

## 4-22 Larool Crescent & 44-50 Carramarr Road Castle Hill Urban Design Report

prepared for Castle Larool DM Pty Ltd, 9 July 2018





# 1.0 Introduction

This Urban Design Report has been prepared by ae design partnership to support a Planning Proposal enabling renewal of the subject site located at 4-22 Larool Crescent and 44-48 Carramarr Rd Castle Hill. The site's location presents a development opportunity within an 800 metre walking catchment from Castle Hill Station. The Station is currently under construction.

The area is identified to undergo transformation under the State Government and The Hills Council's strategies. A previous design concept was submitted by the proponent in February 2018. Council's assessment identified major non-compliances with the previous scheme in terms of floor space ratio, building height, open space and solar access requirements within the Hills Local Environmental Plan 2012 - Castle Hill North Precinct and the Hills Draft Development Control Plan 2012 - Part D Section 20 - Castle Hill North Precinct.

ae design partnership have been engaged to provide a revised design concept which is consistent with the desired future character of the area identified by the Council under The Hills Council's LEP and DCP 2012. The design concept prepared by ae design partnership complies with The Hills Council's LEP and Draft DCP controls, achieving a floor space ratio of 1.44:1 and a height limit of 3 to 5 storeys.

The revised proposal incorporates terrace edge elements to the Carramarr Road and Larool Crescent interface to provide a suitable transition to the future terrace style developments on the adjacent sites. The built form follows the slope of the land to avoid battered walls to the street. The amended layout ensures retention of the existing significant trees located within the centre and front setbacks of the site. A 10 metre wide publicly accessible through site link has been provided connecting Larool Crescent Reserve.

The revised design concept ensures compliance with the Draft DCP controls including:

- Building height;
- Setbacks;
- Dwelling size and mix;
- Communal open space;
- Ground floor private open spaces; and
- Solar access requirements.

The suitability of the proposal is established through an assessment of the design concept against The Hills Council's Desired Future Character and the Draft Urban Design Guidelines from Creating Places for People published by the NSW Government Architect 2011 including:

- Urban Structure,
- Urban Grain,
- Density and Mix,
- Height and Massing,
- Streetscape and Landscape,
- Facade and Interface, and
- Details and Materials



Site Location - 4-22 Larool Crescent and 44-50 Carramarr Road Castle Hill NSW



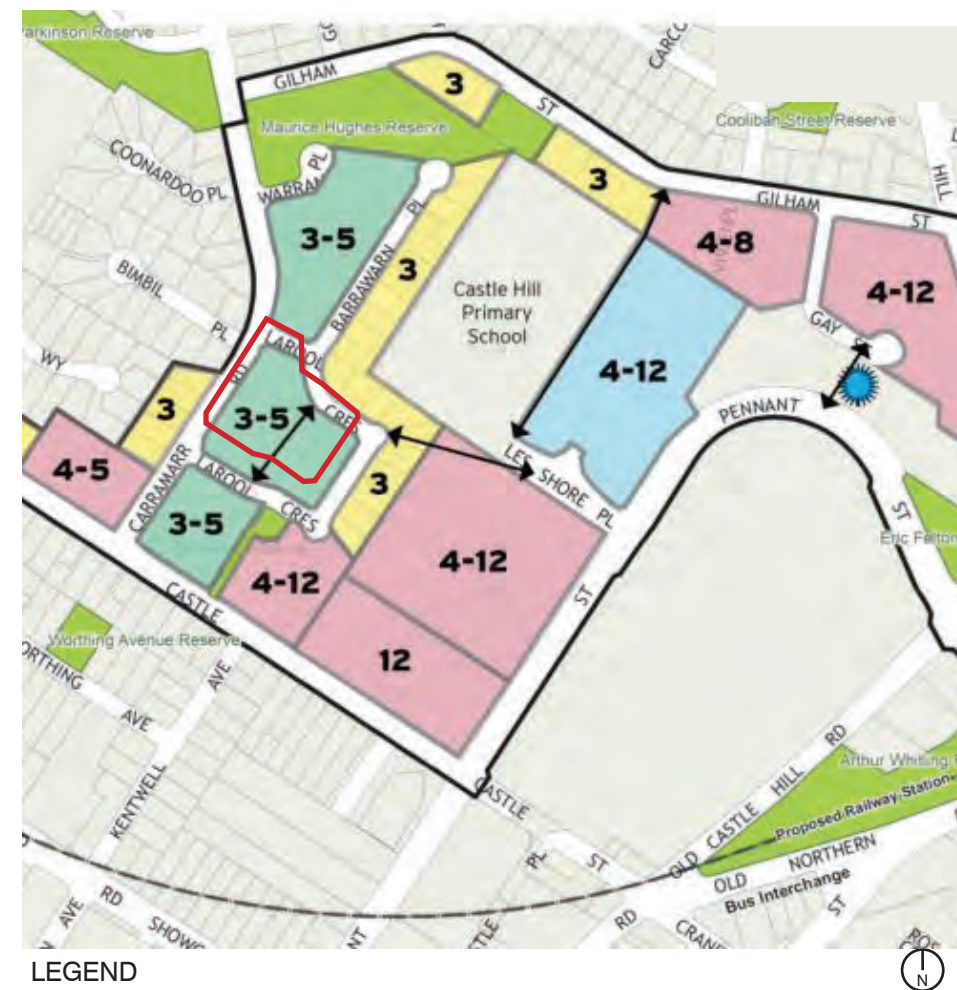
## 2.0 Context Analysis

### 2.1 Castle Hill North Precinct

The Castle Hill North Precinct Structure Plan in the Draft LEP and DCP proposes a height and density transition for the precinct in order to optimise access to the public transport. The proposal includes:

- high density residential area with 4-12 storeys closer to the station;
  - shop top housing proposals with 4-12 storeys closer to the station;
  - high density residential with 3-5 storeys for sites away from the station; and
  - 3 storey terraces in the fringe areas of the precinct.
- structure plan also proposes new pedestrian connections to improve walkability within the precinct.

Council's Structure Plan proposes a 3 to 5 storey high density residential development on the subject site. A 3 storey terrace edge is to be provided for built form transition to the adjacent 3 storey apartment terraces to be located across Carramarr Road and Larool Crescent. A new pedestrian connection is to be incorporated in the proposal.

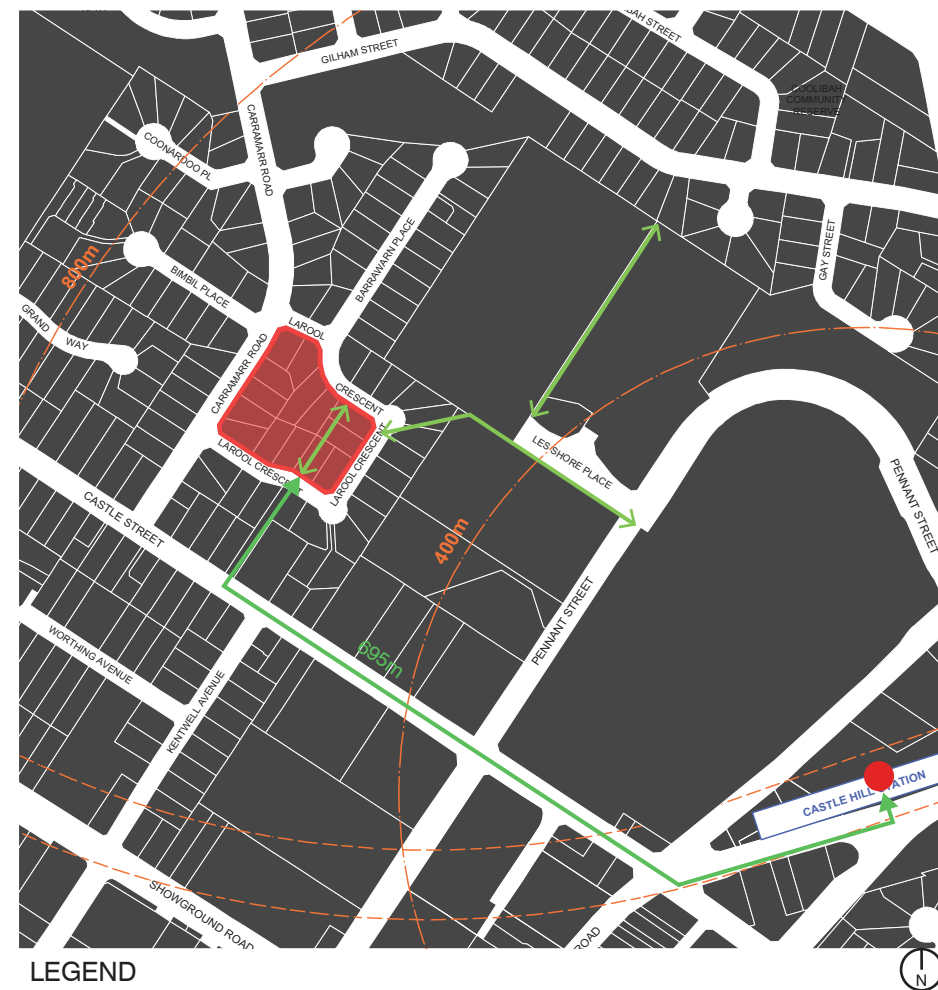


LEGEND

- |  |   |
|--|---|
| <span style="display:inline-block; width:15px; height:15px; background-color:#90EE90; border:1px solid black;"></span> high density residential with terraced edge | <span style="display:inline-block; width:15px; height:15px; background-color:#ADD8E6; border:1px solid black;"></span> shop top housing |
| <span style="display:inline-block; width:15px; height:15px; background-color:#FFD700; border:1px solid black;"></span> terraces                                    | X number of storeys   |
| <span style="display:inline-block; width:15px; height:15px; background-color:#FFB6C1; border:1px solid black;"></span> high density residential                    |   |

### 2.2 Urban Structure

The subject site includes an urban block accessible from Castle Street from south and Carramarr Road from north. The site has a restricted east-west connectivity to Castle Hill Station and the shopping centre. The Castle Hill Station is not easily accessible from the site. The station is located at a 695m walking distance.



LEGEND

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|---|
| <span style="display:inline-block; width:15px; height:15px; background-color:#FF0000; border:1px solid black;"></span> subject site                 |
| <span style="display:inline-block; width:15px; height:15px; border-bottom:2px solid green;"></span> desired pedestrian links based on the Draft DCP |
| <span style="display:inline-block; width:15px; height:15px; border-bottom:2px dashed orange;"></span> distance from Castle Hill Station             |
| <span style="display:inline-block; width:15px; height:15px; background-color:#FF0000; border-radius:50%;"></span> Castle Hill Station               |

### 2.3 Topography

The diagram shows contours at an interval of 2 metres. The Castle Hill Station and the Shopping Centre are located at the high points of the area. The Castle Hill RSL building along Castle Street is the lowest spot in the area. The subject site has a steep topography with an approximately 10m fall across north to south.

The proposed built form in the area and on the subject site needs to step according to the topography to avoid inactive battered wall interfaces between public domain and buildings.



LEGEND

- |  |
|--|
| <span style="display:inline-block; width:15px; height:15px; border:1px solid red;"></span> subject site  |
| <span style="display:inline-block; width:15px; height:15px; background-color:#D3D3D3; border:1px solid black;"></span> contours at 2m interval |
| <span style="display:inline-block; width:15px; height:15px; background-color:#FFD700; border-radius:50%;"></span> high point                   |
| <span style="display:inline-block; width:15px; height:15px; background-color:#000000; border-radius:50%;"></span> low point                    |

## 2.4 Built Form

The area around the subject site includes 1 to 2 storey detached dwelling houses. The existing buildings are to be replaced by new 3 to 5 storey terraces on the subject site as per the Hills Council's desired future character.

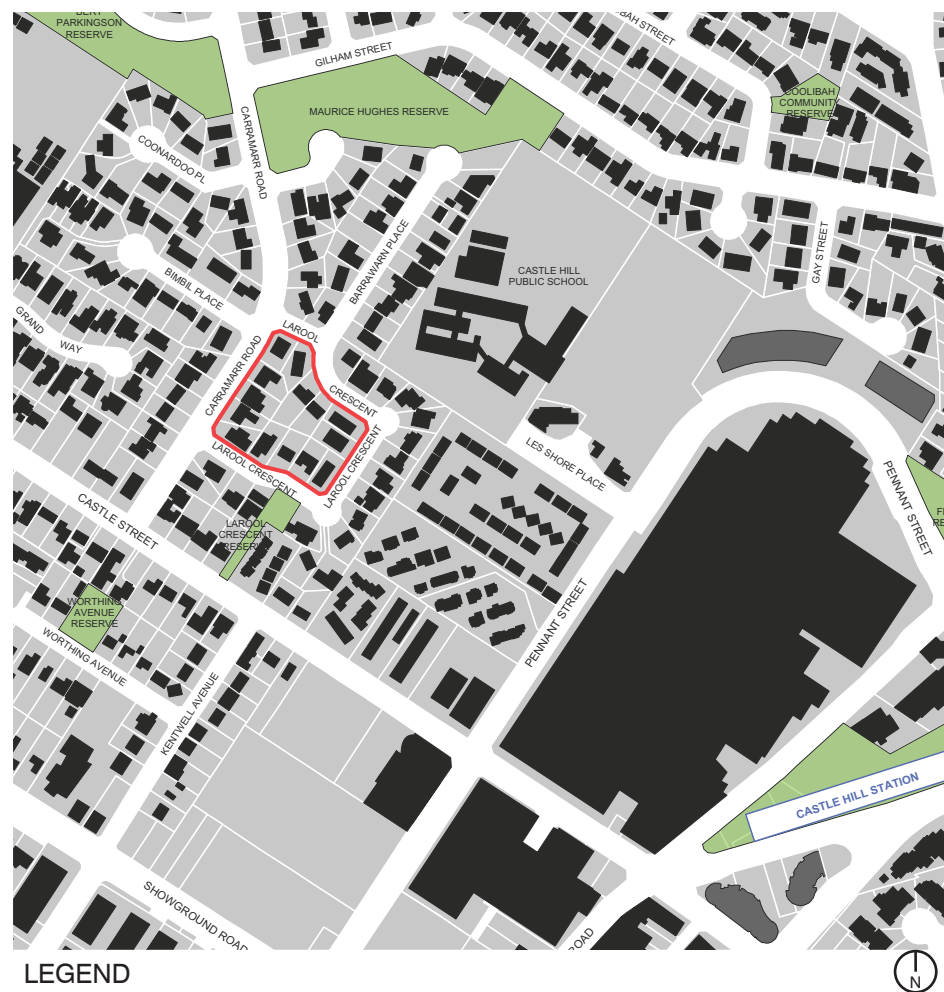
The future buildings on the subject site need to provide a built form transition to the surrounding 3 storey terraces to be located across Carramarr Road and Larool Crescent.

## 2.5 Open Space

The current provision of open space within the 800 metre or a 10 minute walking catchment of the subject site includes:

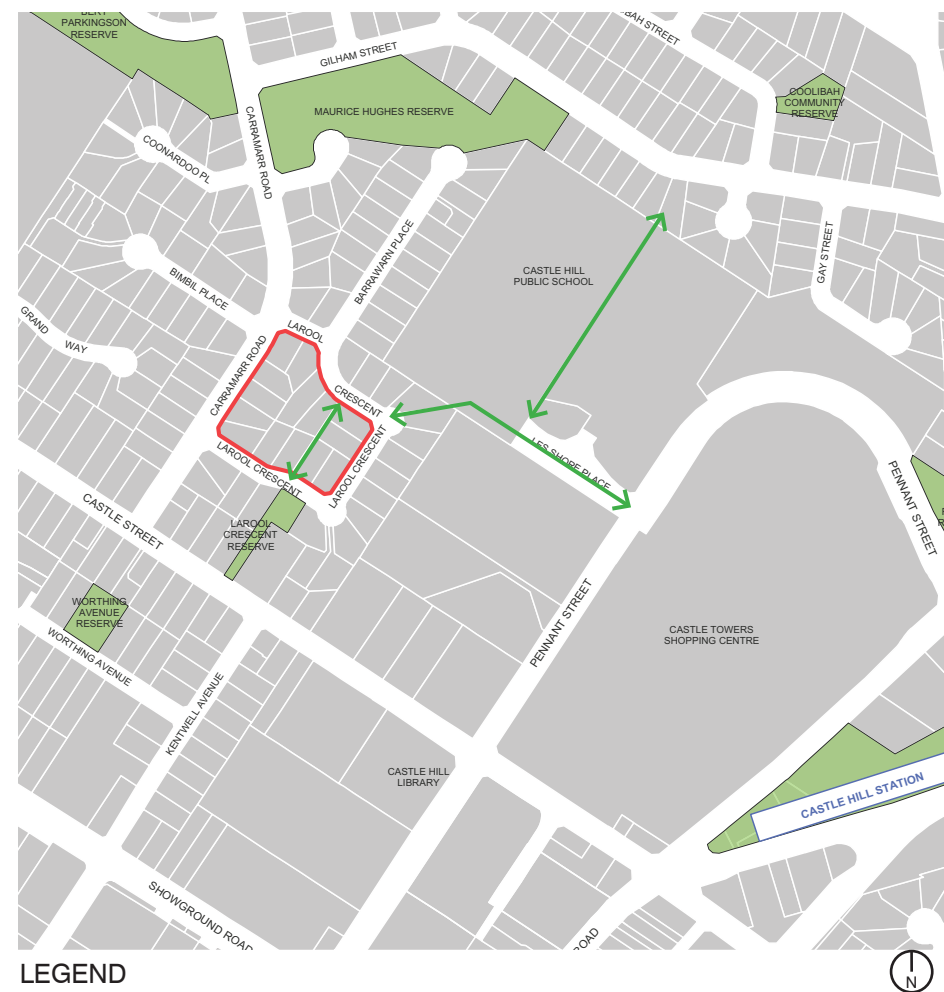
- Larool Crescent Reserve,
- Worthing Avenue Reserve,
- Maurice Hughes Reserve,
- Coolabah Community Reserve,
- Eric Felton Reserve, and
- Arthur Whitting Reserve

The Castle Hill North Precinct LEP and Draft DCP identifies the need for addition of a 10m wide publicly accessible through-site pedestrian links across the subject site and Les Shore Place to improve residential amenity and walkability considering the area is to be transformed in to a high density residential precinct.



### LEGEND

- subject site
- desired pedestrian links based on the Draft DCP
- distance from Castle Hill Station



### LEGEND

- subject site
- desired pedestrian links based on the Draft DCP
- distance from Castle Hill Station
- Castle Hill Station



### 3.0 Desired Future Character:

The Desired Future Character of the Area identified in this report is based on The Hills Local Environmental Plan 2012 - Castle Hill North Precinct and the Hills Draft Development Control Plan 2012 - Part D Section 20 - Castle Hill North Precinct.

#### Transformation of Castle Hill:

The future high density development on the subject site and within the centre can capitalise on the existing shopping centre and the future Castle Hill Station which will have access to a high frequency train service connected to a local bus network. Based on the strategies prepared by the State Government and The Hills Council, it is recognised that the Castle Hill Centre is to offer redevelopment opportunities for retail, mixed use and high density residential proposals supported by new improved public domain to create a walkable centre.

#### Courtyard Style Residential Flat Buildings on Subject Site:

The Hills Shire Draft Development Control Plan - Part D Section 20 - Castle Hill North Precinct anticipates the subject site for courtyard style residential flat buildings with new open spaces and public domain improvements with the vision to reinforce the garden shire character.

#### Built Form:

##### Building Height:

Building heights to allow reasonable daylight access to all developments and the public domain. The Draft DCP proposes 3 to 5 storey high density residential development on the subject site.

##### Building Articulation:

Buildings are to be sufficiently articulated to reduce the appearance of bulk and scale and provide for visual interest and innovative design.

##### Terrace Edge:

Include a 'Terrace Edge Streetscape' with heights no greater than 3 storeys setback 3 metres from the Carramarr Road and Larool Crescent boundaries;

##### Upper Level Setbacks:

Level 4 and 5 are to have an additional setback of 5 metres behind the front building line of Level 1, 2 and 3.

##### Built Form Transition:

Provide a terrace edge and include upper level setbacks to create a built form transition.

#### Public Domain:

##### Landscaped Setbacks:

Include soft landscape treatments within the front setback areas of terraces for built form along Larool Crescent and Carramarr Road. Deciduous trees are encouraged within the front setback areas to facilitate sunlight access in mid winter.

##### Private Open Space:

Provide private open space areas within the front setback areas to soften the interface between built form and public domain.

##### Public Open Space:

Buildings on sites which adjoin public open spaces shall have an outlook to the adjoining open space area, so as to increase passive surveillance of these spaces.

##### Sunlight to Public Spaces:

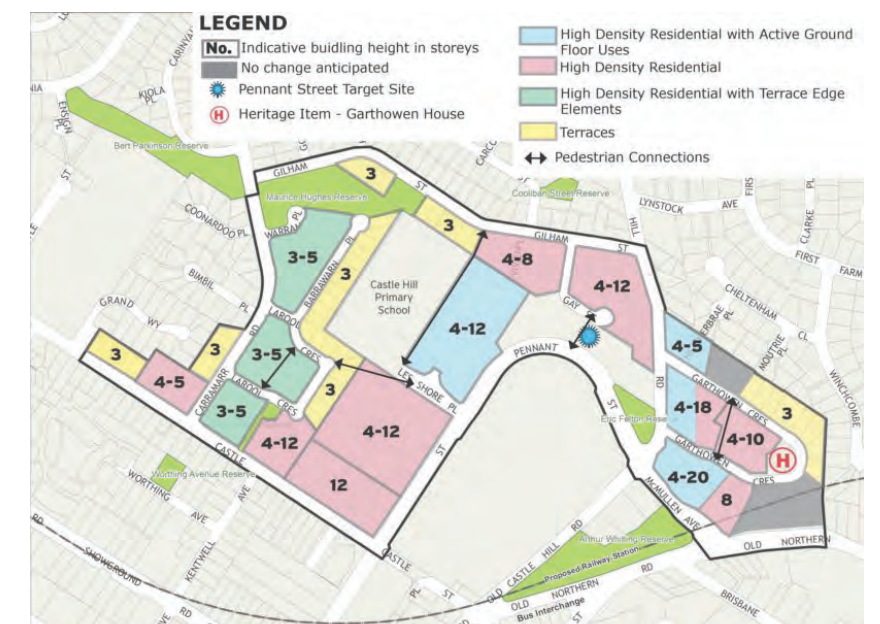
Ensure that overshadowing from new buildings does not result in significant loss of sunlight and diminish the enjoyment of public spaces for pedestrians.



Desired Future Character of Castle Hill, source: Draft DCP 2012 - Part D Section 20



Terrace Edge Cross Section from Draft DCP 2012 - Part D Section 20



Structure Plan showing building heights in storeys and location for new pedestrian connections within the Castle Hill North Precinct from Draft DCP 2012 - Part D Section 20



## 4.0 Site Analysis

The subject site is an urban block including 14 X single ownership lots with a total site area of 10,125m<sup>2</sup>.

### Topography:

The highest point on the site is located at the northern corner of Larool Crescent and Carramarr Road. The land falls by approximately 10 metres from the northern to the southern corner.

### Through-site Pedestrian Link:

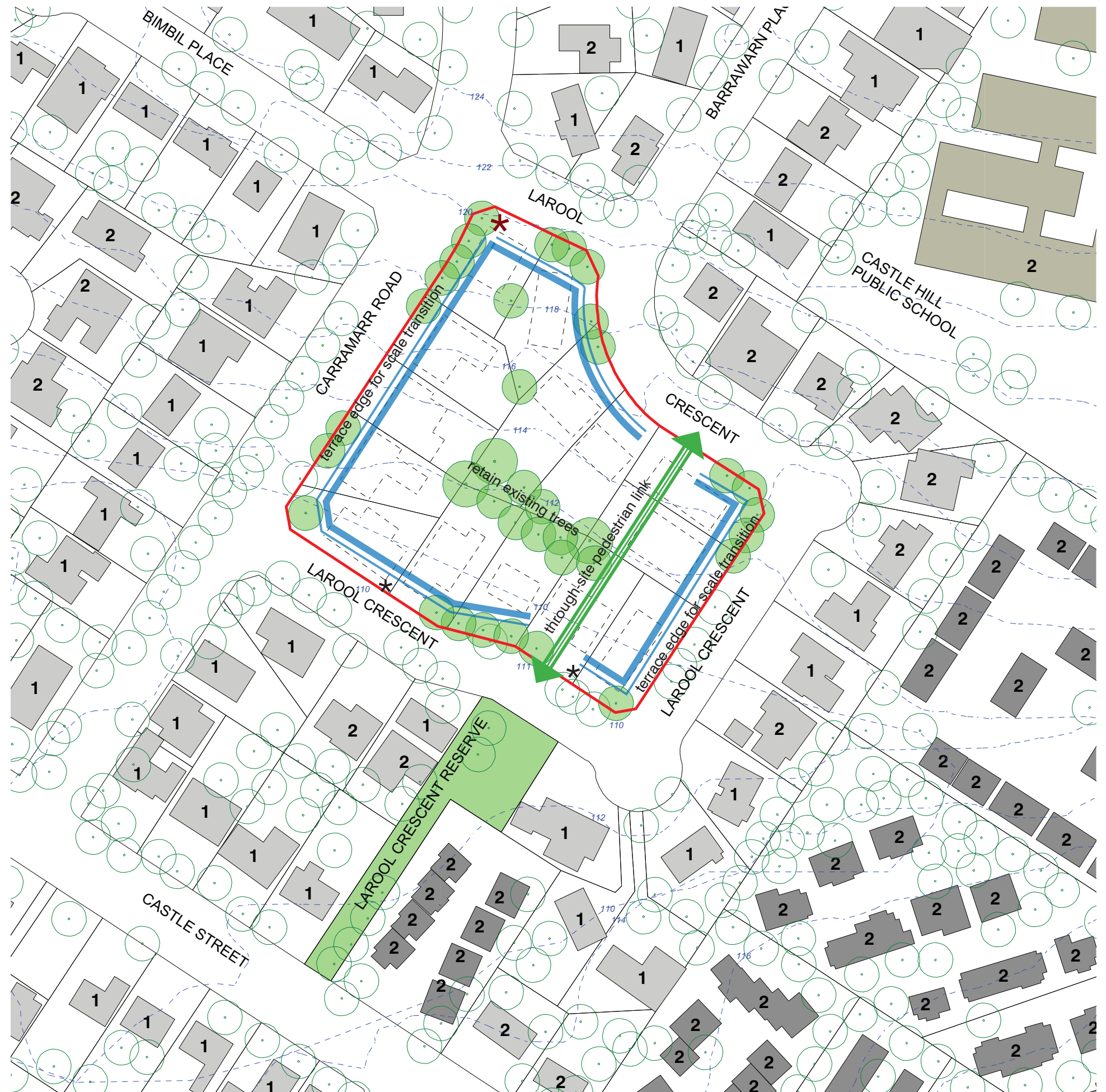
The Larool Crescent Reserve is located south of the subject site. There is an opportunity to create a north-south through-site pedestrian link extending from the Reserve. This location is also the lowest spot of the subject site. This connection has also been identified within the Castle Hill North Precinct Plan prepared by The Hills Council.

### Built Form Transition:

The area around the subject site contains 1-2 storey detached dwelling houses which are to be transformed to 3 storey medium density apartment buildings based on the draft LEP and DCP controls. Council's controls allow a taller development with 3 to 5 storeys for the subject site. Therefore, the proposal needs to consider a suitable built form transition to the adjacent sites.

### Existing Trees on Site:

The site includes a number of existing trees predominantly Bottle Brush, Brush Box and Blue Gum trees. It is highly desired to maximise retention of the existing trees in the area while the Castle Hill North Precinct undergoes a transformation from a low to high density residential precinct.



### LEGEND

- Subject Site
- 10m Wide Through-Site Pedestrian Link
- terrace edge for scale transition
- open space
- existing trees
- dwelling houses
- townhouses
- public buildings
- contours at 2m interval

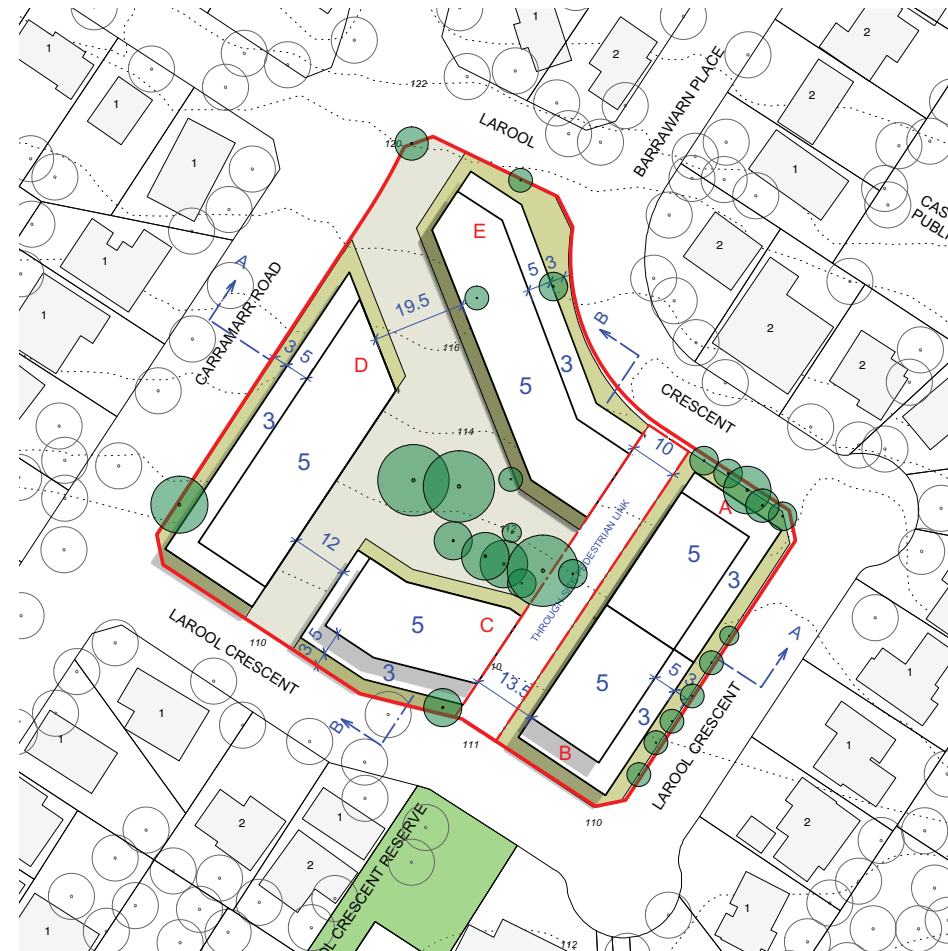


## 5.0 Building Envelope Testing:

The following 2 X design options were tested to establish the best outcome for the subject site and its context. The Building Envelope Testing ensures that the proposed floor space ratio and height of buildings are coordinated with the Desired Future Character of the Area identified within the Draft DCP.

The Building Envelope Testing establishes an optimum floor space ratio capacity for the site, whilst ensuring compliance with the SEPP 65 Apartment Design Guide in terms of building separation distances, solar access to habitable areas, solar access open spaces, deep soil, common open space and other requirements.

### Option 1:



Floor Space Ratio = 1.44 : 1  
Building Height = 3 to 5 storeys

Option 1 is a modified version of the previous scheme submitted by the proponent in February 2018. The modification addition of a 10m wide through-site pedestrian link from Larool Crescent Reserve to Larool Crescent (north) and to Barrarn Place.

Option 1 is a less preferred because of long buildings which appear overbearing in the streetscape. The building length creates an undesirable street interface where a large extent of car park protrudes above ground, particularly in case of Building E which is sited perpendicular against the slope of the site.

The proposed building height of 5 storeys for building E results in a greater extent of overshadowing of the open space, when compared against Option 2.

### Option 2 - Preferred Option:



Floor Space Ratio = 1.44 : 1  
Building Height = 3 to 5 storeys

Option 2 includes a 10m wide through-site pedestrian link from Larool Crescent Reserve to Larool Crescent (north) and to Barrarn Place, similar to Option 1. The option includes 6 x buildings located around a courtyard. The option has relatively smaller building footprints which step as per the topography. The extent of overshadowing is minimised with the finer grain. The building separation distances are generous and are aimed at maximising solar access to open space.



## 6.0 The Proposal

### 6.1 2D Building Envelope Plan

The proposed layout maximises northern orientation and ensures that a balance is created in terms of:

- Addition of a 10m wide through-site pedestrian linking to the Larool Crescent Reserve to south;
- Response to the desired future streetscape character in terms of provision of a 3 storey terrace edge, with a 5m setback for the above 2 floors;
- Retention of existing trees within the courtyard and front setback of the proposal;
- Provision of building heights and separation distances allow adequate sunlight to open spaces and habitable areas of the proposal at mid winter;
- Provision of a 2,835m<sup>2</sup> communal open space (28% of site area);
- Provision of a 1,542m<sup>2</sup> deep soil area in the centre of the site (15% of site area);
- Allocation of a minimum 36m<sup>2</sup> of private open space for ground floor dwellings which achieves a desirable transition between public and private domain and avoids privacy issues; and
- Providing direct entries to the ground floor dwellings from Carramarr Road, Larool Crescent, the through site pedestrian link and central communal open space.

Buildings A, B, C, E and F have a height of 5 storeys. The proposal restricts height of Building D to 3 storeys to ensure direct solar access to the open spaces and habitable areas of all apartments located within Buildings B, C and E.

The option ensures compliance is achieved with the Hills Local Environmental Plan 2012 - Castle Hill North Precinct and the Hills Draft Development Control Plan 2012 - Part D Section 20 - Castle Hill North Precinct.



#### LEGEND

- Subject Site
- Proposed Building Envelopes
- 10m Wide Through-Site Pedestrian Link
- Communal Open Space
- Private Open Space
- Existing Open Space
- Existing Dwelling Houses
- Existing Townhouses
- Public Buildings
- Trees Retained



## 6.2 Retention of Existing Trees

The proposal retains 27 existing trees as the site contains remnants of Sydney Turpentine Ironbark Forest. The details of the retained trees are as follows:

TREE NUMBER	SPECIES	HEIGHT (m)	CANOPY (m)	VIGOUR	LOCATION
1	LIQUID AMBER	18	12	good	western corner of site
2	RED GUM	14	8	good	courtyard
3	NI PINE	18	8	good	southern edge near link
5	KAFFIR PLUM	10	10	fair	courtyard
6	STRINGY BARK	15	10	fair	courtyard
7	CEDAR	10	6	fair	courtyard
8	TALLOWWOOD	24	15	fair	courtyard
10	BOTTLE BRUSH	8	5	fair	eastern end
11	BOTTLE BRUSH	8	6	fair	eastern end
12	BOTTLE BRUSH	8	6	fair	eastern end
13	BOTTLE BRUSH	8	5	fair	eastern end
14	BOTTLE BRUSH	8	5	fair	eastern end
15	BOTTLE BRUSH	7	4	fair	eastern end
16	NSW XMAS BUSH	8	6	fair	courtyard
19	CYPRUS	10	6	fair	northern edge
20	CYPRUS	14	7	fair	northern edge
21	CEDAR	15	10	fair	northern edge
22	NI PINE	14	6	fair	northern edge
23	NI PINE	14	6	fair	northern edge
24	EUCALYPTUS	9	4	low	courtyard
26	MAGNOLIA	7	5	good	courtyard
27	BLUE GUM	30+	15	good	courtyard
28	BLUE GUM	35+	15	good	courtyard
29	MELALEUCA	8	6	good	front of barrawarn place
31	BRUSH BOX	10	5	fair	northern corner
32	MELALEUCA	10	5	fair	northern corner
34	BLUE GUM	20	7	fair	northern corner

Source: Report on Existing Trees prepared by Sam Allouche, 12 June 2018





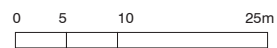
## 6.3 Basement

The entry to the car park is proposed from Larool Crescent (south) from the lowest spot on the site. The basement level is in two parts - the southern part is at RL 108 and the northern part is at RL 111, with the intention to minimise the extent of excavation required on the site. The two parts of the basement are connected through ramps. The location of basement ensures provision of a deep soil zone with an area of 1,542 m<sup>2</sup> - 15.22% of the site area.



### LEGEND

- Subject Site
- Car Space
- Deep Soil
- Trees Retained



1:750@A3





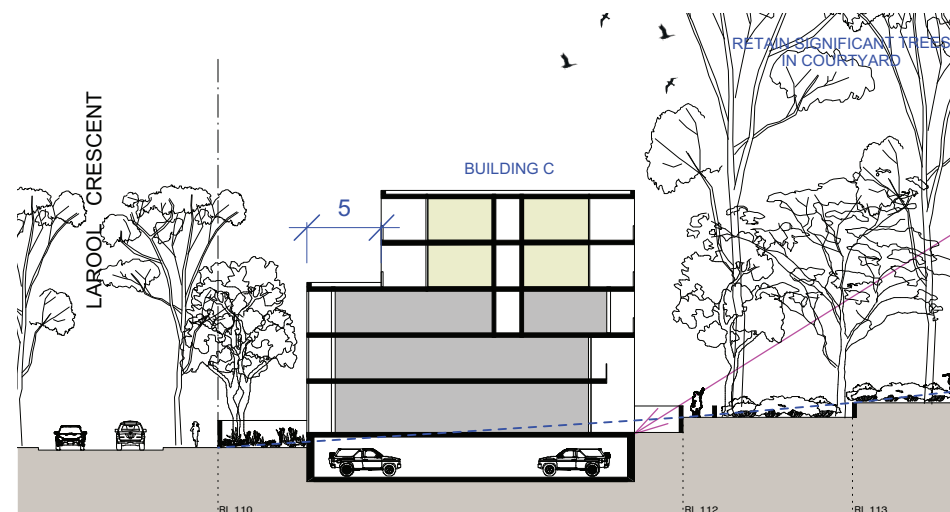
## 6.4 Level 1 / Ground Floor

The proposal creates a desirable street interface at Larool Crescent and Carramarr Road by providing a transition between the public and private domain to avoid visual privacy issues. The buildings are raised above the street level by approximately 1m to improve visual privacy to apartments from the street and to improve passive surveillance and outlook to the streets. The levels of the dwellings step as per the natural ground levels of Carramarr Road and Larool Crescent to avoid issues related to the street interface.

The proposal creates individual and direct street level entries for the ground floor dwellings and clearly marks walkways and pedestrian entries to residential lobbies.

The layout shows private open spaces, communal open spaces and differentiates between public and private domain. The private open spaces ensure that gardens with trees and shrubs can be accommodated to improve amenity for the residents and enhance outlook of the proposal.

The ground floor/level 1 includes living areas of the dwellings which are located adjacent to the private open spaces. The bedrooms of these dwellings are located on level 2. The living areas and private open spaces of all dwellings have either a northern or a north-western aspect to maximise direct sunlight.



Section shows the street interface of Building C proposed addressing Larool Crescent (south).

### LEGEND

- Subject Site
- Apartments with Terrace Edge
- Landscaped Areas
- Trees Retained







## 6.6 Level 3

Level 3 includes a combination of the family friendly apartments and apartments complying with the SEPP 65 ADG sizes. All apartments are proposed addressing the public domain with adequate building separation distances provided to maximise privacy and direct solar access to the scheme.



### LEGEND

- Subject Site
- Family Friendly Apartments
- Apartments complying with the SEPP 65 ADG sizes
- Trees Retained

## 6.7 Level 4 and 5

Level 4 and 5 have a typical level plan that includes a combination of the family friendly apartments and apartments complying with the SEPP 65 ADG sizes.

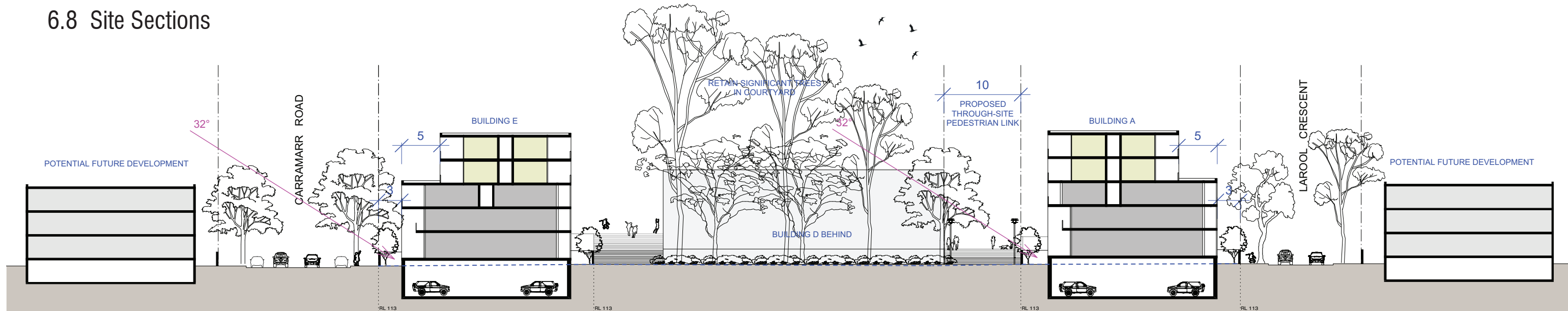


### LEGEND

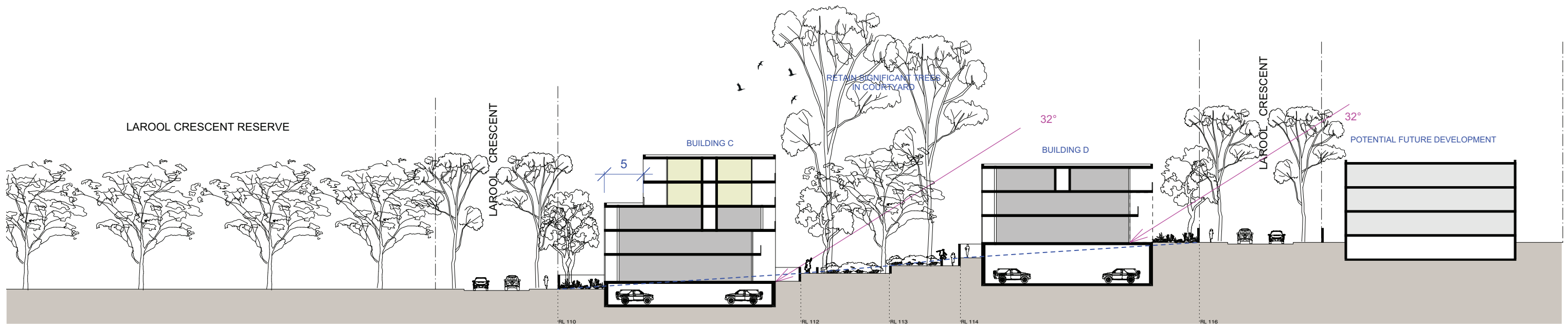
- Subject Site
- Family Friendly Apartments
- Apartments complying with the SEPP 65 ADG sizes
- Trees Retained



## 6.8 Site Sections



SECTION AA



SECTION BB

6.9 Proposal Details

The proposal achieves a floor space ratio of 1.44 : 1 with a total of 128 dwelllings including 60 x family friendly apartments and 68 apartments compliant with the SEPP 65 ADG sizes. The apartment mix includes 47% family friendly apartments.

A communal open space of 2,835m2 - 28% of the site area is provided. A deep soil zone 15.22% of the site area - 1,542m2 is provided to the part of the site that retains the existing trees.

All ground floor apartments are allocated a minimum 36% of private open space accessible from the living areas. The proposal complies with the SEPP 65 Apartment Design Guide with 77% apartments achieing direct solar access for more than 3 hours and 78% of apartments having natural cross ventilation.

Following are the details of the proposal regarding dwelling type, area, private open space area, solar access, cross ventilation, car space allocation and gross floor area:

Site Area		10,125		Apartment Mix:					<i>Percentage</i>
Total GFA		14,546		3 Bedroom Townhouses (FF)	40	(148m2 per apartment)			<b>31</b>
				2 Bedroom (FF)	20	(110m2 per apartment)			<b>16</b>
Floor Space Ratio	1.44			3 Bedroom Apartments (ADG)	0	(105m2 per apartment)			<b>0</b>
Total No. of Dwellings	128			2 Bedroom Apartments (ADG)	52	(85m2 per apartment)			<b>41</b>
Family Friendly Apartments	60			1 Bedroom Apartments (ADG)	16	(58m2 per apartment)			<b>13</b>
ADG Apartments	68			TOTAL	128				<b>100</b>
Communal Open Space	2835 (28%)			47% Family Friendly Apartments within the Scheme					
Deep Soil (15.22%)	1,542								
Solar Access = 99 / 128 Apartments = 77%									
Cross Ventilation = 100/128 Apartments = 78%									
BUILDING A									
LEVEL	UNIT NO.	UNIT TYPE	UNIT NLA	PRIVATE OPEN SPACE	SOLAR ACCESS	CROSS VENTILATION	CAR SPACE	GFA	UNIT CATEGORY
1 AND 2	A1.1	Townhouse	148	36	>3hours	yes	1	960	family friendly
	A1.2	Townhouse	148	36	>3hours	yes	1		family friendly
	A1.3	Townhouse	148	36	>3hours	yes	1		family friendly
	A1.4	Townhouse	148	36	>3hours	yes	1		family friendly
	A1.5	Townhouse	148	36	>3hours	yes	1		family friendly
	A1.6	Townhouse	148	36	>3hours	yes	1		family friendly
3	A3.1	2 Bedroom	110	16	>3hours	yes	1	560	family friendly
	A3.2	2 Bedroom	110	10	>3hours	no	1		family friendly
	A3.3	2 Bedroom	Z	10	>3hours	yes	1		ADG
	A3.4	2 Bedroom	85	10	0	yes	1		ADG
	A3.5	2 Bedroom	110	10	0	no	1		family friendly
4	A4.1	2 Bedroom	110	12	>3hours	yes	1	360	family friendly
	A4.2	2 Bedroom	110	12	>3hours	yes	1		family friendly
	A4.3	1 bedroom	58	10	>3hours	yes	1		ADG
	A4.4	1 bedroom	58	10	0	yes	1		ADG
5	A5.1	2 Bedroom	110	12	>3hours	yes	1	360	family friendly
	A5.2	2 Bedroom	110	12	>3hours	yes	1		family friendly
	A5.3	1 bedroom	58	10	>3hours	yes	1		ADG
	A5.4	1 bedroom	58	10	0	yes	1		ADG
TOTAL	19		1975				19	2240	
BUILDING B									
LEVEL	UNIT NO.	UNIT TYPE	UNIT NLA	PRIVATE OPEN SPACE	SOLAR ACCESS	CROSS VENTILATION	CAR SPACE	GFA	UNIT CATEGORY
1 AND 2	B1.1	Townhouse	148	36	>3hours	yes	1	960	family friendly
	B1.2	Townhouse	148	36	>3hours	yes	1		family friendly
	B1.3	Townhouse	148	36	>3hours	yes	1		family friendly
	B1.4	Townhouse	148	36	>3hours	yes	1		family friendly
	B1.5	Townhouse	148	36	>3hours	yes	1		family friendly
	B1.6	Townhouse	148	36	>3hours	yes	1		family friendly
3	B3.1	2 Bedroom	110	16	>3hours	yes	1	560	family friendly
	B2.2	2 Bedroom	110	10	>3hours	no	1		family friendly
	B3.3	2 Bedroom	83	10	>3hours	yes	1		ADG
	B3.4	2 Bedroom	83	10	0	yes	1		ADG
	B3.5	2 Bedroom	110	10	0	no	1		family friendly
4	B4.1	2 Bedroom	110	16	1	yes	1	360	family friendly
	B4.2	2 Bedroom	110	16	>3hours	yes	1		family friendly
	B4.3	1 bedroom	58	10	>3hours	no	1		ADG
	B4.4	1 bedroom	58	10	0	yes	1		ADG
5	B5.1	2 Bedroom	110	16	1	yes	1	360	family friendly
	B5.2	2 Bedroom	110	16	>3hours	yes	1		family friendly
	B5.3	1 bedroom	58	10	>3hours	no	1		ADG
	B5.4	1 bedroom	58	10	0	yes	1		ADG
TOTAL	19		2056				19	2240	
BUILDING C									
LEVEL	UNIT NO.	UNIT TYPE	UNIT NLA	PRIVATE OPEN SPACE	SOLAR ACCESS	CROSS VENTILATION	CAR SPACE	GFA	UNIT CATEGORY
1 AND 2	C1.1	Townhouse	148	36	>3hours	yes	1	980	family friendly
	C1.2	Townhouse	148	36	>3hours	yes	1		family friendly
	C1.3	Townhouse	148	36	>3hours	yes	1		family friendly
	C1.4	Townhouse	148	36	>3hours	yes	1		family friendly
	C1.5	Townhouse	148	36	>3hours	yes	1		family friendly
	C1.6	Townhouse	148	36	>3hours	yes	1		family friendly
3	C3.1	2 bedroom	110	10	>3 hours	yes	1	620	family friendly
	C3.2	2 bedroom	85	10	>3hours	no	1		ADG
	C3.3	2 bedroom	85	10	0	no	1		ADG
	C3.4	2 bedroom	85	10	>3 hours	no	1		ADG
	C3.5	2 bedroom	110	10	>3 hours	yes	1		family friendly
	C3.6	2 bedroom	85	10	0	no	1		ADG

continued

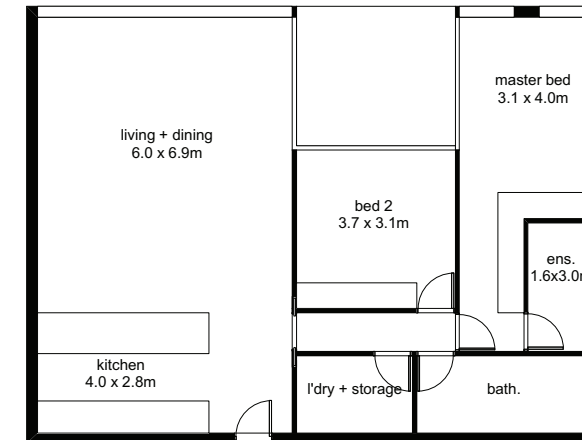
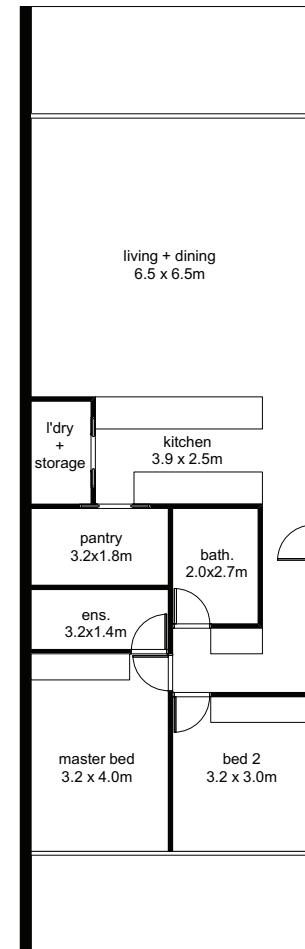
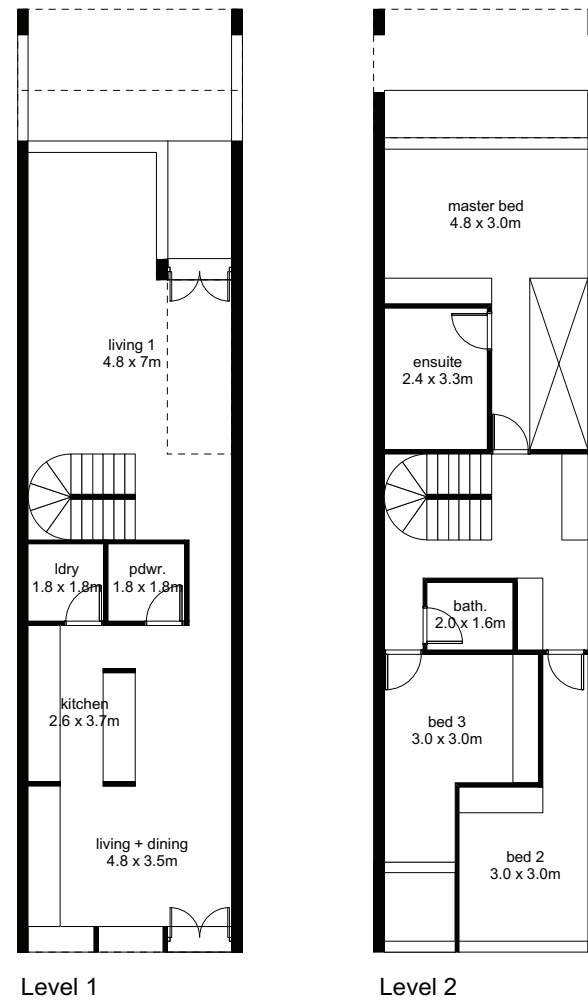


4	C4.1	2 bedroom	85	10	>3 hours	yes	1	450	ADG
	C4.2	1 bedroom	58	10	>3 hours	no	1		ADG
	C4.3	1 bedroom	58	10	0	no	1		ADG
	C4.4	1 bedroom	58	10	>3 hours	no	1		ADG
	C4.5	2 bedroom	85	10	>3 hours	yes	1		ADG
	C4.6	1 bedroom	58	10	0	no	1		ADG
5	C5.1	2 bedroom	85	10	>3 hours	yes	1	450	ADG
	C5.2	1 bedroom	58	10	>3 hours	no	1		ADG
	C5.3	1 bedroom	58	10	0	no	1		ADG
	C5.4	1 bedroom	58	10	>3 hours	no	1		ADG
	C5.5	2 bedroom	85	10	>3 hours	yes	1		ADG
	C5.6	1 bedroom	58	10	0	no	1		ADG
TOTAL		24	2252				24	2500	
BUILDING D									
LEVEL	UNIT NO.	UNIT TYPE	UNIT NLA	PRIVATE OPEN SPACE	SOLAR ACCESS	CROSS VENTILATION	CAR SPACE	GFA	UNIT CATEGORY
1 AND 2	D1.1	Townhouse	148	36	>3hours	yes	1	980	family friendly
	D1.2	Townhouse	148	36	>3hours	yes	1		family friendly
	D1.3	Townhouse	148	36	>3hours	yes	1		family friendly
	D1.4	Townhouse	148	36	>3hours	yes	1		family friendly
	D1.5	Townhouse	148	36	>3hours	yes	1		family friendly
	D1.6	Townhouse	148	36	>3hours	yes	1		family friendly
3	D3.1	2 bedroom	110	10	>3hours	yes	1	450	family friendly
	D3.2	2 bedroom	110	10	>3hours	yes	1		family friendly
	D3.3	2 bedroom	110	10	>3hours	yes	1		family friendly
	D3.4	2 bedroom	110	10	1	yes	1		Family friendly
TOTAL		10	1328				10	1430	
BUILDING E									
LEVEL	UNIT NO.	UNIT TYPE	UNIT NLA	PRIVATE OPEN SPACE	SOLAR ACCESS	CROSS VENTILATION	CAR SPACE	GFA	UNIT CATEGORY
1 AND 2	E1.1	Townhouse	148	36	>3hours	yes	1	1270	family friendly
	E1.2	Townhouse	148	36	>3hours	yes	1		family friendly
	E1.3	Townhouse	148	36	>3hours	yes	1		family friendly
	E1.4	Townhouse	148	36	>3hours	yes	1		family friendly
	E1.5	Townhouse	148	36	>3hours	yes	1		family friendly
	E1.6	Townhouse	148	36	>3hours	yes	1		family friendly
	E1.7	Townhouse	148	36	>3hours	yes	1		family friendly
	E1.8	Townhouse	148	36	>3hours	yes	1		family friendly
3	E3.1	2 bedroom	85	10	>3hours	yes	1	700	ADG
	E3.2	2 bedroom	85	10	>3hours	yes	1		ADG
	E3.3	2 bedroom	85	10	0	yes	1		ADG
	E3.4	2 bedroom	85	10	>3hours	yes	1		ADG
	E3.5	2 bedroom	85	10	0	yes	1		ADG
	E3.6	2 bedroom	85	10	>3hours	yes	1		ADG
	E3.7	2 bedroom	85	10	>3hours	yes	1		ADG
	E3.8	2 bedroom	85	10	0	yes	1		ADG
4	E4.1	2 bedroom	85	10	>3hours	yes	1	549	ADG
	E4.2	2 bedroom	85	10	>3hours	yes	1		ADG
	E4.3	2 bedroom	85	10	1	yes	1		ADG
	E4.4	2 bedroom	85	10	>3hours	yes	1		ADG
	E4.5	2 bedroom	85	10	>3hours	yes	1		ADG
	E4.6	2 bedroom	85	10	1	yes	1		ADG
5	E5.1	2 bedroom	85	10	>3hours	yes	1	549	ADG
	E5.2	2 bedroom	85	10	>3hours	yes	1		ADG
	E5.3	2 bedroom	85	10	1	yes	1		ADG
	E5.4	2 bedroom	85	10	>3hours	yes	1		ADG
	E5.5	2 bedroom	85	10	>3hours	yes	1		ADG
	E5.6	2 bedroom	85	10	1	yes	1		ADG
TOTAL		28	2884				28	3068	
BUILDING F									
LEVEL	UNIT NO.	UNIT TYPE	UNIT NLA	PRIVATE OPEN SPACE	SOLAR ACCESS	CROSS VENTILATION	CAR SPACE	GFA	UNIT CATEGORY
1 AND 2	F1.1	Townhouse	148	36	>3hours	yes	1	1270	family friendly
	F1.2	Townhouse	148	36	>3hours	yes	1		family friendly
	F1.3	Townhouse	148	36	>3hours	yes	1		family friendly
	F1.4	Townhouse	148	36	>3hours	yes	1		family friendly
	F1.5	Townhouse	148	36	>3hours	yes	1		family friendly
	F1.6	Townhouse	148	36	>3hours	yes	1		family friendly
	F1.7	Townhouse	148	36	>3hours	yes	1		family friendly
	F1.8	Townhouse	148	36	>3hours	yes	1		family friendly
	F3.1	2 bedroom	85	10	>3hours	yes	1		ADG
	F3.2	2 bedroom	85	10	>3hours	yes	1		ADG
	F3.3	2 bedroom	85	10	0	yes	1		ADG

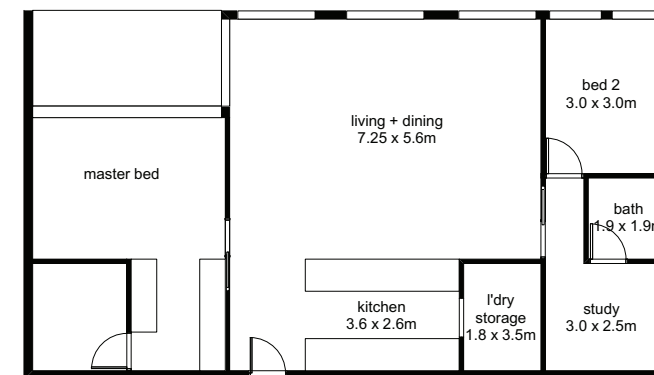
continued

3	F3.4	2 bedroom	85	10	>3hours	yes	1	700	ADG
	F3.5	2 bedroom	85	10	0	yes	1		ADG
	F3.6	2 bedroom	85	10	>3hours	yes	1		ADG
	F3.7	2 bedroom	85	10	0	yes	1		ADG
	F3.8	2 bedroom	85	10	>3hours	yes	1		ADG
	F4.1	2 bedroom	85	10	1	yes	1	549	ADG
4	F4.2	2 bedroom	85	10	>3hours	yes	1		ADG
	F4.3	2 bedroom	85	10	>3hours	yes	1		ADG
	F4.4	2 bedroom	85	10	>3hours	yes	1		ADG
	F4.5	2 bedroom	85	10	>3hours	yes	1		ADG
	F4.6	2 bedroom	85	10	>3hours	yes	1		ADG
4	F5.1	2 bedroom	85	10	1	yes	1	549	ADG
	F5.2	2 bedroom	85	10	>3hours	yes	1		ADG
	F5.3	2 bedroom	85	10	>3hours	yes	1		ADG
	F5.4	2 bedroom	85	10	>3hours	yes	1		ADG
	F5.5	2 bedroom	85	10	>3hours	yes	1		ADG
	F5.6	2 bedroom	85	10	>3hours	yes	1		ADG
TOTAL		28	2884				28	3068	

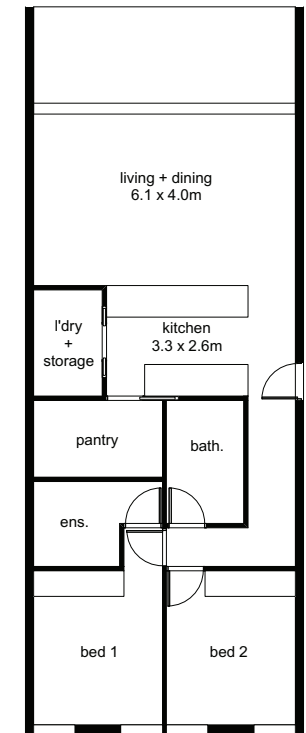
## 6.10 Typical Apartment Layouts



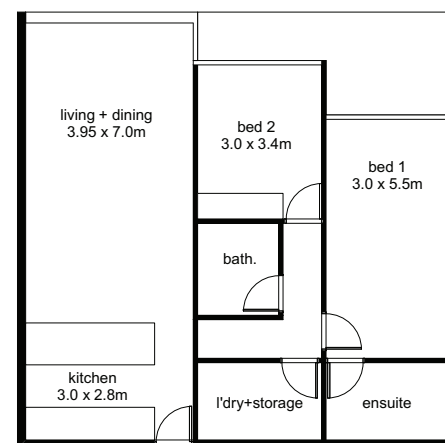
Family Friendly 2 Bedroom = 110m<sup>2</sup>



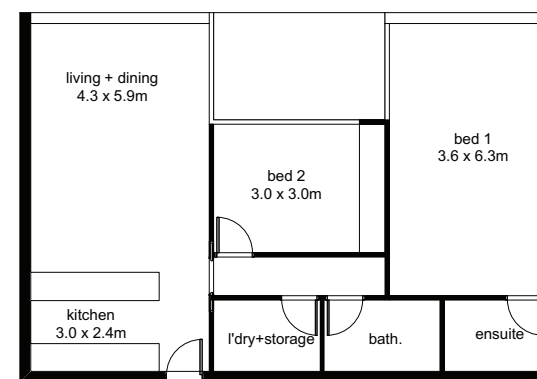
Family Friendly 2 Bedroom = 110m<sup>2</sup>



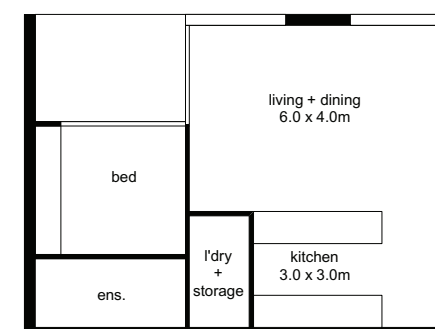
ADG 2 Bedroom = 85m<sup>2</sup>



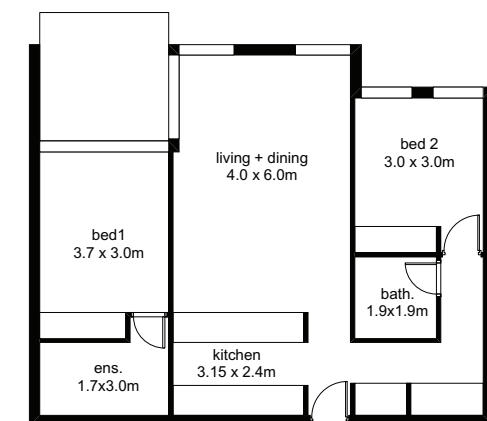
ADG 2 Bedroom = 85m<sup>2</sup>



ADG 2 Bedroom = 85m<sup>2</sup>



ADG 1 Bedroom = 58m<sup>2</sup>



ADG 2 Bedroom = 85m<sup>2</sup>



## 6.11 Mid Winter Shadow Diagrams



9am

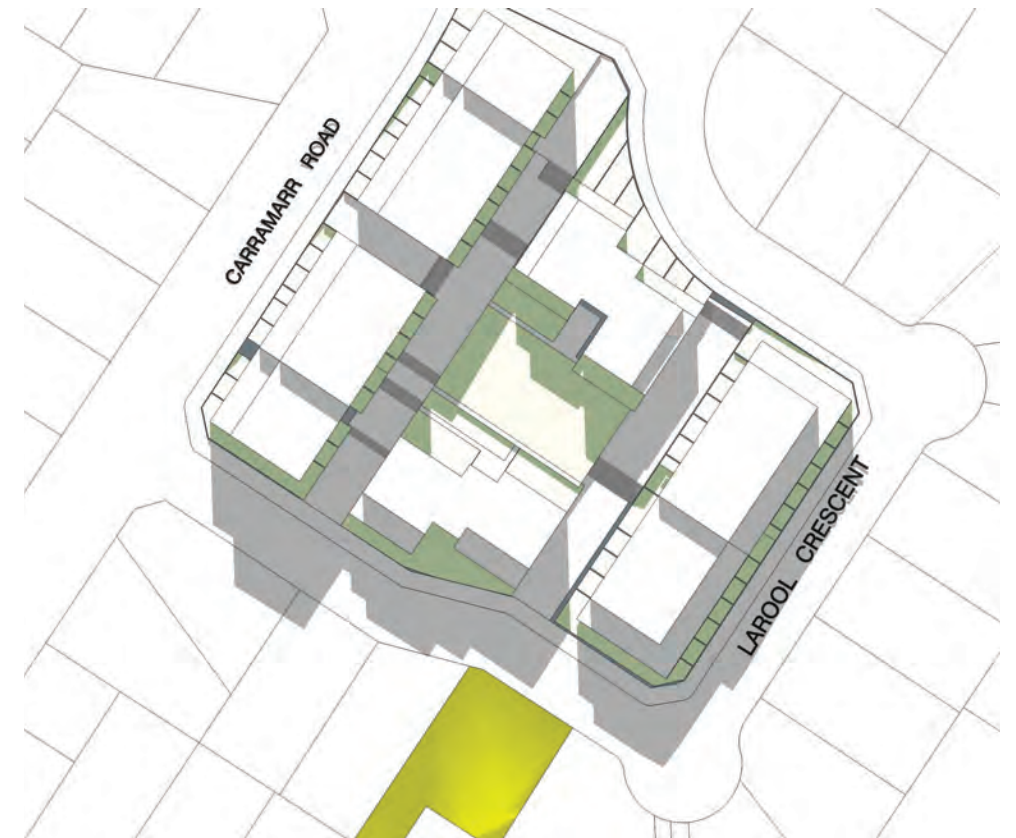


11am

4-22 Larool Crescent & 44-50 Carramarr Road Castle Hill  
Urban Design Report - 9 July 2018

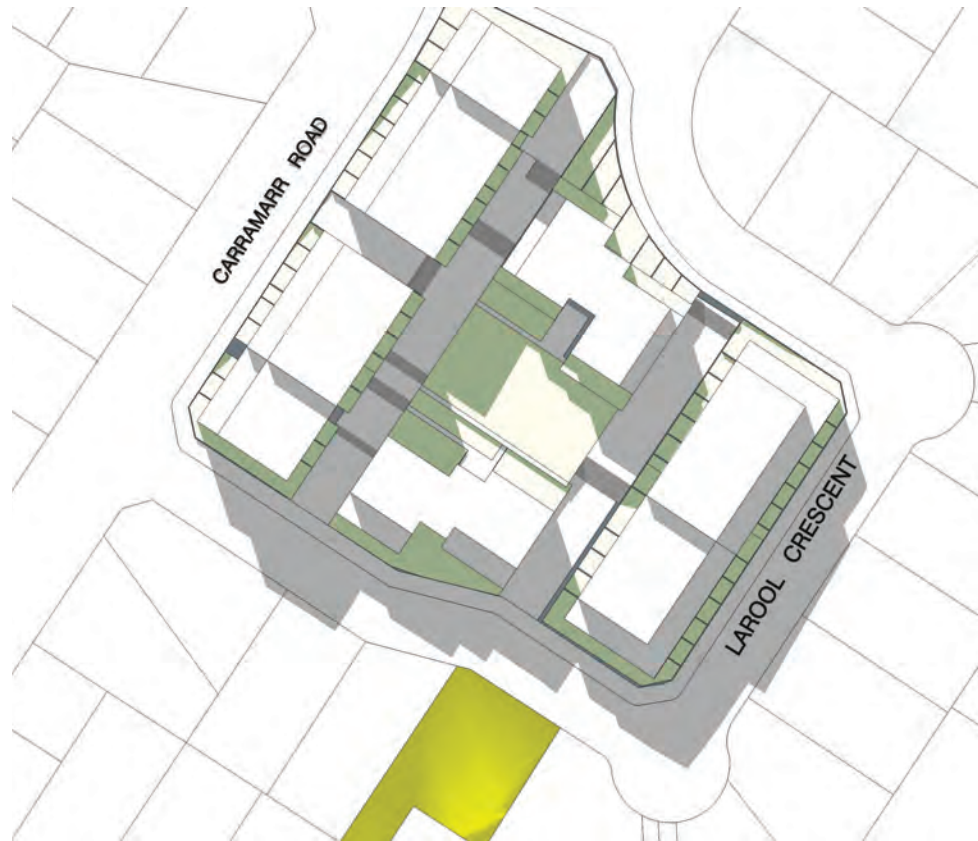


10am

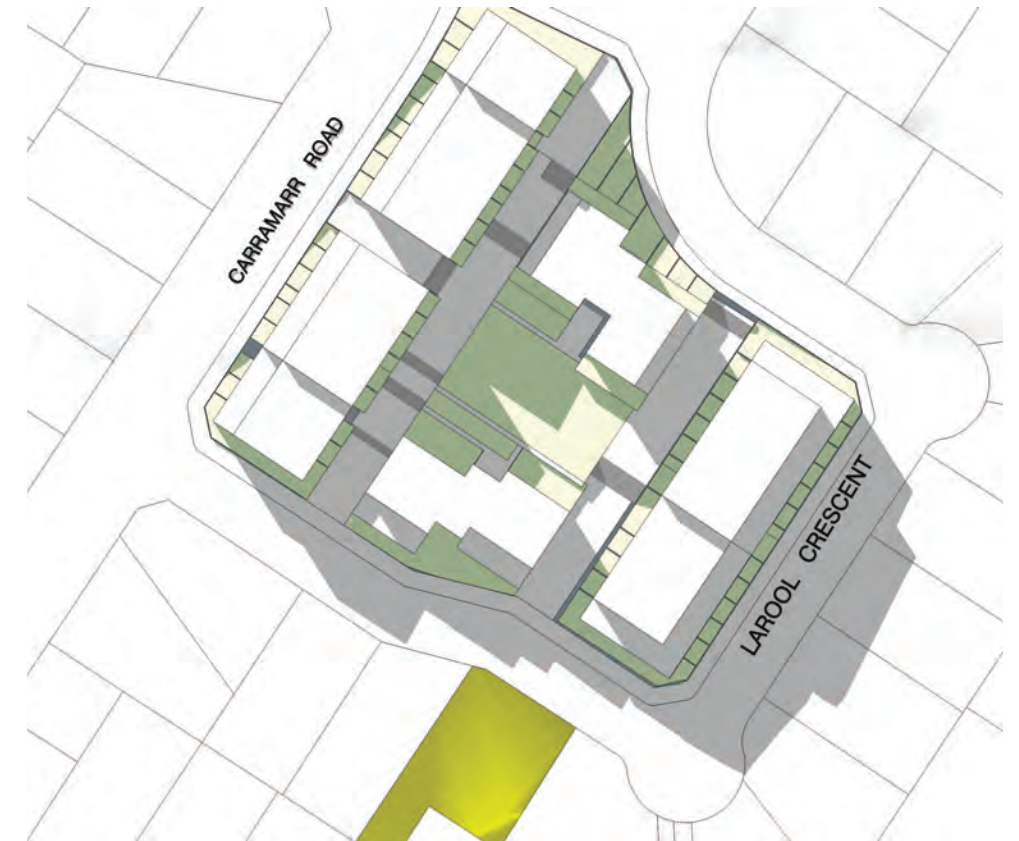


12pm





1pm



2pm



3pm



## 7.0 Assessment of the Proposal

### 7.1 ASSESSMENT AGAINST THE DESIRED FUTURE CHARACTER

#### Built Form

##### Building Envelope Testing and Floor Space Ratio:

Part 4.0 of this report includes testing of design options against match the Desired Future Character of the area in terms of building massing, heights, setbacks and open space. An optimum floor space ratio capacity of 1.44:1 within a building height of 3 to 5 storeys is established through the process. The preferred option is selected based on best outcome achieved for the subject site and its context in terms of building separation distances, solar access, common open space, deep soil and other requirements from the SEPP 65 ADG and the Draft DCP.

A floor space ratio of 1.44 : 1 and a height of 3 to 5 storeys complies with the LEP and the Draft DCP.

##### Residential Intensity:

The proposal enables an increase in residential intensity on a site located 695m from the future Castle Hill Station and bus interchange, to capitalise on the opportunity for a transit oriented developed.

##### Building Form:

The layout includes finer grain buildings with improvement in north-south permeability achieved through adequate building separation distances of 12m and 13.7m.

##### Setbacks:

The proposal includes a 'Terrace Edge Streetscape' with a height of 3 storeys setback 3 metres from the Carramarr Road and Larool Crescent boundaries. An additional setback of 5m for the levels above reduces visual bulk from the public domain, and minimises overshadowing of the public domain and adjacent sites.

##### Solar Access:

Building massing and heights allow daylight access to the habitable areas of the proposal. The assessment includes verification of solar access requirements in the following parts of this report:

- Part 7.3 Views from the Angle of Sun at Mid Winter (9am, 10am, 11am, 12pm, 1pm, 2pm and 3pm); and
- Part 7.6 Number of Sun Hours to Habitable Areas at Mid Winter.

#### Public Domain:

##### Landscaped Setbacks:

The landscaped setbacks provided along Carramarr Road and Larool Crescent ensure that a transition is achieved between the public and the private domain. The setbacks have adequate dimensions (minimum 5 x 7.2m = 36m<sup>2</sup>) to ensure that deciduous trees and shrubs can be planted. The private open spaces achieve adequate direct sunlight at mid winter. The details can be confirmed in Part 7.7 Number of Sun Hours to Open Space at Mid Winter.

##### Public Open Space:

A through-site pedestrian link with a width of 10m is provided as an extension from the Larool Crescent Reserve to south. Buildings A and B are proposed adjoining the through-site pedestrian link to ensure the open space is overlooked.

##### Sunlight to Public Spaces:

The proposed building massing and heights ensure that overshadowing from new buildings does not result in significant loss of sunlight. Details confirming solar access to public spaces can be confirmed in the following parts of this report:

- Part 7.3 Views from the Angle of Sun at Mid Winter (9am, 10am, 11am, 12pm, 1pm, 2pm and 3pm);
- Part 7.4 Views from the Angle of Sun at 21 April (11am, 12pm, 1pm and 2pm) assessed as part of the Draft DCP requirement;
- Part 7.5 Views from the Angle of Sun at 21 August (11am, 12pm, 1pm and 2pm) assessment as part of Draft DCP requirement;
- Part 7.7 Number of Sun Hours to Open Space at Mid Winter.

## 7.2 ASSESSMENT AGAINST THE DRAFT URBAN DESIGN GUIDE, NSW GOVERNMENT ARCHITECT

### Urban Structure

The proposal increases residential intensity of a site with access to the future Castle Hill Station and bus interchange as a transit oriented development. The proposed north-south through site pedestrian link contributes to the improvement in permeability and walkability in the area.

### Urban Grain:

The proposal ensures provision of finer grain buildings placed in a landscape setting which is consistent with the green shire character. The design concept shows a finer grain resolution through addition of a network of walkways and links around the proposed buildings.

### Density and Mix:

The proposed floor space ratio of 1.44 : 1 complies with the Hills Shire Local Environmental Plan 2012 - Castle Hill North Precinct. The increase in the residential intensity is balanced by public domain and walkability improvements.

### Height and Massing:

The proposed height of 3 to 5 storey complies with the Draft DCP. The proposed site coverage is minimised through provision of generous building separation distances. The proposed height and massing ensures SEPP 65 ADG and Draft DCP compliant solar access to the habitable areas and open spaces.

### Streetscape and Landscape:

The design of the communal open space and the publicly accessibly through-site pedestrian link responds to the topography of the site to minimises the extent of required cut and fill. The landscape design ensures retention of the existing trees within the courtyard where a large deep soil zone has been allocated. The landscape design differentiates between the public and private domain through a clear allocation of private open spaces, walkways and communal open space. The 36m2 private open spaces provided have deep soil and solar access to accommodate gardens with trees and shrubs.

### Facade and Interface:

The proposal has a 3 storey terrace edge provided with a 3 metre setback from Larool Crescent and Carramarr Road. The upper levels are provided with an additional 5m setback to create a built form transition to minimise visual and overshadowing impacts on the vicinity. The interface between the public and private domain is to be provided through landscaped setbacks including trees and shrubs.

### Details and Materials:

The built form of the 3 storey terrace edge is to ensure inclusion of a vertical rhythm which is a prominent feature of the terrace style proposals. The texture, colours and detailed treatment is subject to a future development application.



Cover page - Creating Places for People, NSW Government Architect, published 2011



### 7.3 VIEWS FROM ANGLE OF SUN AT MID WINTER (21 June)



9am



10am



11am



12pm





1pm



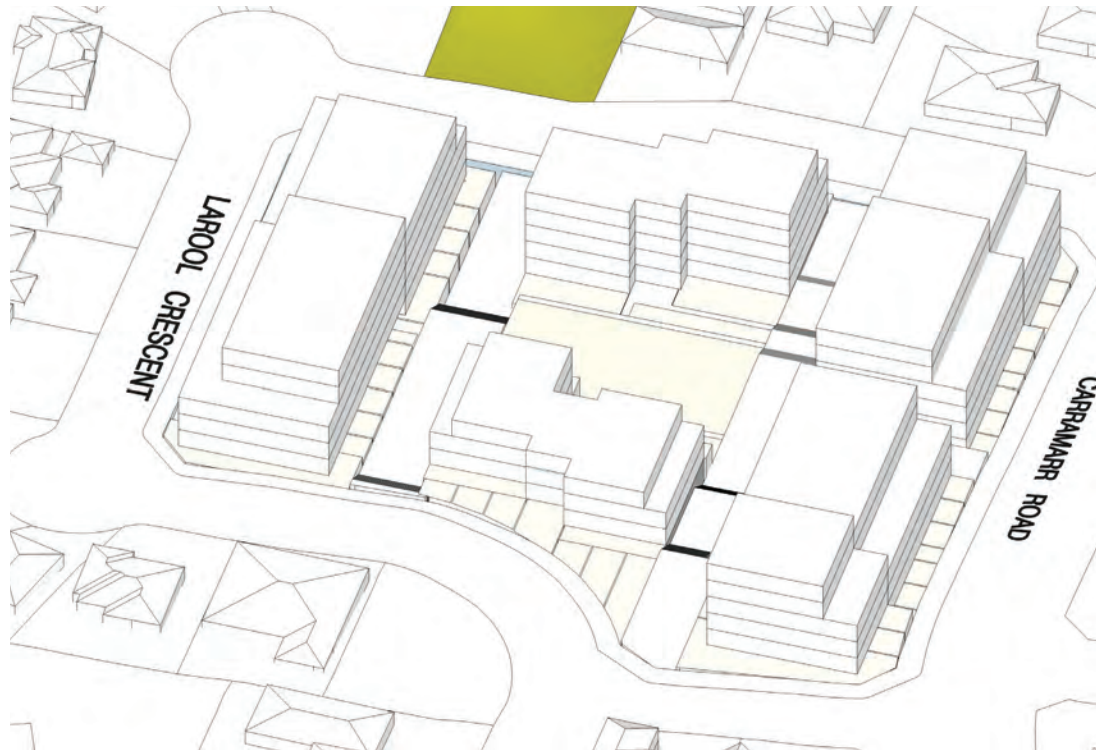
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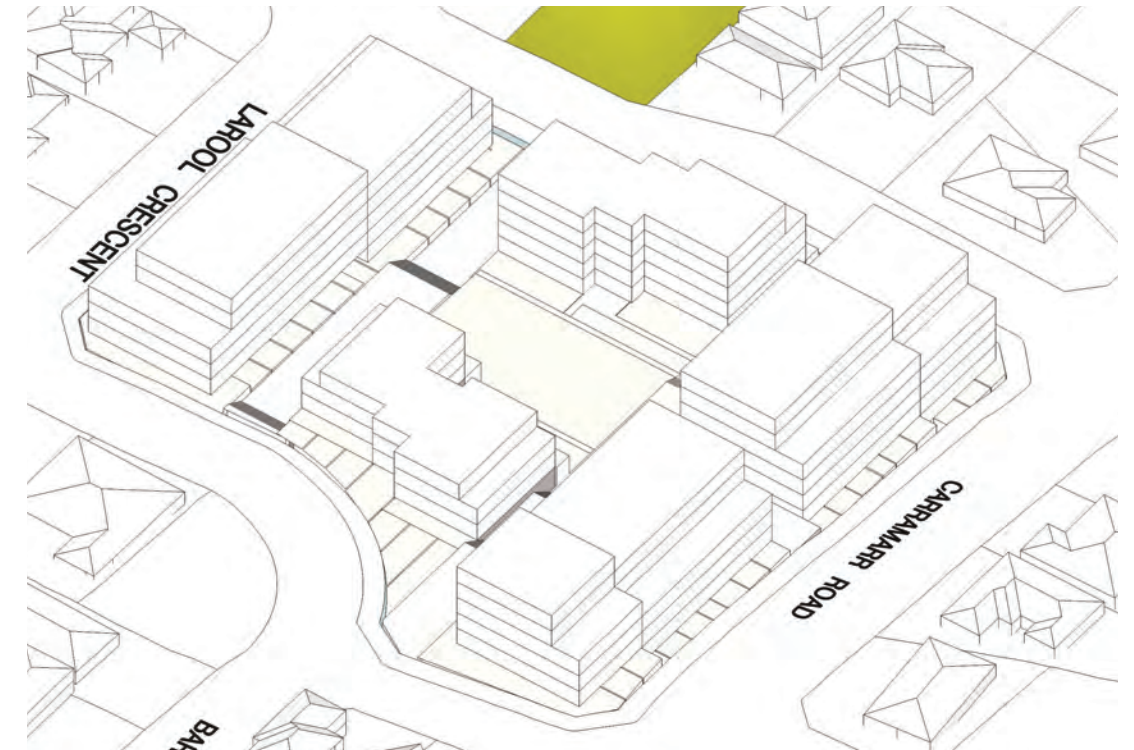
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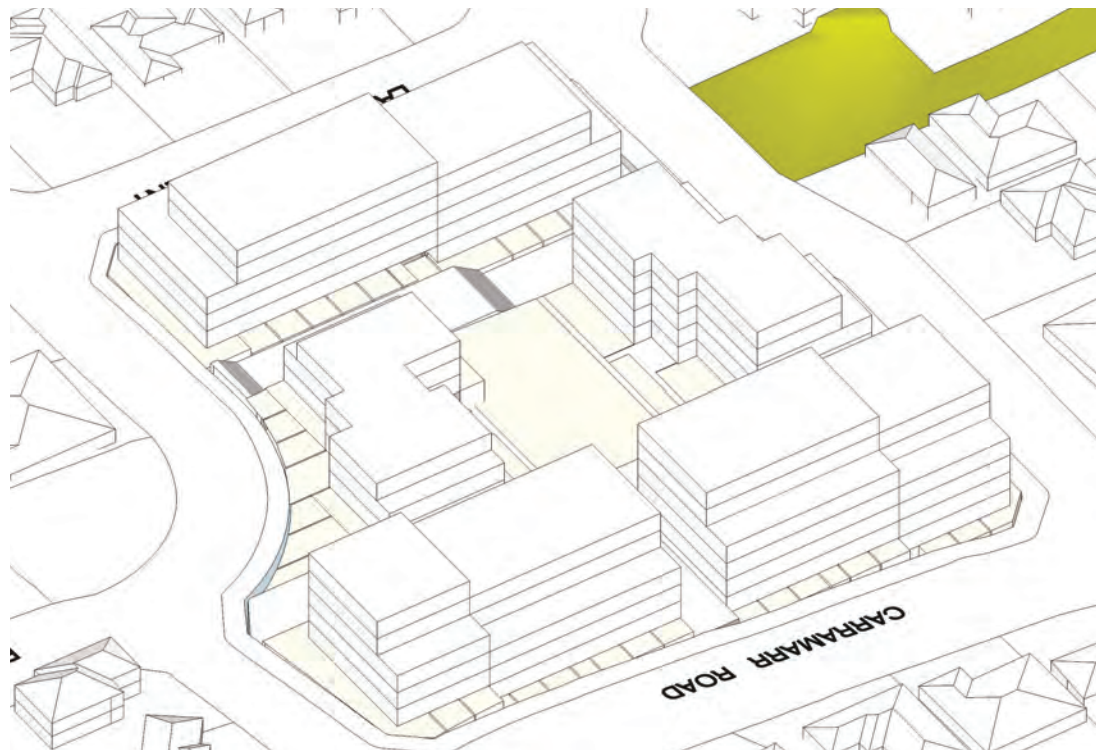
## 7.4 VIEWS FROM ANGLE OF SUN ON 21 APRIL, 11AM TO 2PM



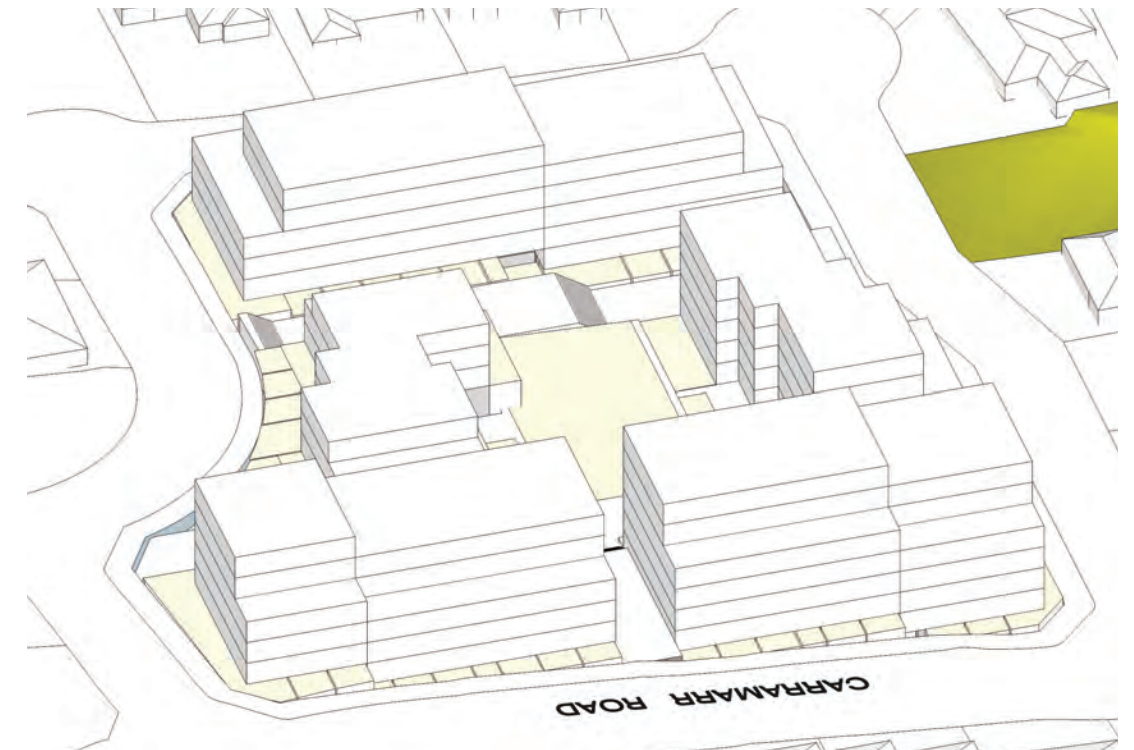
11am



12pm



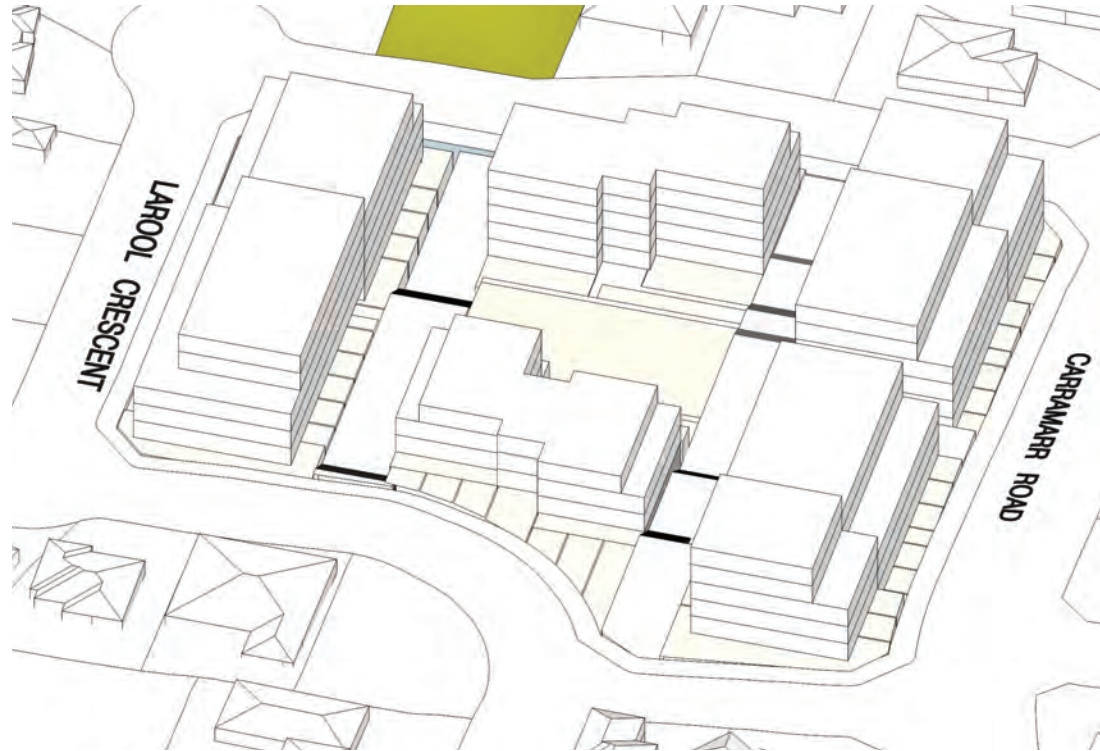
1pm



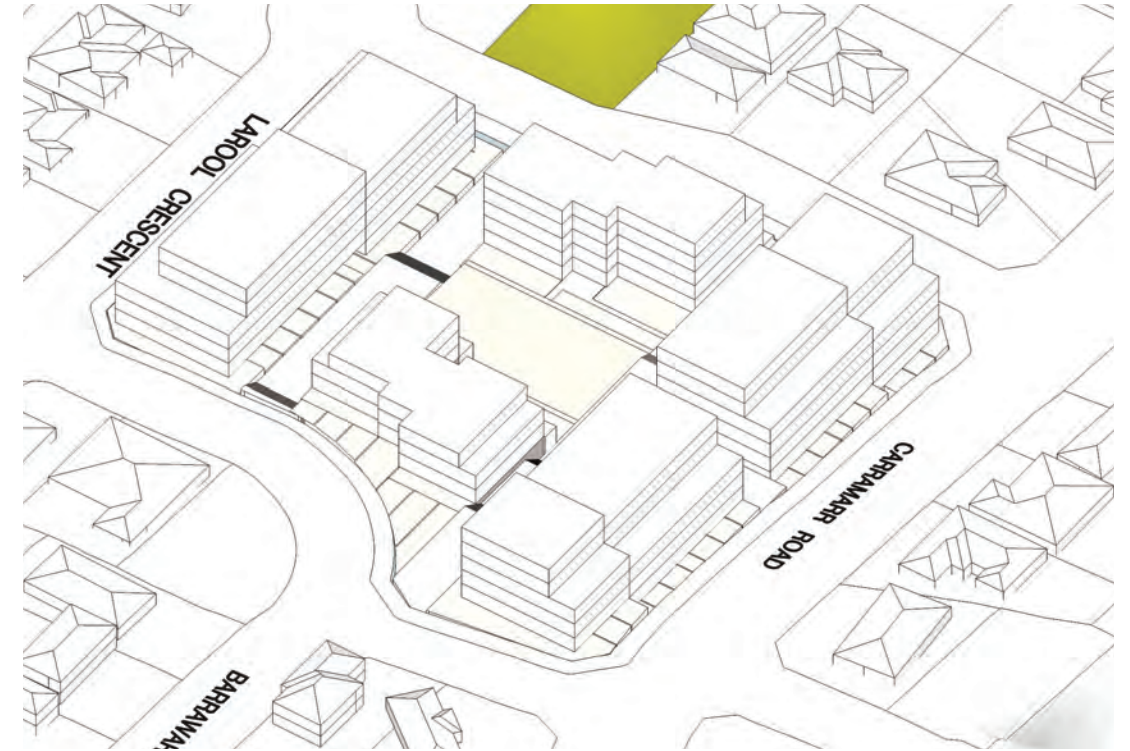
2pm



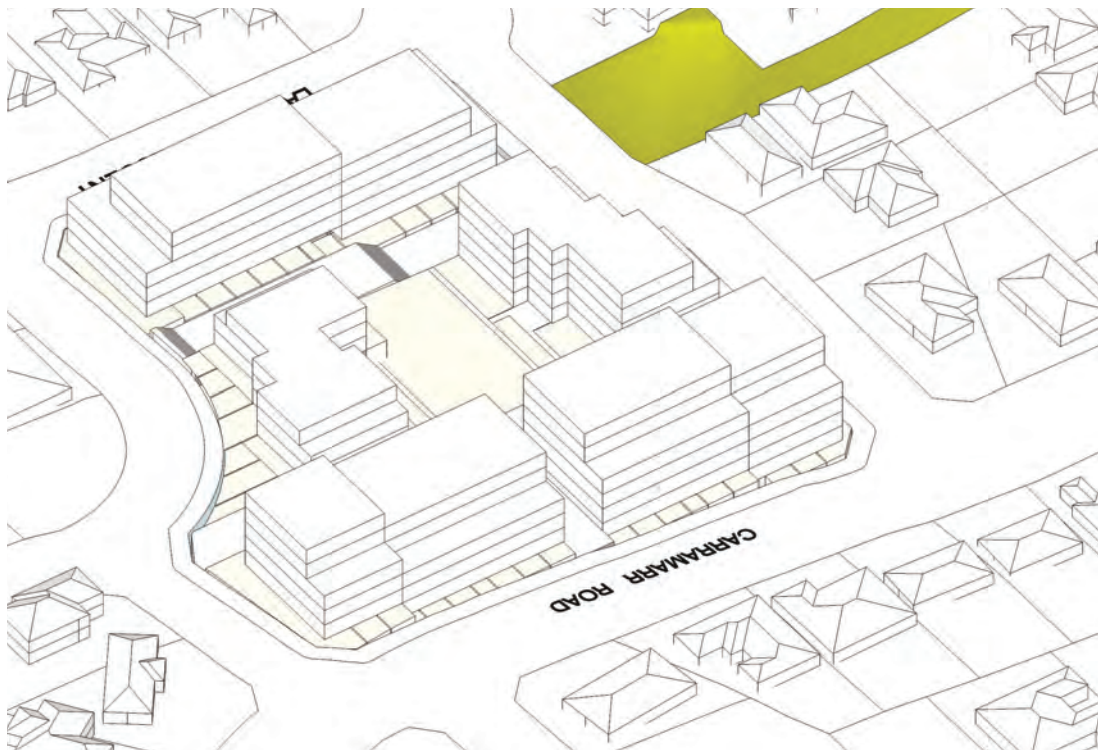
## 7.5 VIEWS FROM ANGLE OF SUN ON 21 AUGUST, 11AM TO 2PM



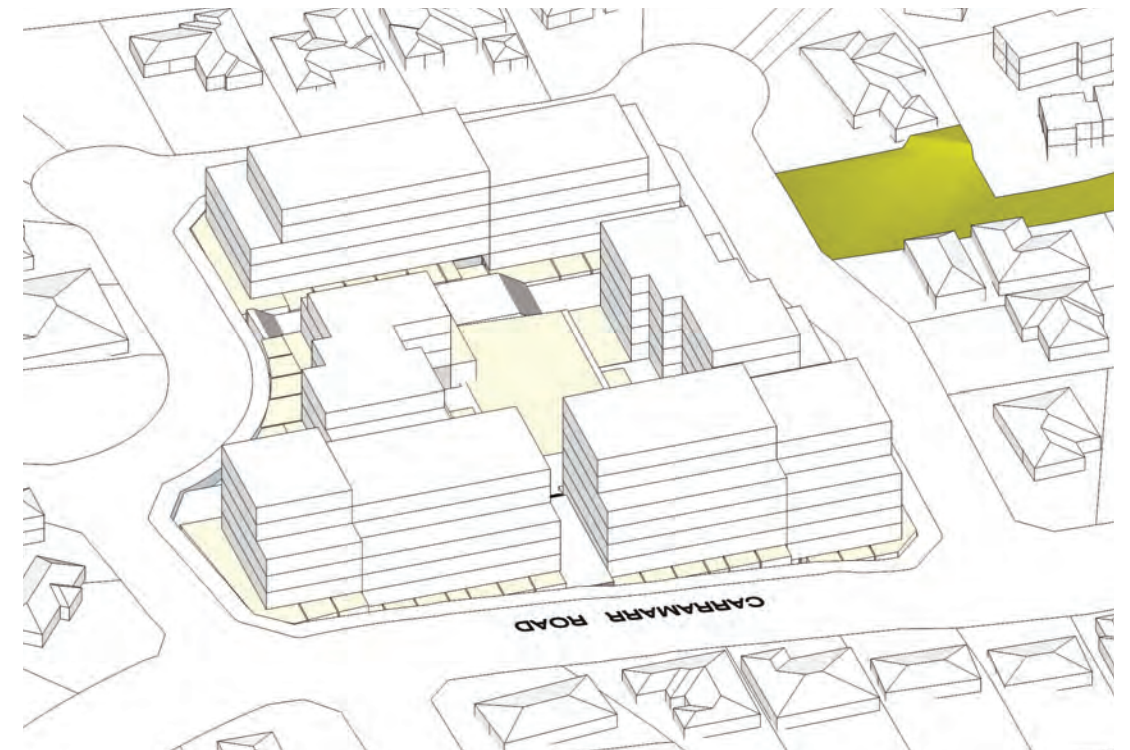
11am



12pm



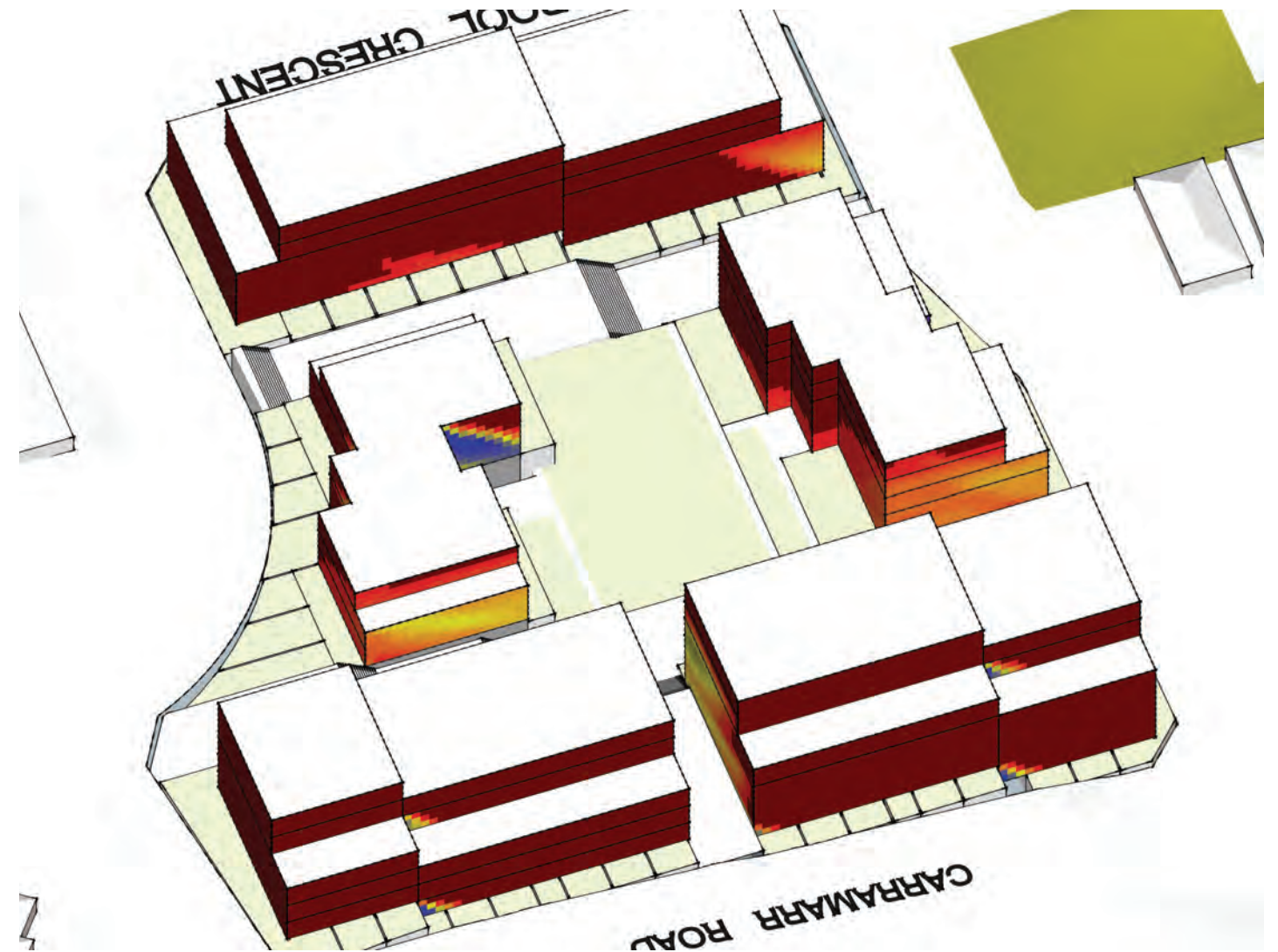
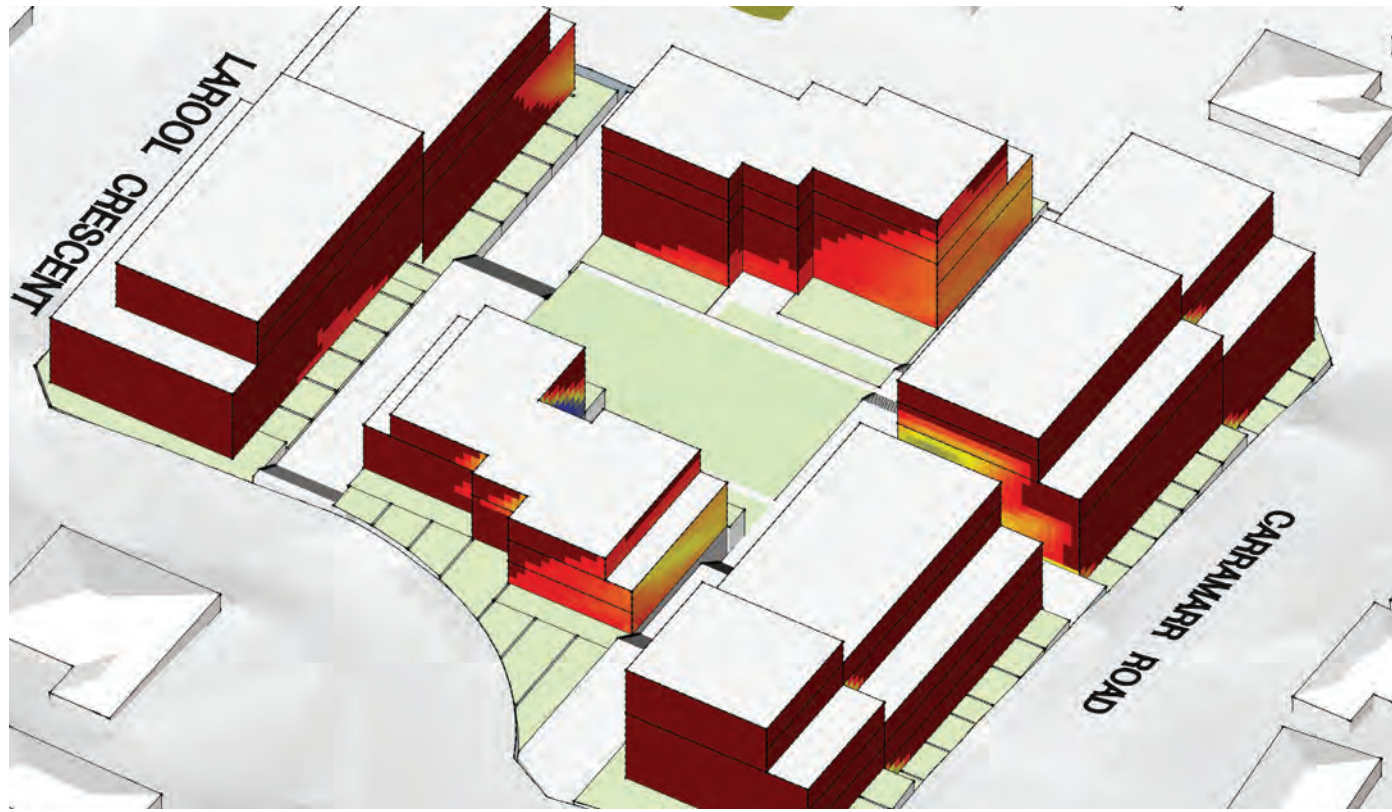
1pm



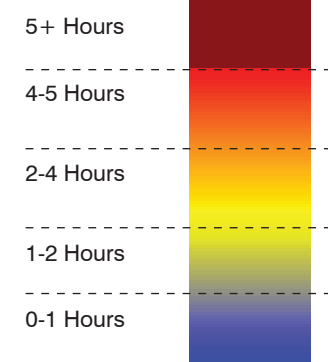
2pm



## 7.6 NUMBER OF SUN HOURS TO HABITABLE AREAS AT MID WINTER

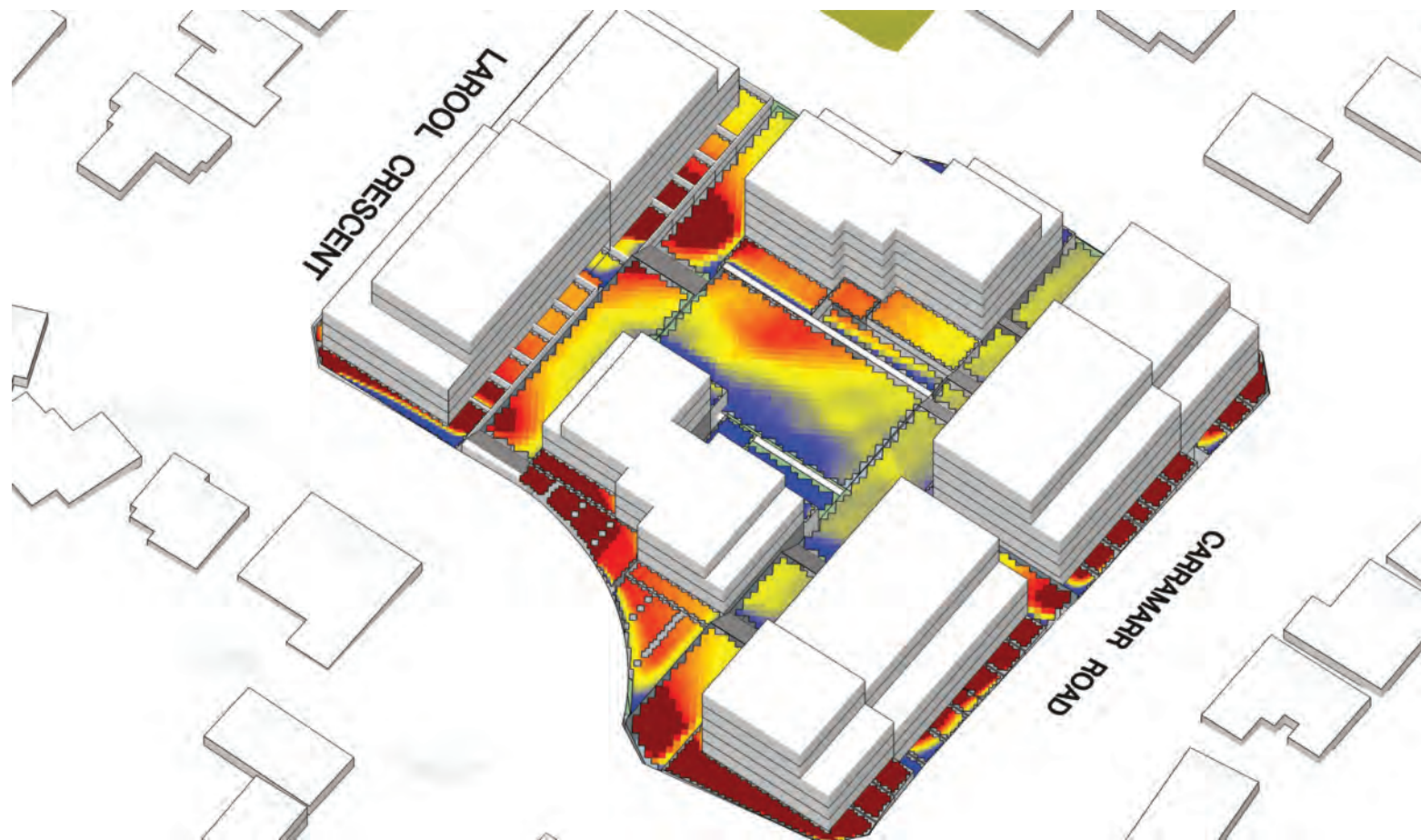


### LEGEND:





## 7.7 NUMBER OF SUN HOURS TO OPEN SPACE AT MID WINTER



### LEGEND:

