

# URBAN DESIGN REPORT

## FOR A RESIDENTIAL BUILDING AT 10 - 14 MERTON STREET, SUTHERLAND

DECEMBER 2014

# 1 INTRODUCTION

- 1.1 Executive Summary
- 1.2 Architect Statement

# 2 THE SITE

- 2.1 Location Study
- 2.2 Streetscape

# 3 PLANNING FRAMEWORK

- 3.1 Land Zoning
- 3.2 Building Heights
- 3.3 Floor Space Ratio
- 3.4 Landscape Area
- 3.5 Heritage
- 3.6 Acid Sulfate Soils
- 3.7 Flood Planning

# 4 REGIONAL, LOCAL + TRANSPORT

- 4.1 Regional and Local Context
- 4.2 Transport

# 5 CONTEXTUAL ANALYSIS

- 5.1 Greenscape
- 5.2 Environment
- 5.3 Topography

# 6 BUILT FORM MODELLING

- 6.1 Built Form Analysis - North-east Perspectives
- 6.2 Built Form Analysis - North-west Perspectives
- 6.3 Building Setbacks
- 6.4 Overshadowing Analysis - Options 1, 2 + 3: June 21
- 6.5 Overshadowing Analysis - Options 1, 2 + 3: June 21-Dec 21
- 6.6 Overshadowing Analysis - Schemes A, B + C: June 21
- 6.7 Preferred Development: Option 2 - 36m Height Limit @ 2.9:1 FSR

# 7 PRECEDENTS

# 8 SEPP65

# 9 APPENDICES



# 1 INTRODUCTION

## 1.1 Executive Summary

This urban design report has been prepared by GEOFORM ARCHITECTS on behalf of PHILLIP OSBORNE to support a planning proposal to the Department of Planning and Environment to review a formal analysis against key planning controls for the amalgamated sites at 10-14 Merton Street, Sutherland.

The above amalgamation opportunity, was chosen for its central Sutherland location with advanced infrastructure and proximity to transit links, allowing for high level urban design outcomes that integrates quality residential living with an integrated urban neighbourhood experience.

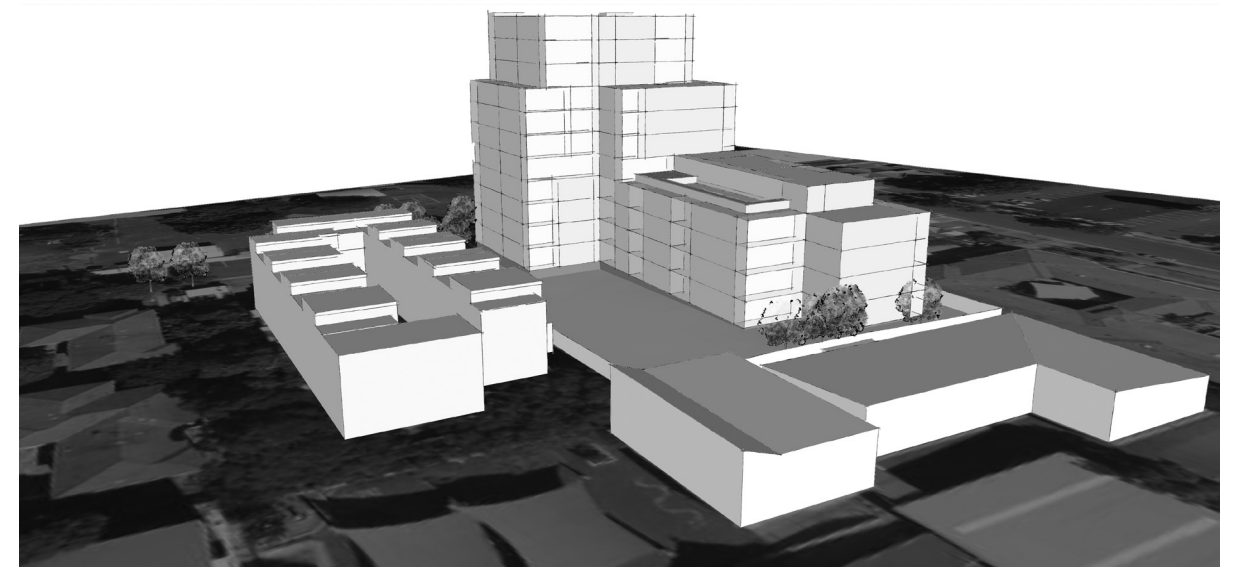
We have undertaken the following Urban Analysis Report with the understanding that Sutherland Council is currently undertaking a strategic review of its key statutory and development controls and specifically in respect of the Planning proposal to amend Sutherland Shire Local Environment Plan 2013.

In support of this submission to Council, this detailed Urban Form Analysis shows possible outcomes and arrives at a holistic residential response in an urban outcome that contributes positively to its neighbourhood, has integrative urban edges, ameliorates potential impacts and becomes a benchmark standard for future developments in the area.

## 1.2 Architect Statement

This Urban Design Analysis Report examines the following:

- The broader contextual frameworks that should support such a development.
- Existing and future planning frameworks, including the draft built form controls currently being considered by Council officers. Position all of the surrounding buildings, existing and proposed, their height limits and FSR, whether they are likely to be developed and their likely impacts in terms of the controls relative to this development.
- Existing context, constraints and opportunities at a micro level. This includes existing landscape and the local 'grain' of the street.
- The proximity of adjoining buildings to the subject site, and whether specific setbacks should be applied.
- Proposed built form on the subject site and impact on the adjacent properties [height, setback, floorplate, efficiencies, bulk, mass and overshadowing, SEPP 65 amenity/building separation]
- Extensive 3D modelling of built form proposed on subject site and on adjacent properties is to be provided to demonstrate impact control and contextual fit.





## 2 THE SITE

### 2.1 Location Study

The site is located within the block bounded by Merton Street to the west, Flora Street to the north, Belmont Street to the east and President Avenue to the south.

Currently on site are two existing dwellings. Immediately to the south is a three storey residential townhouse development. To the east is St Patrick's Primary School and across the road to the west is Sutherland Primary School.

The corner site immediately to the north is a potential development block. It is currently occupied by a commercial use building. To the north-east of the site is an aged care facility.



**Photo 1:** Aerial photo of the subject site (source Google Maps).



**Photo 2:** View of 10 Merton Street.



**Photo 3:** View of 14 Merton Street.



2.2 Streetscape



**Site** looking south along Merton Street (source Google Street View).



**Site** looking north along Merton Street (source Google Street View).

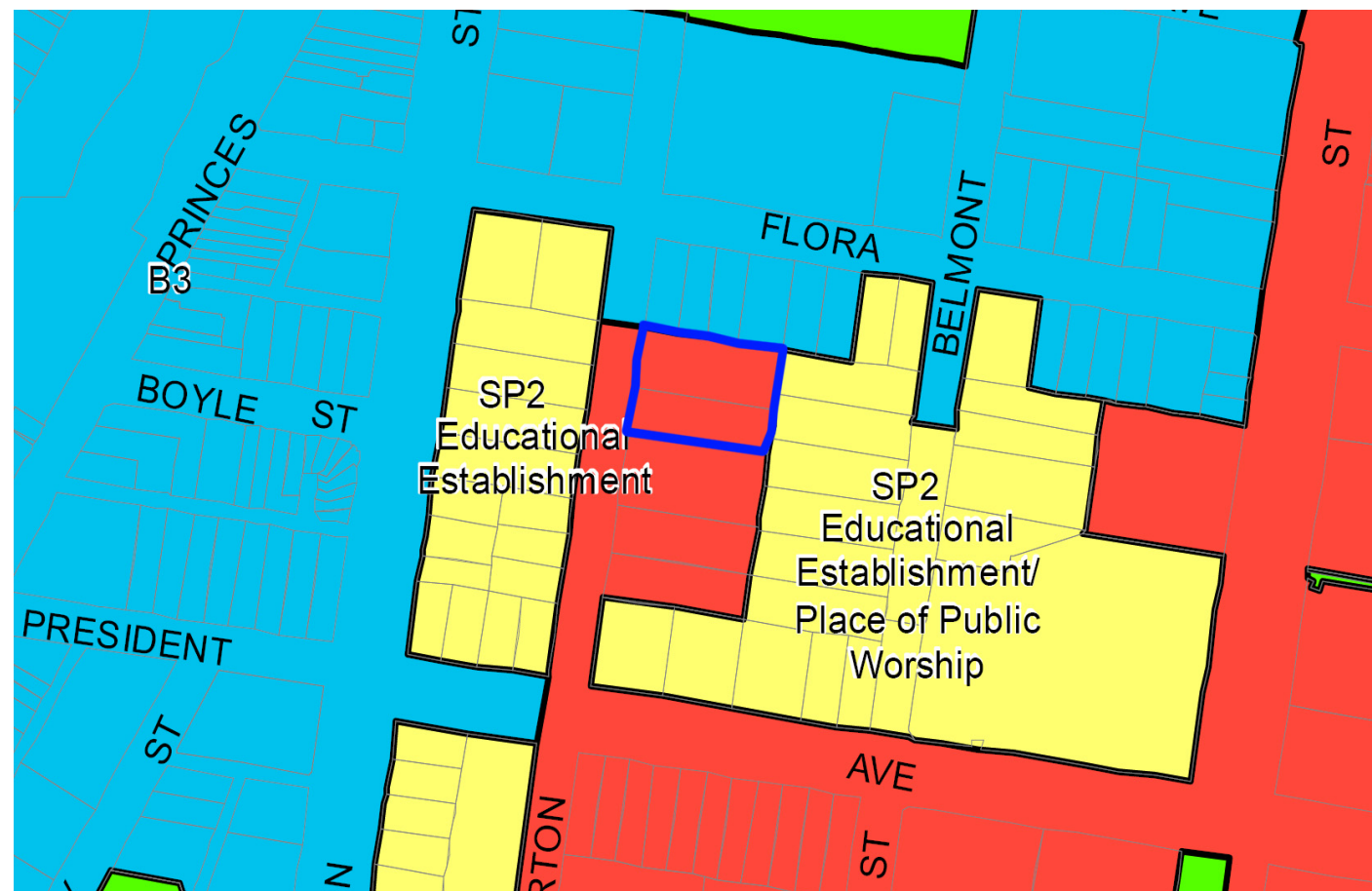


### 3 PLANNING FRAMEWORK

#### AMENDED DRAFT SSLEP3 - 2013

The subject site is shown with a solid blue outline.

#### 3.1 Land Zoning

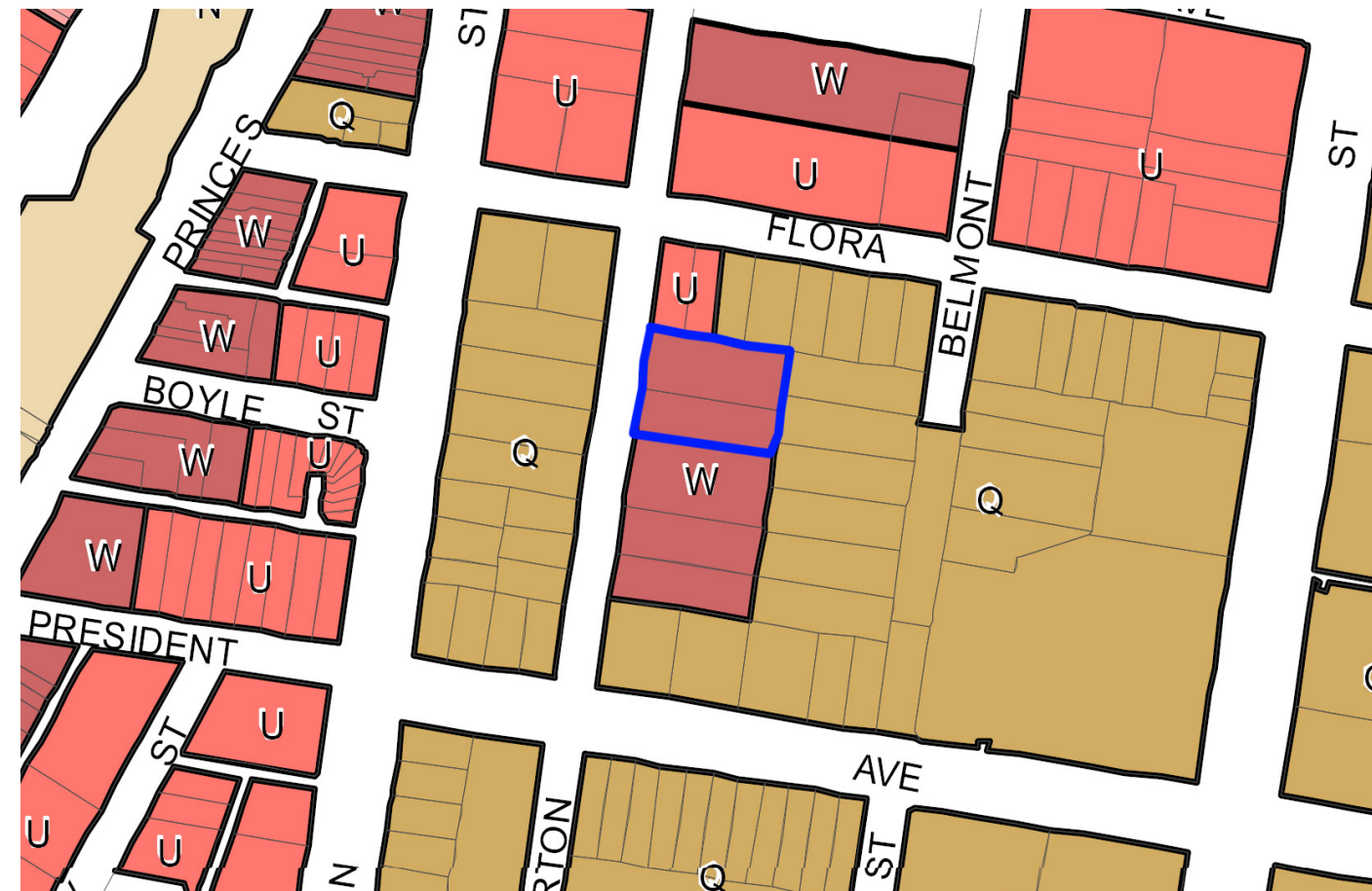


Sheet LZN\_005A

##### Zone

|     |                                    |     |                            |
|-----|------------------------------------|-----|----------------------------|
| B1  | Neighbourhood Centre               | R2  | Low Density Residential    |
| B2  | Local Centre                       | R3  | Medium Density Residential |
| B3  | Commercial Core                    | R4  | High Density Residential   |
| B4  | Mixed Use                          | RE1 | Public Recreation          |
| B5  | Business Development               | RE2 | Private Recreation         |
| B6  | Enterprise Corridor                | SP1 | Special Activities         |
| B7  | Business Park                      | SP2 | Infrastructure             |
| E1  | National Parks and Nature Reserves | SP3 | Tourist                    |
| E2  | Environmental Conservation         | W1  | Natural Waterways          |
| E3  | Environmental Management           | W2  | Recreational Waterways     |
| E4  | Environmental Living               | UL  | Unzoned Land               |
| IN1 | General Industrial                 | DM  | Deferred Matter            |
| IN2 | Light Industrial                   |     |                            |
| IN3 | Heavy Industrial                   |     |                            |
| IN4 | Working Waterfront                 |     |                            |

#### 3.2 Building Heights

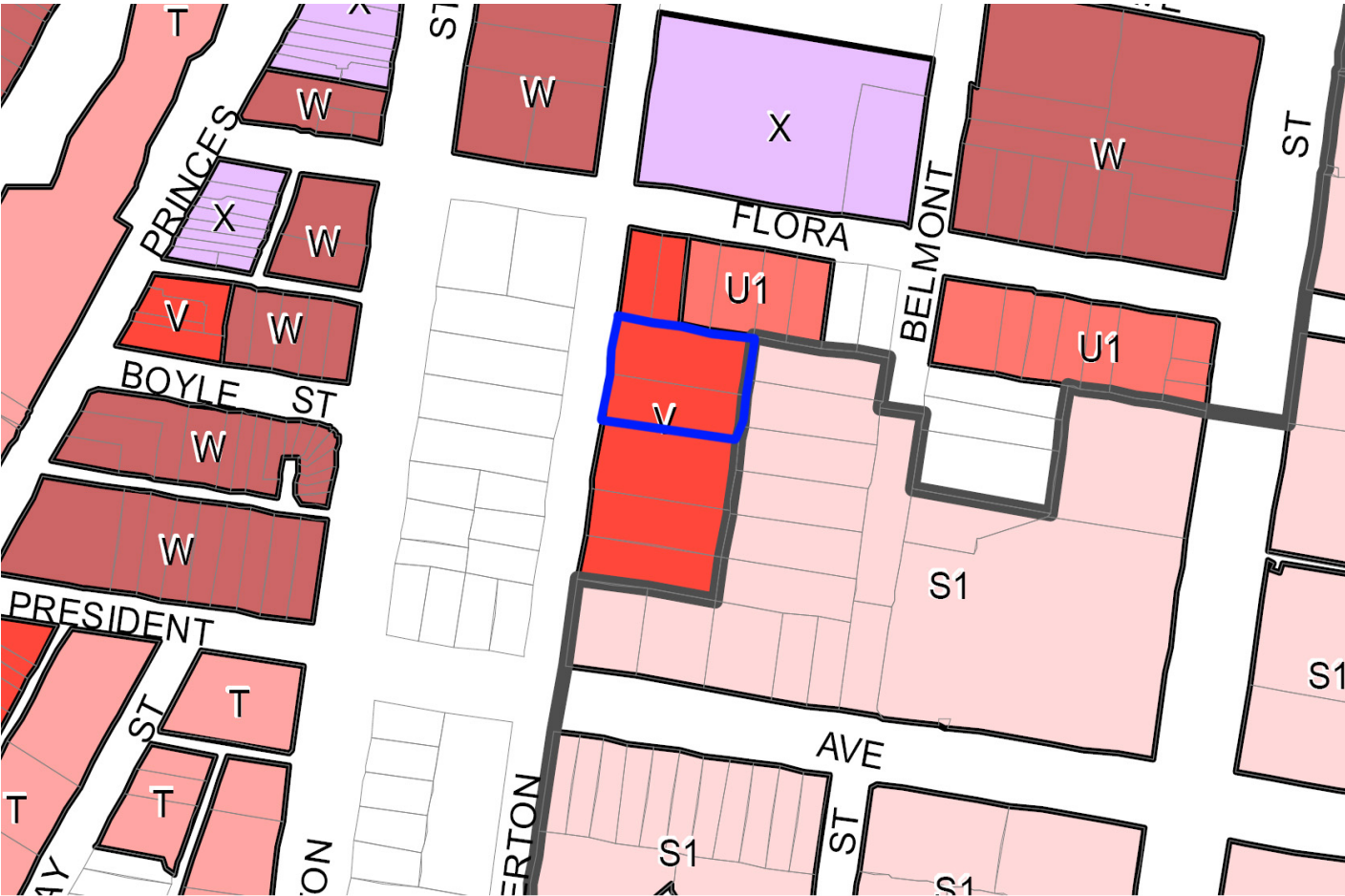


Sheet HOB\_005A

##### Maximum Building Height (m)

|    |     |         |                                      |
|----|-----|---------|--------------------------------------|
| I  | 8.5 | Area 1  | Refer to clause 4.3(7)(a)            |
| J1 | 9   | Area 2  | Refer to clause 4.3(7)(b)            |
| J2 | 9.5 | Area 3  | Refer to clause 4.3(7)(c)            |
| N  | 13  | Area 4  | Refer to clause 4.3(7)(d)            |
| O  | 16  | Area 5  | Refer to clause 4.3(7)(e)            |
| Q  | 20  | Area 5A | Refer to clause 4.3(7)(e)            |
| T  | 25  | Area 6  | Refer to clause 4.5A(2)              |
| U  | 30  | Area 7  | Refer to clause 6.20(2) & 6.20(4)(a) |
| V  | 35  | Area 10 | Refer to clause 4.3(7)(f)            |
| W  | 40  |         |                                      |
| Y  | 50  |         |                                      |

3.3 Floor Space Ratio

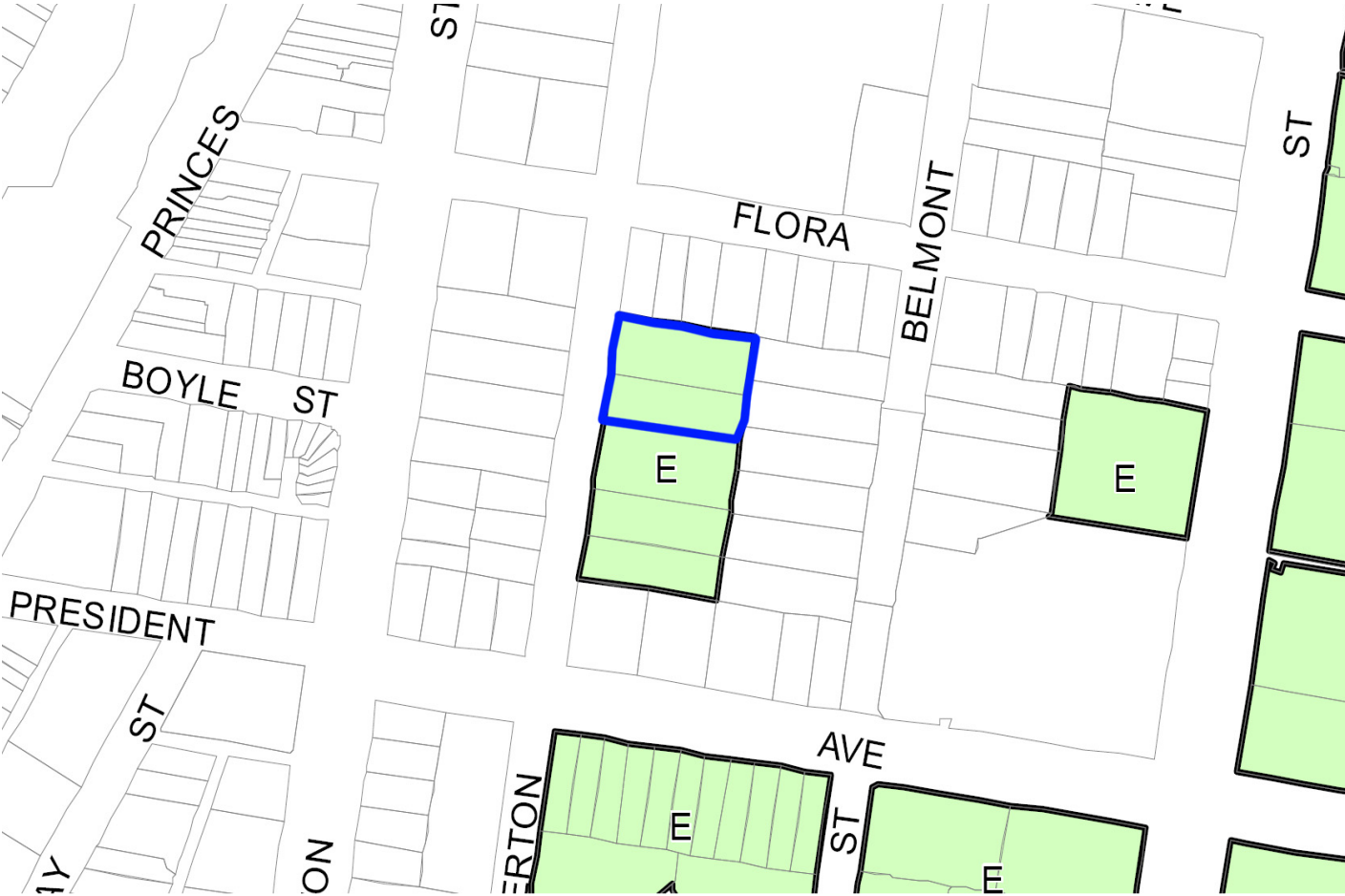


Sheet FSR-005A

Maximum Floor Space Ratio (n:1)

|    |      |         |                                      |
|----|------|---------|--------------------------------------|
| C  | 0.45 | X       | 4                                    |
| D  | 0.5  | Area 5  | Refer to clause 4.4(3)(b)            |
| E  | 0.55 | Area 5A | Refer to clause 4.4(3)(b)            |
| G  | 0.65 | Area 6  | Refer to clause 4.5A(2)              |
| H  | 0.7  | Area 7  | Refer to clause 6.20(2) & 6.20(5)(a) |
| I  | 0.75 | Area 9  | Refer to clause 4.4(3)(d)            |
| N  | 1    | Area 10 | Refer to clause 4.4(3)(f)            |
| P  | 1.2  | Area 11 | Refer to clause 4.4(3)(c)            |
| S1 | 1.5  | Area 12 | Refer to clause 4.4(3)(e)            |
| S2 | 1.6  |         |                                      |
| S3 | 1.8  |         |                                      |
| T  | 2    |         |                                      |
| U1 | 2.5  |         |                                      |
| U2 | 2.75 |         |                                      |
| V  | 3    |         |                                      |
| W  | 3.5  |         |                                      |

3.4 Landscape Area



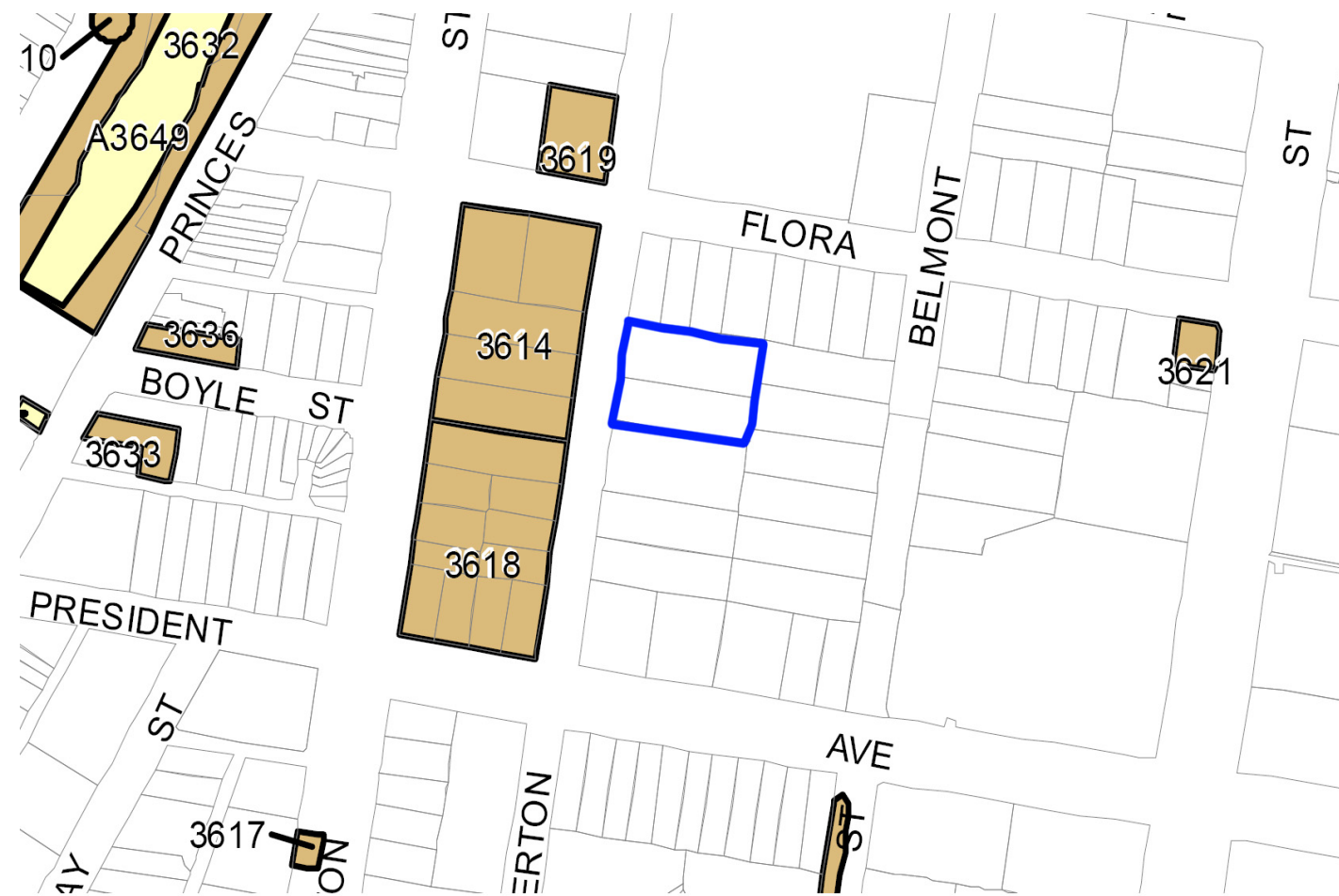
Sheet LSA\_005A

Minimum Landscape Area (%)

|        |                         |
|--------|-------------------------|
| A      | 10                      |
| E      | 30                      |
| J      | 35                      |
| K      | 40                      |
| Area 6 | Refer to clause 4.5A(2) |



### 3.5 Heritage

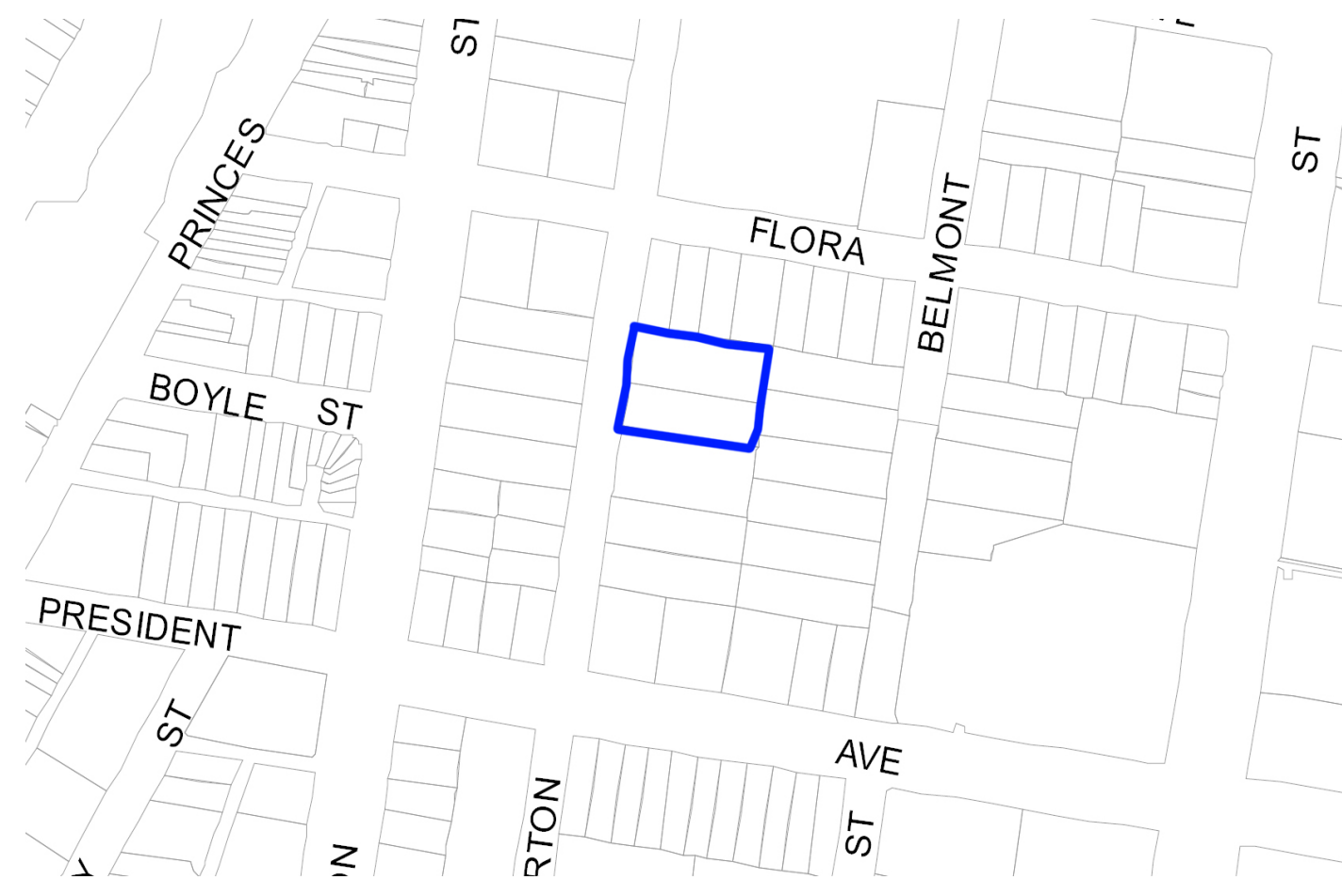


Sheet HER\_005A

#### Heritage

- Item - General
- Item - Archaeological

### 3.6 Acid Sulfate Soils



Sheet ASS\_005A

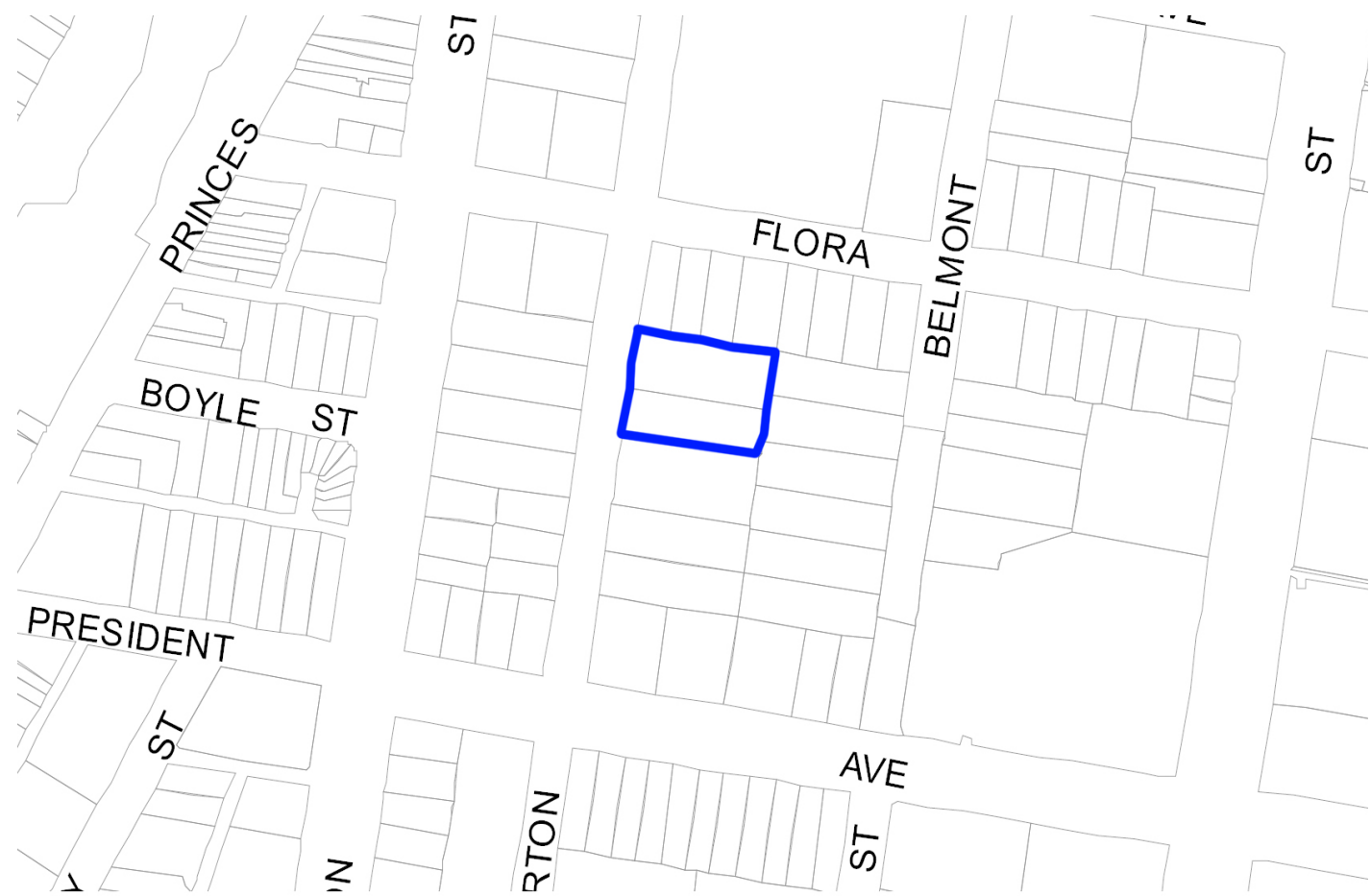
#### Acid Sulfate Soils

- Class 1
- Class 2
- Class 3
- Class 4
- Class 5

#### Cadastre

Cadastre 02/09/2014 © Sutherland Shire Council

3.7 Flood Planning



Sheet FLD\_005A

Flood Planning Land

 Flood Planning Area

Cadastral

 Cadastral 02/09/2014 © Sutherland Shire Council



### 4. REGIONAL, LOCAL + TRANSPORT

#### 4.1 Regional and Local Context

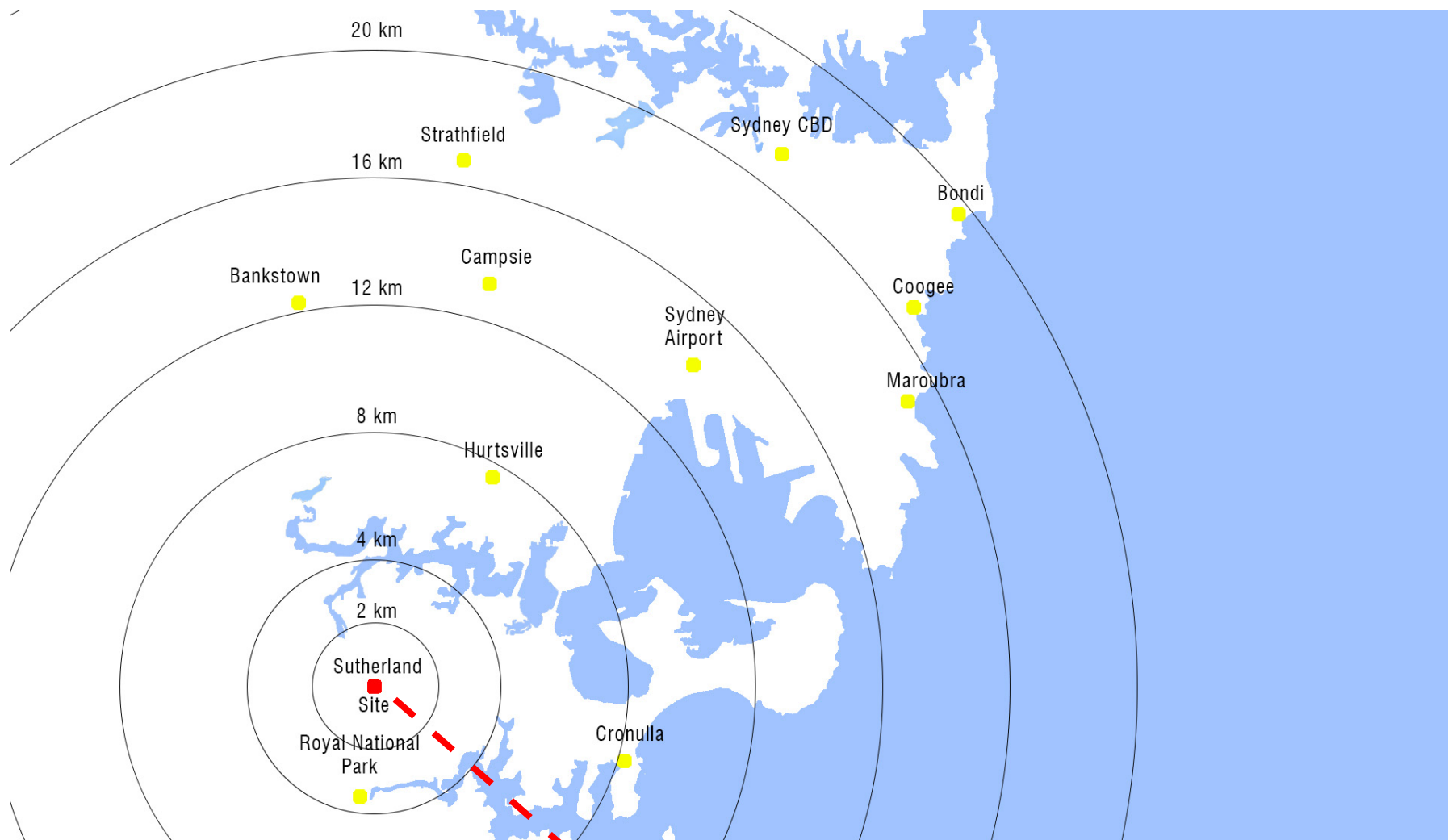
The site is in Sutherland, located 20km south of the Sydney CBD.

The site is in close proximity to the A1 Princes Highway, which is a major arterial road, and to Sutherland train station which links the Illawarra to the Sydney CBD. The site is well connected to its surrounding facilities, including parks, public transportation, hospital, shops and outlets.

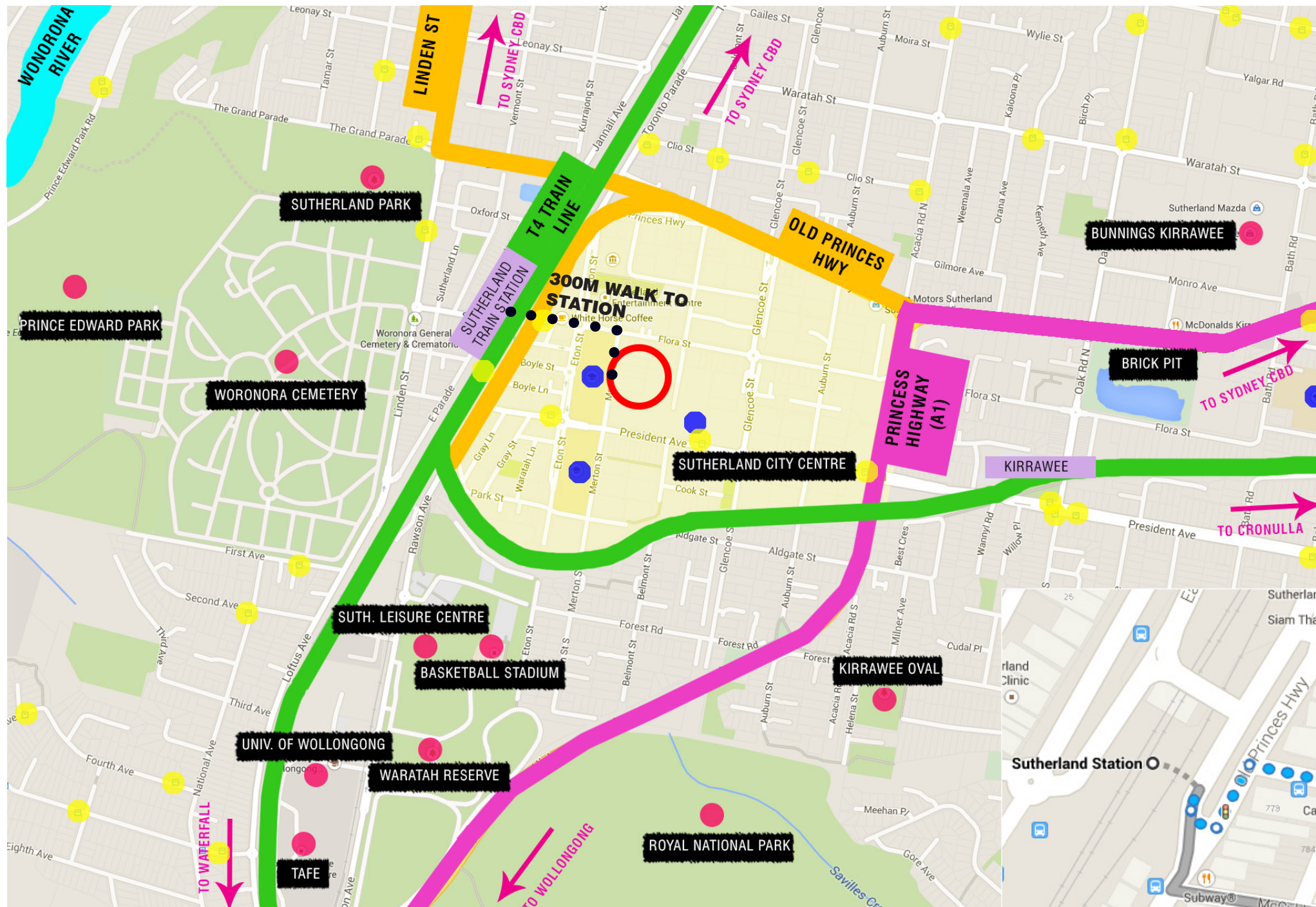
The site is within residential zoned land and adjacent to commercial buildings along Flora Street with residential housing found along the side streets generally.

There are existing street trees along the Merton Street frontage which will be retained.

This area is likely to change as the area is redeveloped given its proximity to key infrastructure uses and its proximity to the city.

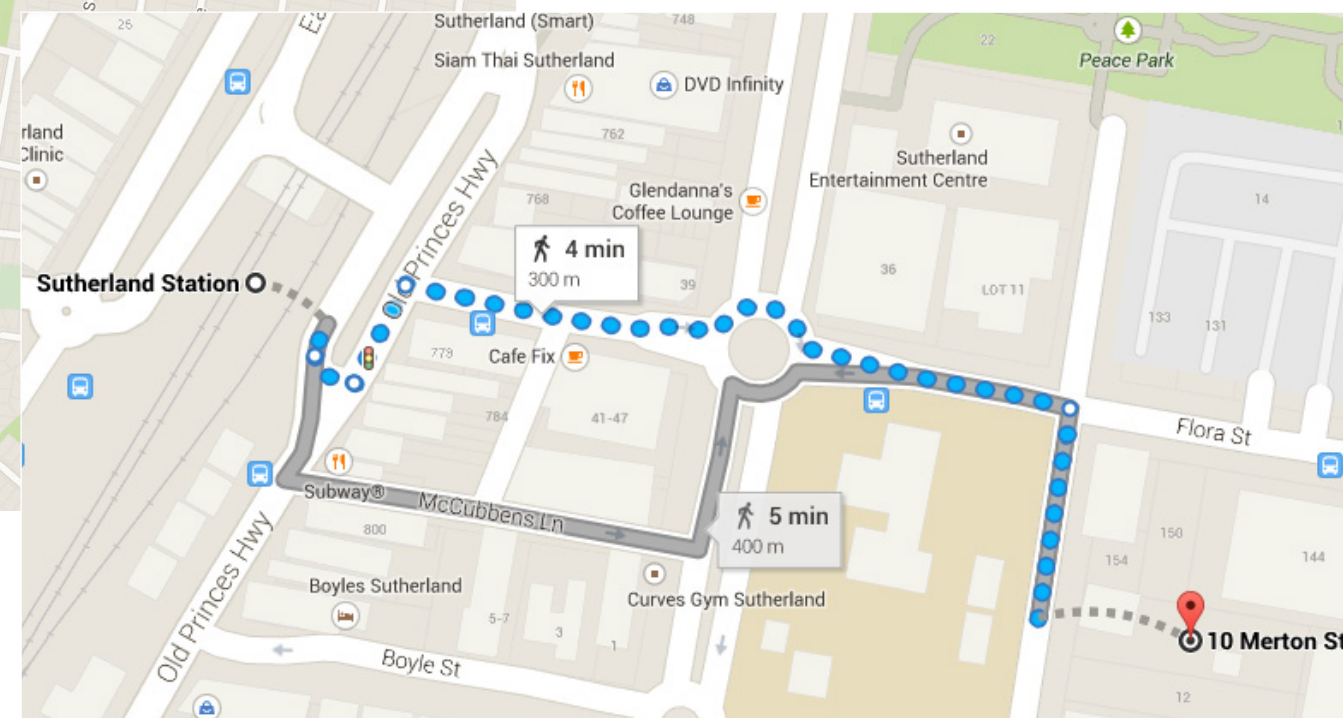






### REFERENCES:

- PLACES OF INTEREST
- BUS STOP
- TRAIN STATION
- T4 TRAIN LINE
- SCHOOLS
- WALK TO STATION 300M



### 4.2 Transport

The site is very well serviced by bus and rail connections. Sutherland Railway Station is about a 4 minute walk from the site and there are also several bus routes that have regular daily services directly adjacent to the site and within very short walking distance.

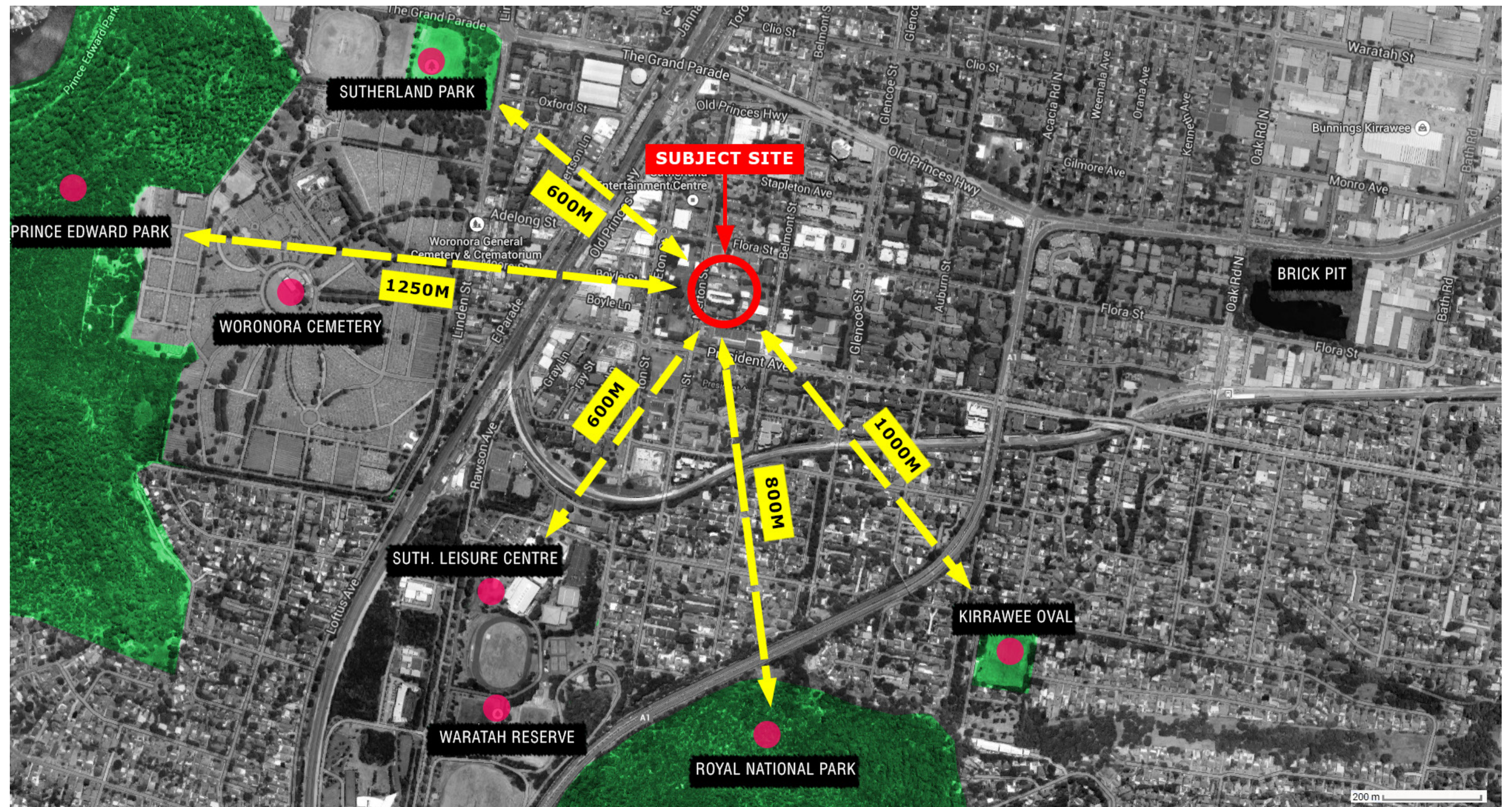
The development site is a short 300m walk from Sutherland train station.



## 5 CONTEXTUAL ANALYSIS

### 5.1 Greenscape

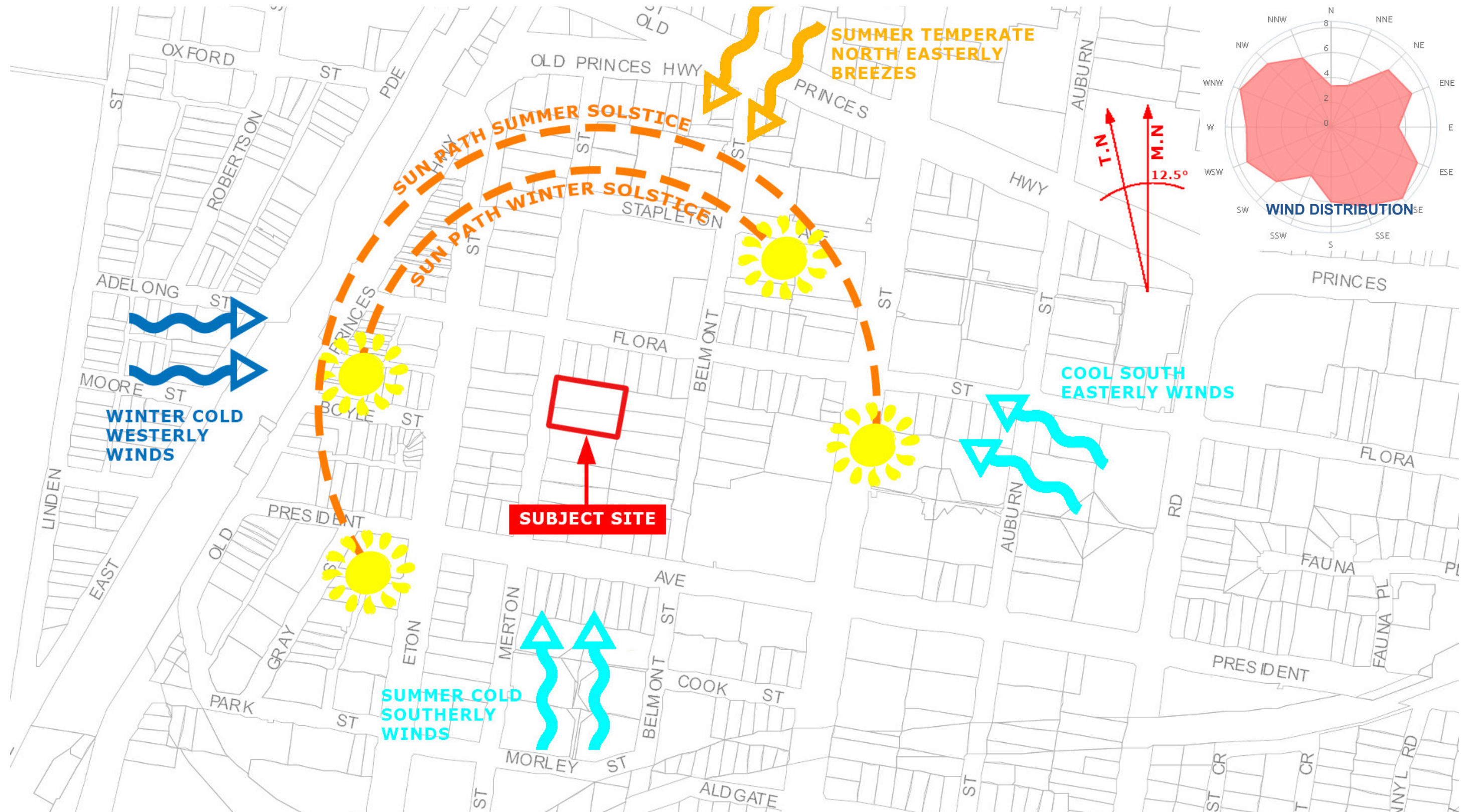
The site is located within 15 minutes walk to Sutherland Park and 20 minutes walk to Prince Edward Park located in the north-east. There are multiple reserves and parks to the south with Kirrawee Oval, Waratah Reserve and the Royal National Park all within a 15 minute walk which provides a convenient balance between green space and built environment. Waratah Reserve also provides a leisure centre.





## 5.2 Environment

The site has an advantage of having a longer facade facing the north which has the greatest opportunity to receive sunlight throughout the year. During summer, there will be a need for shading to the west facade.





### 5.3 Topography

The site has a gentle fall towards Merton Street, from east to west, of about 2m and very little cross fall from north to south.





## 6 BUILT FORM MODELLING

### 6.1 Built Form Analysis - North-East Perspectives

#### Built Form Options:

Proposed Built Form **Option 1**  
40m Height Limit @ 3:1 FSR



Proposed Built Form **Option 2**  
36m Height Limit @ 2.9:1 FSR



Proposed Built Form **Option 3**  
30m Height Limit @ 2.6:1 FSR



#### Additional Schemes - for Shadow Comparative Purposes Only:

**Scheme A**  
20m Height Limit @ 1.8:1 FSR



**Scheme B**  
20m Height Limit @ 1.2:1 FSR



**Scheme C**  
Complying Development @ 0.3:1 FSR

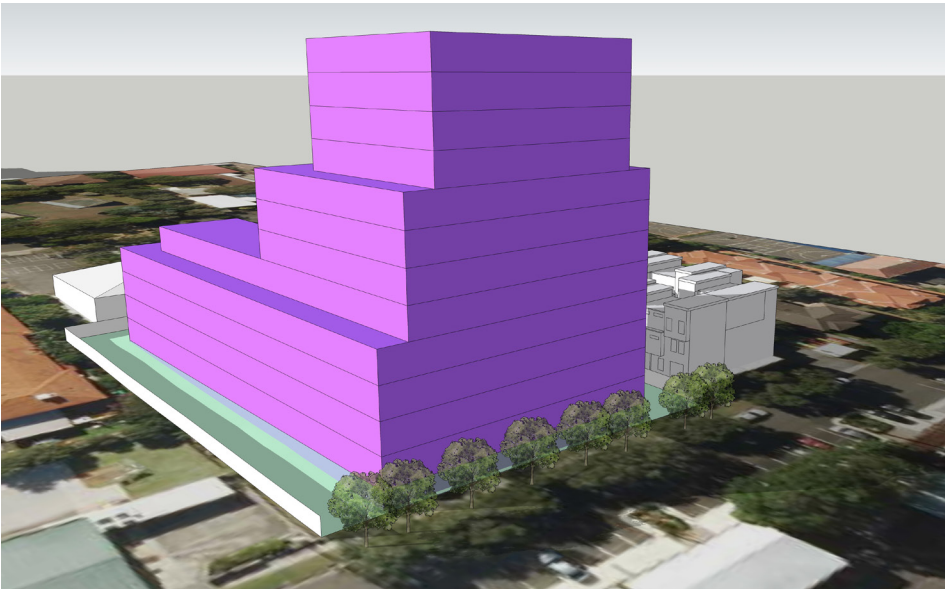




6.2 Built Form Analysis - North-West Perspectives

Built Form Options:

Proposed Built Form **Option 1**  
40m Height Limit @ 3:1 FSR



Proposed Built Form **Option 2**  
36m Height Limit @ 2.9:1 FSR



Proposed Built Form **Option 3**  
30m Height Limit @ 2.6:1 FSR



Additional Schemes - for Shadow Comparative Purposes Only:

**Scheme A**  
20m Height Limit @ 1.8:1 FSR



**Scheme B**  
20m Height Limit @ 1.2:1 FSR



**Scheme C**  
Complying Development @ 0.3:1 FSR



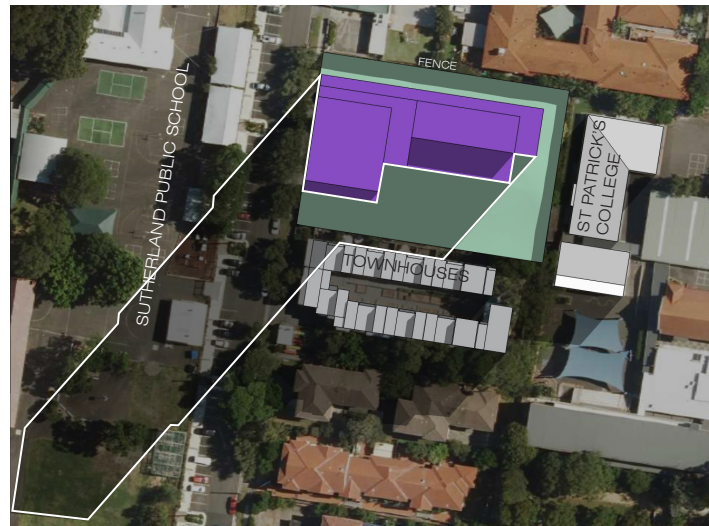






## 6.4 Overshadowing Analysis - Options 1, 2 + 3: **June 21**

### 6.4.1 **Option 1** 40m Height Plane Limit @ 3:1 FSR Plan View



**9 AM**



**10 AM**



**11 AM**



**12 PM**



**1 PM**



**2 PM**

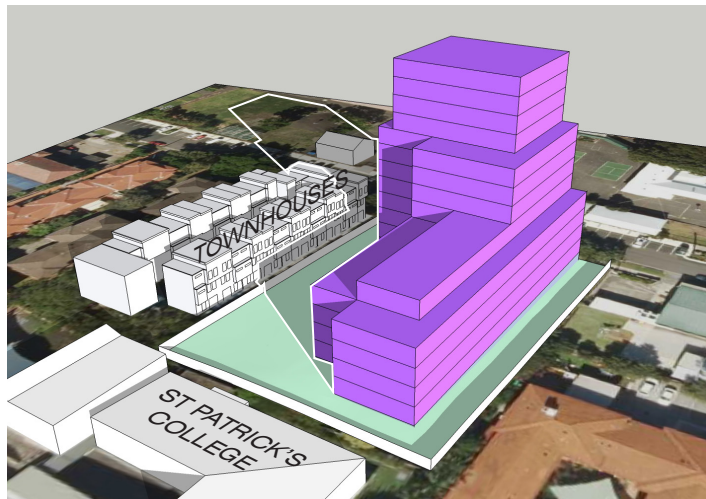


**3 PM**



## 6.4 Overshadowing Analysis - Options 1, 2 + 3: June 21

### 6.4.2 Option 1 40m Height Plane Limit @ 3:1 FSR 3D View to Townhouses Facade



9 AM



10 AM



11 AM



12 PM



1 PM



2 PM



3 PM

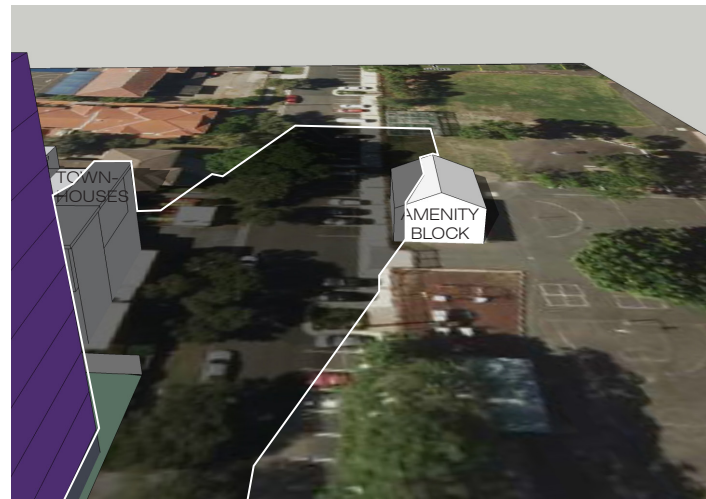


## 6.4 Overshadowing Analysis - Options 1, 2 + 3: June 21

### 6.4.3 Option 1 40m Height Plane Limit @ 3:1 FSR 3D View to Sutherland Primary School



9 AM



10 AM



11 AM



### 6.4.4 Option 1 40m Height Plane Limit @ 3:1 FSR 3D View to St Patrick's College (School Classroom Facade)



1 PM - Classroom overshadowing



2 PM - Classroom overshadowing

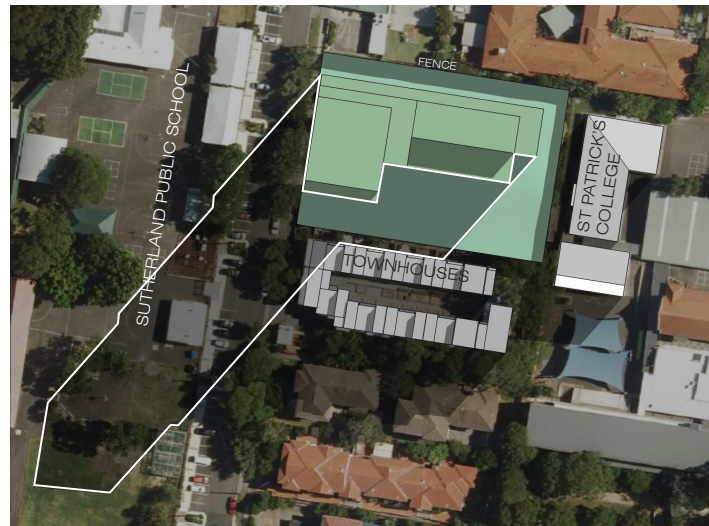


3 PM - Classroom overshadowing



## 6.4 Overshadowing Analysis - Options 1, 2 + 3: June 21

### 6.4.5 Option 2 36m Height Plane Limit @ 2.9:1 FSR Plan View



9 AM



10 AM



11 AM



12 PM



1 PM



2 PM

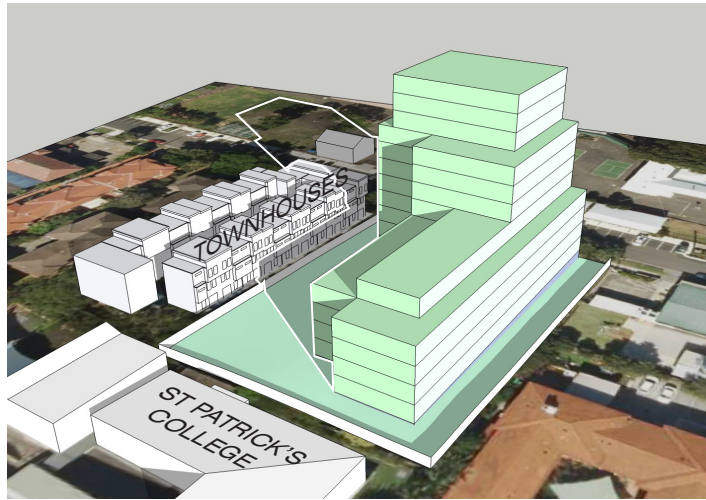


3 PM



## 6.4 Overshadowing Analysis - Options 1, 2 + 3: June 21

### 6.4.6 Option 2 36m Height Plane Limit @ 2.9:1 FSR 3D View to Townhouses Facade



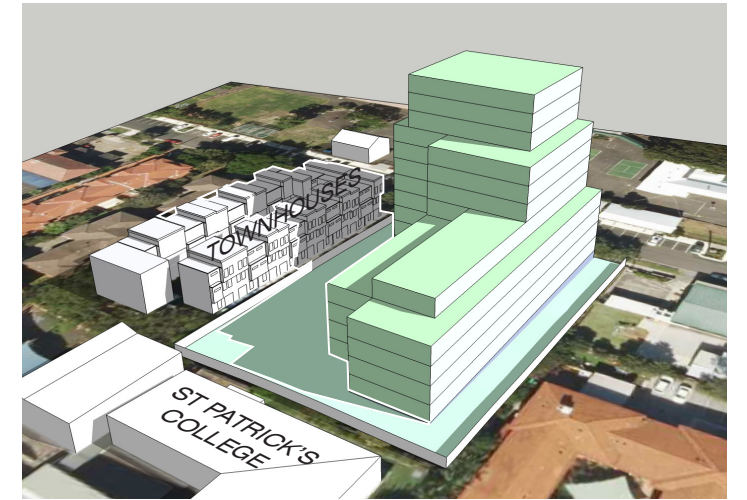
9 AM



10 AM



11 AM



12 PM



1 PM



2 PM



3 PM

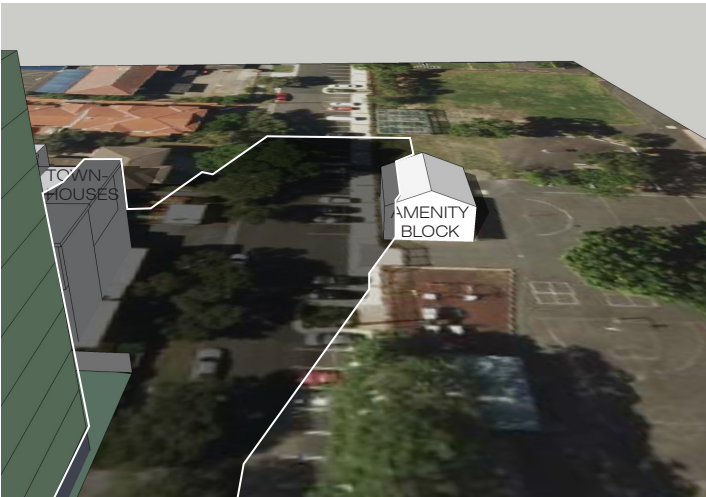


6.4 Overshadowing Analysis - Options 1, 2 + 3: June 21

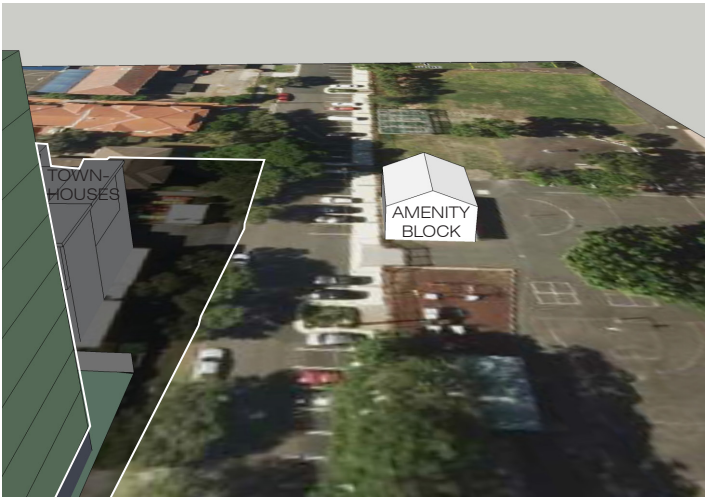
6.4.7 Option 2  
36m Height Plane Limit @ 2.9:1 FSR  
3D View to Sutherland Primary School



9 AM



10 AM



11 AM



6.4.8 Option 2  
36m Height Plane Limit @ 2.9:1 FSR  
3D View to St Patricks College (School Classroom Facade)



1 PM - Classroom overshadowing



2 PM - Classroom overshadowing



3 PM - Classroom overshadowing



## 6.4 Overshadowing Analysis - Options 1, 2 + 3: June 21

### 6.4.9 Option 3 30m Height Plane Limit @ 2.6:1 FSR Plan View



9 AM



10 AM



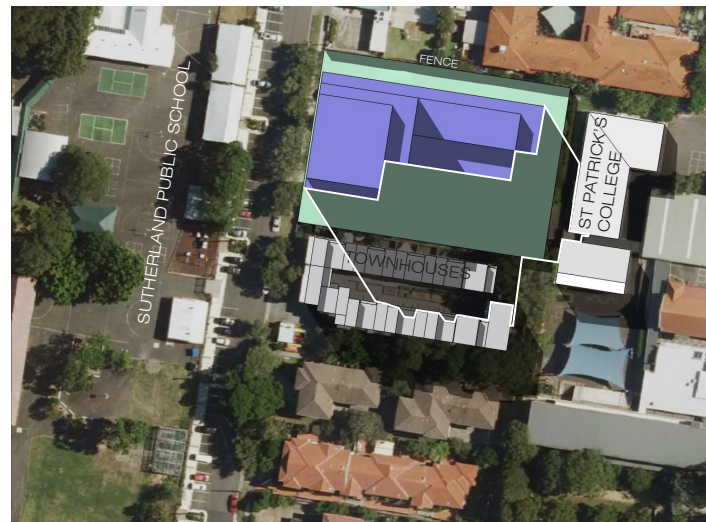
11 AM



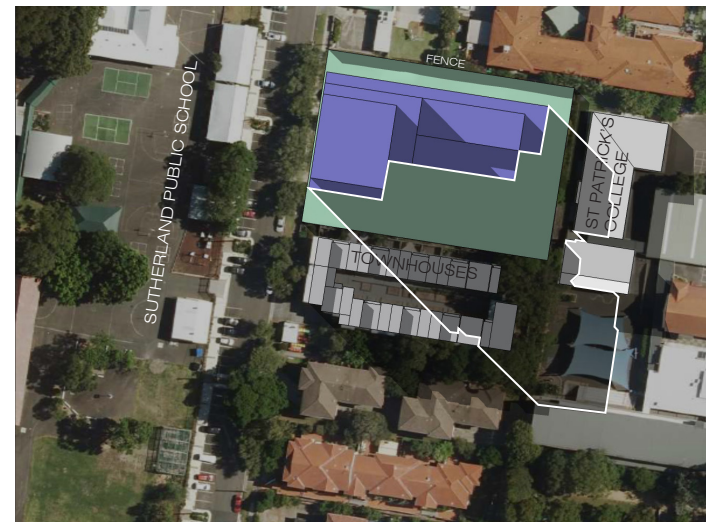
12 PM



1 PM



2 PM



3 PM



## 6.4 Overshadowing Analysis - Options 1, 2 + 3: June 21

### 6.4.10 Option 3 30m Height Plane Limit @ 2.6:1 FSR 3D View to Townhouses Facade



9 AM



10 AM



11 AM



12 PM



1 PM



2 PM

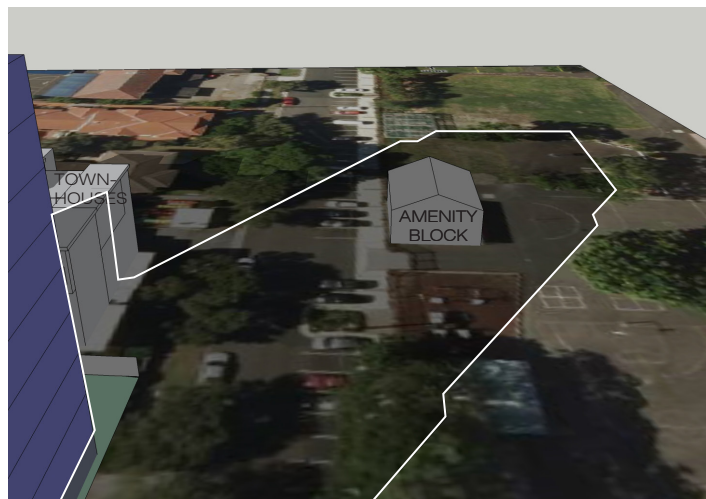


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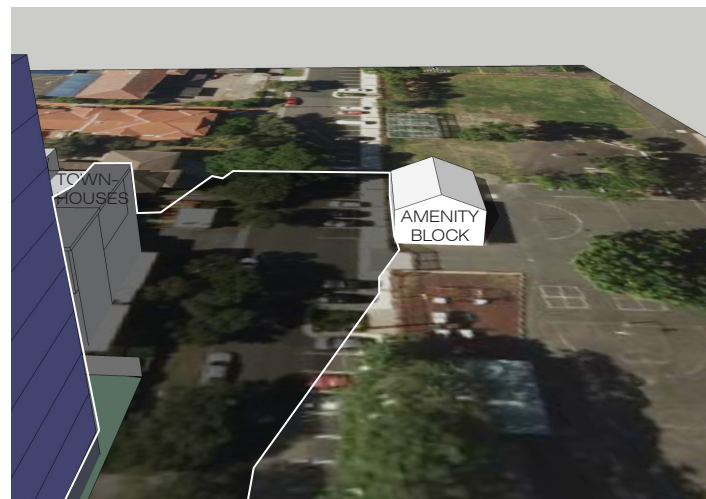


## 6.4 Overshadowing Analysis - Options 1, 2 + 3: June 21

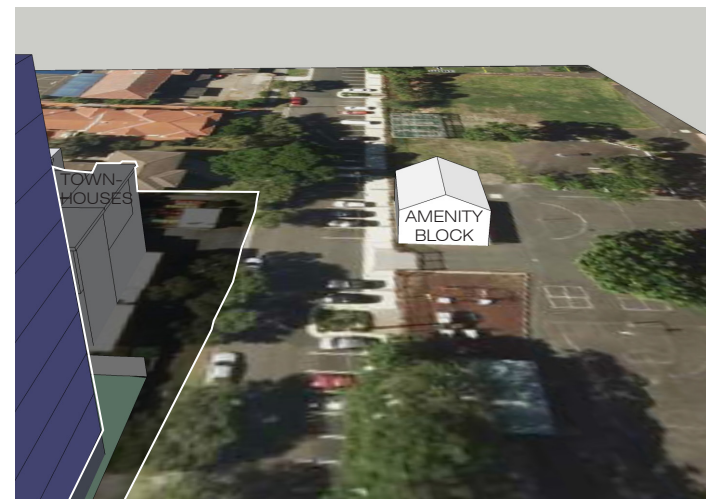
### 6.4.11 Option 3 30m Height Plane Limit @ 2.6:1 FSR 3D View to Sutherland Primary School



9 AM



10 AM



11 AM



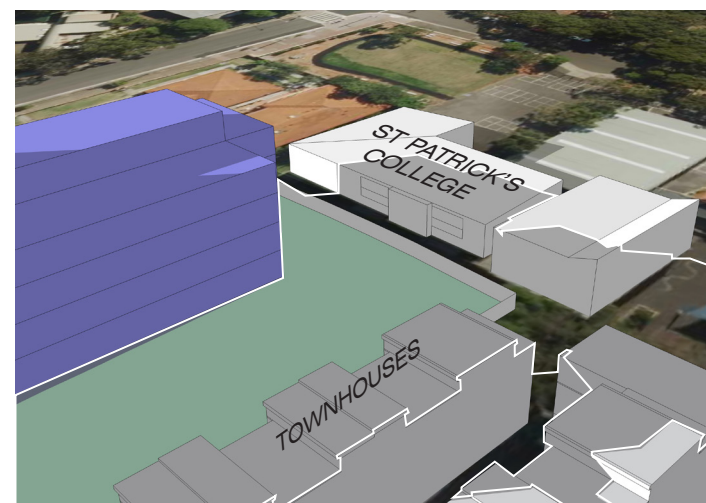
### 6.4.12 Option 3 30m Height Plane Limit @ 2.6:1 FSR 3D View to St Patricks College (School Classroom Facade)



1 PM - Classroom overshadowing



2 PM - Classroom overshadowing

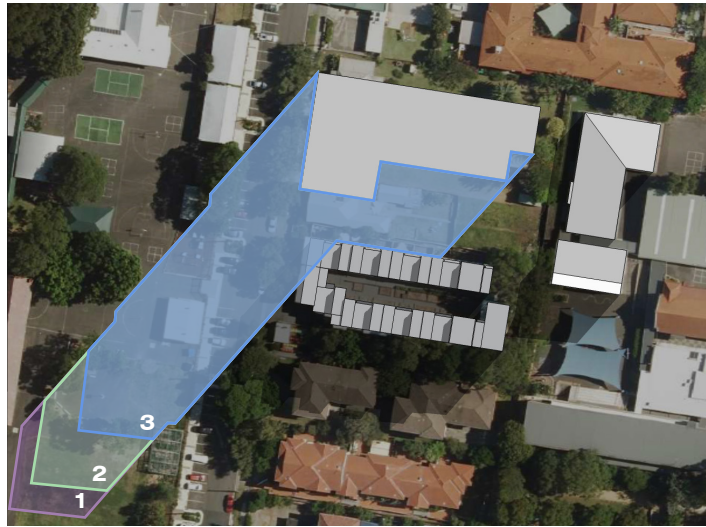


3 PM - Classroom overshadowing



## 6.4 Overshadowing Analysis - Options 1, 2 + 3: June 21

### 6.4.13 Cumulative Impacts of Options 1, 2 and 3 Plan View



9 AM



10 AM



11 AM



12 PM



1 PM



2 PM



3 PM



## 6.5 Overshadowing Analysis - Options 1, 2 + 3: June 21 - Dec 21

### 6.5.1 Option 1 40m Height Plane Limit @ 3:1 FSR 9am - 3D View to Sutherland Primary School Classroom Facade



JUNE



JULY



AUGUST



SEPTEMBER



OCTOBER



NOVEMBER



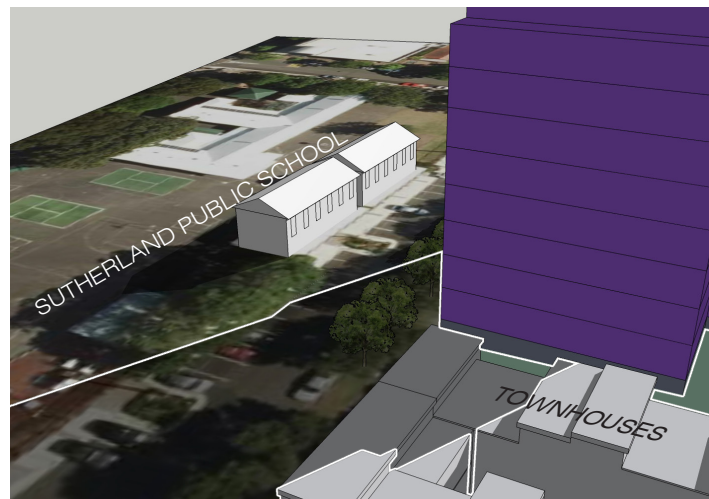
DECEMBER





## 6.5 Overshadowing Analysis - Options 1, 2 + 3: June 21 - Dec 21

### 6.5.2 Option 1 40m Height Plane Limit @ 3:1 FSR 9.30am - 3D View to Sutherland Primary School Classroom Facade



JUNE



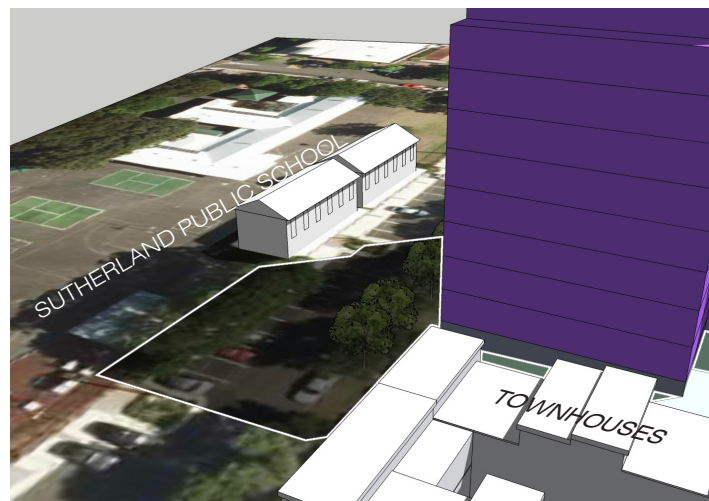
JULY



AUGUST



SEPTEMBER



OCTOBER



NOVEMBER



DECEMBER





## 6.5 Overshadowing Analysis - Options 1, 2 + 3: June 21 - Dec 21

### 6.5.3 Option 2 36m Height Plane Limit @ 2.9:1 FSR 9am - 3D View to Sutherland Primary School Classroom Facade



JUNE



JULY



AUGUST



SEPTEMBER



OCTOBER



NOVEMBER



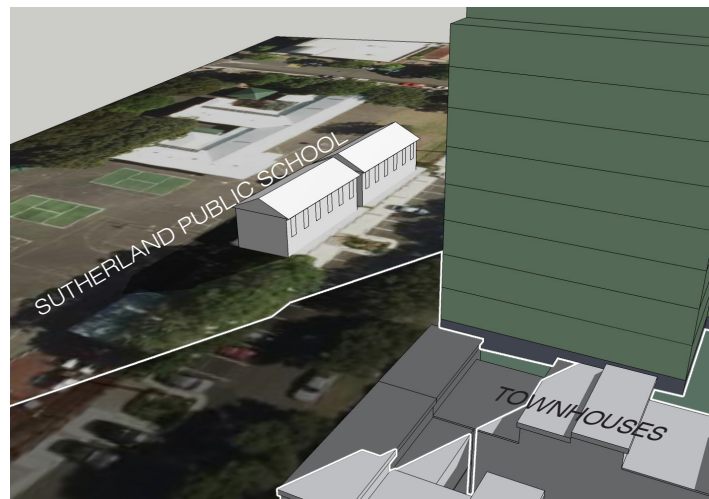
DECEMBER





## 6.5 Overshadowing Analysis - Options 1, 2 + 3: June 21 - Dec 21

### 6.5.4 Option 2 36m Height Plane Limit @ 2.9:1 FSR 9.30am - 3D View to Sutherland Primary School Classroom Facade



JUNE



JULY



AUGUST



SEPTEMBER



OCTOBER



NOVEMBER



DECEMBER





## 6.5 Overshadowing Analysis - Options 1, 2 + 3: June 21 - Dec 21

### 6.5.5 Option 3 30m Height Plane Limit @ 2.6:1 FSR 9am - 3D View to Sutherland Primary School Classroom Facade



JUNE



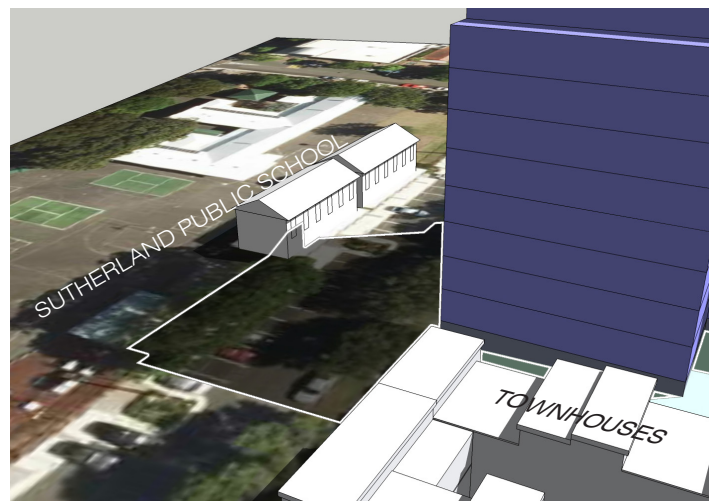
JULY



AUGUST



SEPTEMBER



OCTOBER



NOVEMBER



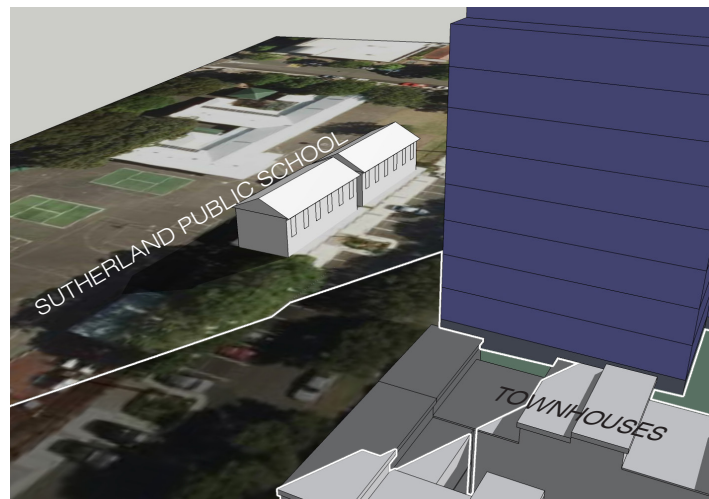
DECEMBER





## 6.5 Overshadowing Analysis - Options 1, 2 + 3: June 21 - Dec 21

### 6.5.6 Option 3 30m Height Plane Limit @ 2.6:1 FSR 9.30am - 3D View to Sutherland Primary School Classroom Facade



JUNE



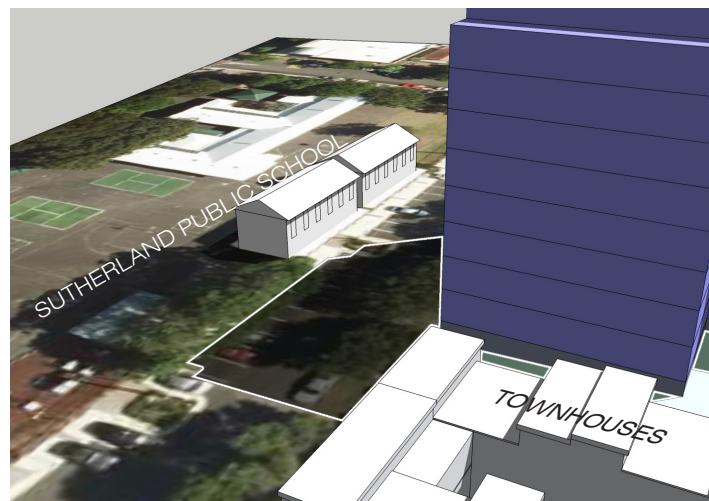
JULY



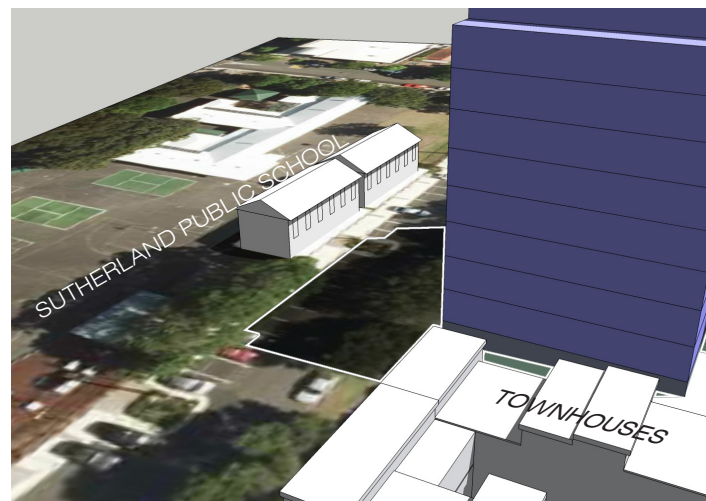
AUGUST



SEPTEMBER



OCTOBER



NOVEMBER



DECEMBER





**6.6 Overshadowing Analysis - Schemes A, B + C: June 21**

**FOR COMPARITIVE PURPOSES ONLY**

**6.6.1 Scheme A**  
**20m Height Plane Limit @ 1.8:1 FSR**  
**Plan View**



**9 AM**



**10 AM**



**11 AM**



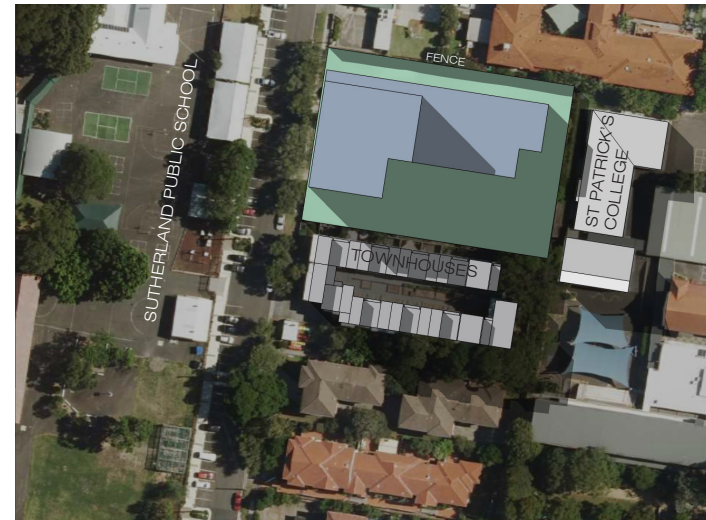
**12 PM**



**1 PM**



**2 PM**



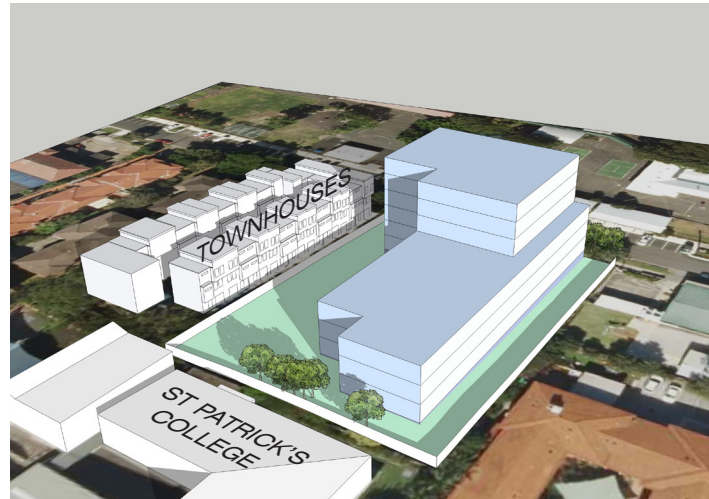
**3 PM**



## 6.6 Overshadowing Analysis - Schemes A, B + C: June 21

FOR COMPARITIVE PURPOSES ONLY

### 6.6.2 Scheme A 20m Height Plane Limit @ 1.8:1 FSR 3D View to Townhouses Facade



9 AM



10 AM



11 AM



12 PM



1 PM

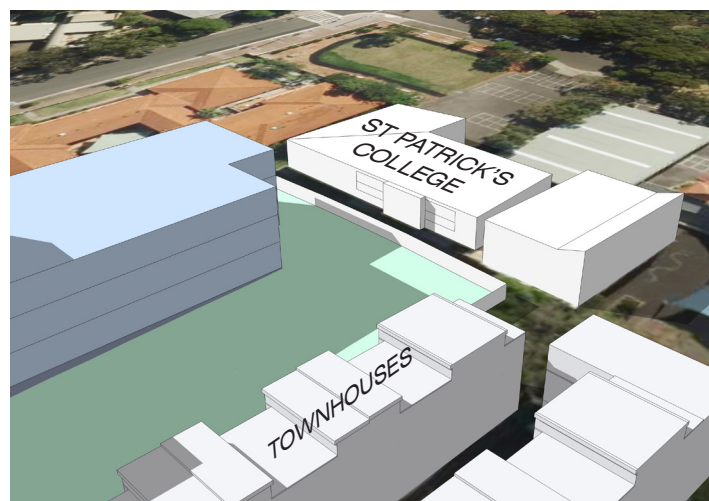


2 PM



3 PM

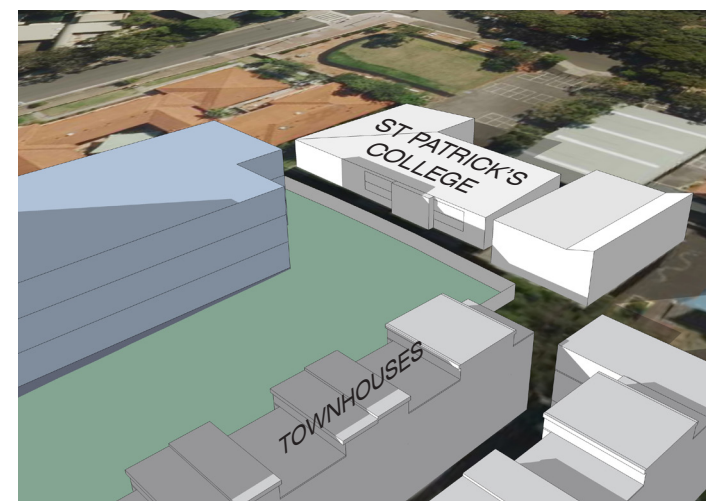
### 6.6.3 Scheme A 20m Height Plane Limit @ 1.8:1 FSR 3D View to School Classroom Facade



1 PM - Classroom overshadowing



2 PM - Classroom overshadowing



3 PM - Classroom overshadowing



**6.6 Overshadowing Analysis - Schemes A, B + C: June 21**

**FOR COMPARITIVE PURPOSES ONLY**

**6.6.4 Scheme B**  
**20m Height Plane Limit @ 1.2:1 FSR**  
**Plan View**



**9 AM**



**10 AM**



**11 AM**



**12 PM**



**1 PM**



**2 PM**



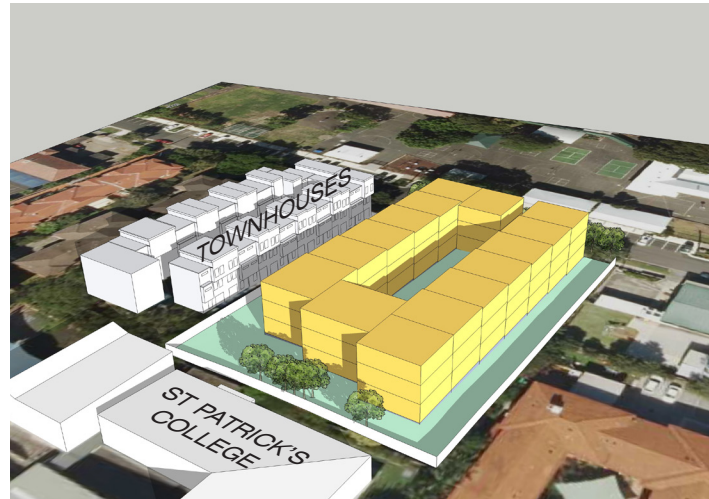
**3 PM**



## 6.6 Overshadowing Analysis - Schemes A, B + C: June 21

FOR COMPARITIVE PURPOSES ONLY

### 6.6.5 Scheme B 20m Height Plane Limit @ 1.2:1 FSR 3D View to Townhouses Facade



9 AM



10 AM



11 AM



12 PM



1 PM

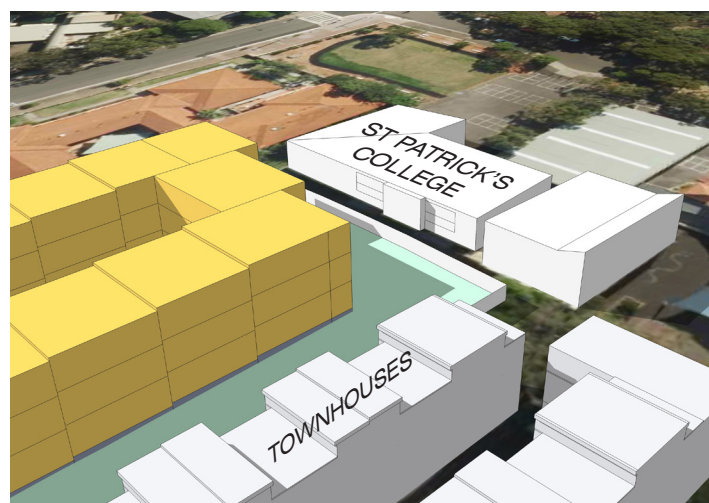


2 PM

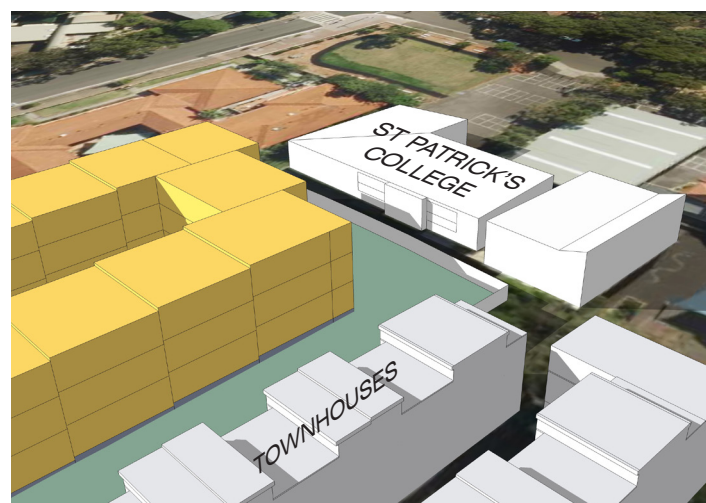


3 PM

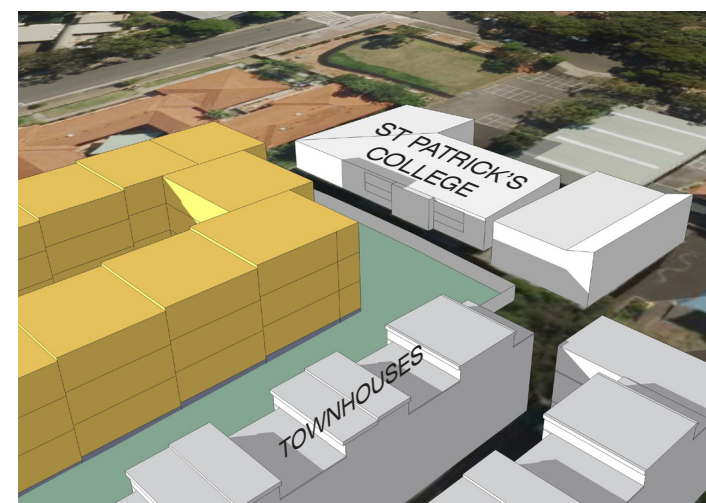
### 6.6.6 Scheme B 20m Height Plane Limit @ 1.2:1 FSR 3D View to School Classroom Facade



1 PM - Classroom overshadowing



2 PM - Classroom overshadowing



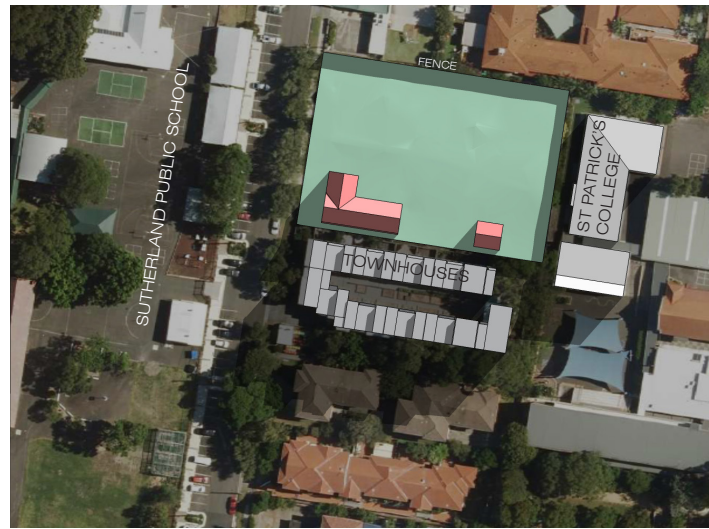
3 PM - Classroom overshadowing



**6.6 Overshadowing Analysis - Schemes A, B + C: June 21**

**FOR COMPARITIVE PURPOSES ONLY**

**6.6.7 Scheme C**  
**Complying Development @ 0.3:1 FSR**  
**Plan View**



**9 AM**



**10 AM**



**11 AM**



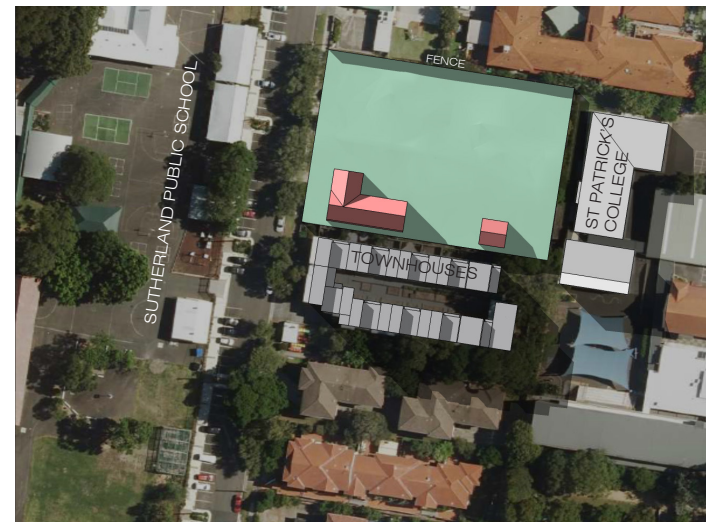
**12 PM**



**1 PM**



**2 PM**



**3 PM**



## 6.6 Overshadowing Analysis - Schemes A, B + C: June 21

FOR COMPARITIVE PURPOSES ONLY

### 6.6.8 Scheme C Complying Development @ 0.3:1 FSR 3D View to Townhouses Facade



9 AM



10 AM



11 AM



12 PM



1 PM



2 PM



3 PM

### 6.6.9 Scheme C Complying Development @ 0.3:1 FSR 3D View to School Classroom Facade



1 PM - Classroom overshadowing



2 PM - Classroom overshadowing



3 PM - Classroom overshadowing



6.6.10 Development Data

10-14 Merton Street, Sutherland

|                    |                                           |
|--------------------|-------------------------------------------|
| No. 10             | 1 798.4                                   |
| No. 12-14          | 1 349.1                                   |
| Combined Site Area | 3 147.5 sqm                               |
| Option 1, 2, 3     | RFB                                       |
| Scheme A           | RFB                                       |
| Scheme B           | Townhouses                                |
| Scheme C           | 2 Storey Dwelling - Complying development |

| Setbacks                          | Low, Mid, High   | Comments                                       |          |          |          |                         |
|-----------------------------------|------------------|------------------------------------------------|----------|----------|----------|-------------------------|
| Front (Merton St)                 | 0.5m, 0.5m, 0.5m | To allow for building articulation             |          |          |          |                         |
| Side (south)                      | 9m, 9m, 12m      | To allow 12m separation to existing townhouses |          |          |          |                         |
| Side (north)                      | 6m, 9m, 12m      | To comply with SEPP65                          |          |          |          |                         |
| Rear                              | 6m min.          |                                                |          |          |          |                         |
|                                   | Option 1         | Option 2                                       | Option 3 | Scheme A | Scheme B | Scheme C                |
| Height Control (m)                | 40               | 36                                             | 30       | 20       | 20       | 8.5                     |
| FSR                               | 3:1              | 3:1                                            | 3:1      | 1.8:1    | 1.8:1    | N/A                     |
| Max GFA (sqm)                     | 9 442.5          | 9 442.5                                        | 9 442.5  | 5 665.5  | 5 665.5  | 430<br>+Outbuilding 100 |
| Floor Plate Areas                 |                  |                                                |          |          |          |                         |
| Whole Floor Plate Area            | 10 560           | 10 110                                         | 9 210    | 6 360    | 4 068    |                         |
| Less Circulation -8%              | 844.8            | 808.8                                          | 736.8    | 508.8    | 162.72   |                         |
| Less Services -2%                 | 211.2            | 202.2                                          | 184.2    | 127.2    | 40.68    |                         |
| Area of Units inc. Balconies      | 9 504            | 9 099                                          | 8 289    | 5 724    | 3 864.6  |                         |
| Number of Units /80 + 8sqm        | 108              | 101                                            | 94       | 65       | 44       |                         |
| GFS (ex Serv, ex Balc, inc. Circ) | 9 484.8          | 9 080.6                                        | 8 272.3  | 5 712.4  | 3 676.0  | 430                     |
| FSR (x:1)                         | 3.0              | 2.9                                            | 2.6      | 1.8      | 1.2      | 0.3                     |



## 6.7 Preferred Development: Option 2 - 36m Height Limit @ 2.9:1 FSR

### 6.7.1 Outcome

The study assessed 3 types of form that compared impacts and SEPP 65 compliance which had height to FSR ratios of 40m/3:1, 36m/2.9:1 and 30m/2.6:1.

From the modelling it is clear to us that the scheme that has the 36m/2.9:1 ratio, which also achieving a minimum of 30% landscape, in the finger and tower form as presented, with the least effect to the immediate and local amenity (to the adjoining school and townhouse development to the south), whilst being under in both height and FSR, is Option 2.

### 6.7.2 Impact Analysis

The shadow and SEPP 65 analysis across the 3 schemes supports scheme 2 as the preferred outcome. Extensive shadow modelling to the finger and tower form shows minimal overshadowing to the townhouse development to the south, no mean feat given the existing development faces north to a site that has a 40m height limit. It can be seen from the scheme comparisons (A,B and C) that it fares equal to a 20m high compliant scheme and a similar 3 level compliant townhouse scheme on the subject site.

SEPP 65 separation applies to the whole of the form, with and EXTRA 3m added to the southern boundary to achieve the minimum setback requirements to the existing townhouse development that is only 3m off its northern boundary.



North-western view - Building massing



North-eastern view - Building massing



Merton Street (west) facade modulation zone shown transparent



## **6.7 Preferred Development: Option 2 - 36m Height Limit @ 2.9:1 FSR**

### **6.7.3 Facade Composition**

Scale, rhythm, proportions - includes balcony recesses and building relief elements



View from north-west



View from south-west



View from south-east



View from north-west



## 6.7 Preferred Development: Option 2 - 36m Height Limit @ 2.9:1 FSR

### 6.7.4 Open Space

Communal open space is 30% of the site area provided at both ground level and mid-rise roof level.  
Private open space for each unit is provided for with balconies having a minimum dimension of 2m.

|                   |                  |
|-------------------|------------------|
| Site area         | 3 147.5 sqm      |
| Common open space | 944 sqm          |
|                   | 30% of site area |





## 6.7 Preferred Development: Option 2 - 36m Height Limit @ 2.9:1 FSR

### 6.7.5 Summary of Analysis

The resultant preferred building form model (Option 2) has been tested against the Council's new draft LEP controls of height and FSR, as well as it meeting SEPP 65 guidelines, across 3 possible solutions in form and is the model that achieves outcomes that in our opinion are in line with Council objectives with providing a medium density level of living within close proximity to rail and transport links.

Given the maximums allowed under the draft LEP, and therefore by exploring forms up-to 40m in height and FSR of 3:1, whilst being scrutinised for solar access into the adjoining school and neighbouring townhouse development, as well as the adjoining houses further south, it can be seen that Scheme 2 is the form that has the least amenity loss in a comparison study.

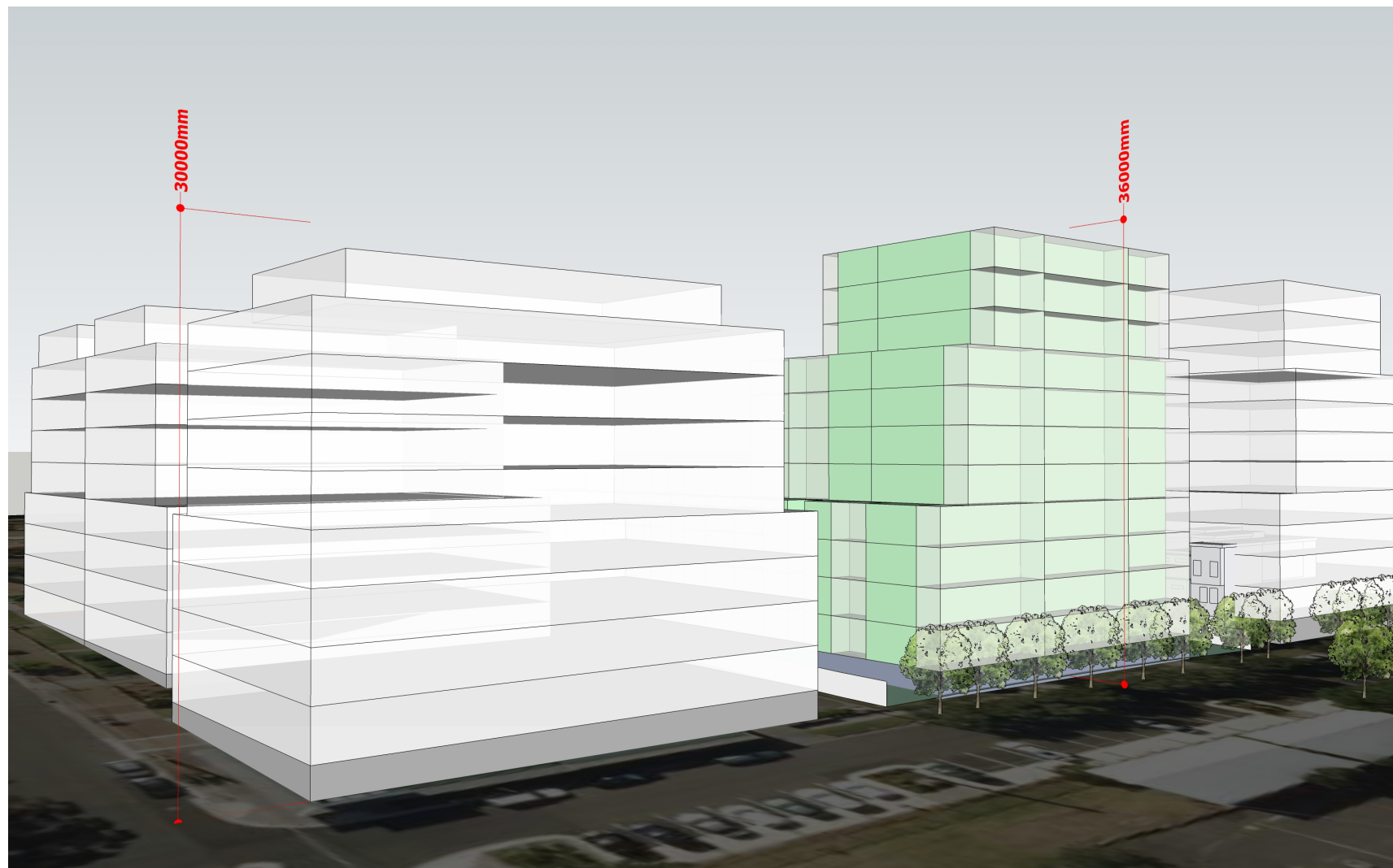
Furthermore, it can be seen that Scheme 2 is the 'tipping point' and anything added

to this volume will have an increased effect of overshadowing to the townhouse development or the school playground.

It therefore can also be seen that this scheme affords no loss of sun to the school playground during its hours of use, as the lower finger form has been parametrically modelled as a direct response to control and not encroach the school playground with shadows at lunch time across the year.

We have also provided a probable best outcome scenario diagram (see Fig. 6.5.4 below), in the event the adjoining sites were to be developed, under the recommended height/FSR data in the draft LEP, that indicate ghost envelopes that give context to the proposal and justify future contextual fit.

### 6.7.6 Potential Future Development





6.7

Preferred Development:  
Option 2 - 36m Height Limit @ 2.9:1 FSR

6.7.7

Development Data

10-14 Merton Street, Sutherland

|                    |             |
|--------------------|-------------|
| No. 10             | 1 798.4     |
| No. 12-14          | 1 349.1     |
| Combined Site Area | 3 147.5 sqm |

| Setbacks                          | Low, Mid, High   | Comments                                       |
|-----------------------------------|------------------|------------------------------------------------|
| Front (Merton St)                 | 0.5m, 0.5m, 0.5m | To allow for building articulation             |
| Side (south)                      | 9m, 9m, 12m      | To allow 12m separation to existing townhouses |
| Side (north)                      | 6m, 9m, 12m      | To comply with SEPP65                          |
| Rear                              | 6m min.          |                                                |
| Option 2                          |                  |                                                |
| Height Control (m)                | 36               |                                                |
| FSR                               | 3:1              |                                                |
| Max GFA (sqm)                     | 9 442.5          |                                                |
| Floor Plate Areas                 |                  |                                                |
| Whole Floor Plate Area            | 10 110           |                                                |
| Less Circulation -8%              | 808.8            |                                                |
| Less Services -2%                 | 202.2            |                                                |
| Area of Units inc. Balconies      | 9 099            |                                                |
| Number of Units /80 + 8sqm        | 101              |                                                |
| GFS (ex Serv, ex Balc, inc. Circ) | 9 080.6          |                                                |
| FSR (x:1)                         | 2.9              |                                                |

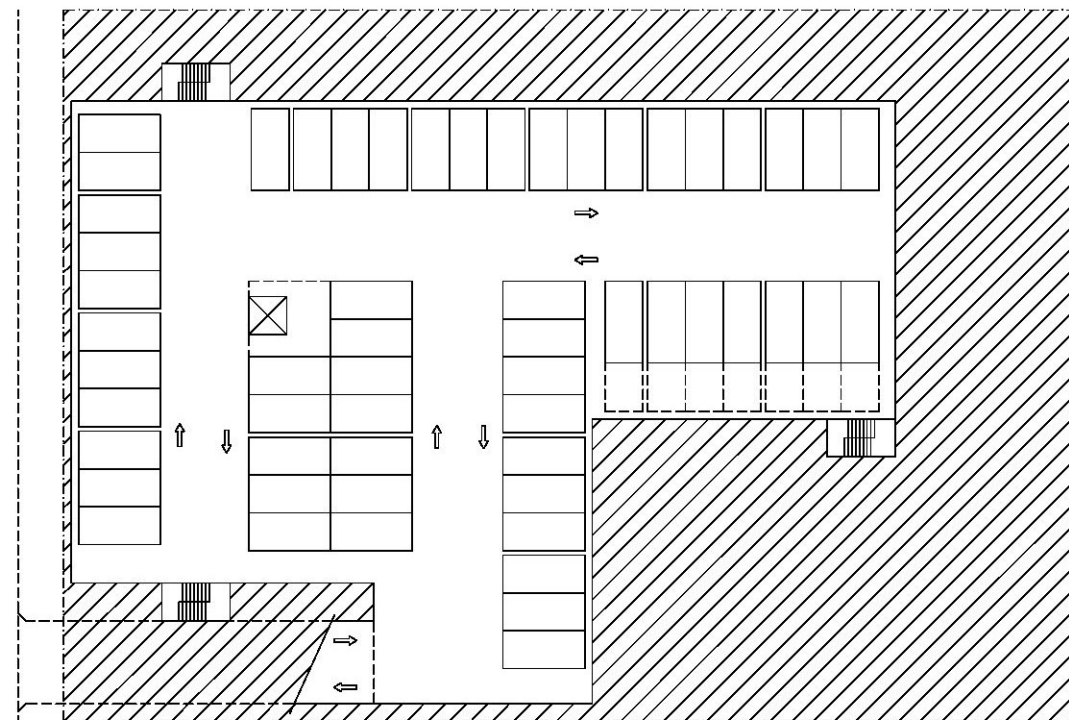
| Unit mix             |           |
|----------------------|-----------|
| 3 bedroom apartments | 4 (4%)    |
| 2 bedroom apartments | 84 (83%)  |
| 1 bedroom apartments | 13 (13%)  |
| Total                | 101 units |

| Car Parking          |                                   |
|----------------------|-----------------------------------|
| 3 bedroom apartments | 2 spaces/unit                     |
| 2 bedroom apartments | 1.5 spaces/unit                   |
| 1 bedroom apartments | 1 space/unit                      |
| Visitors             | 1 space/4 units                   |
| Total                | 173 spaces inc. 26 visitor spaces |



## 6.7 Preferred Development: Option 2 - 36m Height Limit @ 2.9:1 FSR

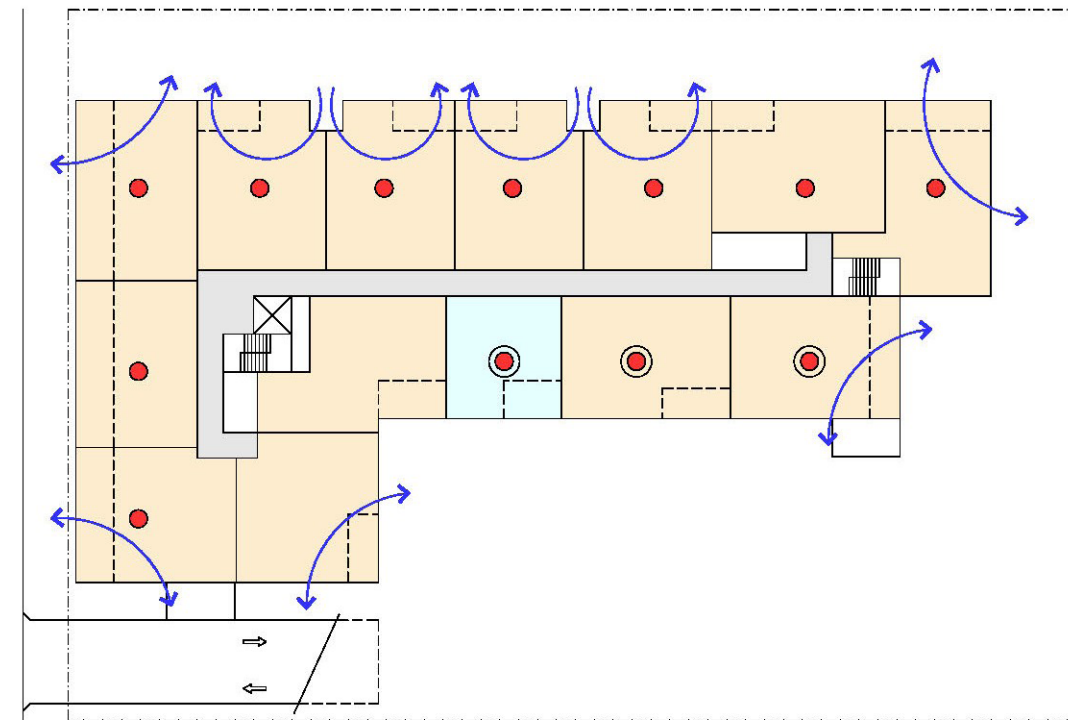
### 6.7.8 Daylight Access + Natural Ventilation Schematic Basement and Level 1-4



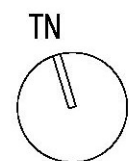
TYPICAL BASEMENT (approx 60 car spaces per level, over 3 levels)

#### KEY

-  NATURAL VENTILLATION  
to 65 of 101 units (64%)
-  DAYLIGHT ACCESS  
to 74 of 101 units (73%)
-  indicates daylight access to L4 unit only



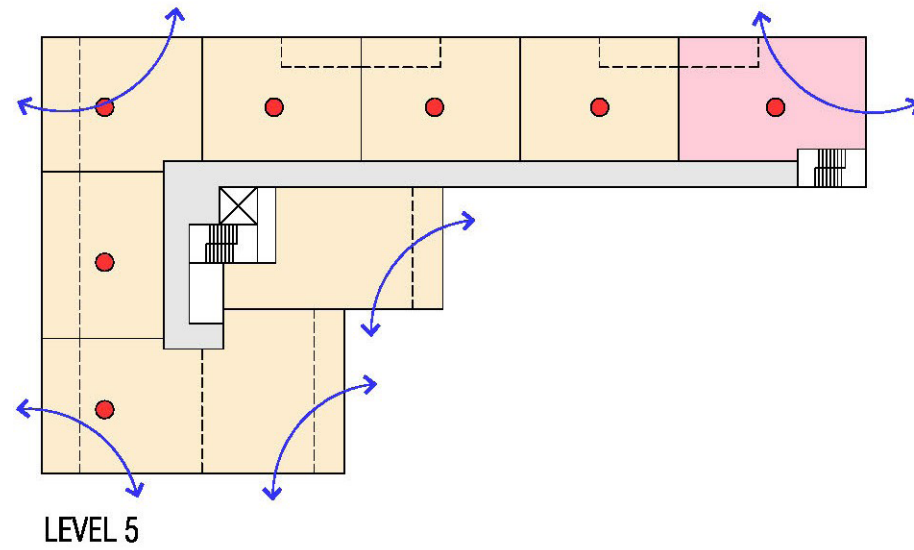
LEVEL 1-4





## 6.7 Preferred Development: Option 2 - 36m Height Limit @ 2.9:1 FSR

### 6.7.9 Daylight Access + Natural Ventilation Schematic Basement and Level 1-4



#### KEY



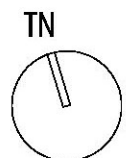
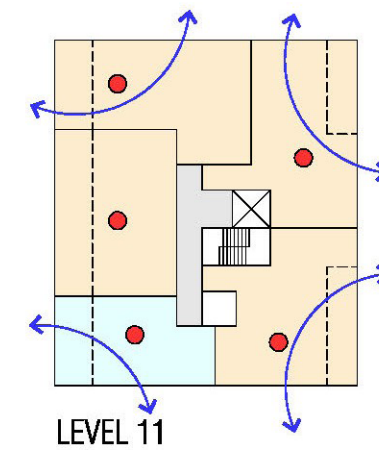
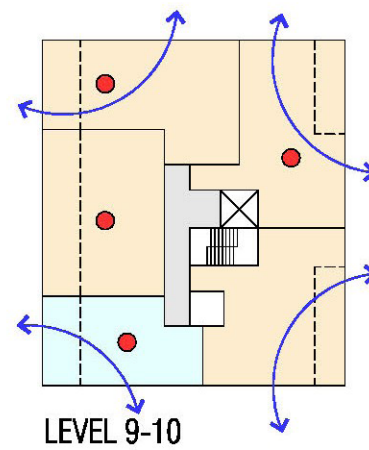
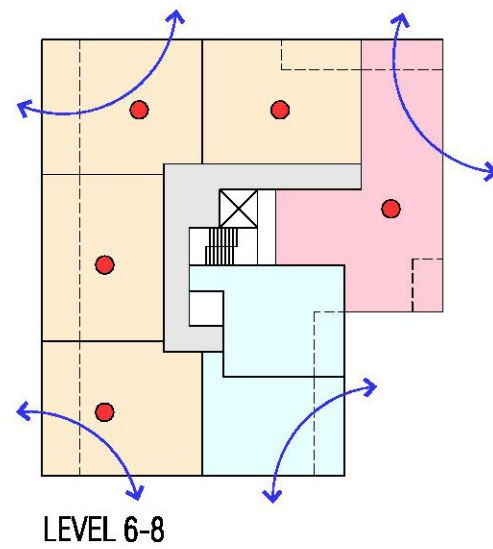
NATURAL VENTILLATION  
to 65 of 101 units (64%)



DAYLIGHT ACCESS  
to 74 of 101 units (73%)



indicates daylight access to L4 unit only





# 7 PRECEDENTS

conceptual framework

10 - 14 MERTON STREET - SUTHERLAND 2232





| Principle | Design quality                                                                                                                                 | Proposal |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 1         | <b>Context</b><br>“Good design responds and contributes to its context which can be defined as the key natural and built feature of the area.” |          |

| Principle | Design quality                                                                                                                                                                                                                                                                                                                                                                                                                       | Proposal |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 2         | <b>Scale</b><br>“Good design provides an appropriate scale in terms of bulk and height that suits the scale of the street and the surrounding buildings.”<br><br>Establishing an appropriate scale requires a considered response to the scale of the immediate surroundings and a respect to the adjoining uses. The proposed bulk and form also need to achieve the scale identified for the desired future character of the area. |          |





| Principle | Design quality                                                                                                                                                                                                                                                                                                                                                                                                                                      | Proposal |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 3         | <p><b>Built form</b></p> <p>“Good design achieves an appropriate built form for a site and for the building’s purpose, in terms of building alignments, proportions, building type and manipulation of building elements.”</p> <p>Appropriate built form defines the public domain, contributes to the character of the streetscapes and public open spaces including their views and vistas as well as providing internal amenity and outlook.</p> |          |



geotom

| Principle | Design quality                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Proposal |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 4         | <p><b>Density</b></p> <p>“Good design has a density appropriate for the site and its context in terms of floor space yields or number of units or residents.”</p> <p>Appropriate densities are sustainable and consistent with the existing density in an area or, for precincts undergoing a transition, are consistent with the stated desired future density. Sustainable densities respond to the regional context, availability of infrastructure, public transport, community facilities and environmental quality.</p> |          |



design • architecture • interiors



| Principle | Design quality                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Proposal |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 5         | <b>Resource, energy and water efficiency</b><br><br>“Good design makes efficient use of natural resources, energy and water throughout its full life cycle, including construction.”<br><br>Sustainability is integral to the design process. Relevant aspects include demolition of existing structures, recycle and re-use of materials, selection of appropriate and sustainable materials, adaptability and reuse of buildings where suitable, layouts and built form, passive solar design principles, efficient appliances and mechanical services, soil zones for vegetation and reuse of water. |          |

| Principle | Design quality                                                                                                                                                                                                                                                                                                                                                                                            | Proposal |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 6         | <b>Landscape</b><br><br>“Good design recognises that together landscape and buildings operate as an integrated and sustainable system, resulting in greater aesthetic quality and amenity for both the residents and or the public domain.”<br><br>Landscape design enhances the development’s natural environmental performance and contributes to the positive image and contextual fit of development. |          |





| Principle | Design quality                                                                                                                                                                                                                                                                                                                                                                                                                        | Proposal |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 7         | <p><b>Amenity</b></p> <p>“Good design provides amenity through the physical, spatial and environmental quality of a development.”</p> <p>Optimising amenity requires appropriate room dimensions and shapes, access to sunlight, natural ventilation, visual and acoustic privacy, storage, indoor and outdoor space, efficient layouts and service areas, outlook and ease of access for all age groups and degrees of mobility.</p> |          |



| Principle | Design quality                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Proposal |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 8         | <p><b>Safety and security</b></p> <p>“Good design optimises safety and security, both integral to the development and for the public domain.”</p> <p>Safety is achieved by maximising the oversight of public and communal spaces while maintaining internal privacy and avoiding dark areas. Activity on the street is maximised through different uses, providing clear and safe access points and providing quality public spaces that cater for desirable recreational uses.</p> |          |





| Principle | Design quality                                                                                                                                                                                         | Proposal |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 9         | <b>Social dimension and affordability</b><br><br>“Good design responds to the social context and needs of the local community in terms of lifestyles, affordability, and access to social facilities.” |          |



| Principle | Design quality                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Proposal |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 10        | <b>Aesthetics</b><br><br>“Quality aesthetics require the appropriate composition of building elements, textures, materials and colours and reflect the use, internal design and structure of the development.”<br><br>Aesthetics respond to the environment and context, particularly to desirable elements of the existing streetscape or, in precincts undergoing transition, contributes to the desired future character of the area. They also respond to the aspiration of the local precinct and its significance within the city. |          |





