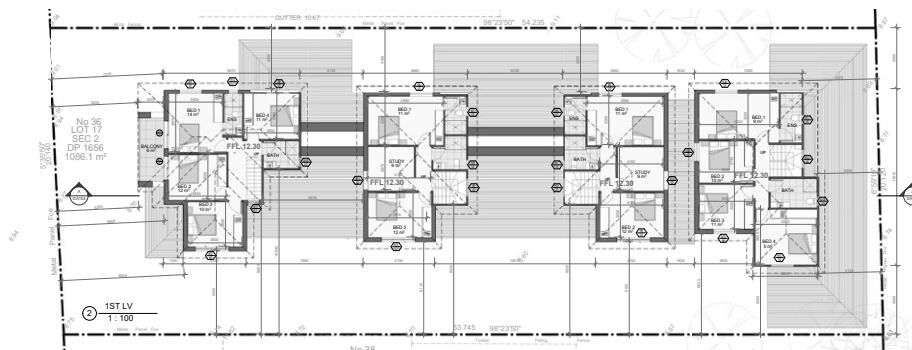
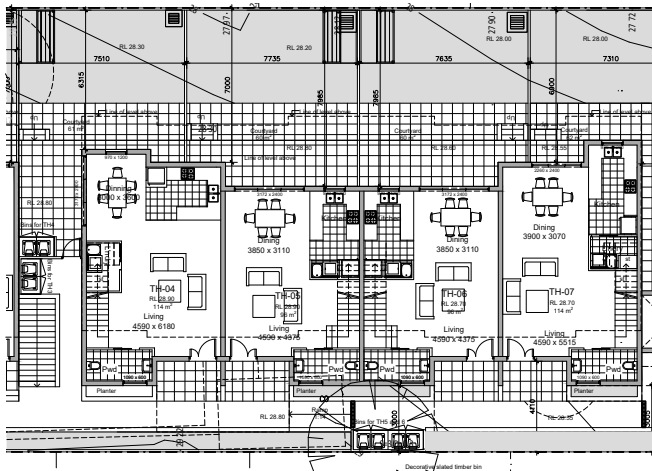
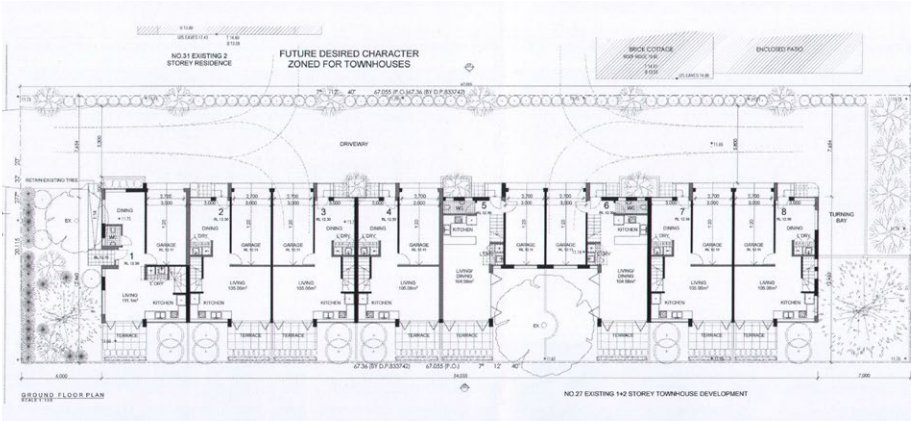
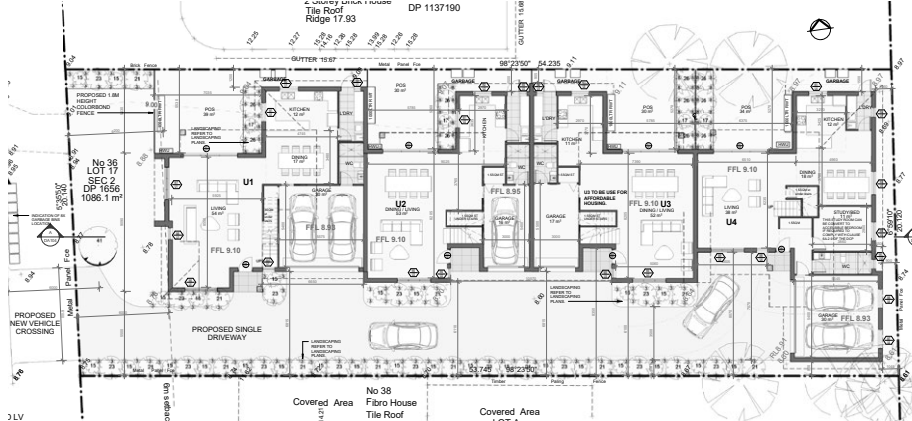
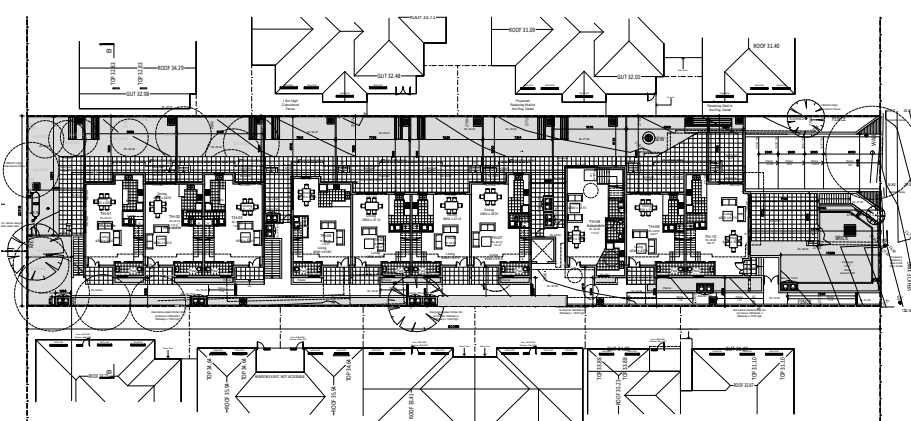
236 Railway Parade

Cabramatta
LEP FSR = 0.45:1

Lot frontage width = 40m
Lot length = 47m
Lot area = 1889m²
GFA = 1498m²
FSR = 0.79:1 deviates from LEP

* Includes basement car parking

Recent Medium Density Developments



91 Cambridge Street
Canley Heights
LEP FSR = 0.45:1 (+0.2:1 through AFH SEPP = 0.65:1)

Lot frontage width = 20m
Lot length = 90m
Lot area = 1,881m²
GFA = 1,079m²
FSR = 0.57:1

36 Church Street
Cabramatta
LEP FSR = 0.45:1

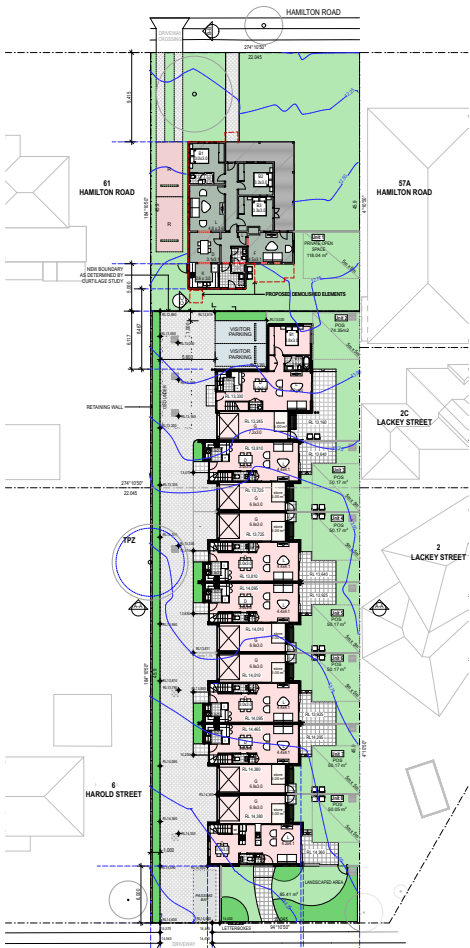
Lot frontage width = 20m
Lot length = 54m
Lot area = 1,086m²
GFA = 681m²
FSR = 0.53:1

This development sought to provide bare minimum under the Affordable Rental Housing SEPP and was withdrawn

29 Pevensey Street
Canley Vale
LEP FSR = 0.45:1

Lot frontage width = 20m
Lot length = 54m
Lot area = 1,348m²
GFA = 841m²
FSR = 0.62:1 deviates from LEP

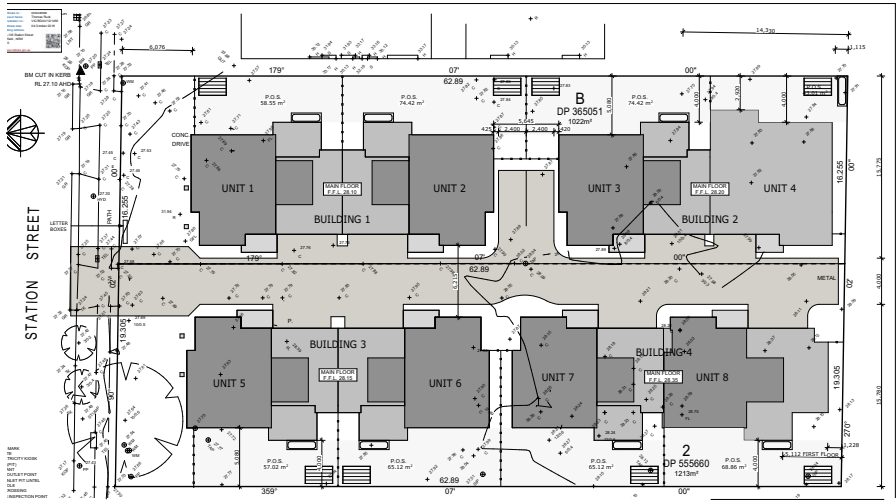
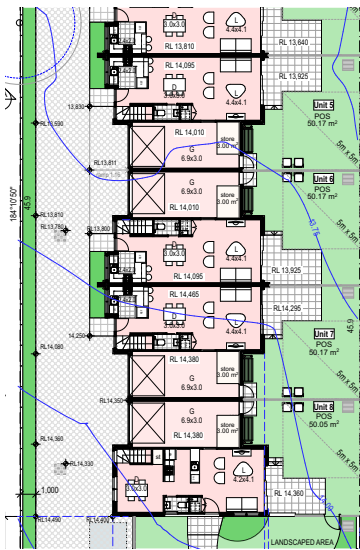
Recent Medium Density Developments



59 Hamilton Road

Fairfield
LEP FSR = 0.45:1

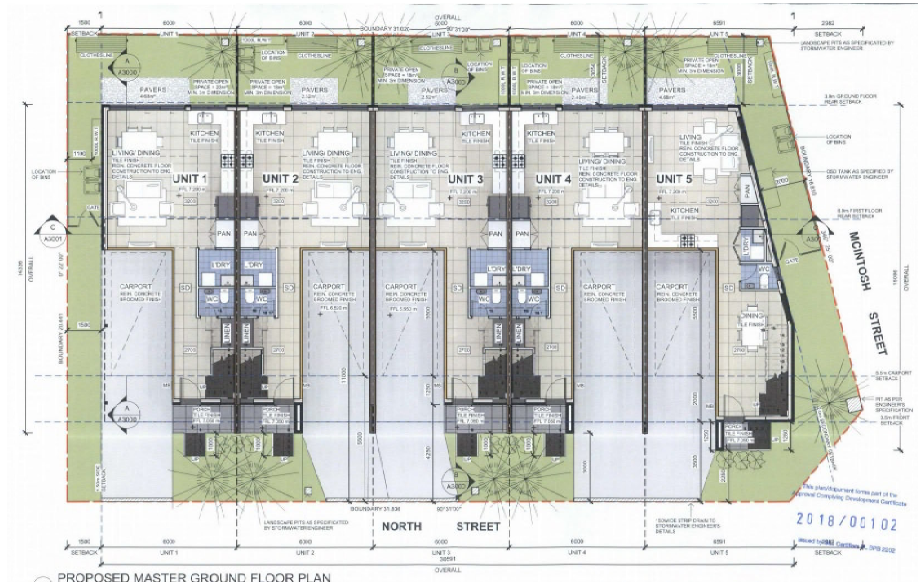
Lot frontage width = 22m
Lot length = 92m
Lot area = 2,023m²
GFA = 643m²
FSR = 0.31:1



133-135 Station Street

Fairfield
LEP FSR = 0.45:1

Lot frontage width = 35m
Lot length = 62m
Lot area = 2,235m²
GFA = 1,022m²
FSR = 0.457:1



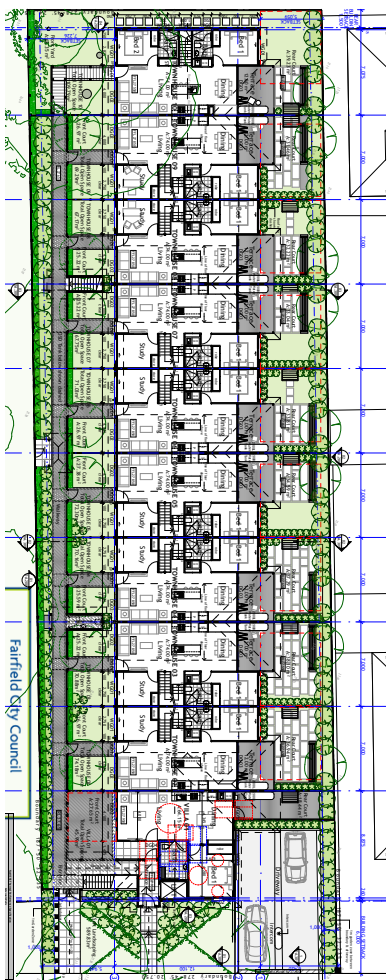
1A Macintosh Street

Fairfield
LEP FSR = 0.45:1

Lot frontage width = 20m
Lot length = 31
Lot area = 676m²
GFA = 475m²
FSR = 0.77:1 deviates from LEP

CDC pathway. This development sought to provide bare minimum under the medium density housing code.

Recent Medium Density Developments

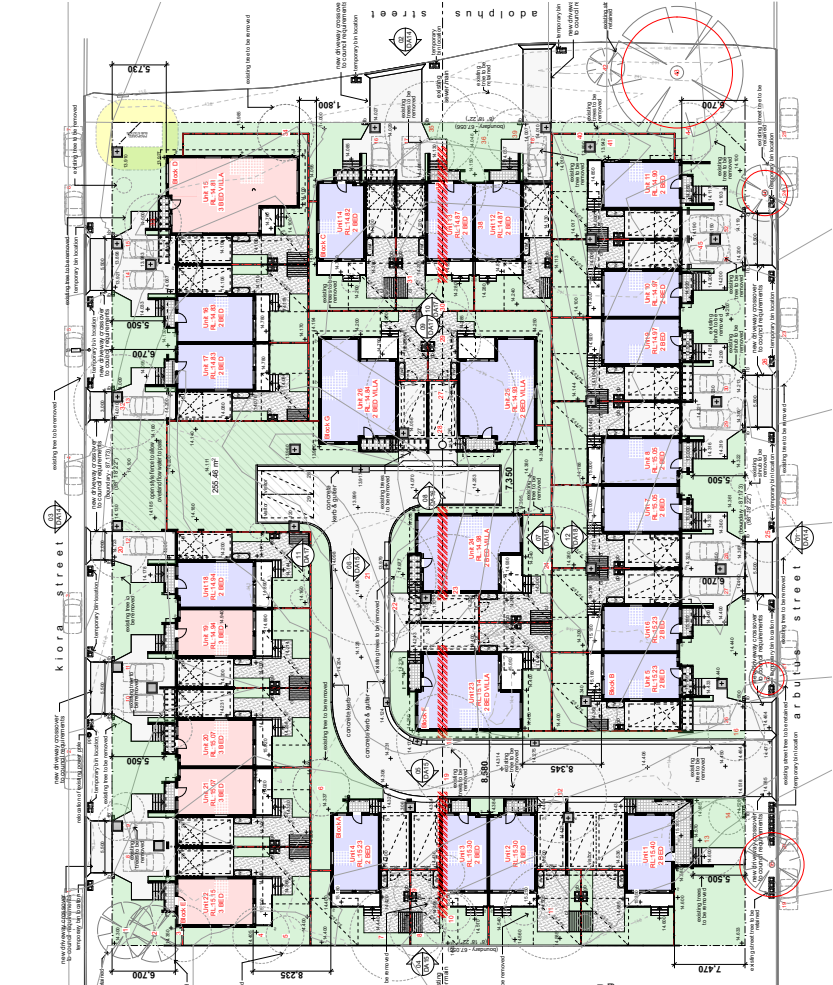
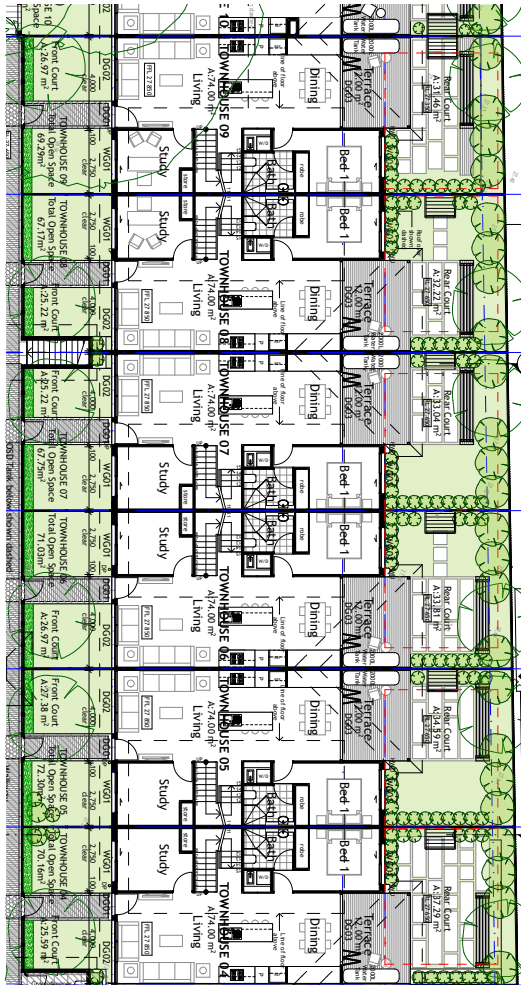


217 Station Street

Fairfield Heights
LEP FSR = 0.45:1

Lot frontage width = 20m
Lot length = 65m
Lot area = 1,947m²
GFA = 963m²
FSR = 0.494:1 deviates from LEP

* Includes basement car parking

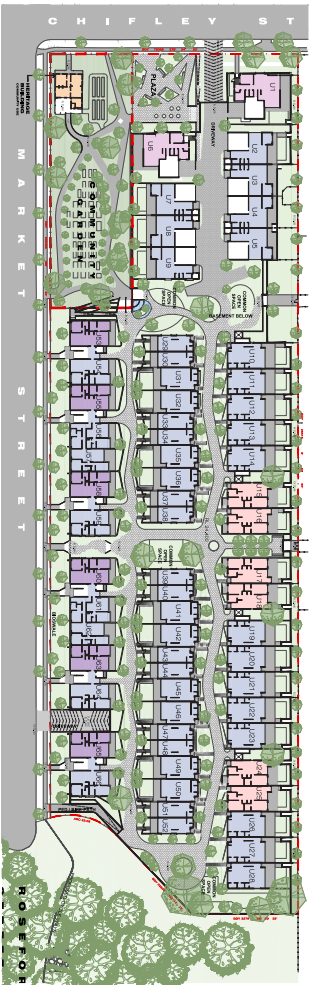


32 Kiora Street

Canley Heights
LEP FSR = 0.45:1

Lot frontage width = 67m
Lot length = 87
Lot area = 5,845m²
GFA = 2,065m²
FSR = 0.35:1

This development seeks to use the Affordable Housing SEPP and is for the NSW Land and Housing Corporation (LAHC)



45 Chifley Street

Smithfield
LEP FSR = 0.45:1

Lot frontage width = 76m
Lot length = 150+
Lot area = 5,845m²
GFA = not stated
FSR = not stated

This development seeks to use the Affordable Housing SEPP and is for the NSW Land and Housing Corporation (LAHC)



Recommendations

5

This section begins by presenting the five key principles that underlie the recommended proposed LEP and DCP amendments that would help deliver improved built form and public domain outcomes in Fairfield. They take their cue from the existing LEP controls, the existing DCP controls and the Medium Density Housing Code. They have been refined and tested through the examples that are illustrated in the final section of this study.

It should be noted that while this study explored the notion of introducing a low rise residential flat building typology into the R3 zone to increase housing options in Fairfield this was considered too progressive and could have distracted attention away from the very good amendments proposed in this report. The team remain convinced that such opportunities should be explored in the future with broader consultation with the local community, DPIE and other stakeholders.

Recommendations

5.1 Principles

The principles outlined below underpin the recommended changes to the Local Environmental Plan and Development Control Plan that follow.



Locally relevant

- Development should respond to local community needs and cultural preferences
- Development should be designed according to the desired future character of Fairfield
 - Housing diversity
 - Amenity
- development strives to address broader social and environmental imperatives related to :
 - climate change
 - managing urban heat island effect
 - housing affordability
 - cultural use of space



Positive public interface

- Development should address the street and make a positive contribution to the neighbourhood
- Buildings have a clear street address and a positive frontage which provides passive surveillance of streets and spaces



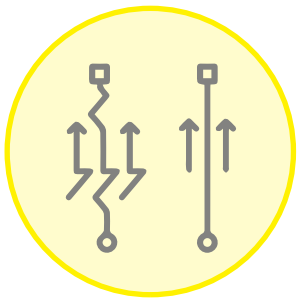
Compatible

- Built form and character should be sensitive to the R2 Low Density Residential zoning as well as creating a transition in scale and density to higher density development such as R4



Equitable

- That the level of privacy and amenity afforded to residents in proposed and existing dwellings within the zone is equitable and comparable to other dense urban neighbourhoods in Sydney that have demonstrated resilience and liveability over time. For example where there is a strong tradition of Victorian terraced housing



Clear and simple

- Controls are clear, consistent, easy to interpret, assess and implement across all typologies and sites

Recommendations

5.2 Proposed LEP amendments

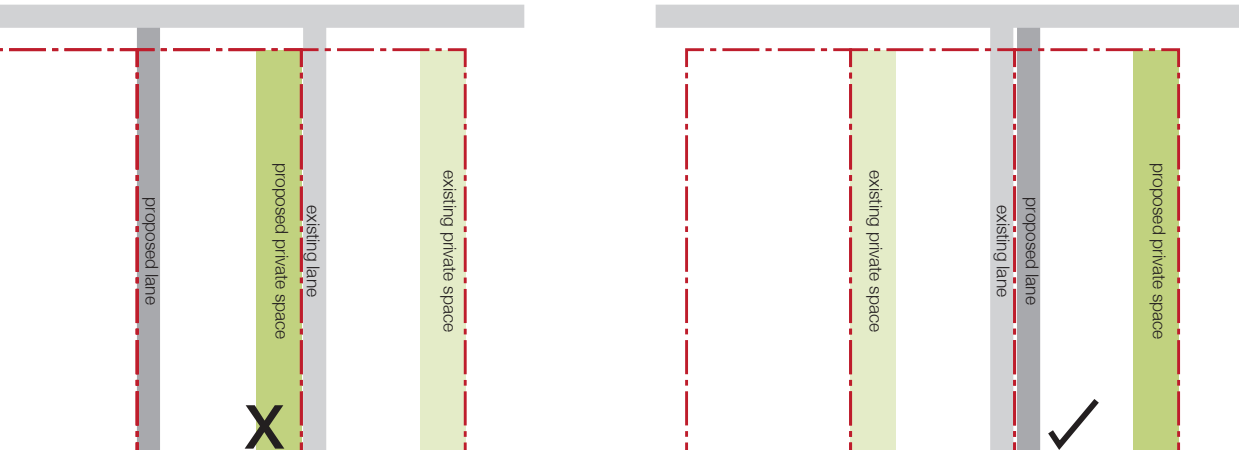
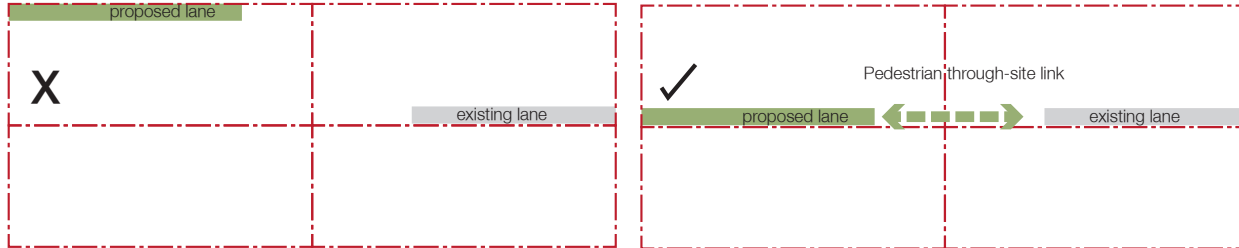
Local Environmental Plan Amendments							
The following changes to the LEP are proposed. Where appropriate, a rationale for these change is provided							
Changes / recommendations	Rationale						
1. Definitions							
1.1 Review the definition of Medium Density Housing to be more explicit about the intent of this zone as a transitional zone between low and high density development	Whilst the Standard Instrument provides uniform definitions across the State, FFC should petition DPIE to review the broad definition of Medium Density Housing to be more explicit about the intent of this zone as a transitional zone between low and high density development. As this is a strategic matter that is unlikely to be resolved in the course of the LEP review an expansion of the definition is provided in the recommendations for DCP amendments (See Section 5.3 below)						
2. Site Coverage Controls							
2.1 Maximum building coverage (including basement) is no more than 50% of the site area	This control limits the building footprint to promote deep soil, increases amenity at ground floor level and discourages second dwellings and out-buildings on smaller lots						
3. Floor Space Ratio Controls							
3.1 FSR plans across the LGA should be reviewed with additional R3 areas identified to support local centres (eg Carramar)	To support local centres identified in the LSPS and centres studies and provide a transition from high to medium density development						
3.2 FSR controls should be for the R3 zone should be simplified and governed by lot width as indicated in the table below:	Current FSR controls are suitable for low density development and need to be increased proportionally to accommodate more urban typologies. DCP controls will need amended as suggested later in this report ensure positive built form outcomes						
<table><tr><td>Lot width</td><td>FSR</td></tr><tr><td>7-22m</td><td>0.5:1</td></tr><tr><td>22-45m</td><td>0.65:1</td></tr></table>		Lot width	FSR	7-22m	0.5:1	22-45m	0.65:1
Lot width		FSR					
7-22m		0.5:1					
22-45m	0.65:1						
3.3 If basement parking is provided, a bonus FSR of 0.15:1 applies	Car parking has the greatest impact on the public domain and on the quality of the environment at ground floor level. Incentivising basement car parking provision helps address affordability issues and has positive impacts on amenity						

Summary FSR Table			
Lot width	Base FSR	With Basement (+0.15)	
7-22m	0.5:1	0.65:1	
22-45m	0.65:1	0.8:1	
4. Height of Building			
4.1 Increase permissible height of building on corner sites from 9m to 10m where: - the property has dual frontage onto public streets; and - where both frontages are longer than 22m			The additional height allows for variation in building heights at corners to support architectural diversity and interest in the zone.

Recommendations

5.3 General DCP amendments

Development Control Plan Amendments	
The following changes to the DCP are proposed and where appropriate, a rationale for these change is provided	
Changes / recommendations	Rationale
1. General comment	
The DCP Controls for Medium Density Housing should be comprehensively reviewed to make them more accessible and simpler and easier understand, interpret and implement. Key controls that drive built form outcomes include: - Unit mix - GFA ratios between storeys - Car parking requirements - Open space requirements - Landscaping requirements	This study has focussed specifically on potential variations to FSR, Height of Building and setback controls, but there are a number of controls that either impact on development feasibility (and consequently affordability) or result in the undesirable outcomes (such as extensive hard surfacing and uniformity in the housing product). Implicit in the following recommended amendments to the controls is an acceptance by FCC and DPIE that departures from the ADG Controls as they pertain to Low Rise Residential Flat Buildings.
As far as possible the controls should be consistent for all building types (dwelling houses, dual occupation, Multi Dwelling housing and Manor Houses).	The DCP should control built form within the R3 zone so that it functions as a transition between lower and higher density environments. Consequently development controls in terms of coverage, setbacks and open space requirement should be consistent across dwelling types.
2. Definitions	
2.1 The following definition for the medium Density Housing in the R3 Zone should be considered: <i>Medium Density Housing:</i> <i>Includes residential development that fulfil-is a residential purpose and provides a transition from low density to high density environments. Development under this definition provides high quality, affordable accommodation that is comparable in density, scale and form to low rise residential development by:</i> <i>maintaining comparable setbacks with the R2 zone</i> <i>being below a net density of 100 dwelling units per hectare* or an FSR of under 0.8:1</i> <i>being no more than 3 storeys in height</i> <i>may include Detached Dwellings, Attached Dwellings, and Manor Houses</i> * boarding houses excluded	The DCP should expand on the definition of Medium Density Housing in the LEP to be more specific in relation to the transitional role of the zone as the interface between low and high density development, and could refer specific reference to a density. Ideally this definition would form part of the LEP, but given policy constraints, in the short term the DCP seems to be the most appropriate location for this more refined definition. The definition will allow a range of different housing and building typologies with a clear upper limit to differentiate this zone from the R4 High Density Housing. It is important to note that this study has focussed specifically on Medium Density housing in the R3 zone. Further consideration will need to be given to medium density housing in the R2 zone. The recommendation of this study is that medium density housing in the R2 zone should be consistent with the built form parameters in this zone and that FCC should rather consider the expansion of the R3 zone where it seeks to support local centres or achieve greater transition in built form.

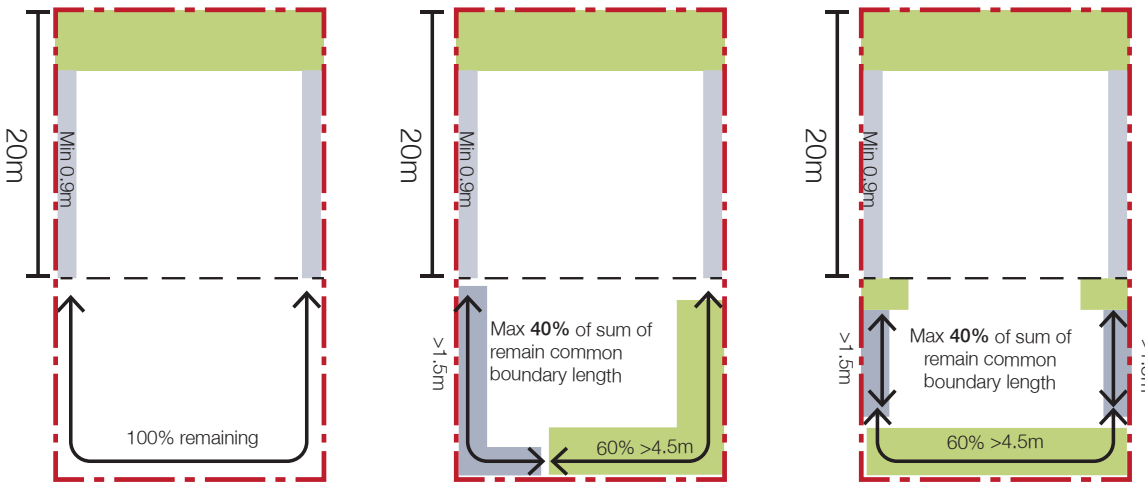
2.2 The definition of “Site Coverage” in current DCP should be revised to include all areas covered by basements.	This is to achieve the objective of increasing deep soil within the site.
3. Orientation and through-site links	
3.1 Where the adjacent property has been developed with a private internal driveway along its common boundary, the internal arrangement of the proposed development should be such that the internal lane for the new development is adjacent to the adjacent internal lane of the adjacent property. The sharing of access lanes that would serve both developments is encouraged.	This control encourages more laneway type environments where private back gardens back onto other private back gardens.
	
3.2 Where Council deem it desirable to improve permeability for pedestrians and where the property to the rear of proposed site has been developed with a private internal driveway that terminates at it's rear boundary, the internal arrangement of the proposed development should be such that it aligns with and connects to the existing driveway. Council may require this driveway to be registered as an easement in favour of the general public for pedestrian and cycle access only.	This allows Council to improve levels of permeability for pedestrians and improve integration where this is desired.
	

Recommendations

5. Gross Floor Area Controls	
5.1 The total area of each floor plate above the ground floor level should be no more than 90% of the ground floor building footprint (inclusive of garages, but excluding basements)	The existing controls that limit the GFA of the first floor above ground to 65% of the ground floor results in large building footprints at ground floor level to maximise potential GFA above. This reduces the opportunities for open space, deep soil, canopy, diverse unit mix, facade articulation and development above garages. The strict limitation of upper storey GFA also impacts negatively on affordability and limits the number of accessible bedrooms deliverable on the first storey. Controls such as overshadowing are more effective in maintaining the amenity of adjacent public and private open spaces. The intent of the 90% limitation is that it ensures the articulation of the first floor level with balconies and stepped façades.
6. Front Setback Controls	
6.1 Front / street setback is reduced from 6m to 4.5m	The reduction does not have a major effect on the potential for significant landscaping and tree planting along the public interface. It improves land utilisation and is consistent with the front setback specified in the Low to Medium Density Housing Code (LMDHC). Front gardens are often less used relative to rear gardens due to their public exposure an the reduction in width is unlikely to impact on amenity.
6.2 The front 2m of the 4.5m front setback is considered a street interface zone which should be landscaped and maintained by the Strata Body / Body Corporate as communal open space on the street.	This ensures a consistent and well maintained landscape edge to the public domain. Some services and storage can still be discretely integrated into the landscape zone.
6.3 The rear 2.5m of the 4.5m front setback streets interface zone should be landscaped and can be part of a private garden for the adjacent ground floor dwelling/s.	This maximises the landscape buffer to the street and private open space for residents.
6.4 Garages to be set back from the street boundary by 5.5m.	This ensures that active uses define the street and also provide the opportunity for an additional parking space within the property. <i>Note this is not an ideal urban design outcome as cars will dominate the street. This is addressed with the maximum number of driveways per property - see later control.</i>

7. Side Setback Controls	
7.1 Minimum 0.9m side setback (from side boundary) for ground floor and upper storeys for the first 20m in length perpendicular from the front boundary.	A 0.9m setback is consistent with setbacks for the R2 zone. It also promote buildings with a street address, ensure access and natural drainage to the street and ensure terrace rows have rhythm created by breaks. BCA requirements for openings and fire separation would still need to be met.
7.2 The 0.9m setback <u>for one side boundary</u> may be reduced to nil (0m) for ground floor and first storeys for the first 20m (perpendicular to front boundary), if: · there is written consent from the affected adjoining neighbour/s; and · the adjacent property/ies has a building with no habitable windows opening onto the side boundary within 1.8m of the site boundary.	As above, this allows for the incremental development of terraced typologies along the street and allows developers of smaller lots to optimise their layout and achieve higher yields.
7.3 After a distance of 20m from the front boundary (measured perpendicular to the front boundary) and where there are no habitable rooms or windows that face onto the boundary- buildings must be set back from the side boundary by a minimum of 1.5m for ground and first storey for a maximum of 40% of the total remaining linear length of all common boundaries of the lot and 4.5m for remainder, Where any structure is proposed within the 4.5m of the side boundary, written support from the adjoining owner must be provided, and the applicant must demonstrate that the primary open space of the adjacent dwelling is not overshadowed.	This is broadly in line with existing DCP controls after 20m. It allows for a terrace for the full width of the street frontage and allows for a double row terrace typology to the rear aligned with the street boundary (see later typologies). The 1.5m setbacks aligned with LMDHC and seeks to address potential overshadowing impacts. The 4.5m setback delivers a 9m separation distance habitable rooms if the adjacent property is also delivered as medium density housing. Separation distances lower than ADG are supported as: · solar access at ground floor level at winter solstice for a two storey building 4.5m from the boundary exceeds the 6m setback required for four storey buildings required in the ADG. · The relatively low densities meaning that there are fewer people overlooking adjacent private open space. The approach is also consistent with the level of privacy enjoyed by residents in other parts of Sydney, such as Surry Hills and Redfern, which are considered desirable and where terraced typologies are common and where there are oblique views over adjacent private open spaces / back gardens from the upper level windows.

Recommendations

 OR	
7.5 Council may require a 3m side boundary setback where there is a continuous street frontage that is more than 45m in length	This allows attached terraces and ensures breaks in urban form that is consistent with the <i>LMDHC Guidelines</i> .
8. Rear Setback Controls	
8.1 Minimum 4.5m for buildings < 2 storeys / 6.5m in height.	Increased rear setback encourages deep soil at the rear of the site to allow for substantial tree planting.
8.2 Minimum 6m for buildings > 2 Storeys / 6.5m in height.	Setbacks more permissive than LMDHC and generally aligns with ADG for the second level above ground floor.
9. Separation Distances Controls	
9.1 The distance between any two habitable rooms on the same property shall be no less than 9m.	This is consistent with the setback from the side boundary and ensures equitable levels of privacy. It is also in line with ADG separation required between habitable and non-habitable rooms where higher density is anticipated.
9.2 The distance between any window / door opening of a habitable room and a non-habitable room on the same property shall be no less than 6m. The windows of the non-habitable room shall either: · have a sill level above 1.8m above internal finished floor level · have a permanent privacy screen or be · Have glazing that is non-operable and of a translucent material	This ensures privacy levels for habitable rooms but is below ADG requirements.

10. Private and Communal Open Space			This supports the principle of equity and the definition of the zone as a transition between low and high density development. The minimum requirements align with the ADG.
10.1 Each dwelling should have access to the following amount of private open space			
Dwelling type	Minimum area	Minimum depth	
Studio units	4m ²	-	
1 bedroom units	8m ²	2m	
2 bedroom units	10m ²	2m	
3+ bedroom units	12m ²	2.4m	
10.2 Each dwelling located at ground floor should have a minimum of 35m ² of private open space with a minimum dimension of 4m.			The existing DCP controls for open space are difficult to interpret and based on unit sizes. 10.1 above deals with minimum private open space requirements. 10.2 deals specifically with ground floor units. The standardisation of private open space per dwelling from a range of 20-60m² (depending on number of bedrooms) to a standard of 35m² does not equate to an overall reduction in deep soil. It corresponds to urban house typologies and is between the requirements in the R2 zone and the ADG requirements for residential flat buildings. The MDHC requires 16m² of open space per dwelling with a minimum length and width of 3m. A 4m wide rear garden has recently been endorsed by Georges River Council. The controls later in this report promote tree planting, canopy cover, communal open space are equally effective in creating amenity for new developments.
10.3 No communal open space is required where a development is less than 12 units.			This reduces under used peripheral space in developments without critical mass of dwellings to support them.
10.4 In developments where there are more than 12 units a minimum of 10m ² per dwelling should be provided as communal open space. This could be either as rooftop terraces, open space at ground floor level and within indoor / enclosed common area.			This control ensures adequate communal open space provision for RFBs and recognises that these could take different forms.
10.5 A minimum of 50% of the required communal open space must be located at ground level, have a minimum width of 6m and be co-located with deep soil zones.			This control ensures the activation of the ground floor and the provision of amenity in association with deep soil zones.

Recommendations

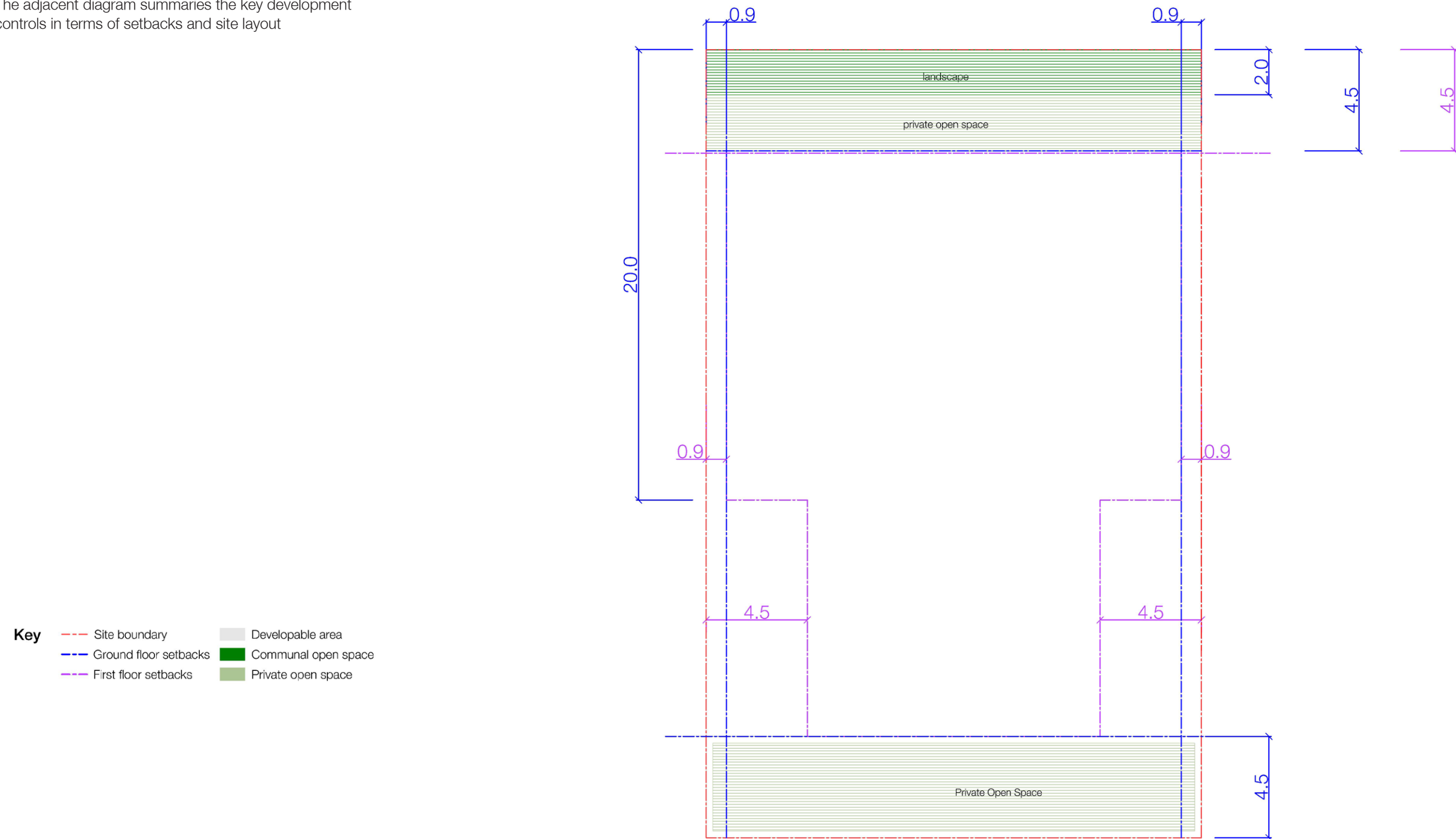
11 Pedestrian Access	
11.1 Every unit with street frontage at ground floor level must have its own pedestrian access point / gate from the street.	The control helps to activate the public street interface,
12. Car Parking and Access	
12.1 Driveway entrances limited to one crossing for every 15m of street frontage	This limits gaps in the street frontage as well as maintain pedestrian and landscape integrity of the footpath and planting zone. This is a simplification of current driveway controls (i.e. 6A.3.2).
12.2 The maximum width of carriageway crossings is 5.5m	This helps to reduce the amount of frontage allocated to car access.
12.3 Reduce car parking requirements to 1 space per dwelling	R3 Zones are typically concentrated around local centres where access to public transport, amenities, jobs and public services are high. High car parking requirements increase construction cost relative to living space, decrease efficiency of land use and do not contribute to safe or active interfaces with streets or public spaces.
12.4 All resident car parking at ground floor level must be provided with the building footprint.	This ensures that car parking is structured whilst allowing for limited short term visitor car parking at grade.
12.5 Any additional on-site car parking provision above 1 space per unit is to be provided below ground.	This provision encourages the use of the ground plane for active uses.
13. Services	
13.1 All services and servicing spaces (i.e. waste storage rooms, substations, plant, SVPs, conduits, boilers, meter boxes etc.) must be properly integrated into the facade design, internalised and screened from public view where possible.	This control improves street interface across the zone.
14. Landscaping Controls	
14.1 A landscape plan must be submitted as part of the DA illustrating that no more than 40% of the site area is covered with impervious material (including permeable paving). This is the sum of building footprint (including basement), internal streets/driveways and any impermeable landscaping elements both public and private.	This controls achieves three objectives. Firstly, to promote deep soil, allow mature trees, shrubs and limit the urban heat island effect. Secondly, it maximises natural drainage on the site and reduces the need for associated infrastructure. Thirdly, it improve amenity and outlook for both the public domain and rear private open spaces.
14.2 The landscape plan must demonstrate that at least 20% of the site is deep soil, with the minimum width of any deep soil zone being 4m.	This controls supports good tree health and natural drainage.

14.3 Tree planting required: - Side: 1 tree with mature height of 5-8m for every 10m of the side boundary where the building is set back by more than 4.5m - Rear: 1 tree with mature height of 8m for every 10m of the rear boundary.	This control promotes tree canopy in the private domain and helps deal with issues of privacy between units
14.4 One large street tree for every 20m of street frontage is to be planted in the street verge and maintained by the Strata Body / Body Corporate for the first 3 years after the issue of occupation certificate. The location, species and tree surround detailed are to be to Councils Standard.	Street tree planting adds amenity to the neighbourhood, helps to mitigate the visual impact of the development and increases tree canopy cover within the public domain.

Recommendations

5.4 Generic Control Diagram

The adjacent diagram summarizes the key development controls in terms of setbacks and site layout



Recommendations

5.5 Manor Houses

Development Control Plan Amendments	
Changes / recommendations	Rationale
1.1 The primary entrance to the vertical circulation core of the upper storey unit / units must be visible from the street.	The control helps to activate the public street interface and ensures units above ground floor or to the rear of the property have a visible public street address.

5.6 Multi Dwelling Housing

Development Control Plan Amendments	
Changes / recommendations	Rationale
1.1 The front doors of least two units must be visible from the street and pedestrian access to the ground floor units fronting onto the street must be from the street .	This ensures a positive interface with the public street and a public street address.
1.2 Where the width of the lot is larger than 30m and more than 6 dwellings are proposed, the front doors of at least two dwellings located to the rear of the property should be visible from the street.	This ensures a visual connection between the street and units located to the rear of the property.

This final section presents examples of type of built form that may result from the application of the above controls. These scenarios were developed iteratively and in parallel with the review of the controls. The objective of this exercise was to:

- Confirm the minimum lot sizes that allow for a range of different housing typologies whilst ensuring good built form outcomes. Two scenarios have been tested:

Scenario A: a lot of 22x35m (770m²)

- *aligning with the DCP minimum lot width*

Scenario B: a lot of 38x55m (2,090m²)

- *a mid point between two common amalgamation possibilities (35m - 3x15m/ 5x7m and 40m - 2x20). This allows for a direct comparison*

- Demonstrate how the issues raised by officials with the existing controls could be addressed
- Show how the amended controls apply to different housing typologies
- Illustrate how the maximum yield could be achieved within the ambit of the controls

6.1 Assessing typologies against proposed controls

In this section proposed building typologies have been designed conceptually and tested against the proposed new controls that are summarised in adjacent table.

For the purposes of discussion where a typology does not meet the control this is identified in a red box to flag where wither controls need to be reviewed or where typologies need to be amended.

Minimum Lot Size	RFB minimum lot width is 30m
Site Coverage	Max. including basement is 50% Max. footprint of any detached dwelling or studio is 45m²
Development Mix	For sites smaller than 1,000m²: up to 30% 1 bedroom units up to 80% 2 bedroom units For sites larger than 1,000m²: up to 20% 1 bedroom units up to 75% 2 bedroom units minimum of 10% 3 bedroom units
FSR	Lot width 7 - 22m = FSR 0.45:1 Lot width 22 - 45m - 0.65:1 Development that provides more than 20% 3 or 4 bed units may have a 0.1:1 bonus If basement parking is provided, a bonus FSR of 0.25:1 may be offered So max FSRs are: Lot width 7 - 22m = FSR 0.80:1 Lot width 22 - 45m - 1.0:1 (parking the potential other SEPP bonuses for the purpose of these studies) Upper storeys can only be 90% of the ground floor footprint
Height of Building	11m
Front Setback	4.5m (first 2m communal, second 2.5m private open space)10m setback for 3rd storey

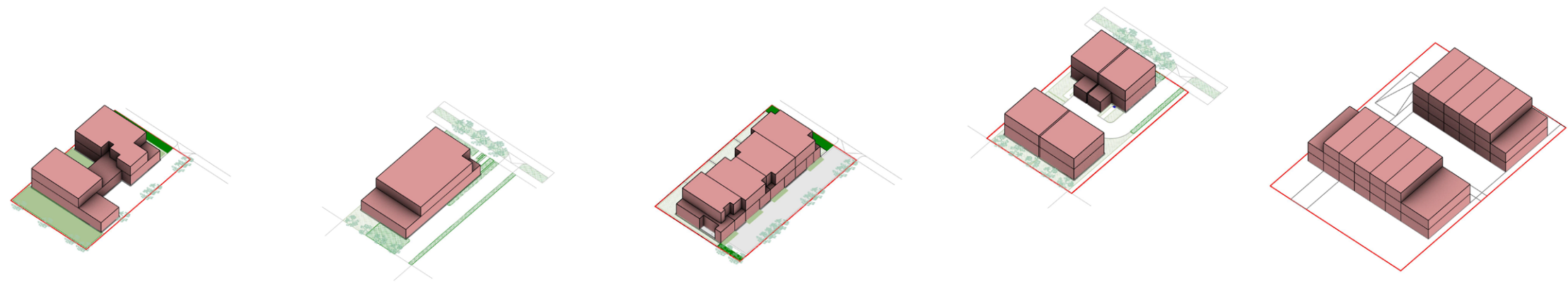
Side setback	0.9m for first 20m. May be reduce to 0.0m with permission from neighbour etc 4.5m for remainder of the site (+another control that I can't make sense of) 6m setback for the second storey after 20m		
Rear Setback	4.5m for buildings for 2 storey buildings 6m for buildings for greater than 2 storeys		
Private Open Space	Dwelling type	Minimum area	Minimum
	Studio units	4m2	-
	1 bedroom units	8m2	2m
	2 bedroom units	10m2	2m
	3+ bedroom units	12m2	2.4m
	Ground Floor - Each dwelling should have a minimum of 35m²		
Landscaping	Maximum of 60% of the site area can be covered with impervious materials		

Summary of proposed controls

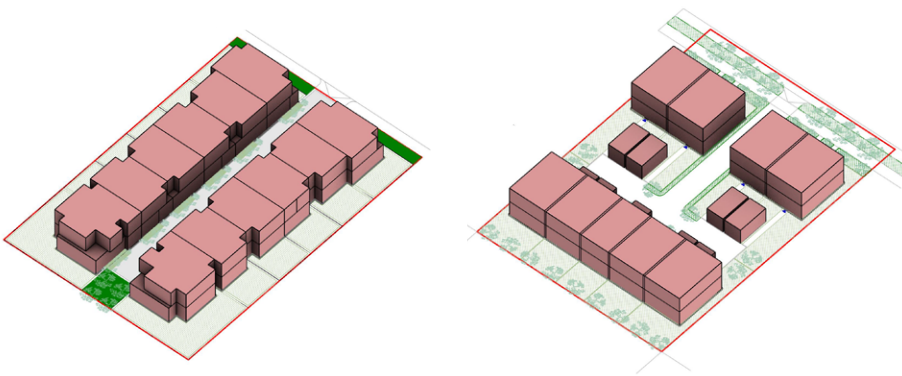
Design Studies

6.2 Typologies

Lot A2: 22x35m



Lot B2: 38x50m



Manor House 1A
52 dw/ha

Manor House 2A
52 dw/ha

Multi-dwelling Housing 1A & 1B
(attached town houses)

1A = 52 dw/ha
1B = 57dw/ha

Multi-dwelling Housing 2A & 2B
(mews)

2A = 52 dw/ha
2B = 43 dw/ha

Multi-dwelling Housing 3B
(terraces)

3A = 52 dw/ha
3B = 62 dw/ha

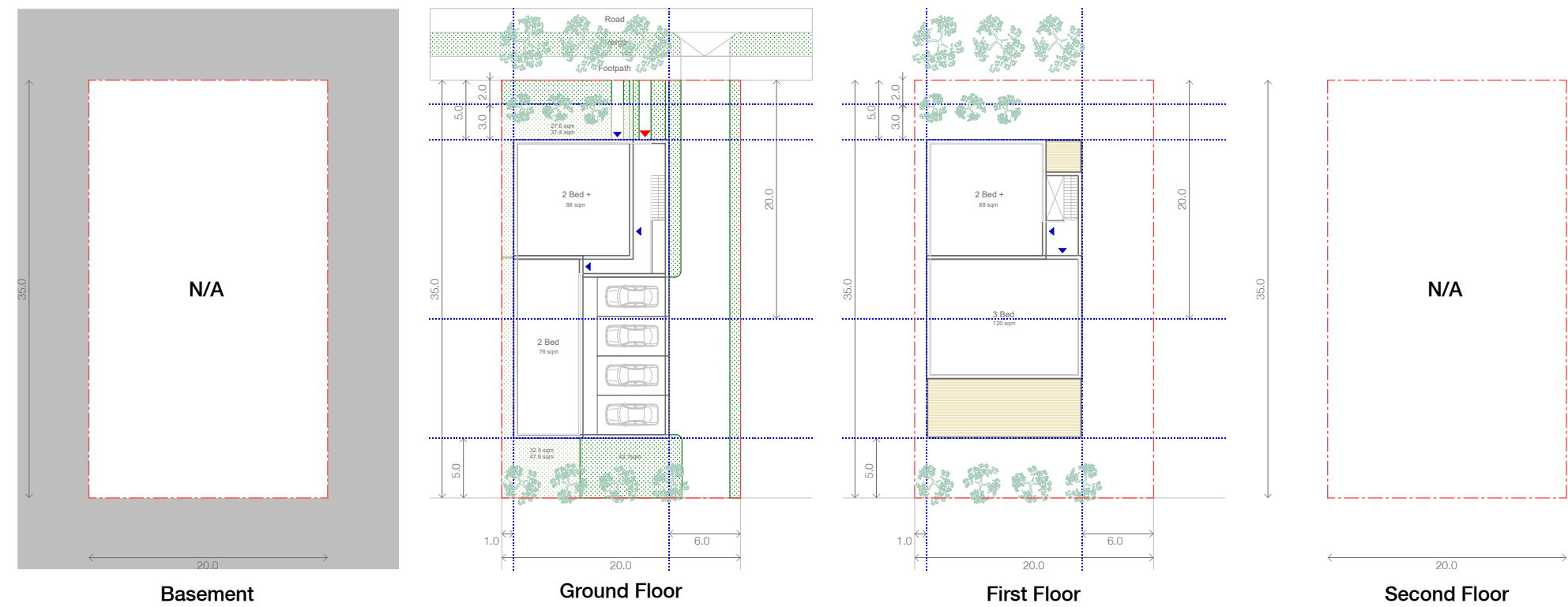
Design Studies

6.3 A1 - Manor House

Site Area	700 sqm	
Lot Width	20 metres	
Total GFA	413 sqm	
Ground Floor	192 sqm	
First Floor	221 sqm	115.1 % of ground
Second Floor	-- sqm	-- % of ground
Total FSR	0.59:1	(incl. 0.1:1 bonus)
Height of Building	8.8 m	(3.7 + 3.1 + 2m roof)
Building Footprint	325 sqm	46.4 % of site
Total Dwellings	4	
Dwelling Mix	-- 1 Beds	-- % of total
	3 x 2 Beds	75 % of total
	1 x 3 Beds	25 % of total
Parking Spaces	4	
Private Open Space	156 sqm	
Communal Open Space	42 sqm	
Deep Soil	>106 sqm	15 % of site
Impervious Material	495 sqm	70.7 % of site

Notes:
- 1 dwelling not achieving 35 sqm POS at ground if "rear only"
- Side setback non-compliant (past 20m - 40% of 15 = 6) 10m shown

Recommended LEP & DCP Controls

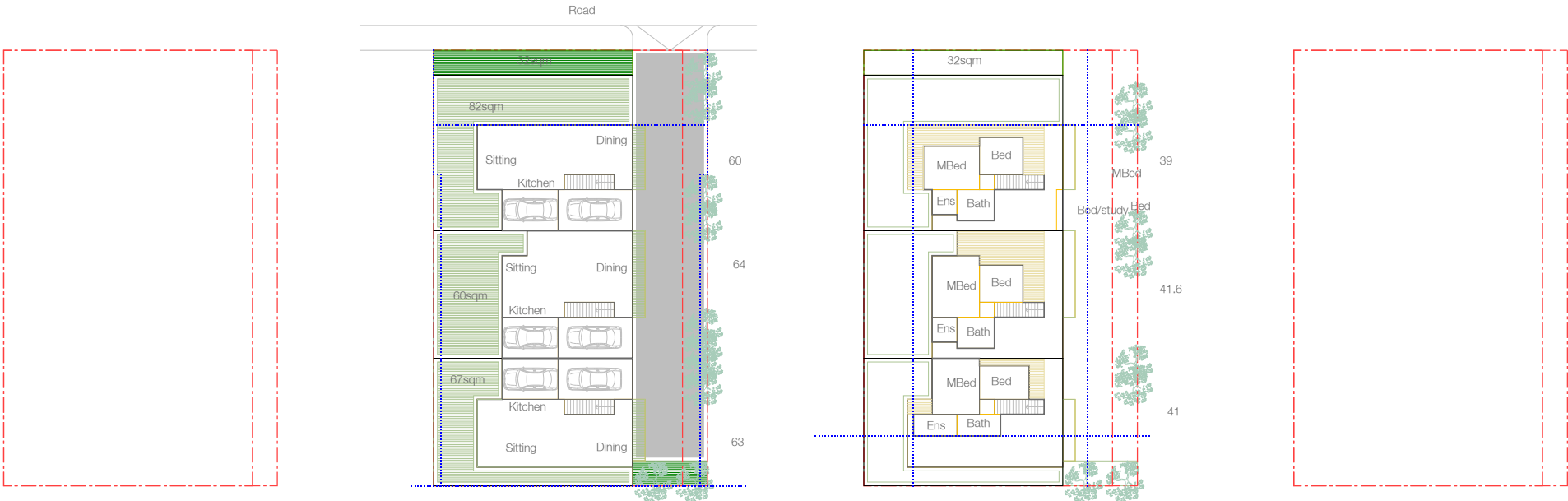


Design Studies

6.4 A2 - Multi Dwelling - Cul-de-sac

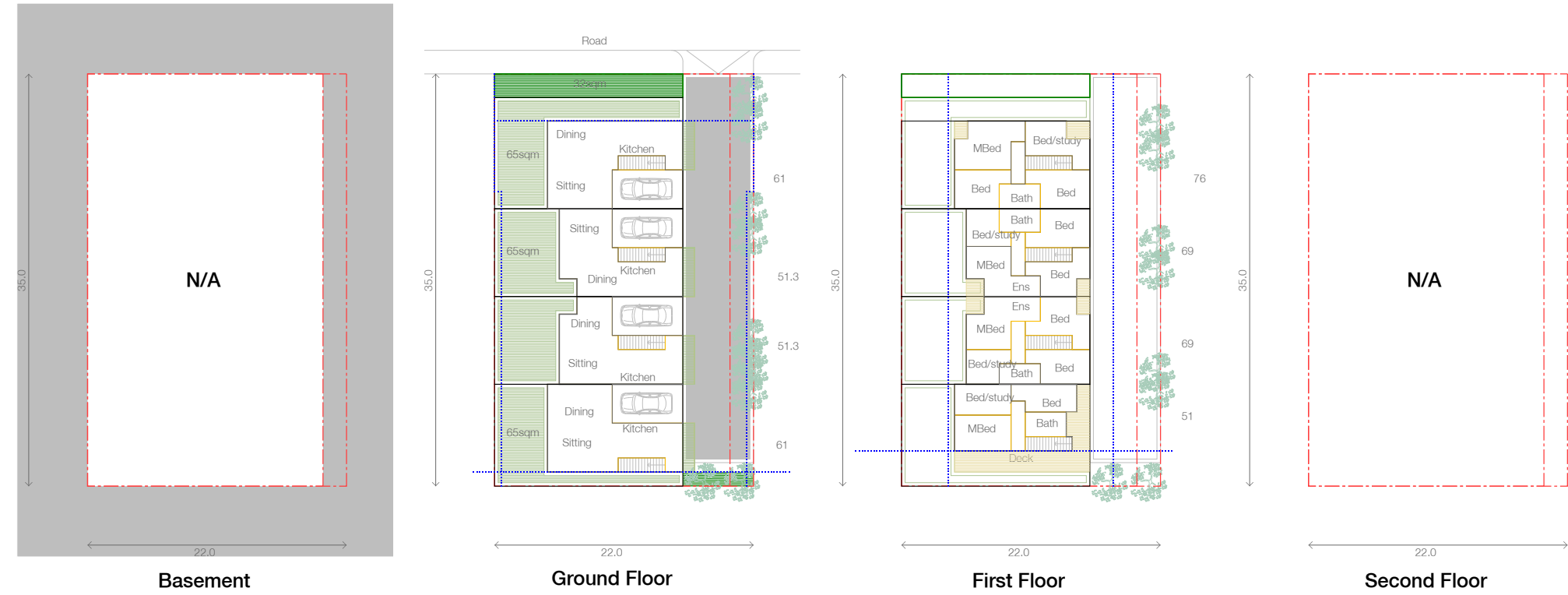
Site area = 770 sqm
Building footprint = xxx sqm
Coverage = xxx%
Dwellings = 3
Mix = 3 x 2beds
Parking spaces = 6
Rear Private Open Space = 221sqm
Total Site GFA = 308sqm
Site FSR = 0.4:1

Existing LEP & DCP Controls



Recommended LEP & DCP Controls

Site area = 770 sqm
Building footprint = xxx sqm
Coverage = xxx%
Dwellings = 4
Mix = 4 x 3beds
Parking spaces = 4
Rear Private Open Space = 204 sqm
Total Site GFA = 489 sqm
Site FSR = 0.65:1



Design Studies

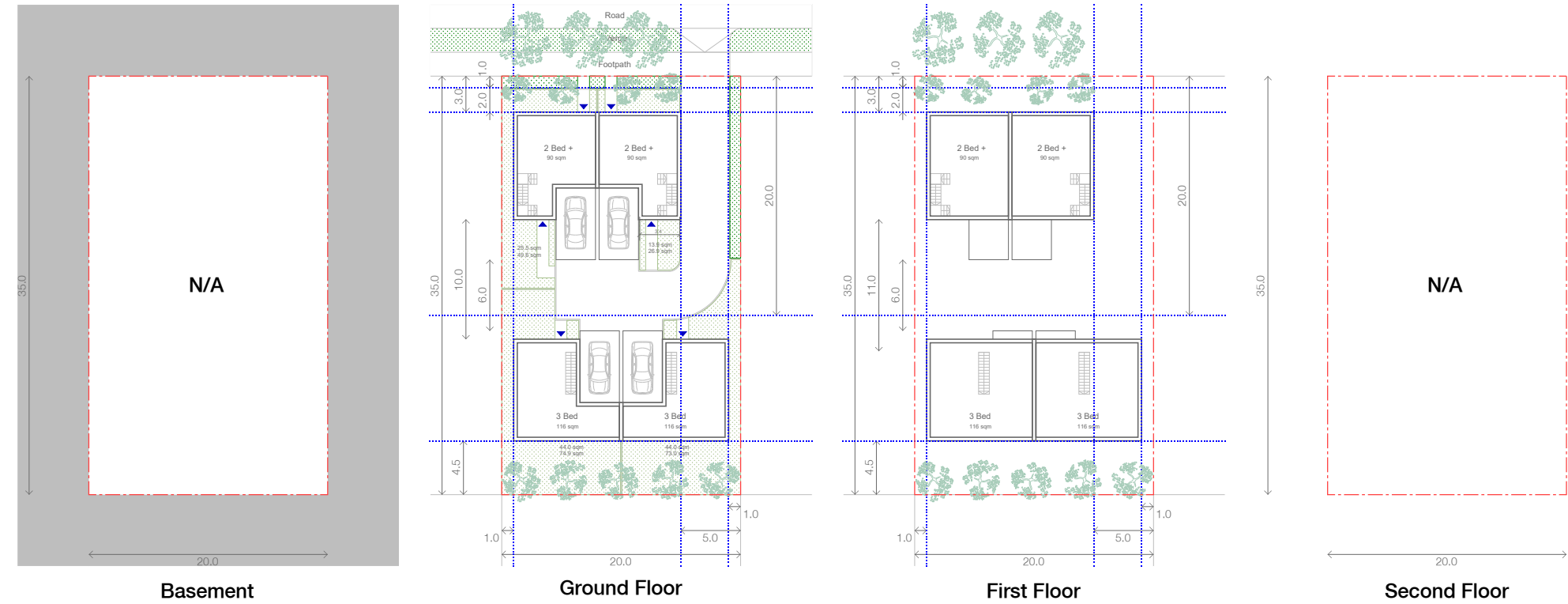
6.5 A2 - Multi Dwelling - Mews

Site Area	700 sqm	
Lot Width	20 metres	
Total GFA	433 sqm	
Ground Floor	187 sqm	
First Floor	245 sqm	131 % of ground
Second Floor	-- sqm	-- % of ground
Total FSR	0.61:1	(incl. 0.1:1 bonus)
Height of Building	8.8 m	(3.7 + 3.1 + 2m roof)
Building Footprint	279 sqm	39.8 % of site
Total Dwellings	4	
Dwelling Mix	- x 1 Beds	- % of total
	4 x 2 Beds	50 % of total
	4 x 3 Beds	50 % of total
Parking Spaces	4	
Private Open Space	224 sqm	
Communal Open Space	-- sqm	
Deep Soil	>101 sqm	14.4 % of site
Impervious Material	466 sqm	66.6 % of site

Notes:

- 1/2 dwelling(s) not achieving 35 sqm / 4m dimension POS at ground. Rear only?
- Front setback non-compliant (less than 4.5m)
- Side setback non-compliant (past 20m - 40% of 15 = 6) 8.5m shown

Recommended LEP & DCP Controls

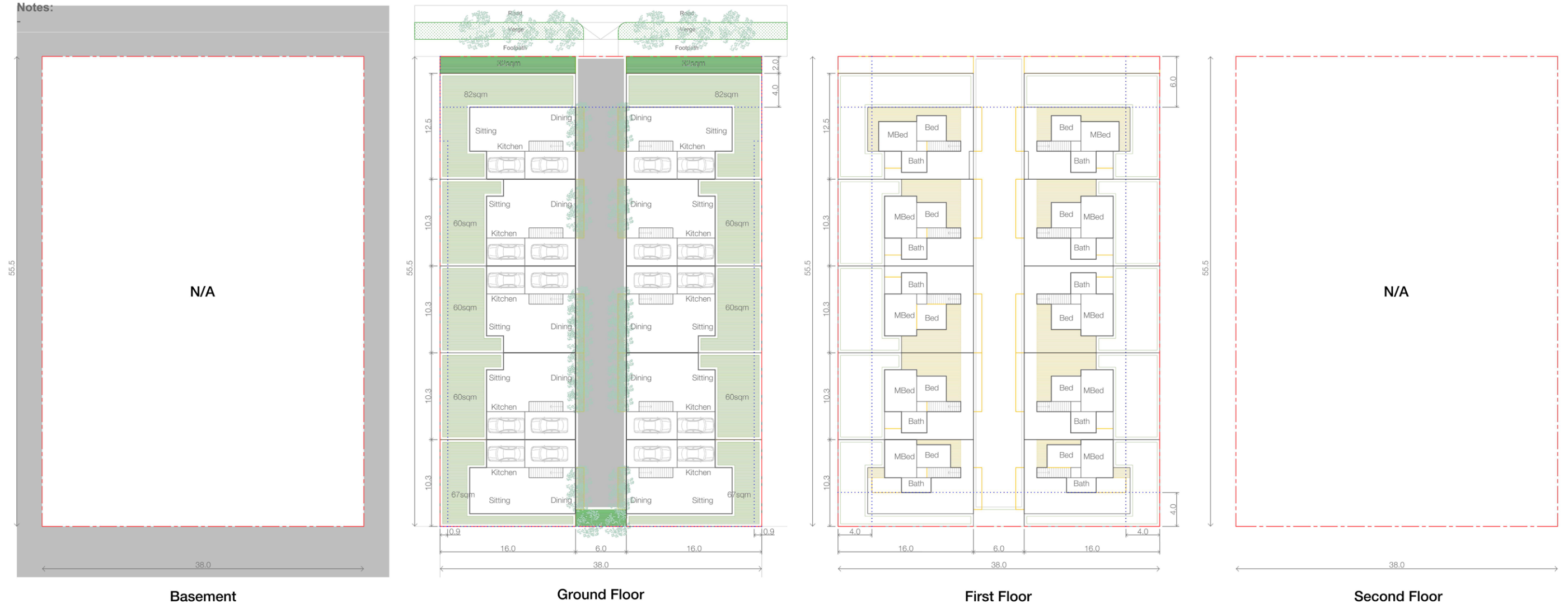


Design Studies

6.6 B2 - Multi Dwelling - Cul-de-sac (Existing Controls)

Site Area	2,109 sqm	
Lot Width	38 metres	
Total GFA	988 sqm	
Ground Floor	632 sqm	
First Floor	356 sqm	56 % of ground
Second Floor	- sqm	- % of ground
Total FSR	0.46:1	(- bonus)
Height of Building	10m	(3.1 + 3.1 + 3.1 + 1.7m roof)
Building Footprint	644 sqm	33.8 % of site
Total Dwellings	10	
Dwelling Mix	- x 1 Beds	- % of total
	10 x 2 Beds	100 % of total
	- x 3+ Beds	- % of total
Parking Spaces	10	
Private Open Space	746 sqm	
Communal Open Space	76 sqm	
Deep Soil	724 sqm	34.3 % of site
Impervious Material	632 sqm	29.9 % of site

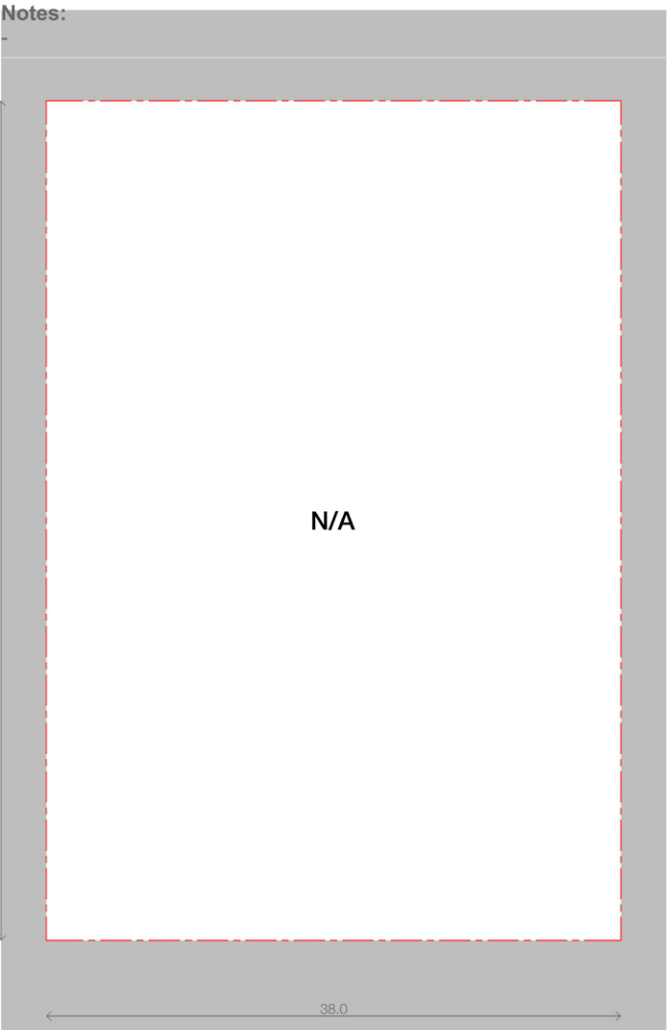
Notes:



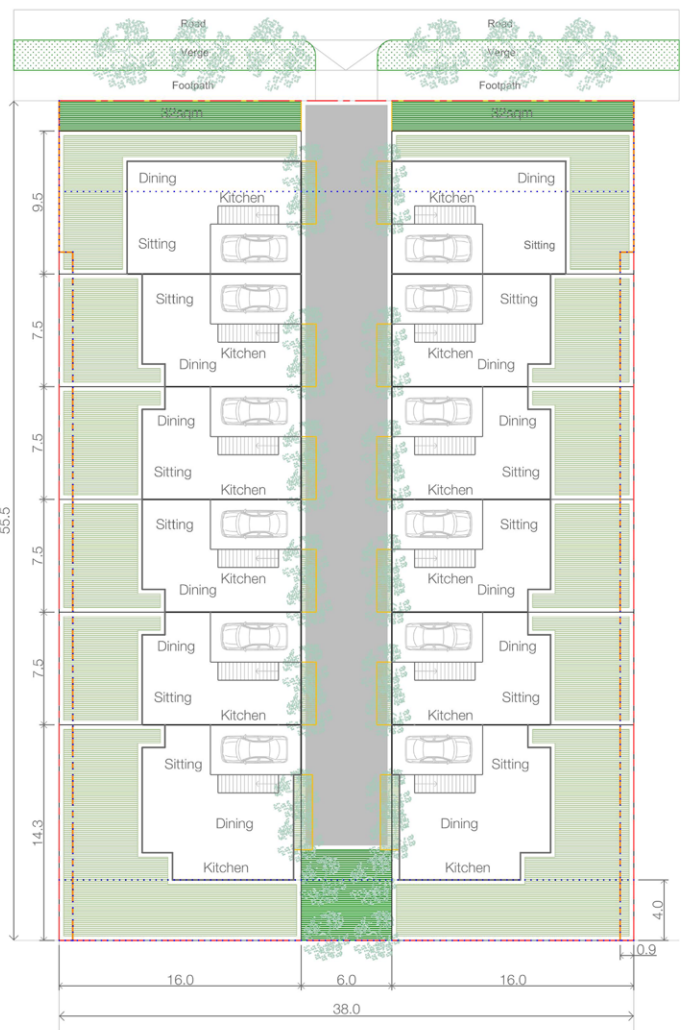
Design Studies

6.7 B2 - Multi Dwelling - Cul-de-sac (Proposed Controls)

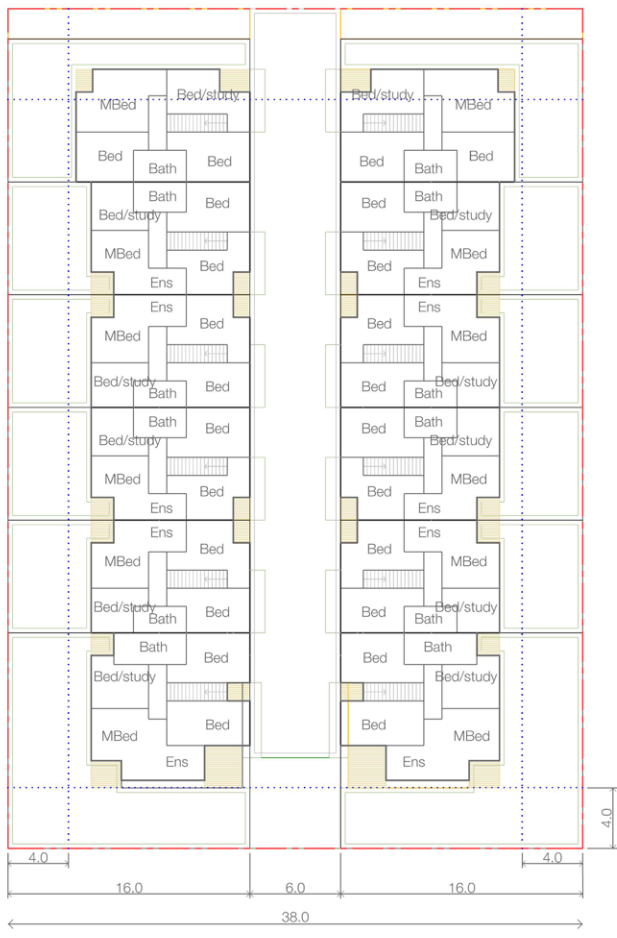
Site Area	2,109 sqm	
Lot Width	38 metres	
Total GFA	1,586 sqm	
Ground Floor	690 sqm	
First Floor	896 sqm	129 % of ground
Second Floor	- sqm	- % of ground
Total FSR	0.75:1	(- bonus)
Height of Building	10m	(3.1 + 3.1 + 3.1 + 1.7m roof)
Building Footprint	644 sqm	33.8 % of site
Total Dwellings	10	
Dwelling Mix	- x 1 Beds	- % of total
	- x 2 Beds	100 % of total
	12 x 3+ Beds	- % of total
Parking Spaces	12	
Private Open Space	728 sqm	
Communal Open Space	100 sqm	
Deep Soil	829 sqm	32.7 % of site
Impervious Material	1272 sqm	60% of site



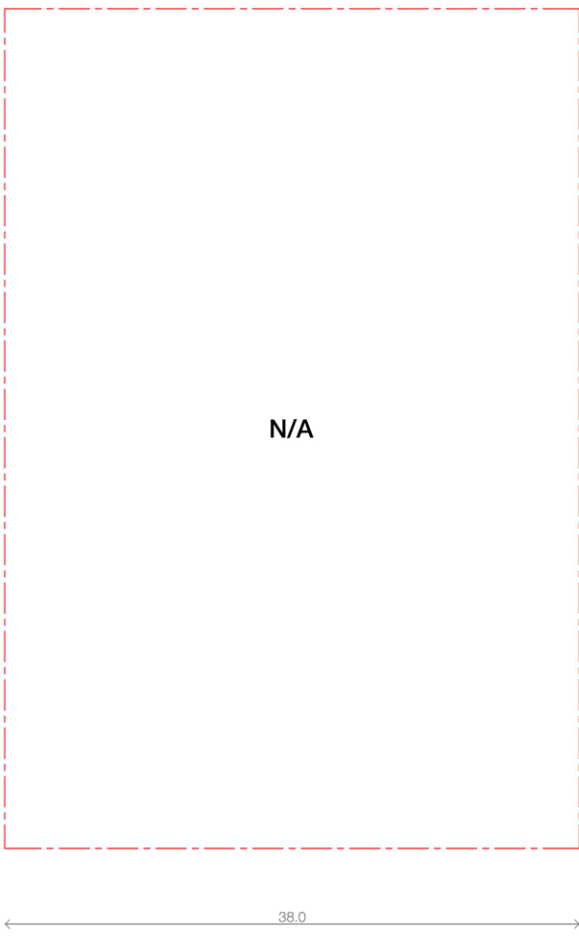
Basement



Ground Floor



First Floor



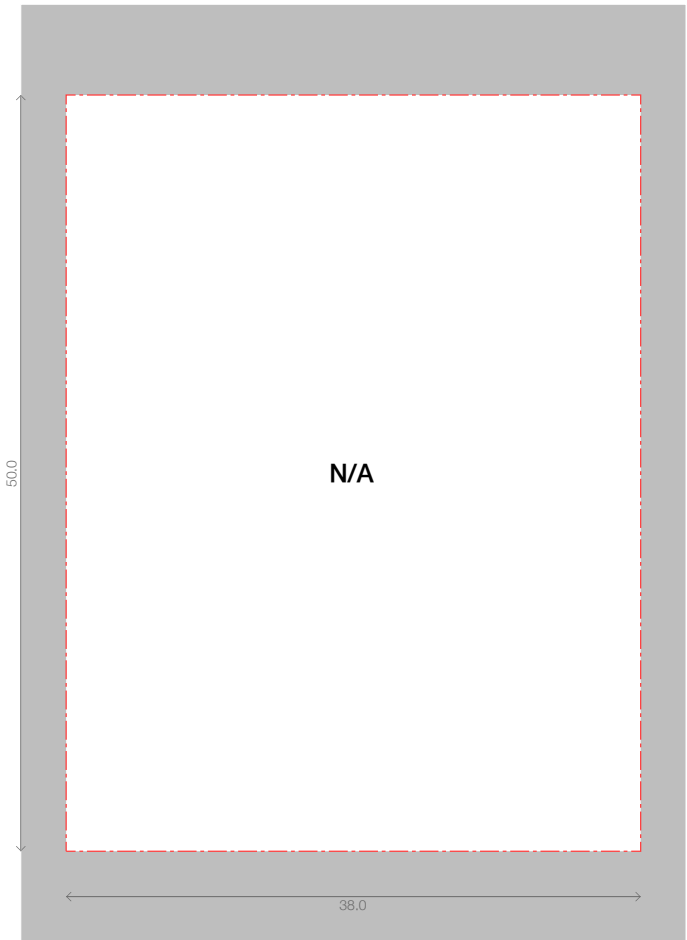
Second Floor

Design Studies

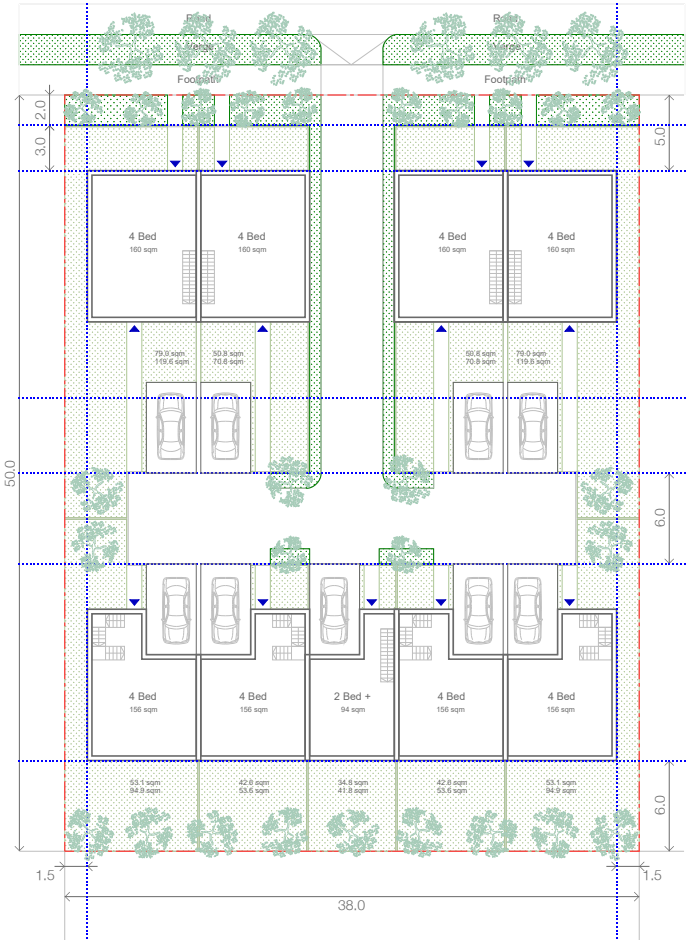
6.8 B2 - Multi Dwelling - Mews (Proposed Controls)

Site Area	1,900 sqm	
Lot Width	38 metres	
Total GFA	1,388 sqm	
Ground Floor	517 sqm	
First Floor	571 sqm	110 % of ground
Second Floor	300 sqm	58 % of ground
Total FSR	0.73:1	(incl. 0.1:1 bonus)
Height of Building	11.9 m	(3.7 + 3.1 + 3.1 + 2m roof)
Building Footprint	644 sqm	33.8 % of site
Total Dwellings	9	
Dwelling Mix	- x 1 Beds	-- % of total
	1 x 2 Beds	11.1 % of total
	8 x 3+ Beds	88.9 % of total
Parking Spaces	9	
Private Open Space	719 sqm	
Communal Open Space	-- sqm	
Deep Soil	>630 sqm	33.1 % of site
Impervious Material	1,140 sqm	61.5 % of site

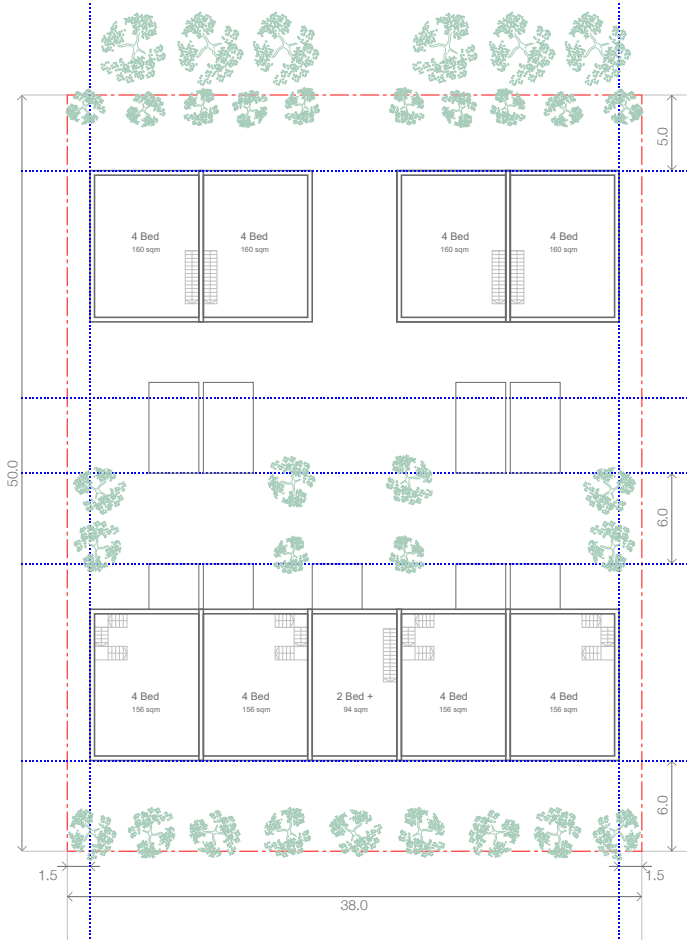
Notes:
- 1 dwelling not achieving 35 sqm POS at ground if "rear only"
- Side setback compliant (past 20m - 40% of 30m = 12). 10m shown



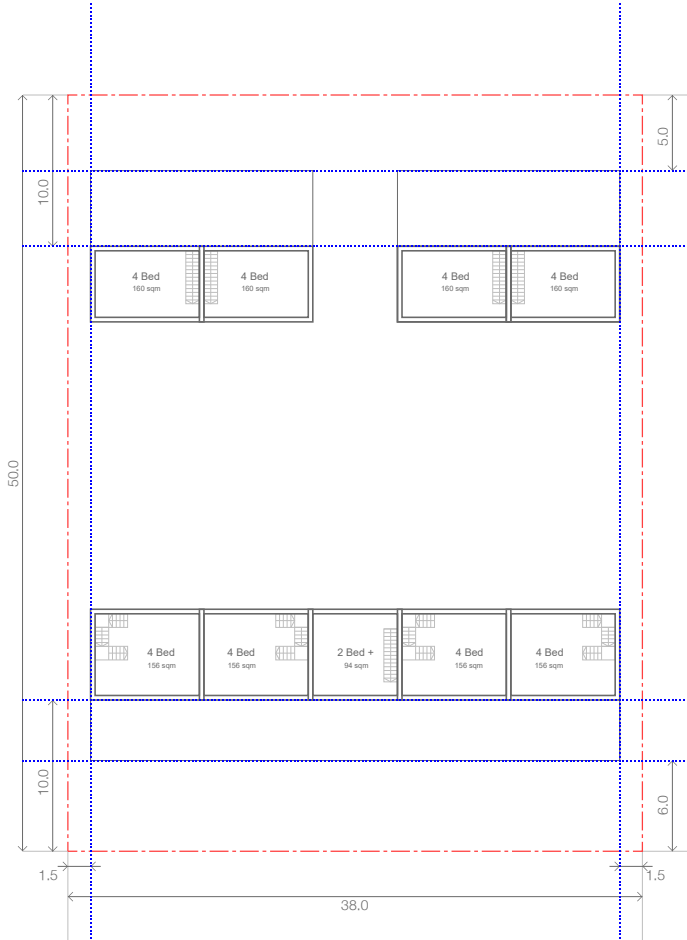
Basement



Ground Floor



First Floor



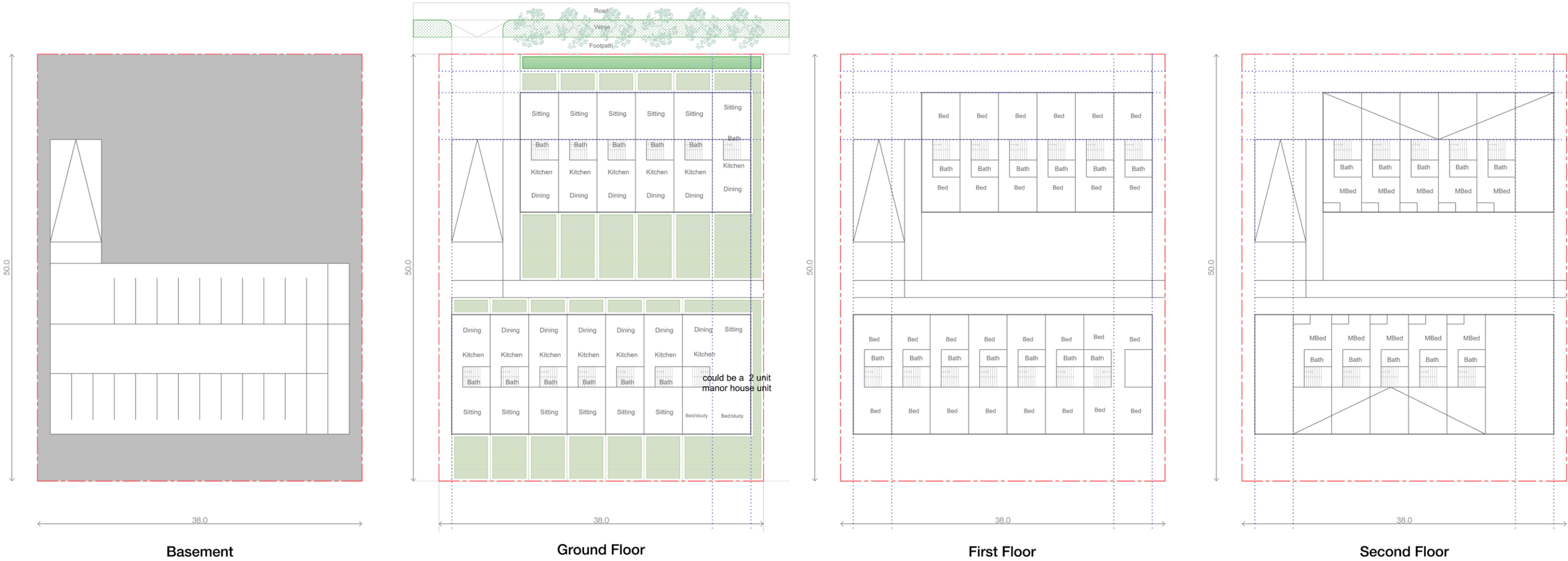
Second Floor

Design Studies

6.9 B2 - Multi Dwelling - Terrace (Proposed Controls)

Site Area	1,900 sqm	
Lot Width	38 metres	
Total GFA	1,814 sqm	
Ground Floor	768 sqm	
First Floor	763 sqm	100 % of ground
Second Floor	283 sqm	36 % of ground
Total FSR	0.95:1	
Height of Building	11.9 m	(1 + 3.7 + 3.1 + 3.1 + 1m roof)
Building Footprint	868 sqm	45 % of site
Total Dwellings	13	
Dwelling Mix	- x 1 Beds	- % of total
	- x 2 Beds	- % of total
	13 x 3+ Beds	100 % of total
Parking Spaces	21	
Private Open Space	615 sqm	
Communal Open Space	57 sqm	
Deep Soil	618 sqm	32 % of site
Impervious Material	1282 sqm	67 % of site

Notes:
-



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