

URBAN DESIGN REPORT

SITE 2
2-10 CADMAN CRESCENT
4-8 HUGHES AVENUE + 16-30 DAWES AVENUE
CASTLE HILL

SHOWGROUND
CORPORATION PTY LTD

NOVEMBER 2017



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Revision D	October 2017	Preliminary
Revision E	November 2017	Preliminary



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1

INTRODUCTION

Sydney is growing at staggering rates, and with that growth has come a transformative infrastructure project that will alleviate transport issues and unlock development potential

SITE 2



Aerial View of Envisioned Precinct. Figure 19 - SSPP



This Urban Design report has been prepared by Aleksandar Design Group Pty Ltd on behalf of Showground Corporation Pty Ltd as part of a Planning Proposal that seeks to review the key controls for 2-10 Cadman Crescent, 4-8 Hughes Avenue & 16-30 Dawes Avenue, Castle Hill.

The comprehensive review of the site and its surroundings reveals that the subject site has the opportunity to provide both additional density and height. The proposal is in keeping with the strategy and vision of the Showground Station Precinct Proposal.

This urban design report examines:

- The proposed control within the Showground Station Precinct Proposal
- Building envelope testing (height, setbacks, floor plate, efficiencies, bulk, mass and overshadowing, Apartment Design Guide amenity/ building separations)
- 3D modelling of the built form proposed on the subject site and on adjacent properties is provided to demonstrate impact as well as contextual fit
- The impact of the redevelopment on neighbouring sites

In thoroughly examining these issues this report identifies a preferred built form that satisfies the above objectives

2

SITE ANALYSIS

Analysis of Site 2 from a local perspective



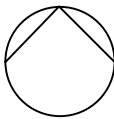
The subject site is centrally located within an existing low density residential area.

It is within 400m of the new Showground train station which is part of the Sydney Metro Northwest.

Vehicular connections will be improved with the proposed new roads around and adjacent to the site with new bike paths and linear parks to Dawes Avenue.

Residential amenity will be improved with the adjacent park expansion.

- 1 Site 2
- 2 Showground Station
- 3 Cattai Creek
- 4 Local Park
- [] Site Boundary





View 1 - East along Dawes Avenue



View 2 - Looking North-East on Dawes Avenue towards local park



View 3 - Looking South on Dawes Avenue towards site



- 1 View 1
- 2 View 2
- 3 View 3
- Site Boundary



View 4 - Corner of Dawes Ave and Hughes Ave



View 5 - Corner of Hughes Ave and Cadman Ave



View 6 - Looking North Cadman Cres towards site



- 4 View 4
- 5 View 5
- 6 View 6
- Site Boundary



Site E6 has a site area of 15 694m²

Its boundaries measure 138m, 81m, 63m & 111m

The site falls from south east to north west up to 11.5m in height.

3

THE PROPOSAL



Impressions of the Showground Station Precinct. Figure 31, Figure 2, Figure 3 SSPP

DIVERSITY

- Development of a range of building types ranging from high to low density residential that offers to interlace different experiences, boost local communities, cater to all ages, and be able to support different sizes of families

- Development of diverse streets and communal spaces to activate localized communities with the aim of enriching the character of the precinct

CONNECTIVITY

- Creating accessible, authentic and diverse networks of publicly accessible communal spaces with an improved public transport system

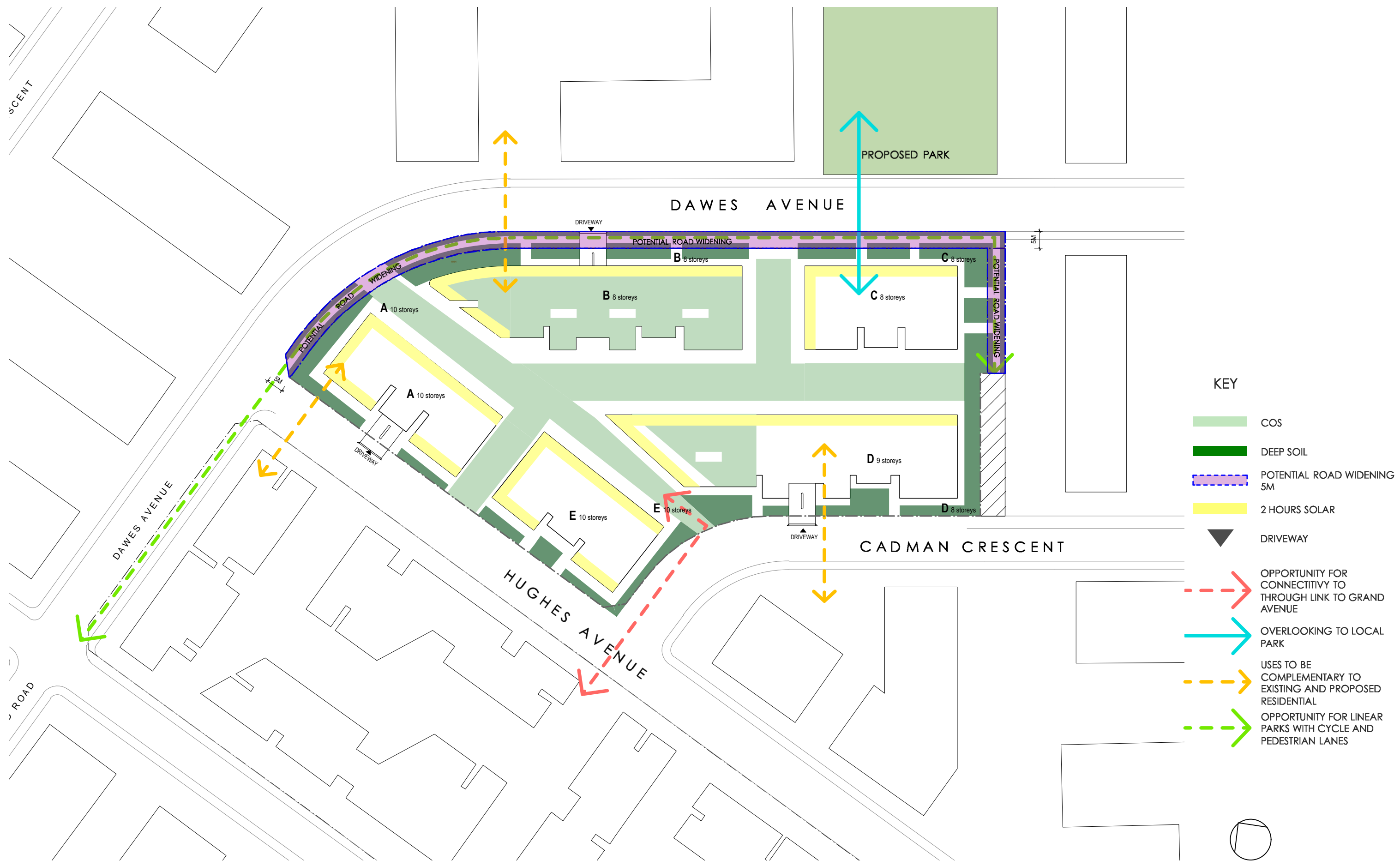
- Provide more avenues for cycling and walking to reduce traffic congestion in the surrounding areas

- To integrate the existing and future prospects of the landscape and buildings, with the goal of establishing a lasting framework and pattern for the growth of the area

SUSTAINABILITY

- Development of a positive environmental, social and economic outcome for the site that maximises natural cross ventilation and sunlight for the amenity of residents.

- Passive thermal design for ventilation, heating and cooling reducing reliance on technology and operation costs as well as deep soil zones for ground water recharge and vegetation.

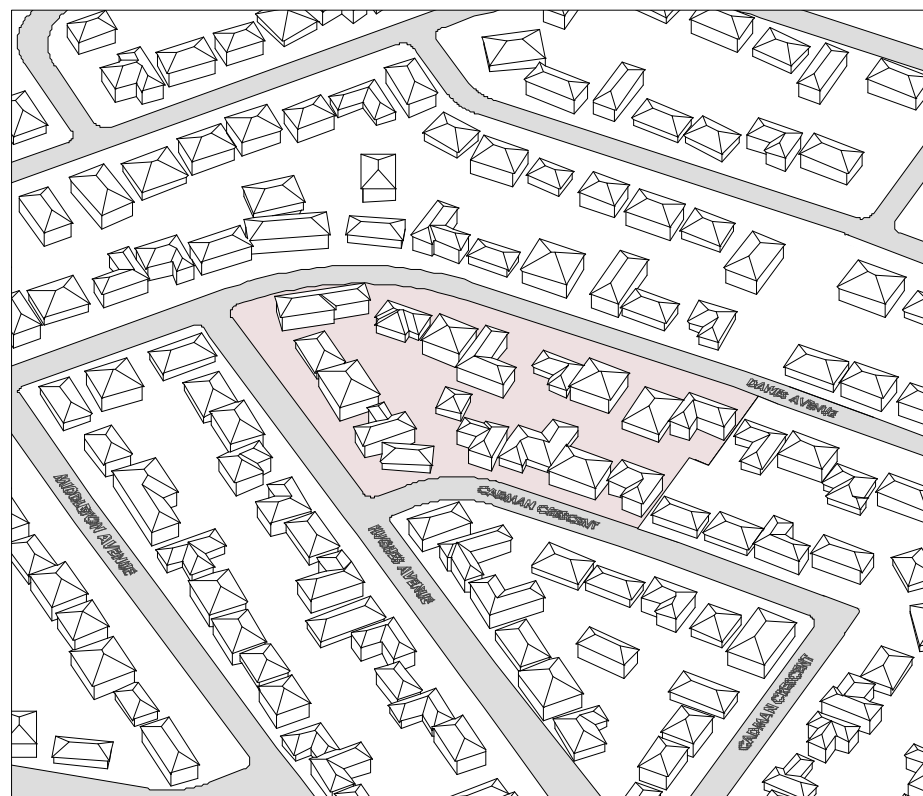


THE PROPOSAL

BUILDING DESIGN PRINCIPLES

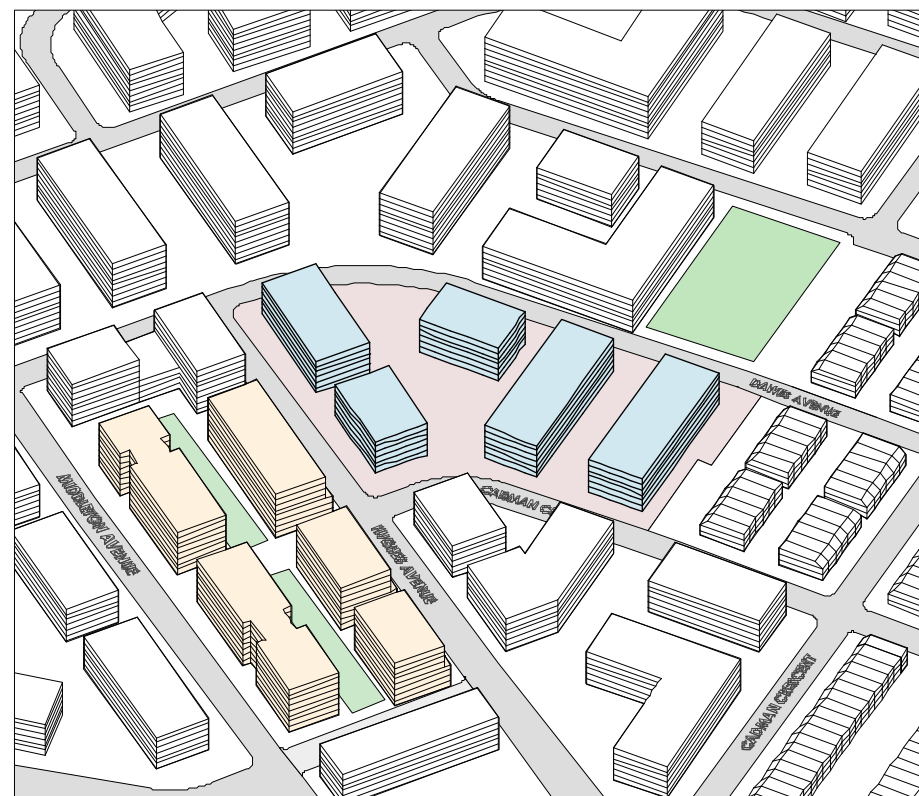


- Achieving design excellence by exceeding the minimum requirements of the SEPP65/ADG e.g:
 - + exceeding minimum 2 hours solar access for 70% of apartments in winter
 - + exceeding communal open space requirement
 - + exceeding the requirement for cross ventilation for 60% of apartments
- Increasing the housing supply to meet the targets projected in the Showground Station Precinct Proposal
- Creating compelling urban forms within a landscaped setting with landscaped front setbacks, raised planting in front of low-walled courtyards to create activated "green streets"
- Create an interconnected open space network to activate streets and enrich the urban environment
- Creating linear parkways to reinforce the proposed open space network and allow for bike paths and landscaped pedestrian avenues
- Achieving a high amenity standard to built forms and central courtyard with the courtyard width between 18-22m, 2 hours solar access to 70% of apartments at mid-winter and natural cross ventilation to 60% of apartments
- Creating a diversity of accommodation to suit a range of lifestyles



EXISTING BUILT CONTEXT

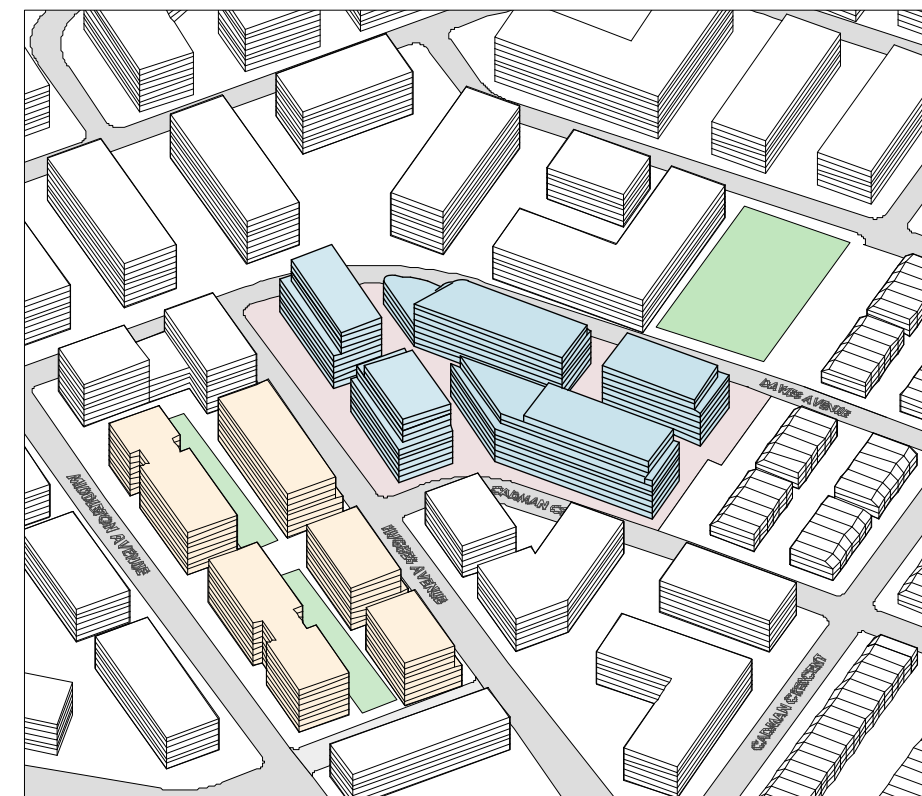
The site is currently a low-rise, low-density residential neighbourhood with little residential amenity and community promoting landmarks



SHOWGROUND STATION PRECINCT PROPOSAL BUILT FORM

Built form modelling of a the site within its context has shown that a fully compliant scheme offered by the Showground Station Precinct Proposal falls short in certain critical areas:

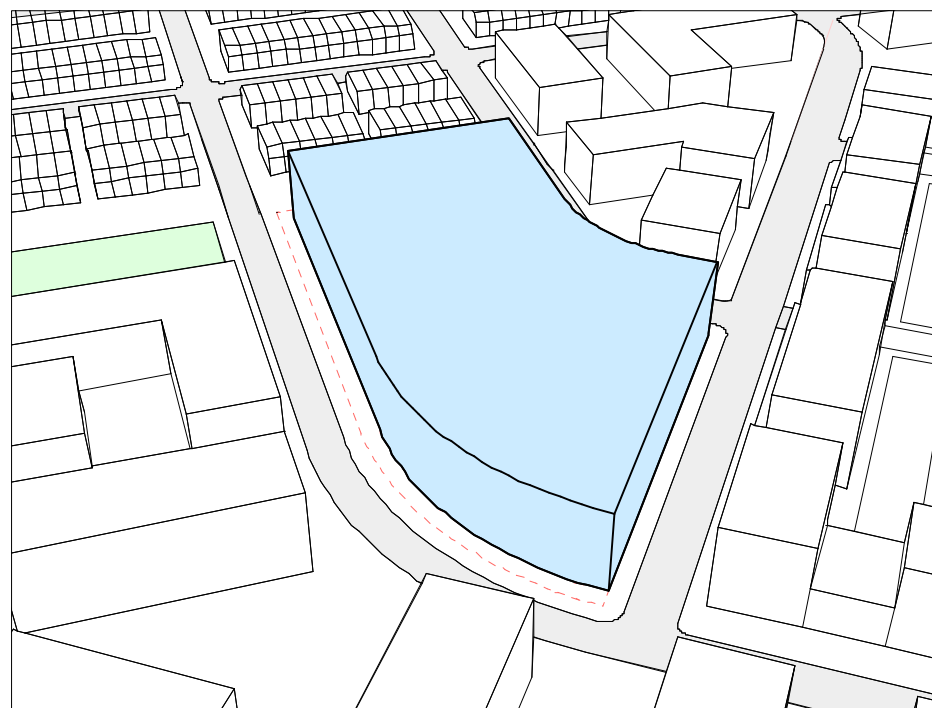
- The buildings have limited street address
- Poor solar access to some communal open spaces
- Poor solar access to 50% of building facades
- Under developed building footprint to permissible FSR
- Under utilisation of site opportunities
- Falls short in housing targets projected in the Showground Station Precinct Proposal
- The existing scheme can only optimistically achieve an FSR of 1.8:1 of the potential 2.3:1 within the current height and FSR controls



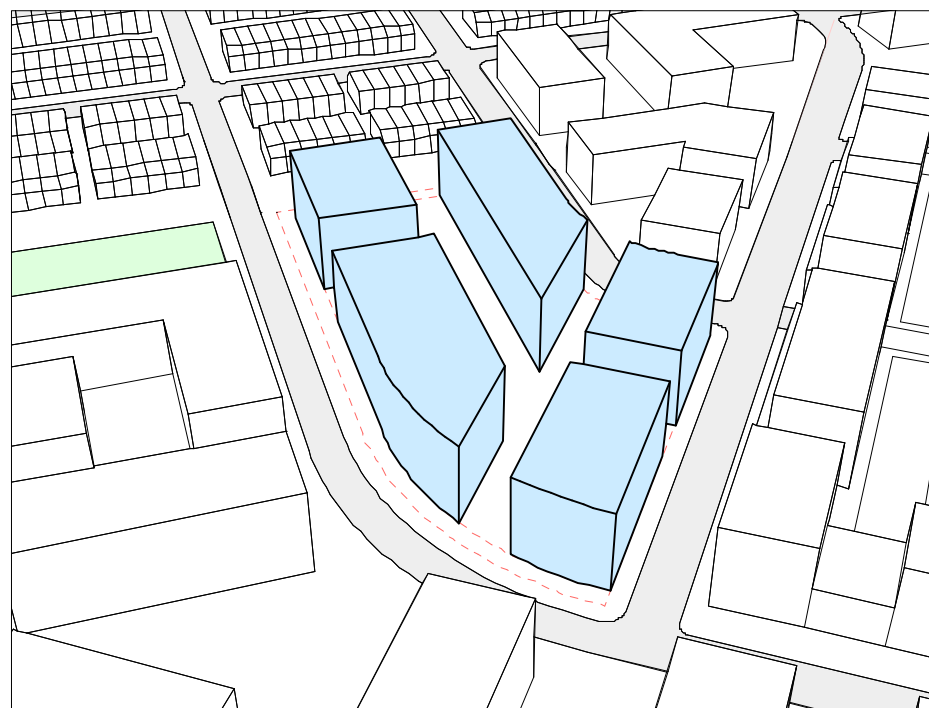
PROPOSED BUILT FORM

Built form modelling of the site with the proposed scheme achieves:

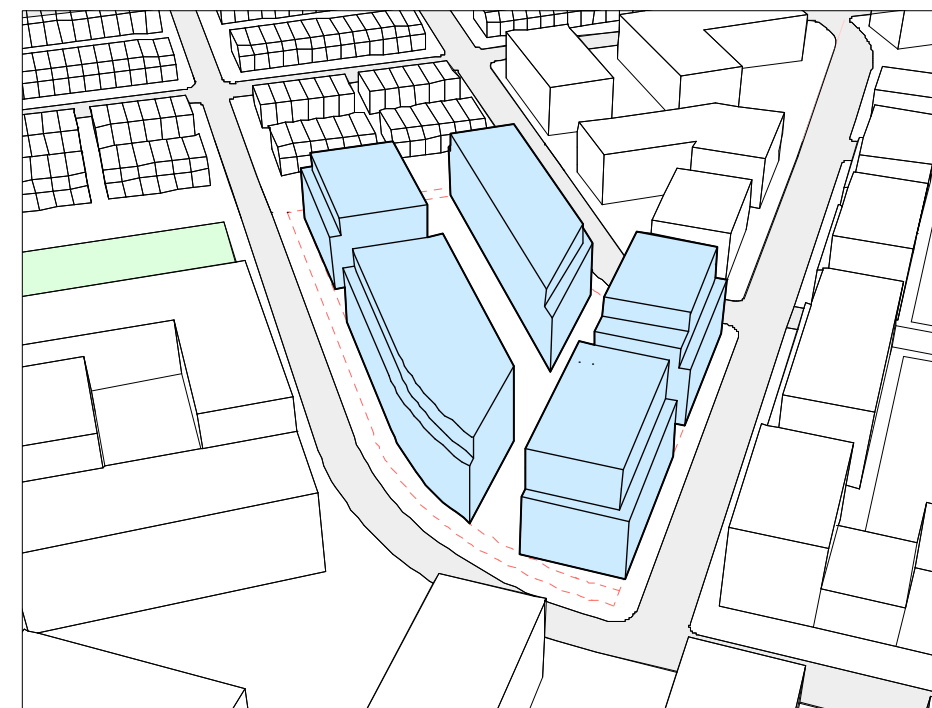
- Good street address
- Orientation allows good solar access to proposed units
- Site permeability with opportunity for through site links
- Good solar access to communal open space
- Exceed housing targets projected in the Showground Station Precinct Proposal
- Efficient utilisation of building footprints while staying within the requirements of the ADG



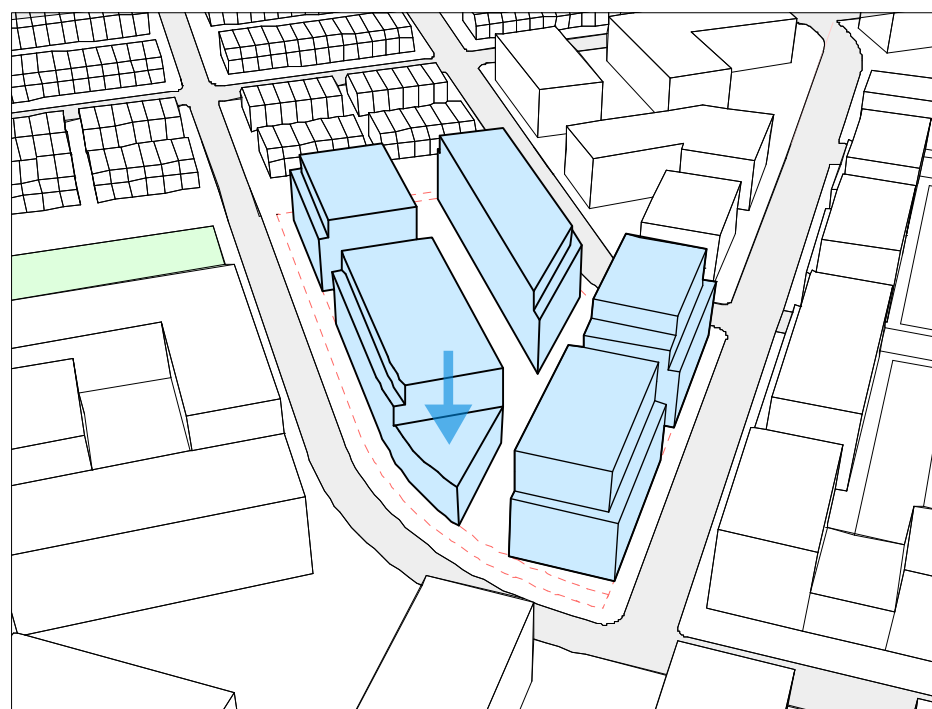
SITE MASSING AT PROPOSED 8-10 STOREY HEIGHT



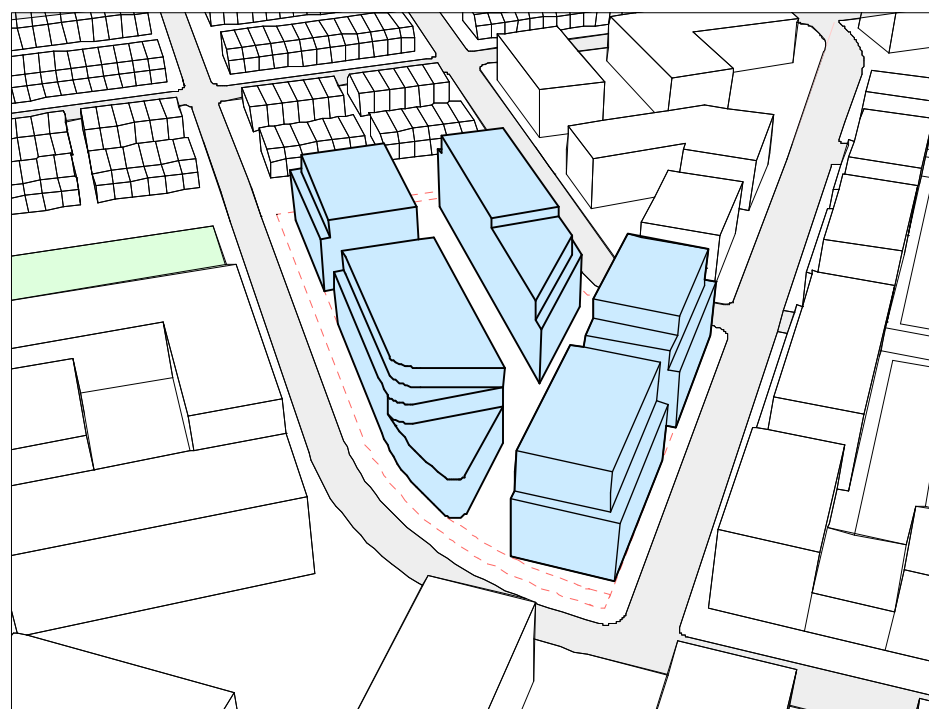
THROUGH SITE LINKS, ADG BUILDING SEPARATION & SOLAR



TOP FLOORS SET BACK



CORNER DROPPED FOR SOLAR TO OPEN SPACE TO GROUND FLOOR COURTYARDS

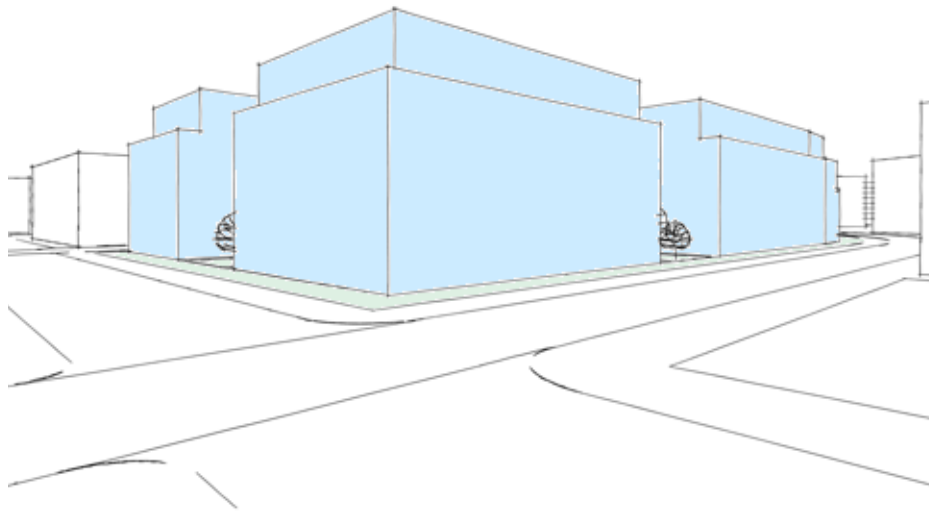


MASSING ARTICULATION & RESPONSE TO EXISTING TOPOGRAPHY

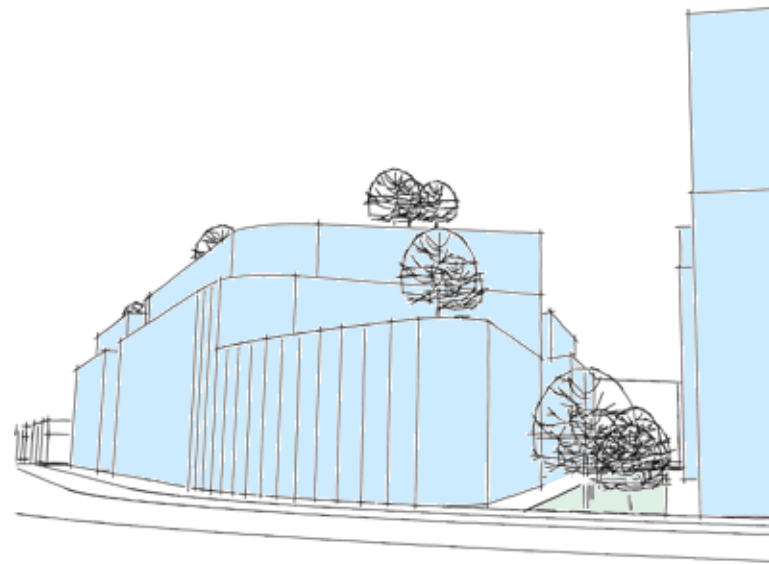


PROPOSED OPEN SPACE

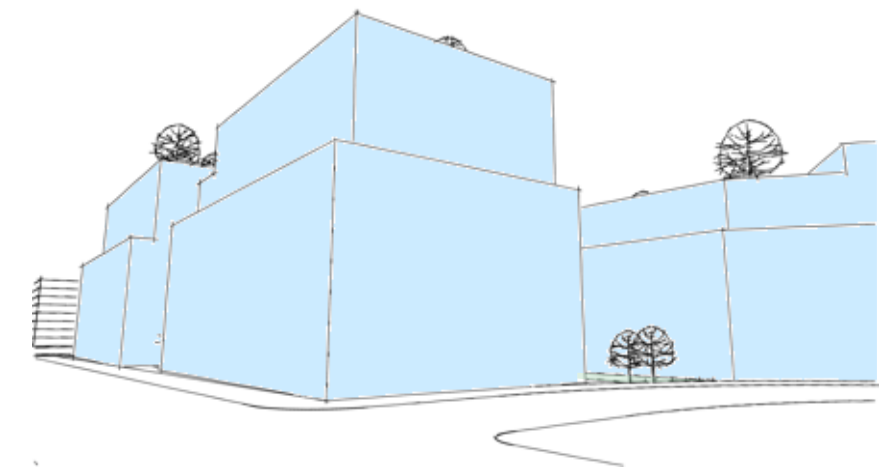
PROPOSED MASSING



View from Dawes Ave and local park



View from the corner of Dawes Ave and Hughes Ave



View from the corner of Hughes Ave and Cadman Cres

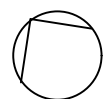
GROUND FLOOR PLAN



SCALE 1:750@A3



SCALE 1:750@A3



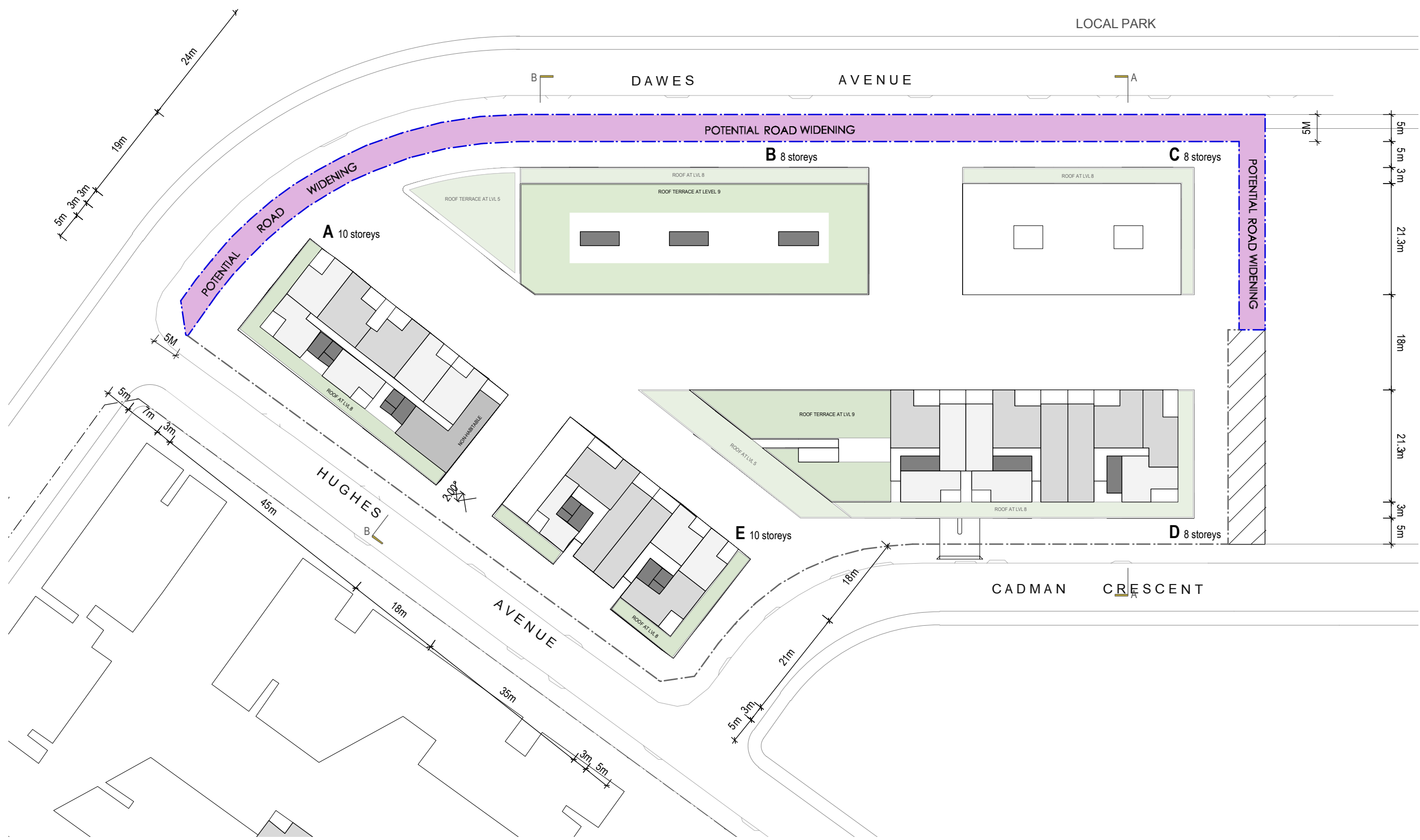
SCALE 1:750@A3



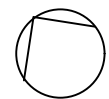
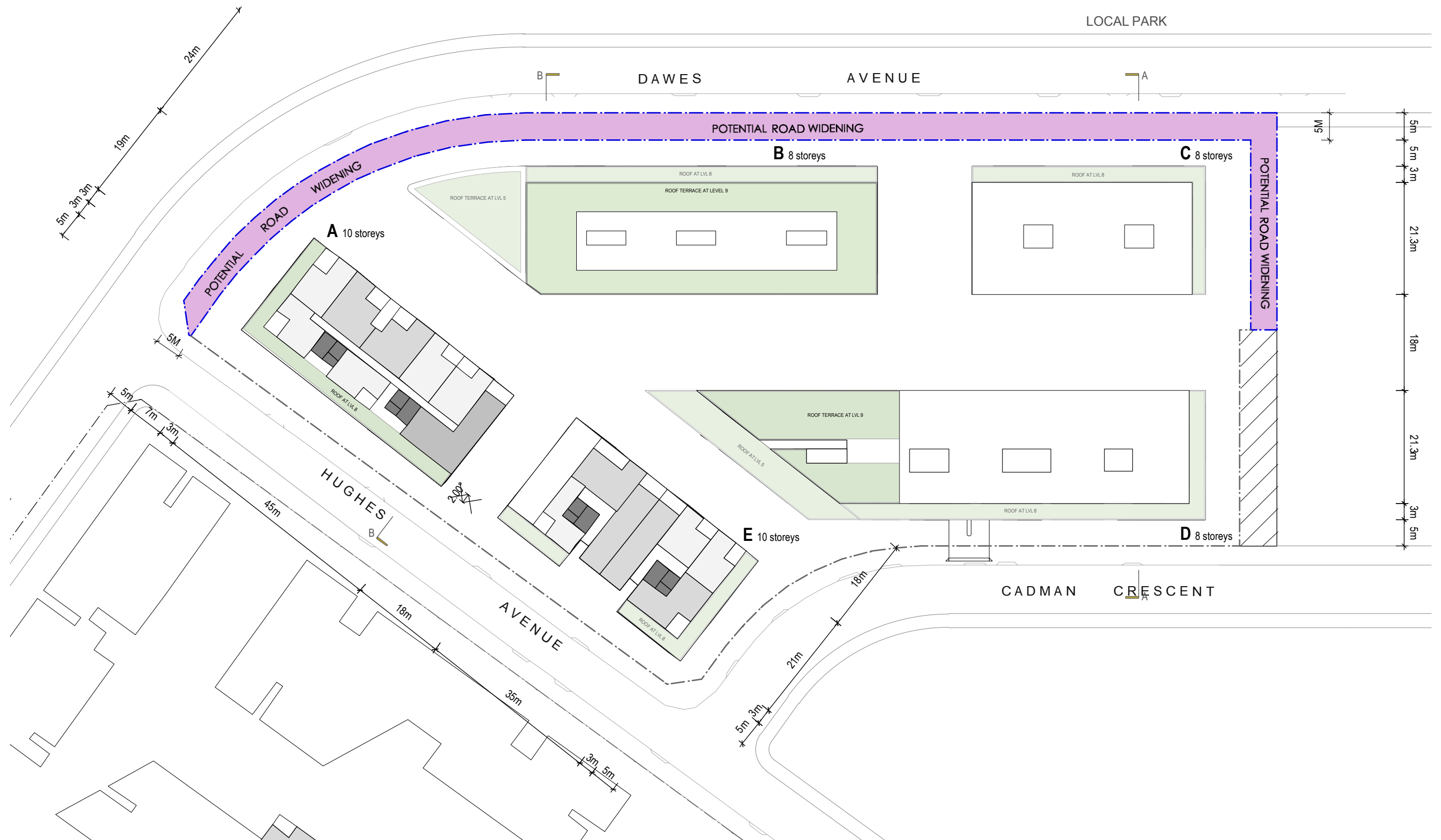
SCALE 1:750@A3



SCALE 1:750@A3



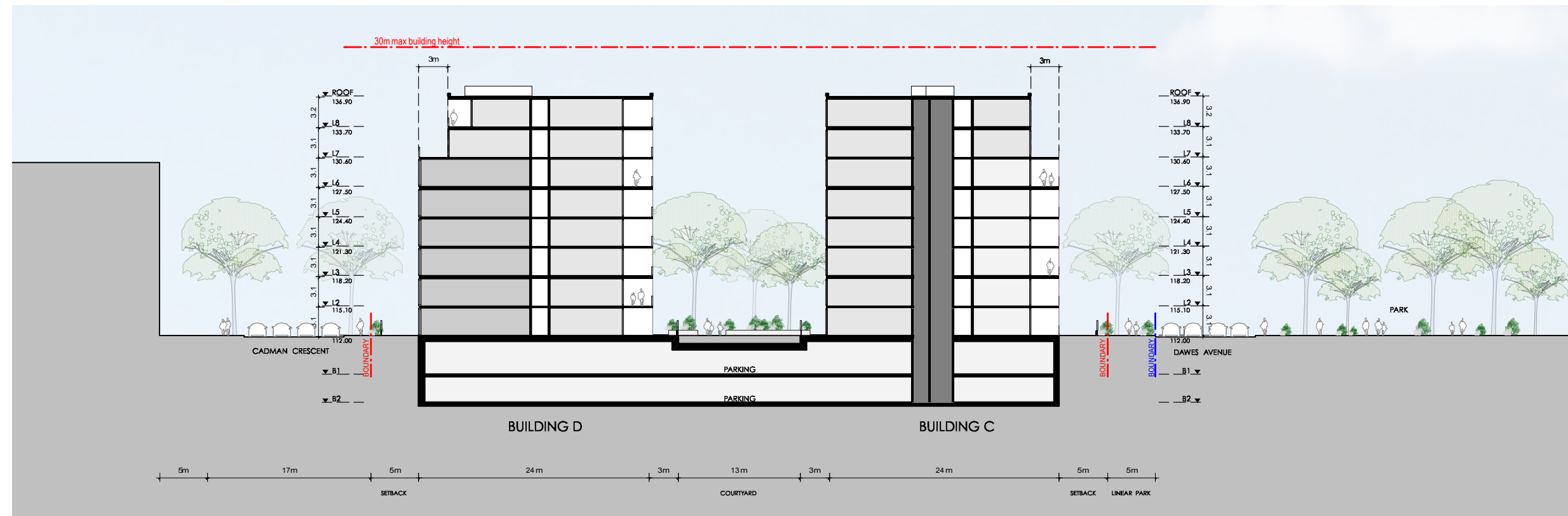
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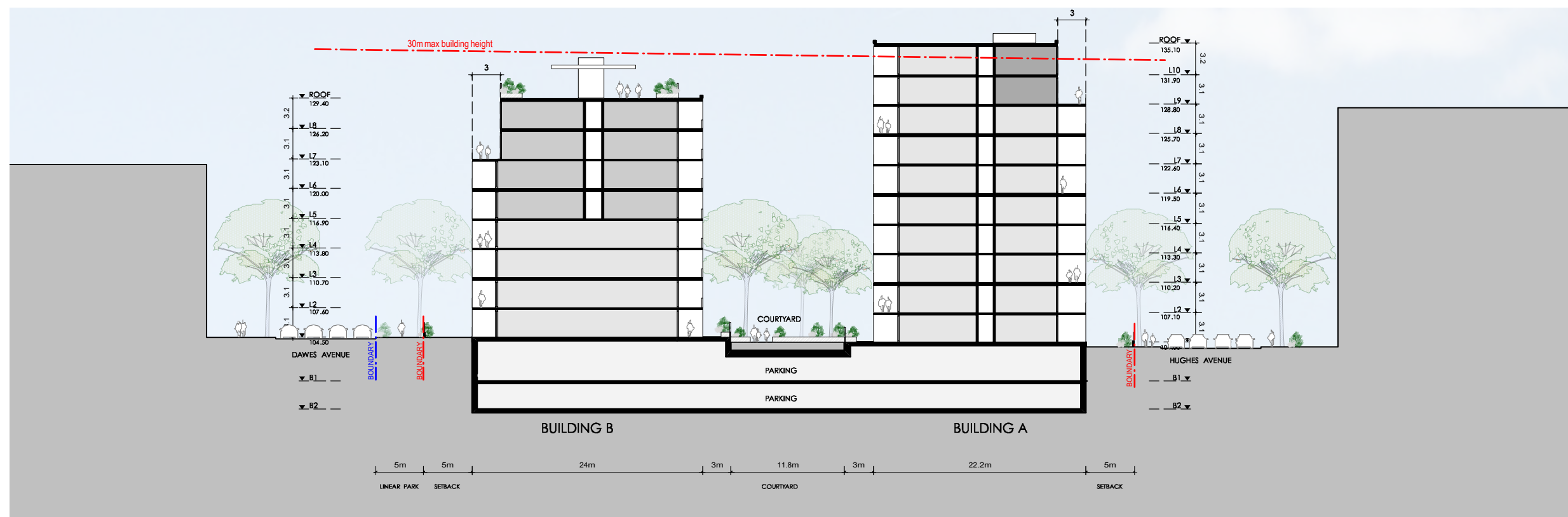
SCALE 1:750@A3



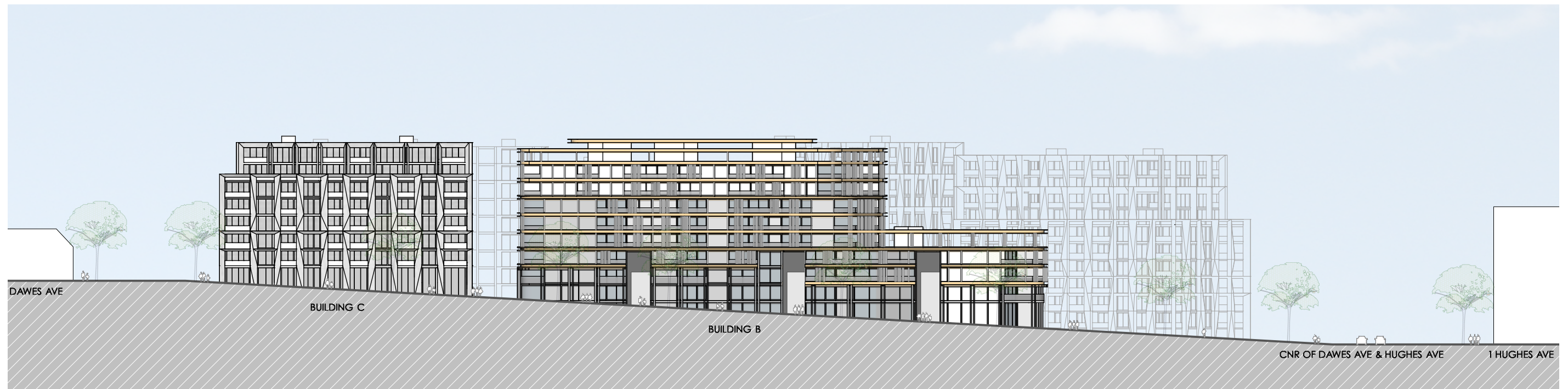
SCALE 1:750@A3



SECTION A-A



SECTION B-B



■ NORTH ELEVATION



■ WEST ELEVATION

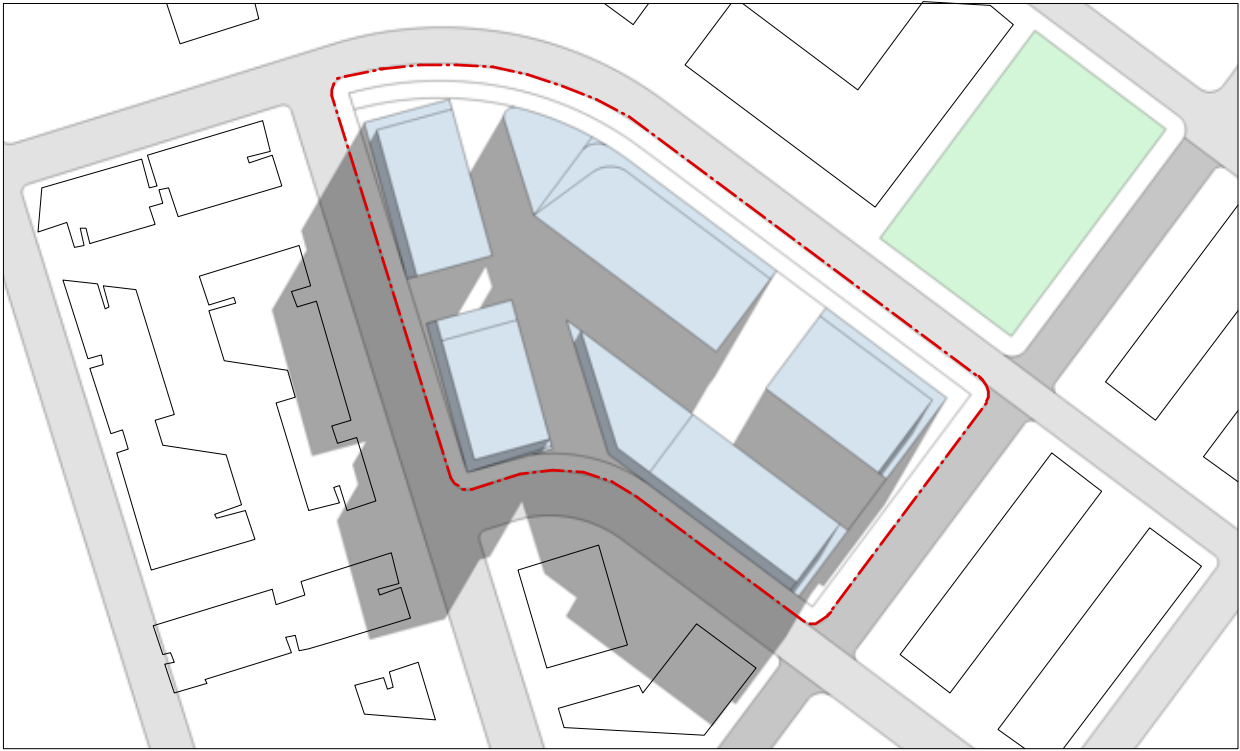
Shadow Testing

The overshadowing impacts of the proposed design were tested for the 21st June. The majority of the overshadowing occurred to the residential areas to the West and South of the site. Although the testing indicated that these sites could be developed with residential accommodation, and achieve 2hrs solar access in mid-winter as per the Apartment Design Guide.

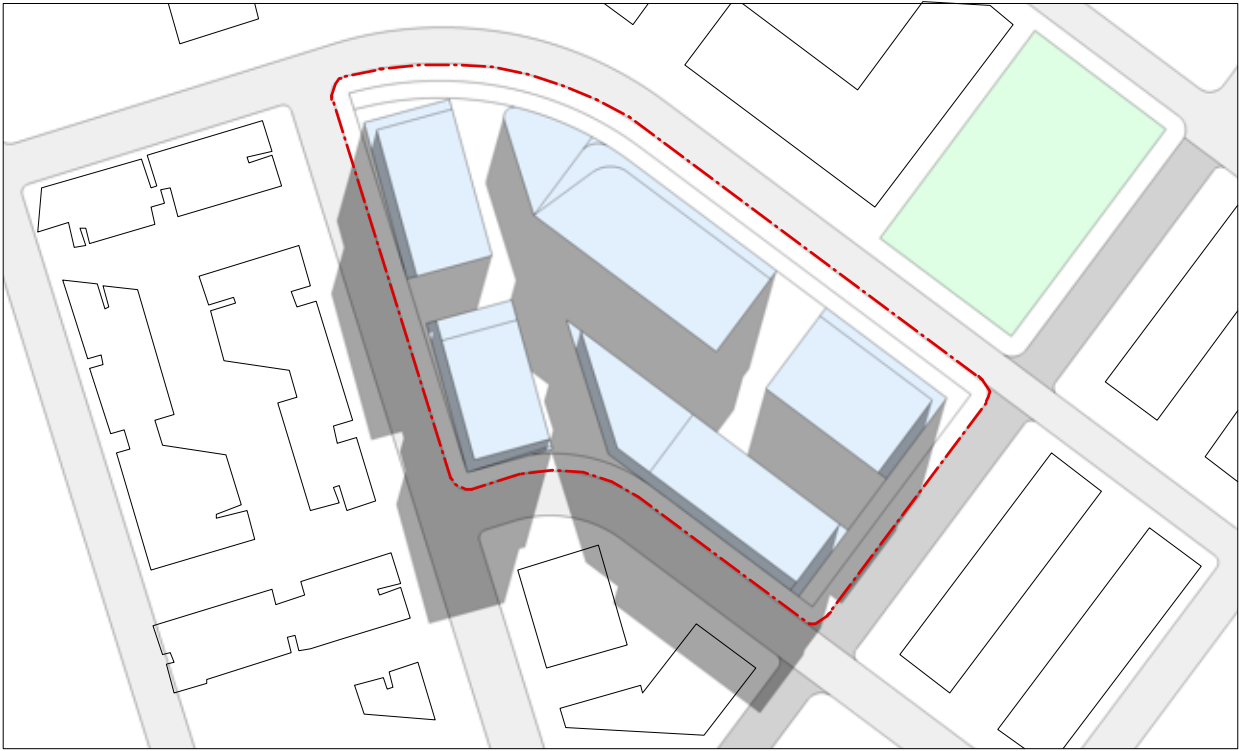
- SUBJECT SITE
- FUTURE DEVELOPMENT SITES
- FUTURE DEVELOPMENT ENVELOPES



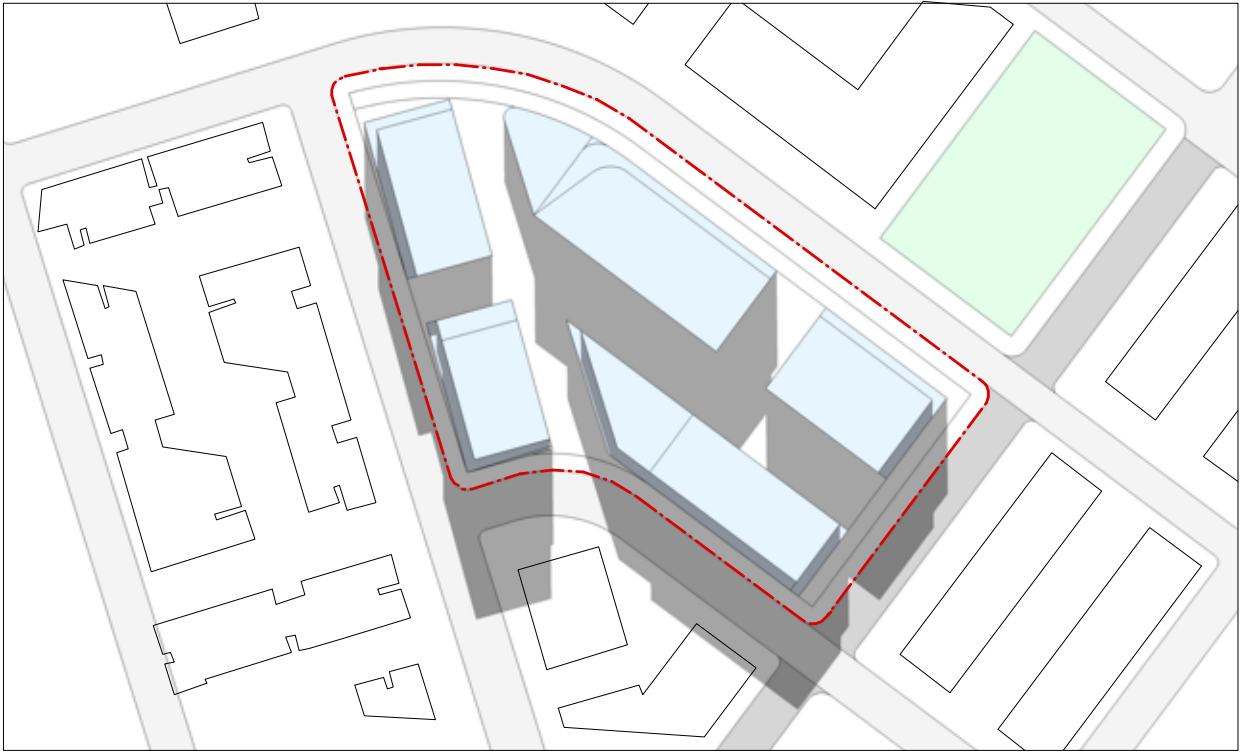
21st JUNE 9AM



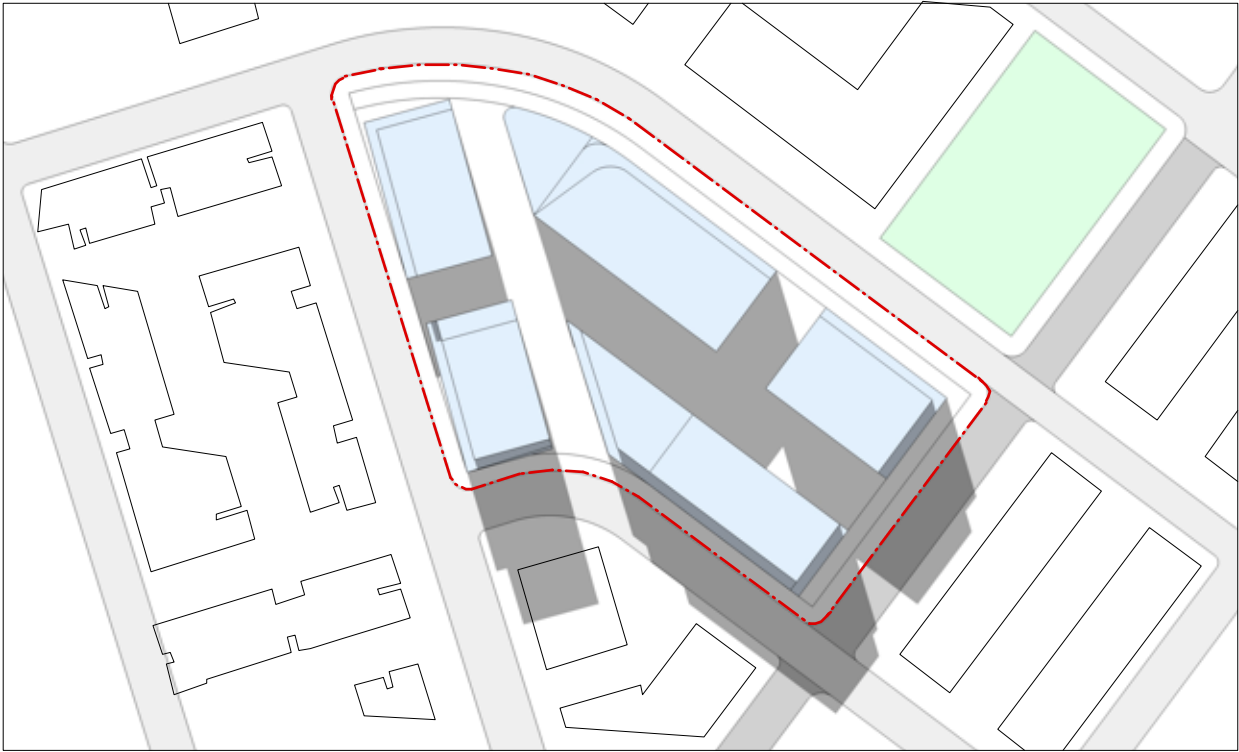
21st JUNE 10AM



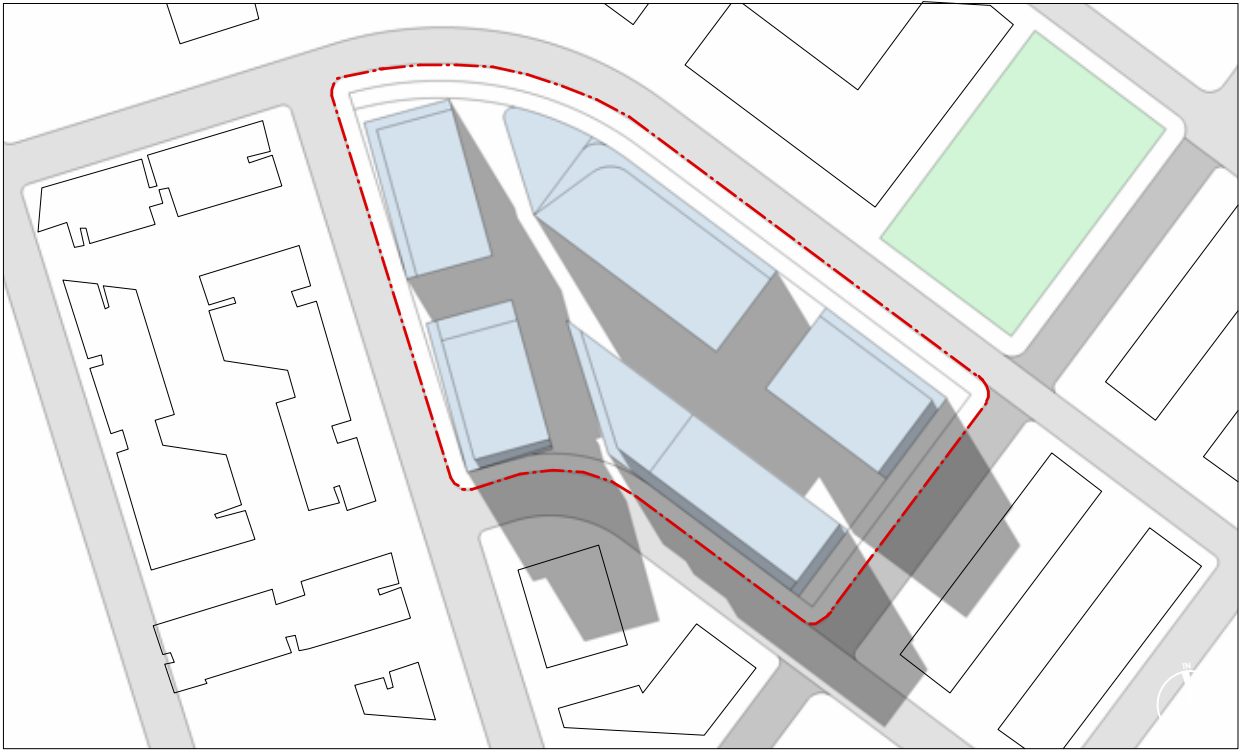
21st JUNE 11AM



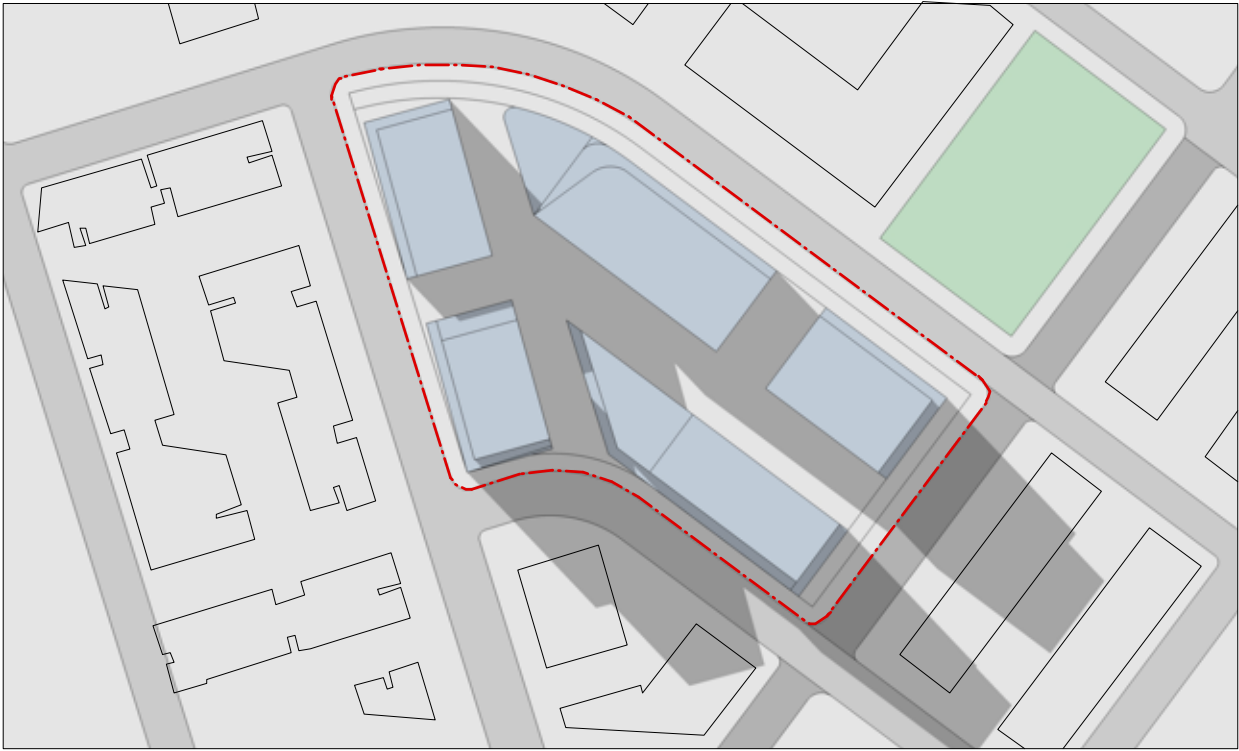
21st JUNE 12PM



21st JUNE 1PM



21st JUNE 2PM



21st JUNE 3PM





■ GROUND FLOOR/LEVEL 1



■ LEVEL 2



■ LEVEL 3



■ LEVEL 4

KEY

-  POSSIBLE OVERSHADOWING FROM FUTURE DEVELOPMENT TO NORTH
-  MIN. 2 HRS SOLAR ACCESS
-  + 15 MINS SOLAR ACCESS
-  0 HRS SOLAR





■ LEVEL 5



■ LEVEL 6



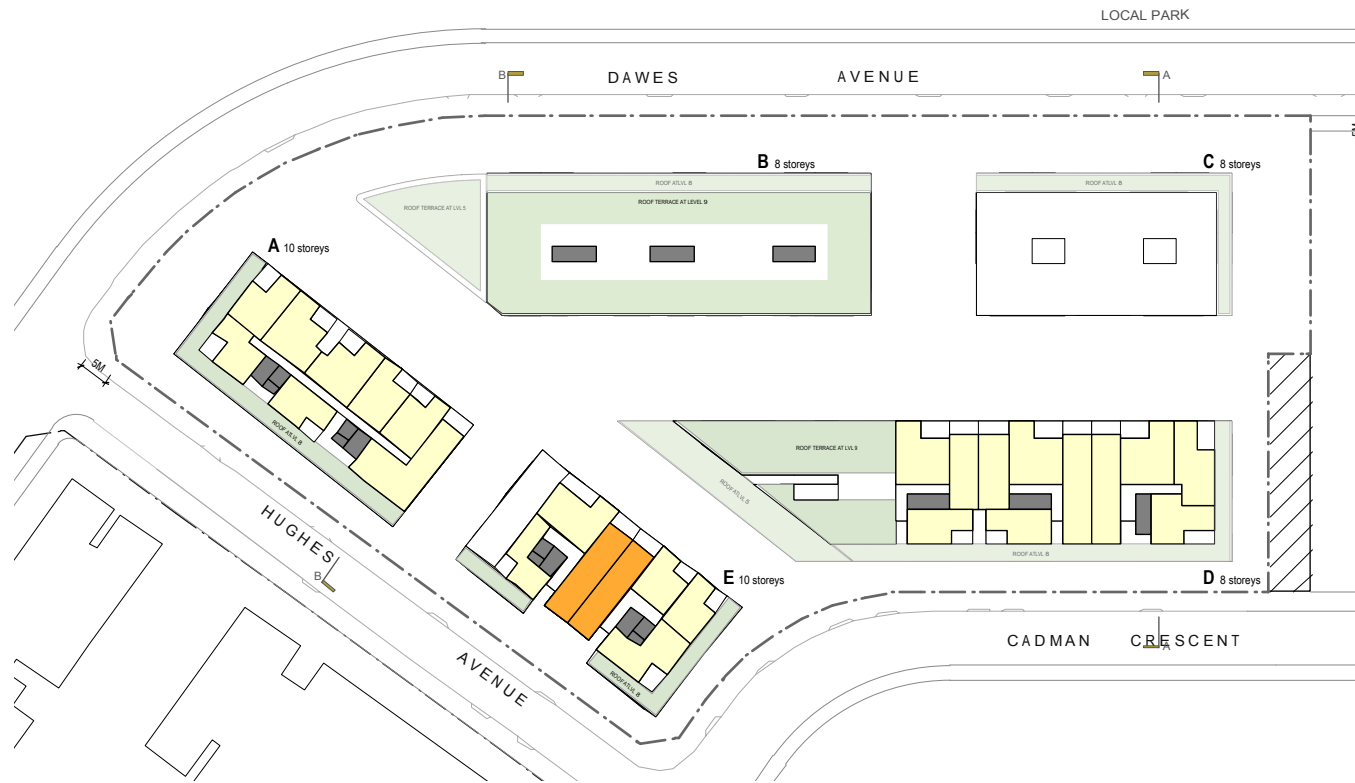
■ LEVEL 7



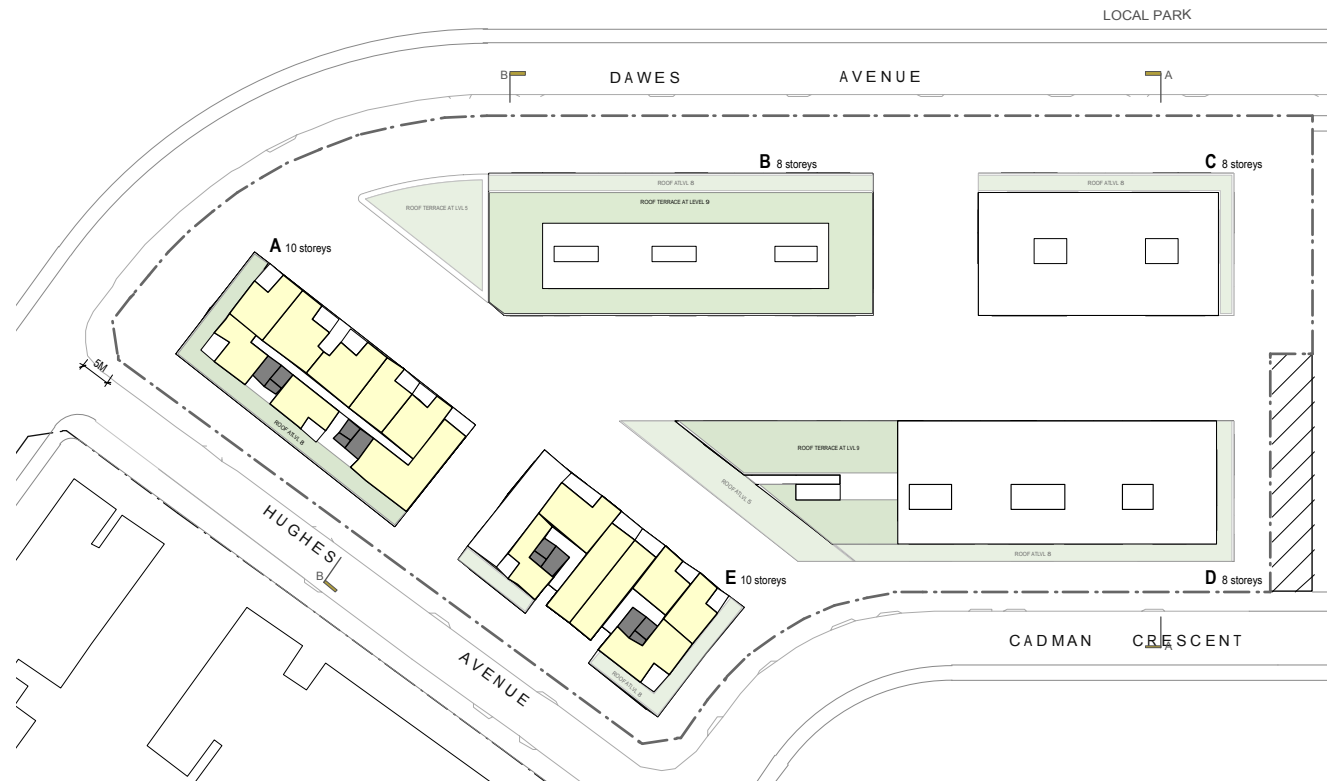
■ LEVEL 8

- KEY**
- POSSIBLE OVERSHADOWING FROM FUTURE DEVELOPMENT TO NORTH
 - MIN. 2 HRS SOLAR ACCESS
 - + 15 MINS SOLAR ACCESS
 - 0 HRS SOLAR

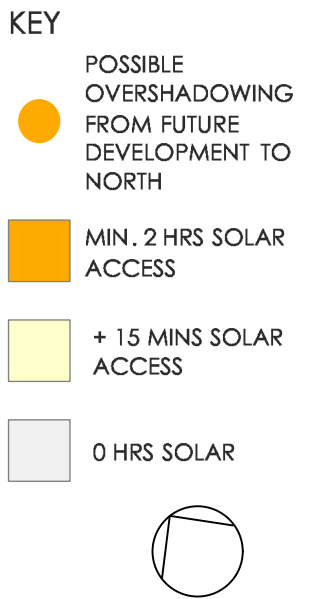




■ LEVEL 9



■ LEVEL 10





■ GROUND FLOOR/LEVEL 1



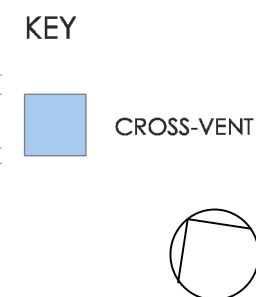
■ TYPICAL LEVEL 2-4



■ TYPICAL LEVEL 5-6

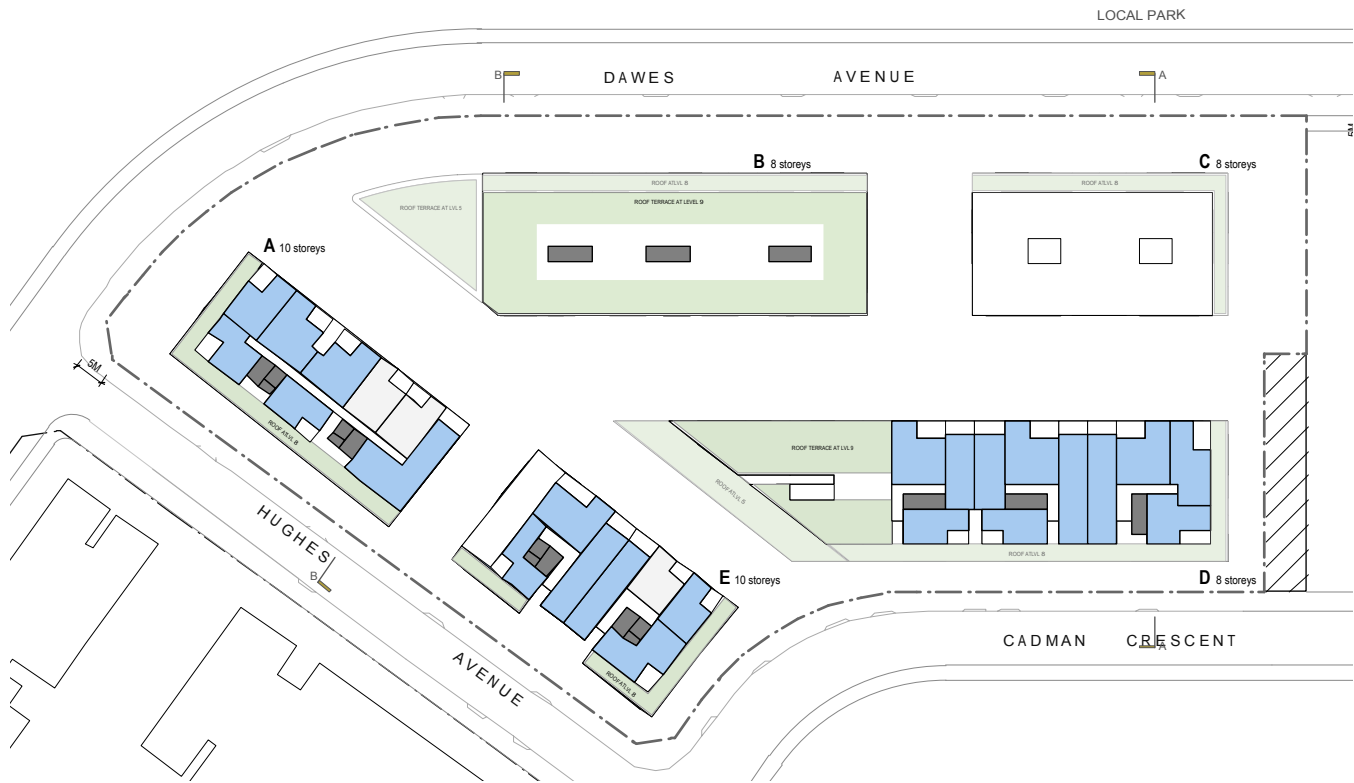


■ LEVEL 7

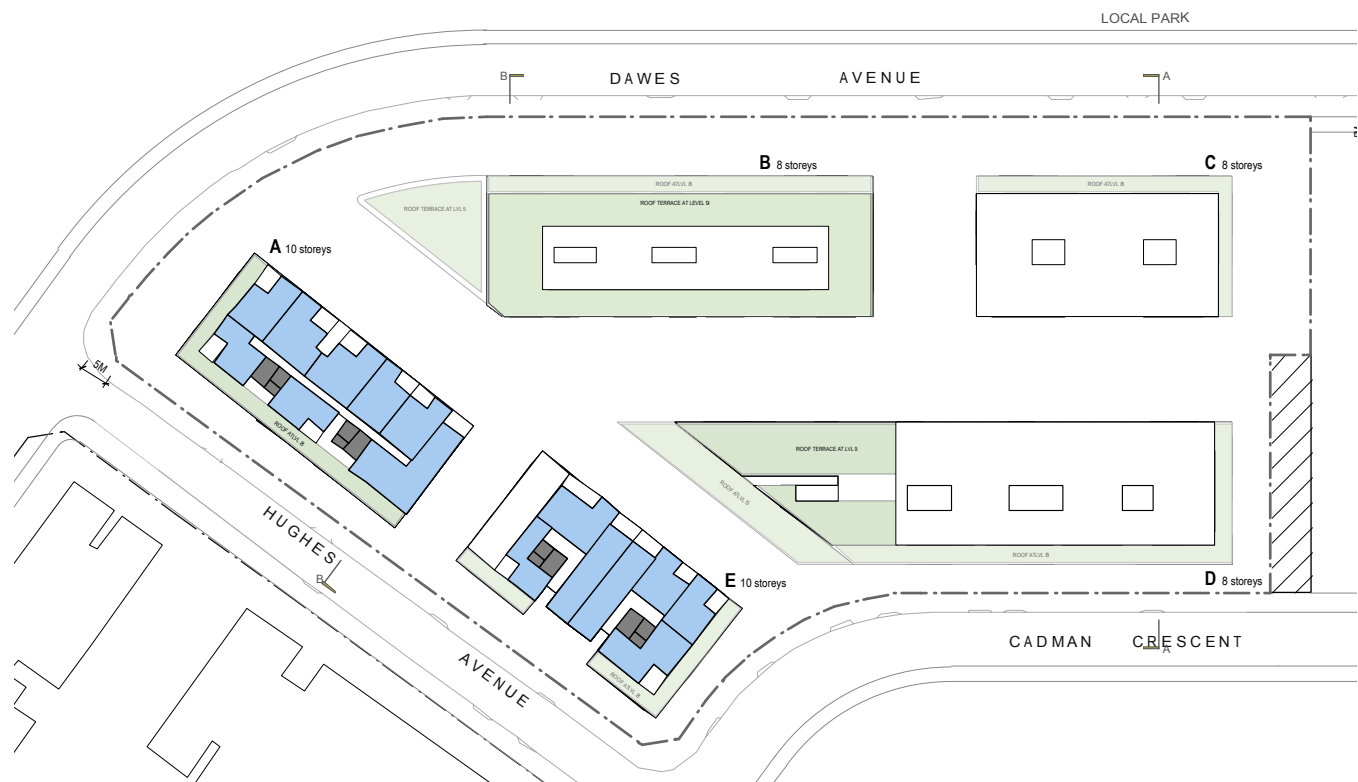




■ LEVEL 8



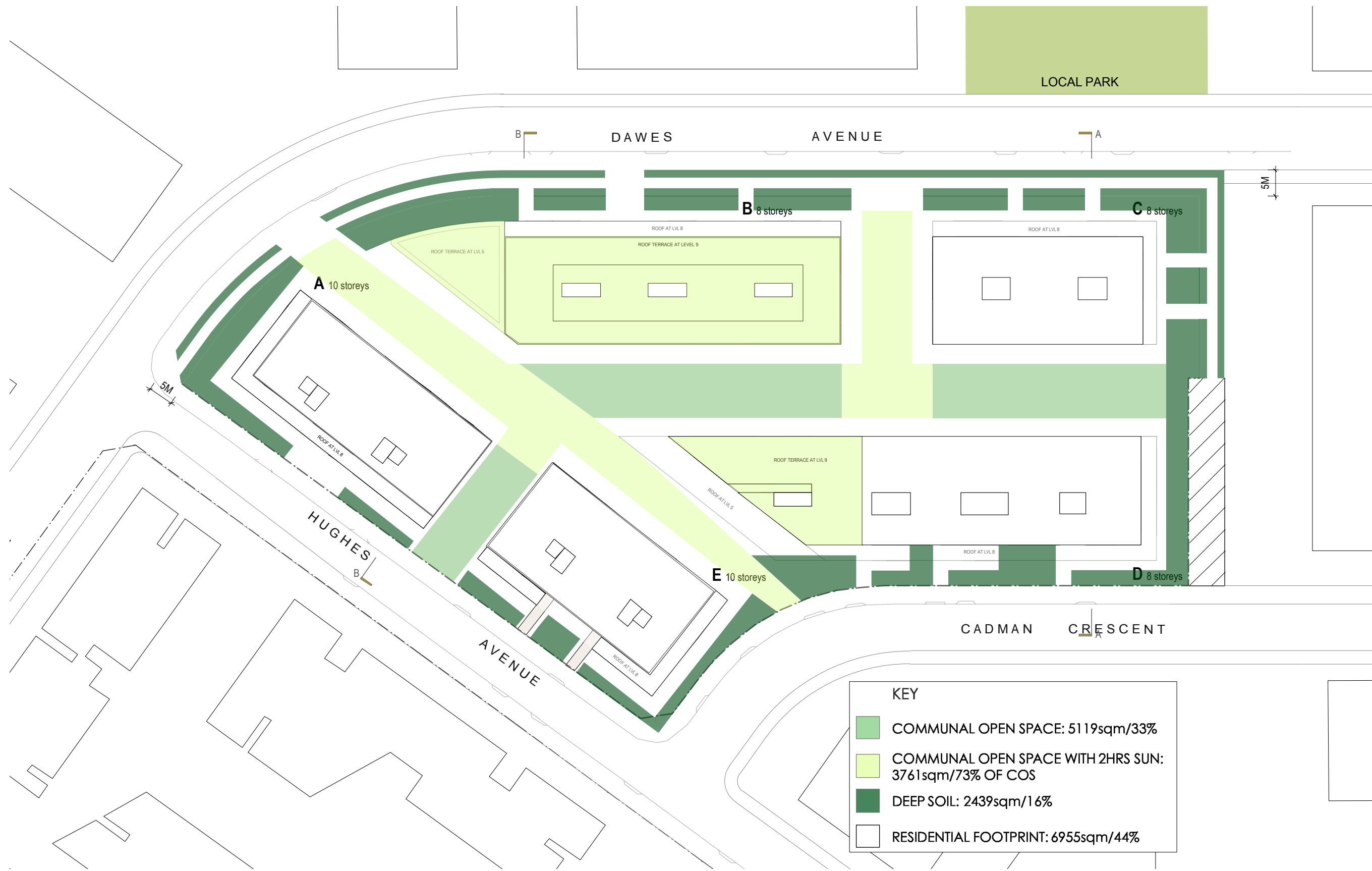
■ LEVEL 9

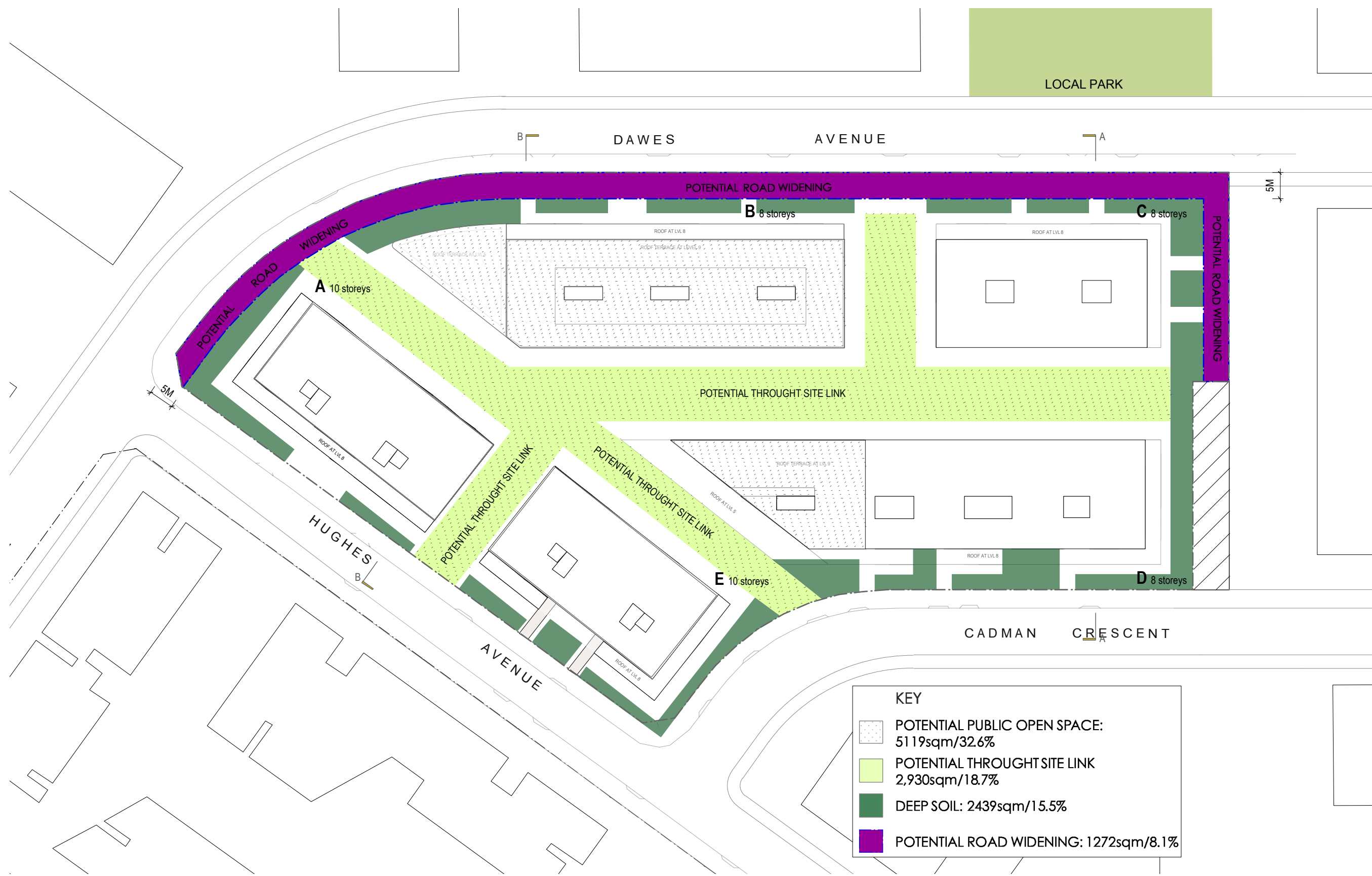


■ LEVEL 10

KEY







KEY	
	POTENTIAL PUBLIC OPEN SPACE: 5119sqm/32.6%
	POTENTIAL THROUGH SITE LINK 2,930sqm/18.7%
	DEEP SOIL: 2439sqm/15.5%
	POTENTIAL ROAD WIDENING: 1272sqm/8.1%

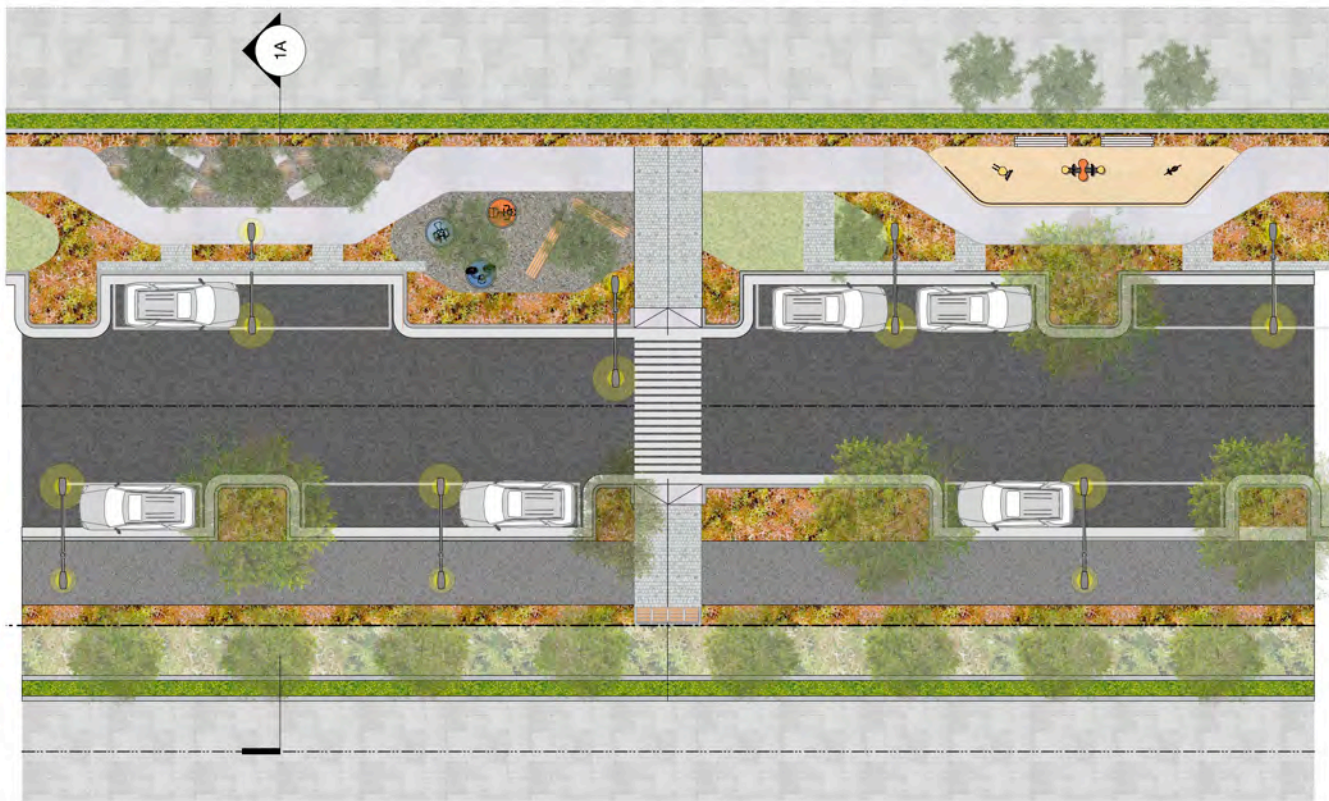


LEGEND

PROGRAMME

- 1 Entry Wayfinding
- 2 Public Art
- 3 Central Plaza
- 4 Play Pod
- 5 Fitness Pod
- 6 Table Tennis
- 7 Citrus Orchard
- 8 Lawn Seating
- 9 Picnic Pod





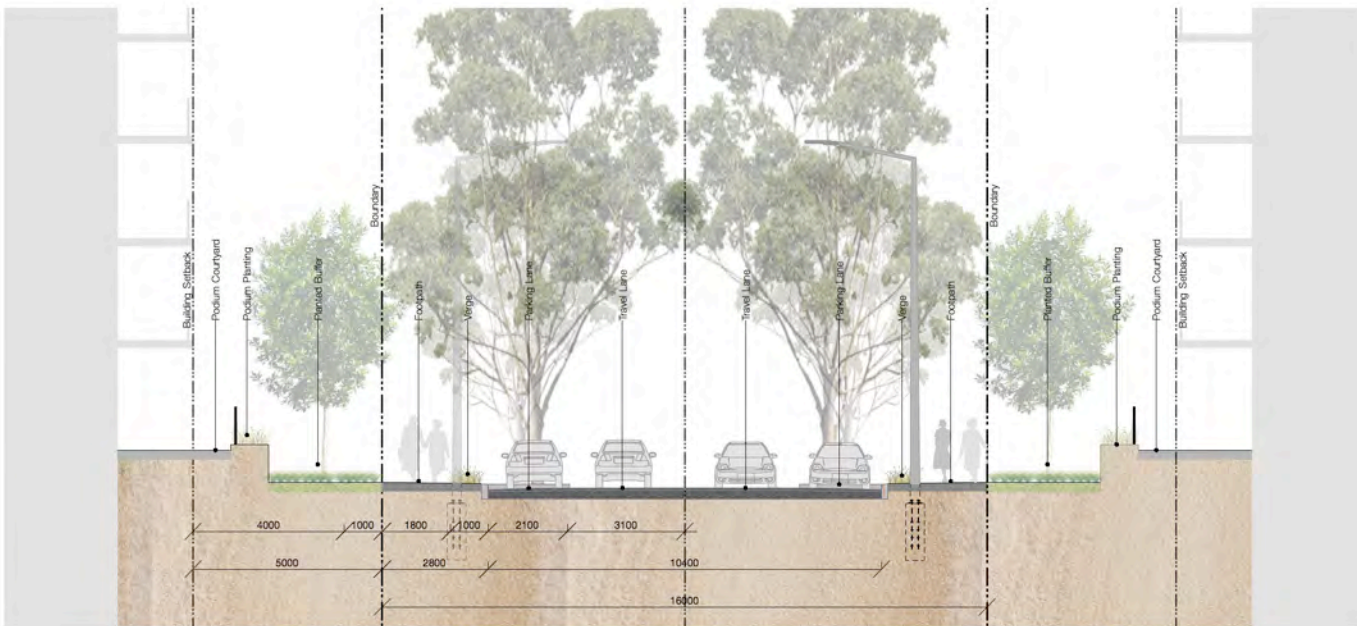
1 Type 2: Park Street
Typical Plan @1:150



2 Type 3: Residential Street
Typical Plan @1:150



1A Type 2: Green Street
Typical Section @1:100

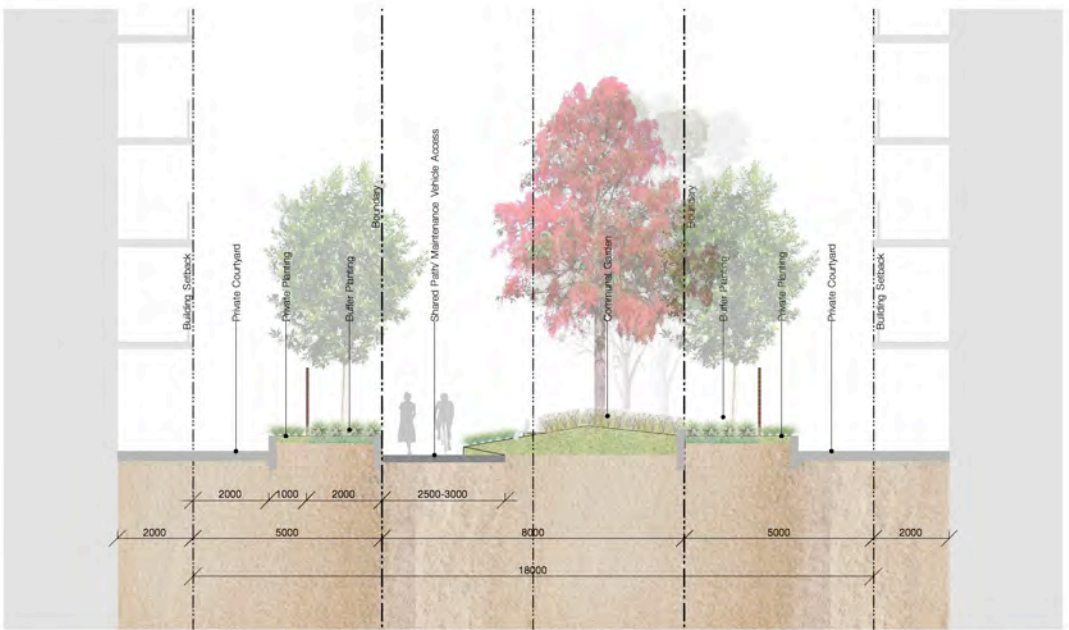


2A Type 3: Residential Street
Typical Section @1:100

PEDESTRIAN THROUGH SITE LINK



2 Type 4: Pedestrian Through Link
Typical Plan @1:150



2A Type 4: Pedestrian Through Link
Typical Section @1:100

4

STRATEGIC POSITION

Analysis of Site 2 within its strategic context

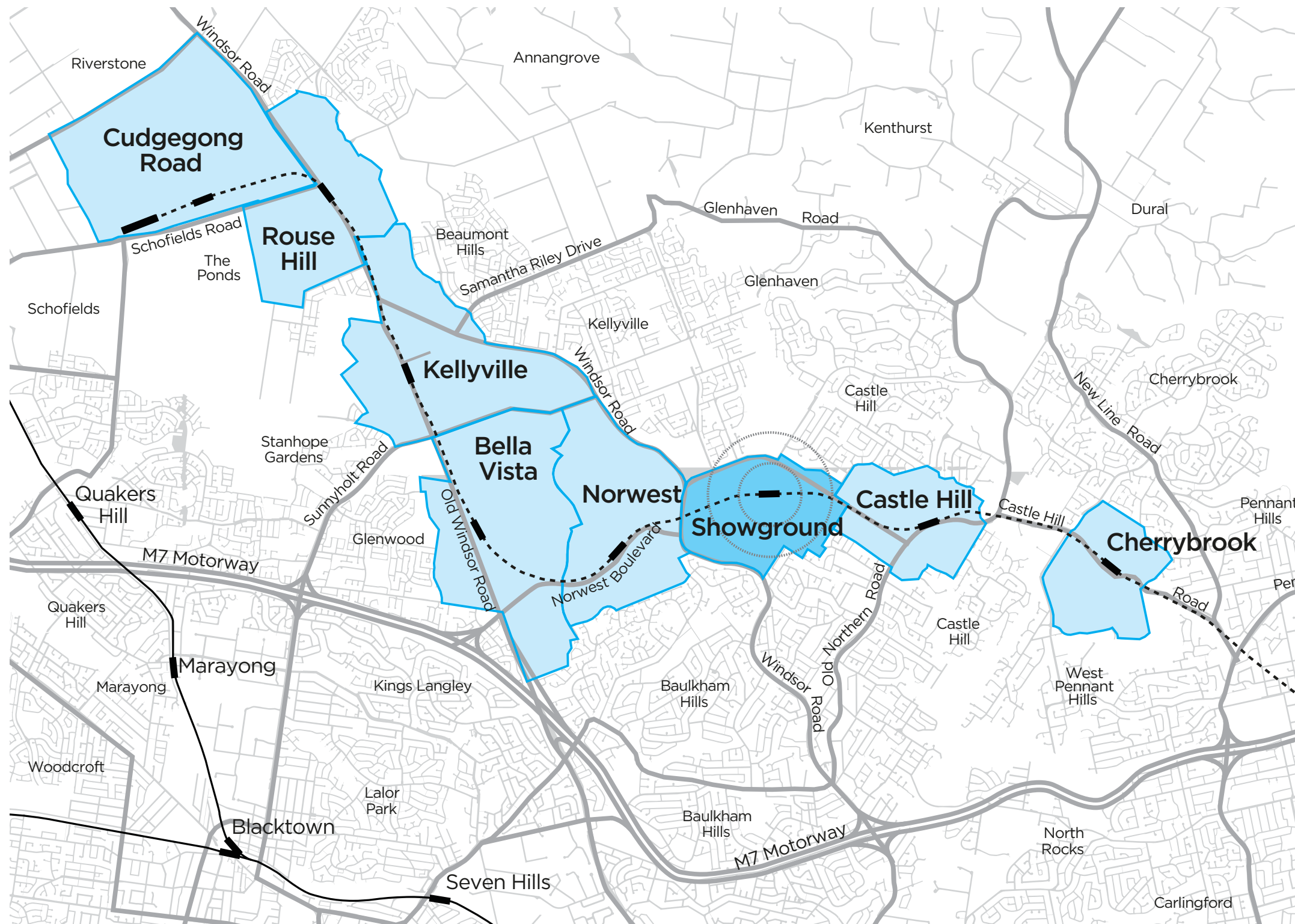


Proposed Sydney Rapid Transit



Site 2 is located within the Showground Precinct. This precinct surrounds one of the 8 new stations on the Sydney Metro Northwest. The new station will provide excellent connectivity to

- + places of work such as Norwest, Macquarie Park, North Sydney and the City,
- + educational facilities such as Macquarie University,
- + larger retail centres such as Macquarie Park, Chatswood and the City,
- + cultural facilities in the City



North West Rail Link Corridor Strategy Overview . Figure 4 - Showground Station Precinct Proposal (SSPP)

The Sydney Metro Northwest (former known as the North West Rail Link), is Australia's largest public transport infrastructure project currently under construction + is a priority rail project for the NSW Government.

8 new stations of which one is the Showground Precinct, are currently under construction. They are due to open in the first half of 2019 and will connect into the existing 13 kilometre Epping to Chatswood rail line.

In 2024, the second stage of Sydney Metro, the Sydney Metro City and Southwest, will extend from Chatswood, run under Sydney Harbour, the Sydney CBD and west to Bankstown, further connecting the site throughout Sydney.

The Department of Planning and Environment and Transport for NSW, in consultation with relevant local councils and State government agencies, finalised the North Rail Link Corridor Strategy in September 2013. The Corridor Strategy included Structure Plans for each station precinct. It was prepared to guide planning around the stations, and integrate land use + transport planning to meet current and emerging challenges associated with future expected growth in the North West region.

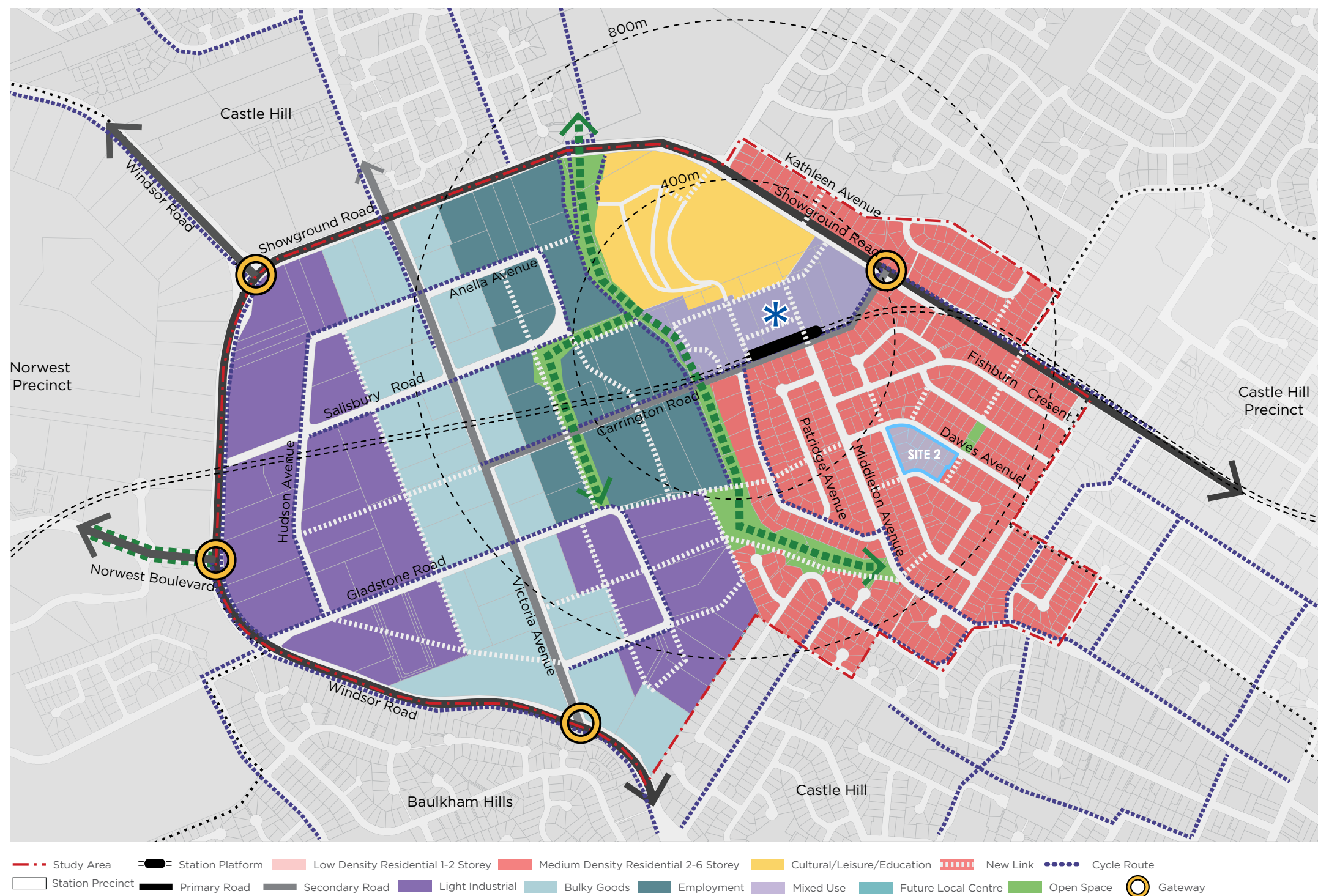
STRATEGIC POSITION

SHOWGROUND STATION STRUCTURE PLAN

The Structure Plan prepared for the Showground Station Precinct as part of the North West Rail Link Corridor Strategy shows Site 2 within the Medium Density 2-6 Storey area. The site is approximately 500m from the new train station which is an easy walking distance.

Higher density housing normally associated with such transport infrastructure+ local centre zoning is seemingly missing from the plan.

The opportunity to provide greater densities exists.



Aerial View of Envisioned Precinct. Figure 5 - SSPP

Why is density a good thing in the Showground Station Precinct?



Showground Station. Figure 56 - SSPP

Transit Oriented Developments (TODs) are defined as highly walkable precincts centred around a major transit hub. TOD precincts are the preferred model for both infill and new development strategies in Australia, due to their ability to achieve wider sustainability and economic benefits when compared to their suburban counterparts.

Transport Orientated Development has a multitude of benefits for urban areas:

- Reduction in congestion
- Helps to curb urban sprawl
- Increases patronage of public transport
- Increases walkability
- Increased density contributes to supporting the local economy
- Increases housing choice

In Sydney, the Metropolitan Strategy has designated 80% of new housing to be provided within walking distance of centres with good public transport accessibility and reach.



Local Centre. Figure 58 - SSPP

Five typical conditions have been identified as a strategy that delivers on TOD principles, as well as responds to existing context's and to structure the corridor;

Gateway

- Highly visible sites along the corridor which mark the entry into a centre or the gateway point along the corridor;
- Adjacent to major open space and/or rail.

Heart/Marker

- Strategic sites within the heart of the Village (local centre)
- Adjacent to a light rail stop and/or on a major intersection.

Village (Local Centre)

- Sites located within the centre of the village (local centre)
- Higher density to deliver mixed use amenity of the centre

Mid Corridor

- Sites located between Villages (local centres);
- Lower height and density between the local centres.

Special Destination

- Sites located adjacent to institutions and other specific land uses



Carrington Rd. Figure 59 - SSPP

The planning rationale for an increase in floor space + height on the site includes:

- + proximity to new Train Station
- + proximity to new Local Centre
- + proximity to Employment Area
- + proximity to proposed Educational Area
- + the site not identified as being affected by major environmental + heritage constraints
- + Limited other instances of large + consolidated ownership
- + Currently under utilisation of the site, comprising low grade buildings
- + Attractiveness of area for higher density residential development
- + Strategically located in an area that is accessible to existing

STRATEGIC POSITION

SHOWGROUND STATION PRECINCT PLAN

The Structure Plan from the Northwest Rail Corridor Strategy has been developed into a Precinct Plan for the Showground Station Precinct.

The height of the buildings now proposed within Site 2's area has been increased up to 8-10 storeys. A 6 storey transition is generally proposed to the lower density residential area to the south.

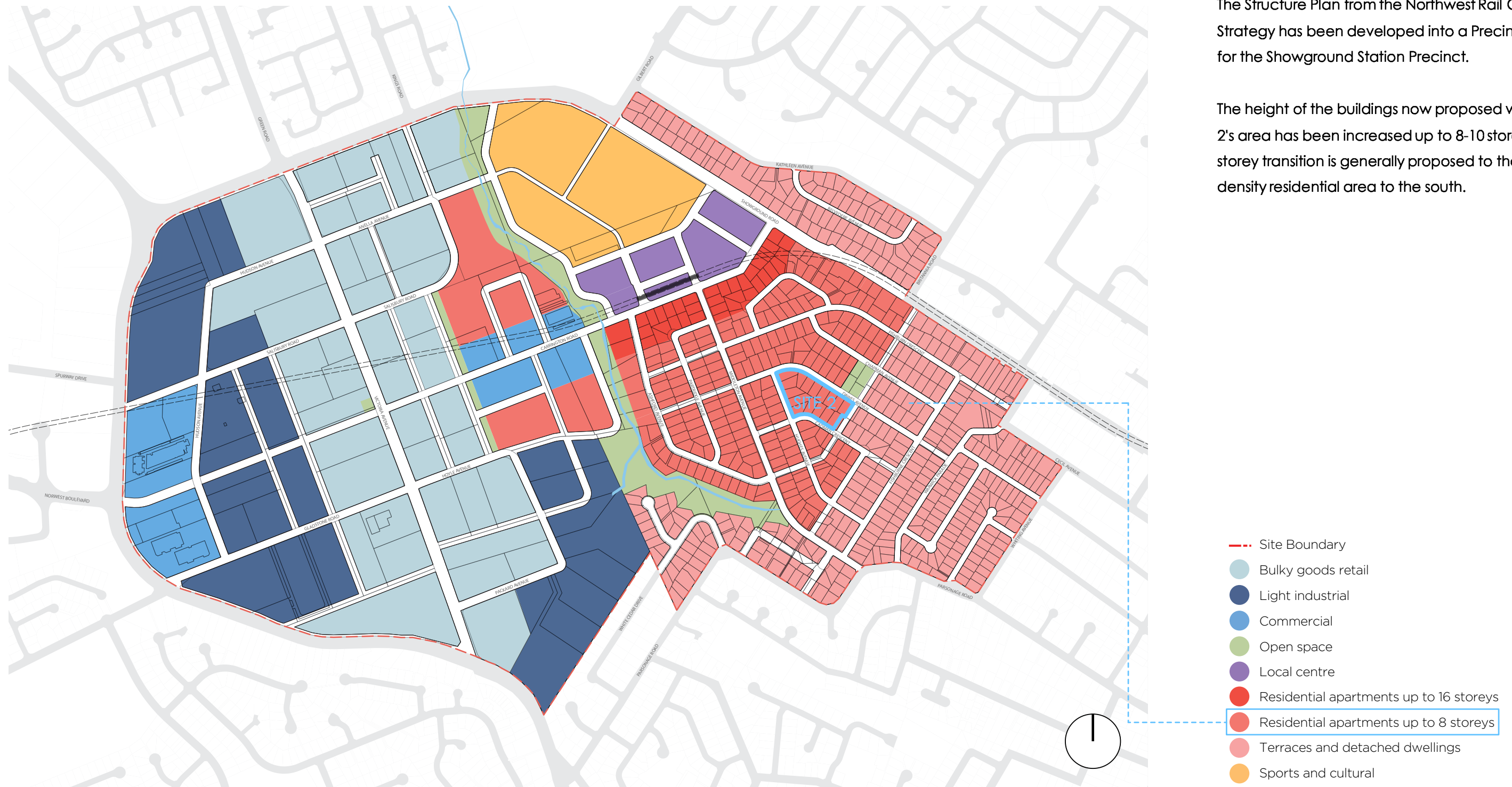


Figure 21 - Proposed Precinct Plan, Showground Station Precinct Proposal

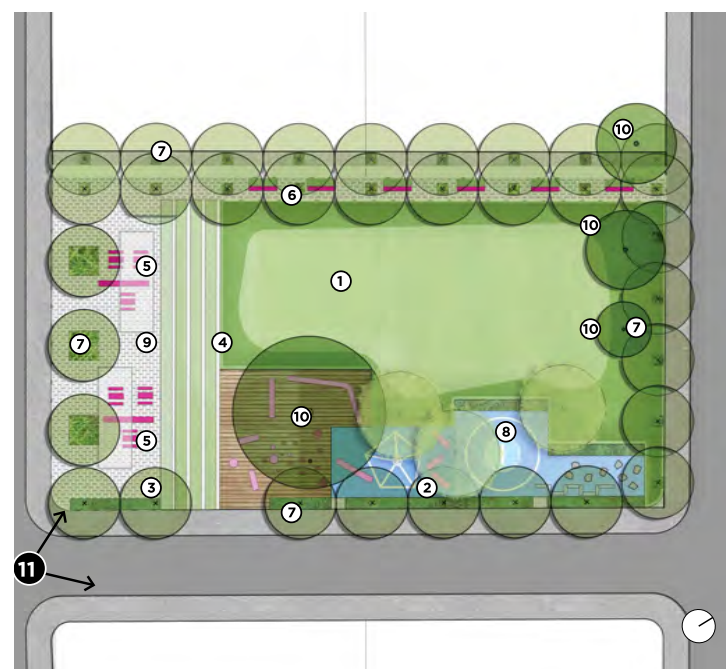


Proposed Open Space Network . Figure 23 - SSPP

Adjacent to Site 2, a new Local Park is proposed.

This will provide opportunities for outlook from Site 2, as well as provide the future residential of the site additional and complementary recreational space within close proximity to the Site.

Implementation of wide pedestrian linear parks around the North and East boundaries of the site creates a connection to the precinct wide open space network. These "Green Streets" provide a wide pedestrian and cycle way which encourage sustainable modes of transport, and lowers traffic congestion in the precinct.



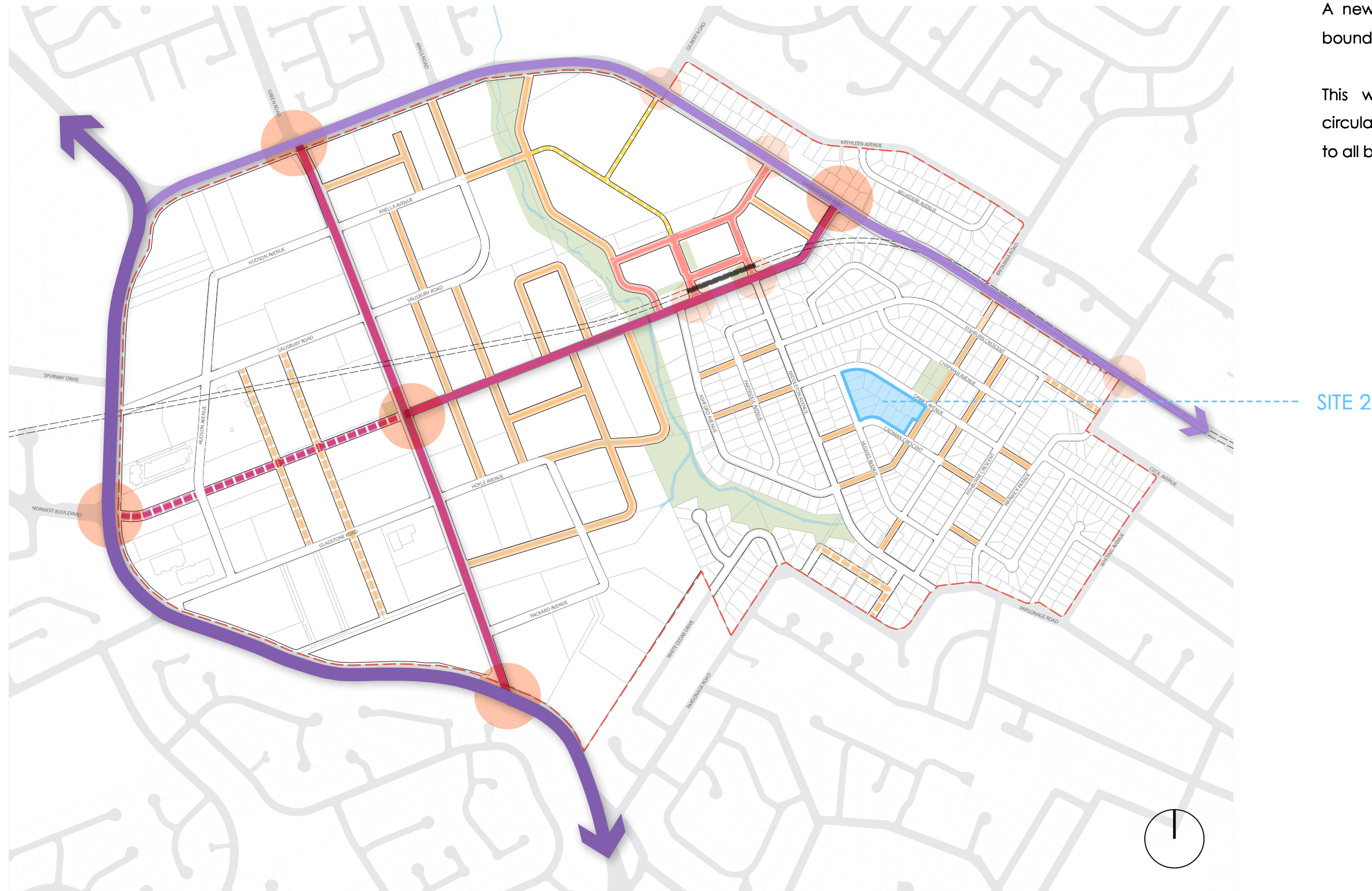
Local park indicative concept plan . Figure 31 SSPP



Impression of local park . Figure 30 - SSPP

A new local street is proposed along the Eastern boundary of Site 2.

This will provide full vehicular and pedestrian circulation around the site, as well as street address to all buildings.



Proposed street network and public transport. Figure 32 SSPP

STRATEGIC POSITION

BUILT FORM

The subject site is shown within the 'Residential Apartments up to 8-10 storeys' sub-precinct. A minimum allotment size of 1500m² is required. Site 2 easily exceeds this, having an area of 15 694m²

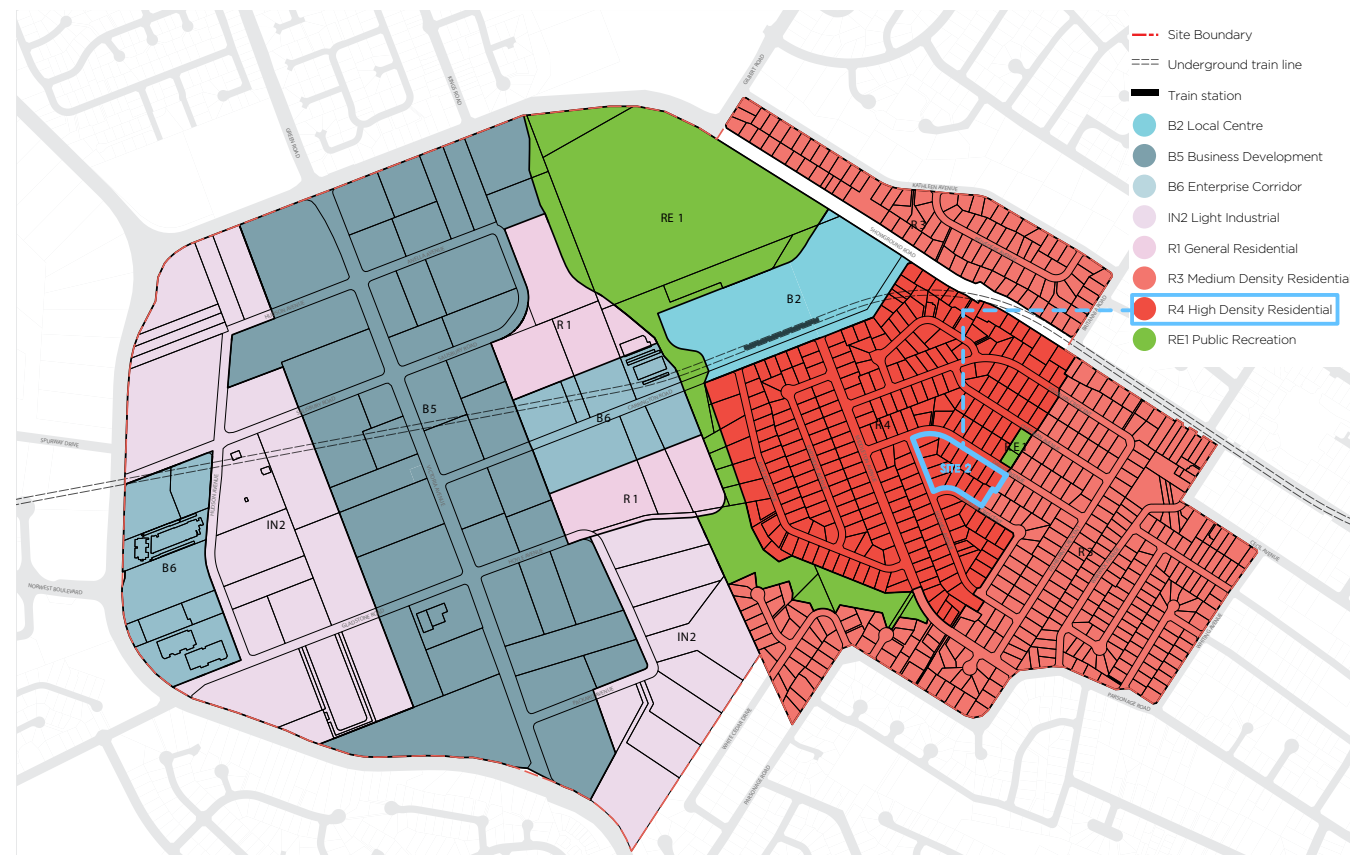
The new road between the subject site + lower density housing to the south will aid in provide adequate ADG separation as well as transitioning to lower built forms.



Proposed Built Form. Figure 34 - SSPP

STRATEGIC POSITION

ZONING, FSR + HEIGHT



Proposed Zoning Map. Figure 51 - SSPP

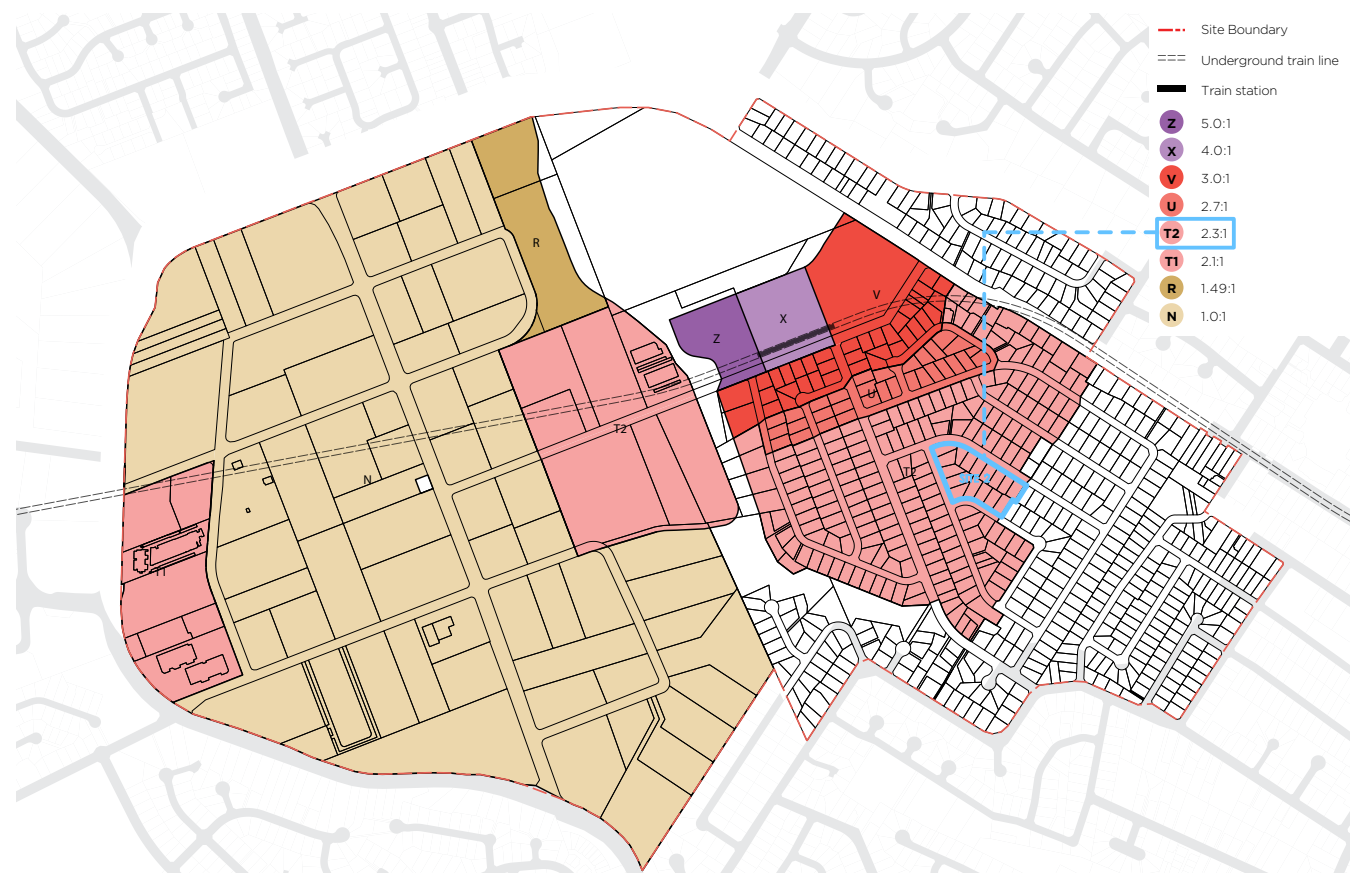
NO CHANGE PROPOSED

Site 2 is proposed to be zoned R4 High Density Residential. No change to the zoning is being requested.

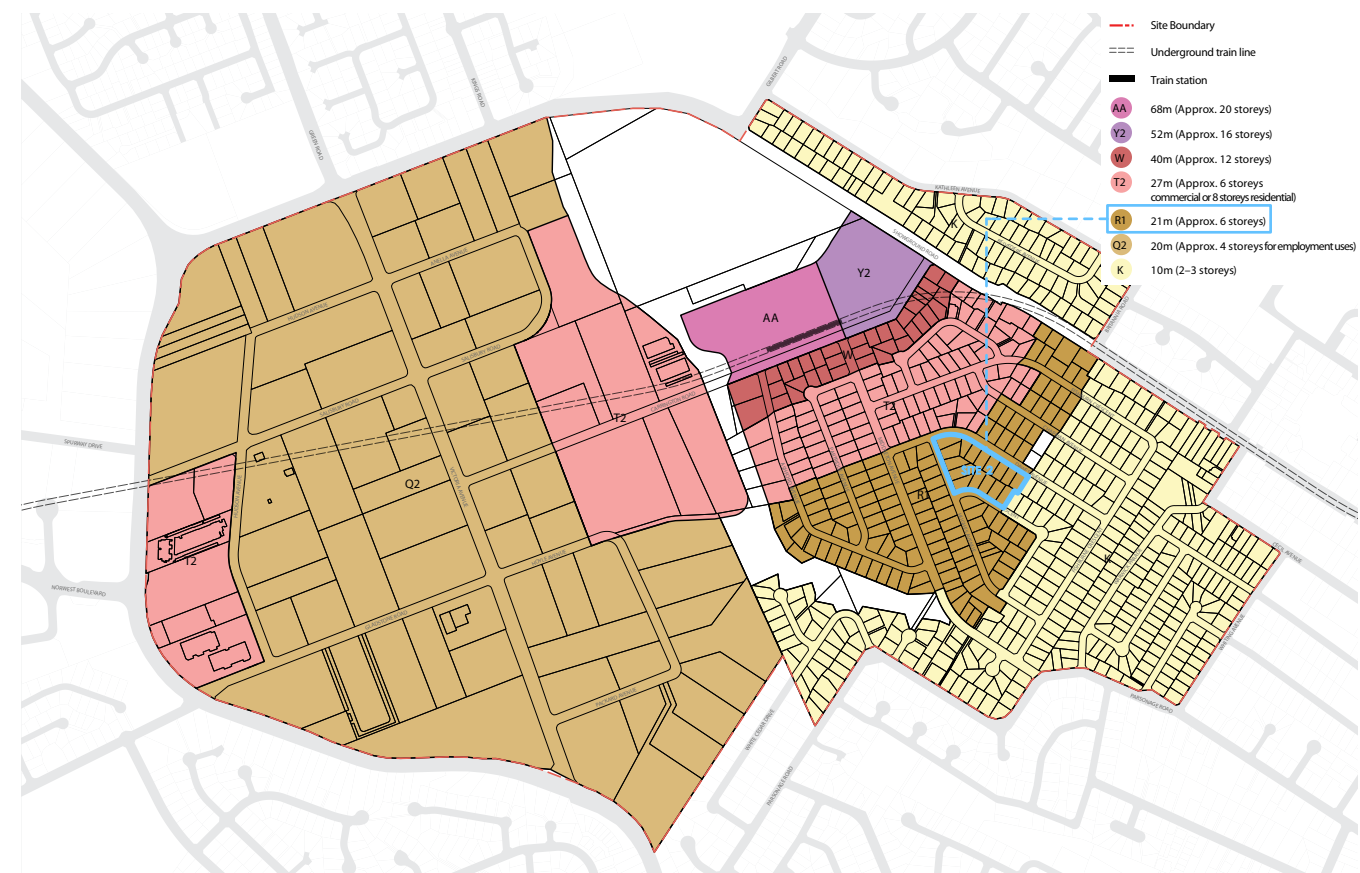
The FSR for Site 2 proposed by the Showground Station Precinct proposal is 2.3:1, with a height limit of 21m (6 storeys).

This Urban Design Report seeks to show that to expand the 2.75:1 FSR area to include Site 2 is justifiable.

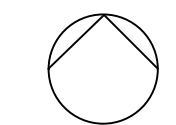
Further, this Urban Design Report seeks to justify the expansion of the 8-10 storey height limit to include Site 2.



Proposed Floor Space Ratio Map. Figure 53 - SSPP



Proposed Height of Buildings Map. Figure 52 - SSPP



SITE Site Address Cadman Cres, Hughes Ave
Site Area 15,794 sqm

Key

Residential

Parking

Retail/ Active Uses

Landscape area

5 Total storeys

Deep soil

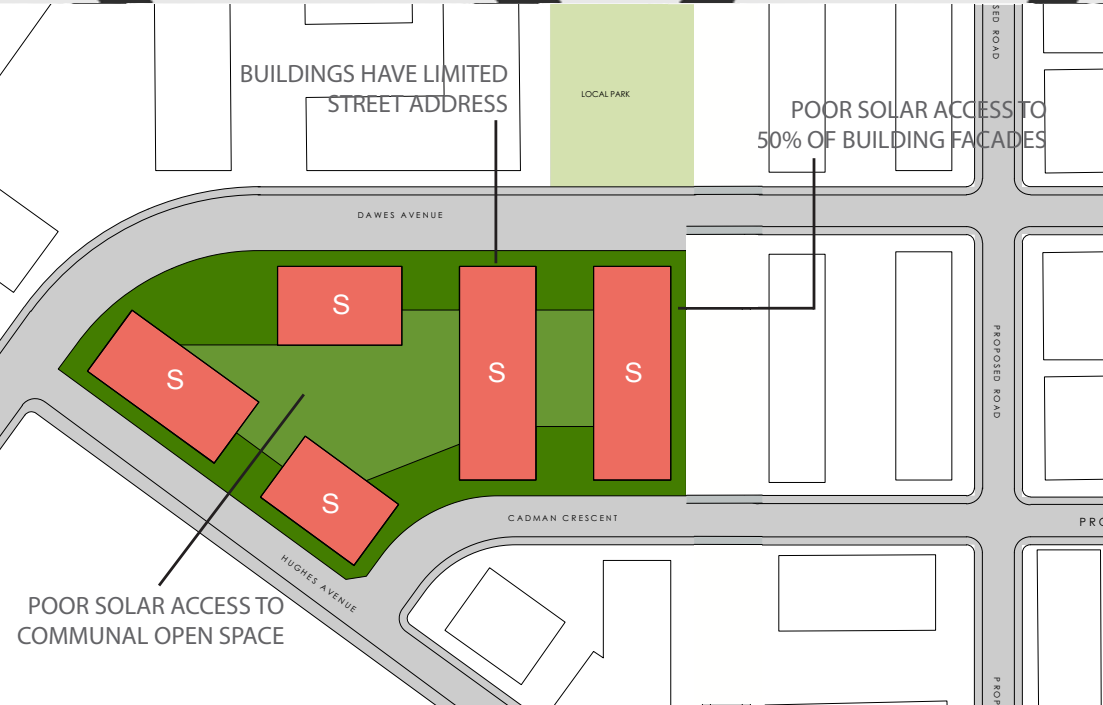
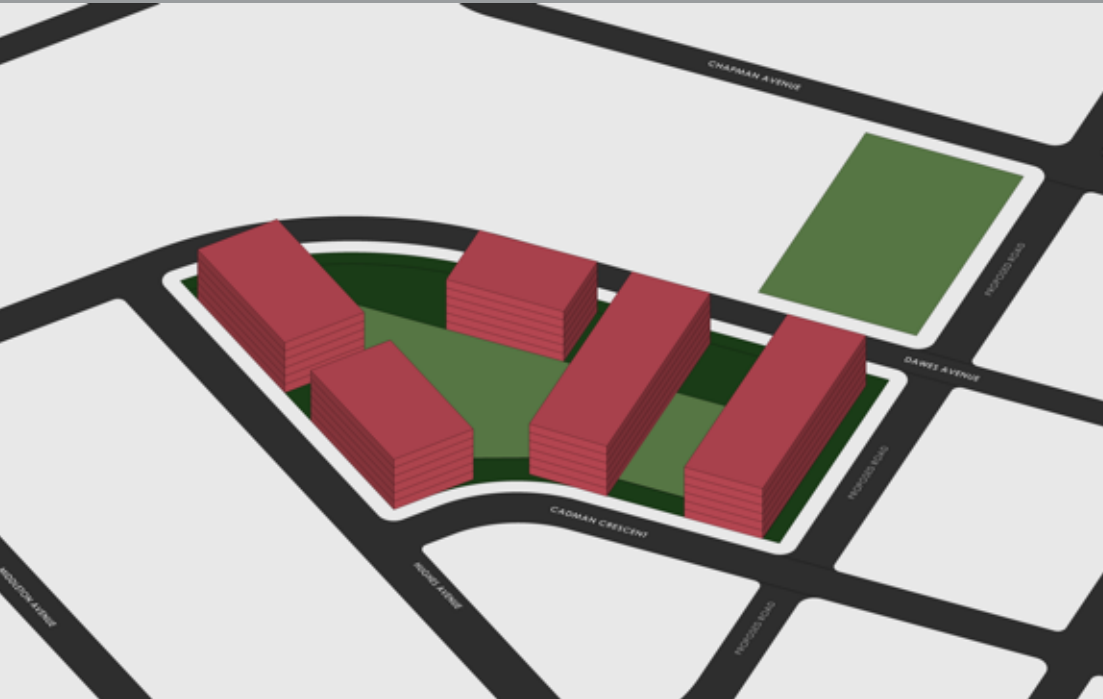
Notes

Deep soil : Minimum 15%
Total landscaped area : Minimum 30%
Site coverage : Maximum 45%
Street wall height :6 storeys
Setbacks : 5m
Setback above street wall : 3m

General Comments

Public Benefit : Increased amenity to apartments and communal open space while satisfying FSR requirement
Building Heights : 6 storeys (compliant); 8-10 storeys (proposed)
FSR : 1.82:1 (compliant); 2.75:1 fsr (proposed)

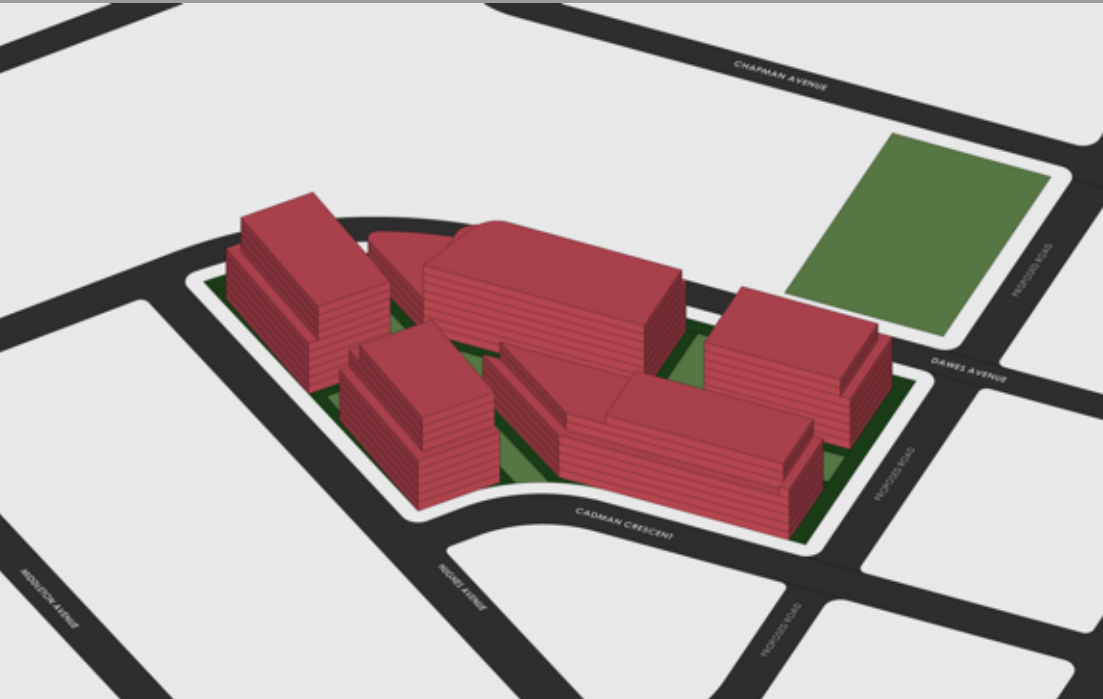
Fully compliant with current proposed LEP & DCP FSR 1.8:1



Landuse: Residential
Building Ht : 6 storeys
GFA : 28 560sqm

Total GFA: 28 560 sqm FSR: 1.82:1 Max Ht: 6storeys/18m Landscape: complies
Comment: Under developed building footprint to permissible FSR

Planning Proposal FSR 2.6:1



Landuse: Residential
Building Ht : 8-10 storeys
GFA : 43 090sqm @ 75% efficiency

Total GFA: 43 090 sqm FSR: 2.75:1 Max Ht: 10 storeys/34m Landscape: complies
Comment: Increased amenity to apartments and communal open space while satisfying FSR requirement

SITE AREA 15694 M²

COUNCIL CONTROLS

COUNCIL	HILLS SHIRE COUNCIL					
ZONE	R4 HIGH DENSITY RESIDENTIAL					
HEIGHT LIMIT	30m					
ALLOWABLE FSR	2.3 :1	PROPOSED FSR				2.75 :1
		36096 M²				
SITE COVERAGE	45%	7062 M²	PROPOSED SITE COVERAGE	45%	7062 M²	
COMMUNAL OPEN SPACE (DCP)	30%	4708 M²	PROPOSED COS	30%	4708 M²	
COMMUNAL OPEN SPACE (ADG)	25%	3924 M²	PROPOSED 2HRS	80%	3761 M²	
50% TO RECEIVE MIN. 2 HRS SOLAR (DCP)	50%	2354 M²		160%	(OF REQUIRED MIN DCP)	
50% TO RECEIVE MIN. 2 HRS SOLAR (ADG)	50%	1962 M²		192%	(OF REQUIRED MIN	
DEEP SOIL	15%	2354 M²	PROPOSED DEEP SOIL	15%	2354 M²	
OR 25% OF UN BUILT UPON AREA, WHICHEVER IS GREATER						

YIELD GFA

	NO. OF STOREYS	BUILDING A			BUILDING B			BUILDING C			BUILDING D			BUILDING E		
		2 HR SOLAR	CROSS VENT	GFA	2 HR SOLAR	CROSS VENT	GFA	2 HR SOLAR	CROSS VENT	GFA	2 HR SOLAR	CROSS VENT	GFA	2 HR SOLAR	CROSS VENT	GFA
LEVEL 01	1			730			1330			760			1490			800
LEVEL 02	1			810			1410			800			1630			800
LEVEL 03	1			810			1410			800			1630			800
LEVEL 04	1			810			1410			800			1630			800
LEVEL 05	1			810			1215			800			1485			800
LEVEL 06	1			810			1215			800			1485			800
LEVEL 07	1			670			1160			715			1310			730
LEVEL 08	1			640			1110			635			1310			700
LEVEL 09	1			640												575
LEVEL 10	1			640												575
SUB TOTAL	10	93%	71%	7370	76%	67%	10260	74%	66%	6110	58%	73%	11970	64%	73%	7380

TOTAL	73%	70%	43090 m2
REQUIRED PERCENTAGE	MINIMUM REQUIREMENTS		
	70%	60%	

This Urban Design Report has established that the proposed development standards proposed in the Showground Station Precinct Proposal are inadequate to meet the predicted residential growth for the site and the precinct.

Built form modelling has shown that a scheme fully compliant to the Showground Station Precinct Proposal falls short in reaching the FSR of 2.3:1 with the height limit of 21m (6 storeys).

Built form modelling of the proposed scheme has achieved an FSR of 2.75:1 within the maximum height limit of 34m (8-10 storeys) without adverse built forms and without affecting amenity for the residents.

