

Appendix E

Transport Impact Assessment



7-33 Water Street, Strathfield South Planning Proposal/Pre-Gateway Transport Impact Assessment

Client //	RJ Green & Lloyd Pty Limited and Westport Pty Ltd
Office //	NSW
Reference //	14S1453000
Date //	02/03/16

7-33 Water Street, Strathfield South

Planning Proposal/Pre-Gateway

Transport Impact Assessment

Issue: B 02/03/16

Client: RJ Green & Lloyd Pty Limited and Westport Pty Ltd

Reference: 14S1453000

GTA Consultants Office: NSW

Quality Record

Issue	Date	Description	Prepared By	Checked By	Approved By	Signed
A	11/02/16	Final	Ken Hollyoak	Ken Hollyoak	Ken Hollyoak	Ken Hollyoak
B	02/03/16	Final	Ken Hollyoak	Ken Hollyoak	Ken Hollyoak	

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1. Introduction

It is understood that RJ Green & Lloyd Pty Limited and Westport Pty Ltd is seeking to pursue the rezoning of the existing industrial land at 7-33 Water Street, Strathfield South.

It is proposed to develop the existing industrial site to accommodate a residential development with a basement level car park. For the purposes of this assessment, a yield of 361 apartments has been assumed.

GTA Consultants was commissioned by RJ Green & Lloyd Pty Limited and Westport Pty Ltd to provide pre-gateway traffic advice in relation to the above site.

The remainder of the report is set out as follows:

- Chapter 2 discusses the existing road network conditions surrounding the site
- Chapter 3 describes the proposed development
- Chapter 4 assesses the parking requirements
- Chapter 5 discusses the potential traffic impacts
- Chapter 6 presents the summary and conclusions of the investigation.

In preparing this report, reference has been made to the following:

- an inspection of the site and its surrounds
- Strathfield Municipal Council Part C of Strathfield Consolidated Development Control Plan (DCP), Multiple-Unit Housing
- Strathfield Municipal Council Part I of Strathfield Consolidated Development Control Plan (DCP), Provision of Off-Street Parking Facilities
- plans for the proposed development prepared by Robertson & Marks dated 27th January 2016.
- other documents and data as referenced in this report.

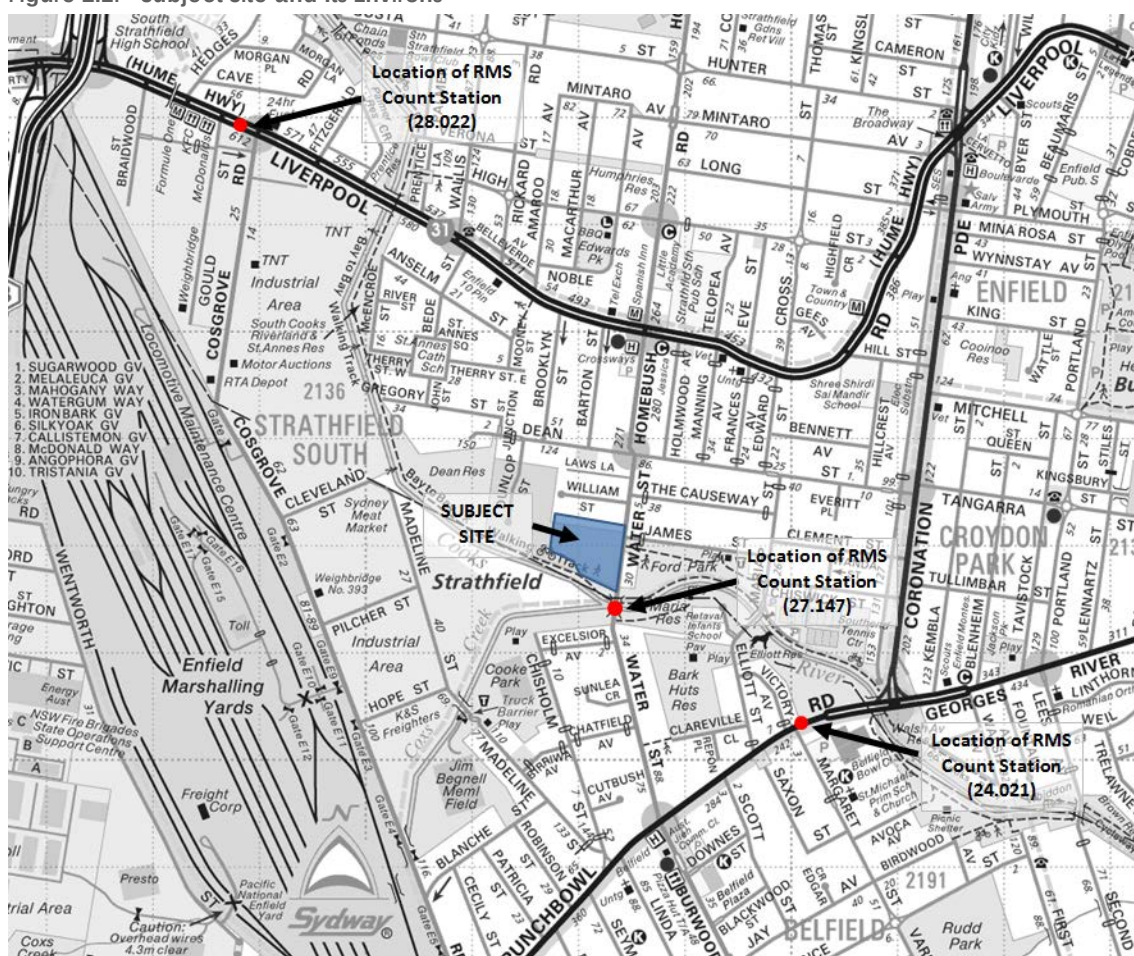
2. Existing Conditions

The subject site is located at 7-33 Water Street, Strathfield South. The site has a frontage of approximately 170m to Water Street. There are currently seven driveways within the 170m frontage along Water Street. The site is currently zoned "IN1" General Industrial under Strathfield Environmental Plan 2012.

The surrounding properties include industrial, low and medium density residential uses.

The location of the site and its surrounding environs is shown in Figure 2.1.

Figure 2.1: Subject Site and Its Environs



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2.1 Road Network

Water Street is a local road, which functions as a collector type road. It is a two-way road with one travelling lane in each direction.

Kerbside parking is generally permitted on both sides of the road. The posted speed limit is 50km/hr.

The following intersections currently exist in the vicinity of the site:

- Water Street/James Street (unsignalised)

- Water Street/Homebush Road/Dean Street (signalised).

2.2 Traffic Volumes

GTA Consultants obtained average daily traffic (ADT) figures from Roads and Maritime Services (RMS), Journey Information and Digital branch at the following locations:

- 27.147 –Water Street, South Strathfield at Cooks River
- 24.021 – Punchbowl Road, South Enfield, east of Margaret Street
- 28.022 – Hume Highway, Strathfield, west of Cosgrove Road.

The location of these count stations are also shown in Figure 2.1. Table 2.1 presents the ADTs for the above sites by year.

Table 2.1: Average Daily Traffic (ADT)

Year	RMS Count Stations		
	27.147 (Water St)	24.021 (Punchbowl Rd)	28.022 (Hume Hwy)
2002	11,197	-	-
2005	11,848	-	-
2008	-	32,571	-
2009	11,673	33,483	50,661
2010	-	31,635	50,608
2011	-	31,005	49,041
2012	-	31,750	47,833
2013	-	32,437	53,597
2014	-	31,664	50,115

Table 2.1 indicates that the average daily flows at Water Street have fluctuated over the years. However in general, the traffic volumes at the above sites have remained at a similar level or decreased at a rate of about 0.5 percent per annum between 2008 and 2014.

2.3 Site Observations

The key issues observed during the weekday afternoon site visit are as follows:

- Unrestricted street parking is available along Water Street and James Street, except along the bus zone on Water Street in both directions.
- On street parking was generally not occupied along the western side of Water Street.
- About 40 percent of street parking was occupied along the eastern side of Water Street, south of James Street during the weekday afternoon.
- All street parking was occupied along the eastern side of Water Street, north of James Street.
- On street parking was generally available on James Street and William Street during the weekday afternoon periods (about 30 percent was occupied).
- During the afternoon site visit, the southbound traffic was observed to be significantly heavier than the northbound traffic. The peak period observed was between 5:10pm and 5:40pm. After 5:45pm, the traffic volumes declined considerably.
- The signalised intersection at Water Street-Dean Street was also observed to be operating satisfactorily.

2.4 Public Transport

Railway Station

The nearest railway station is Belmore Station, located approximately 2.6km drive from the site via Water Street/Burwood Road. There are a number of other stations located nearby, which are:

- Homebush Station – 3.4km from the site
- Strathfield Station – 3.5km from the site.

The frequency of the current train services at the above stations are provided in Table 2.2.

Table 2.2: Train Frequencies

Station	Route Description	Frequency		
		Weekday AM Peak (7-9am)	Weekday PM Peak (4-6pm)	Weekday off-peak
T3 Bankstown line				
Belmore	To City	Every 5-10 mins	Every 10-15 mins	Every 15 mins
Belmore	From City	Every 5-10 mins	Every 15 mins	Every 15 mins
T2 Inner West & South line				
Homebush	To City	Every 15 mins	Every 15 mins	Every 15 mins
Homebush	From City	Every 15 mins	Every 15 mins	Every 15 mins
T2 Airport, Inner West & South line				
Strathfield	To City	Every 5 mins	Every 5-15 mins	Every 15 mins
Strathfield	From City	Every 5-10 mins	Every 5-15 mins	Every 15 mins
T1 North Shore, Northern & Western line				
Strathfield	To City	Every 5 mins	Every 5 mins	Every 5-10 mins
Strathfield	From City	Every 5-10 mins	Every 5 mins	Every 5 mins

Table 2.2 indicates that a good level of train services to and from the City is provided at the above train stations. However, these stations are not located within the walking distance to and from the site.

Bus Service

Punchbowl Bus Company operates the bus route 450, Hurstville to Burwood with peak services operating to Sydney Olympic Park.

Bus stops are located on Water Street, just south of William Street for northbound service and north of James Street for southbound service.

A review of the public transport available in the close vicinity of the site is summarised in Table 2.3.

Table 2.3: Bus Frequencies

Route No.	Route Description	Frequency		
		Weekday AM Peak (7-9am)	Weekday PM Peak (4-6pm)	Weekday off-peak
450 – Hurstville to Burwood				
	To Burwood & Sydney Olympic Park	Every 15 mins	Every 15 mins	Every 30 mins
	To Hurstville	Every 15 mins	Every 15 mins	Every 30 mins

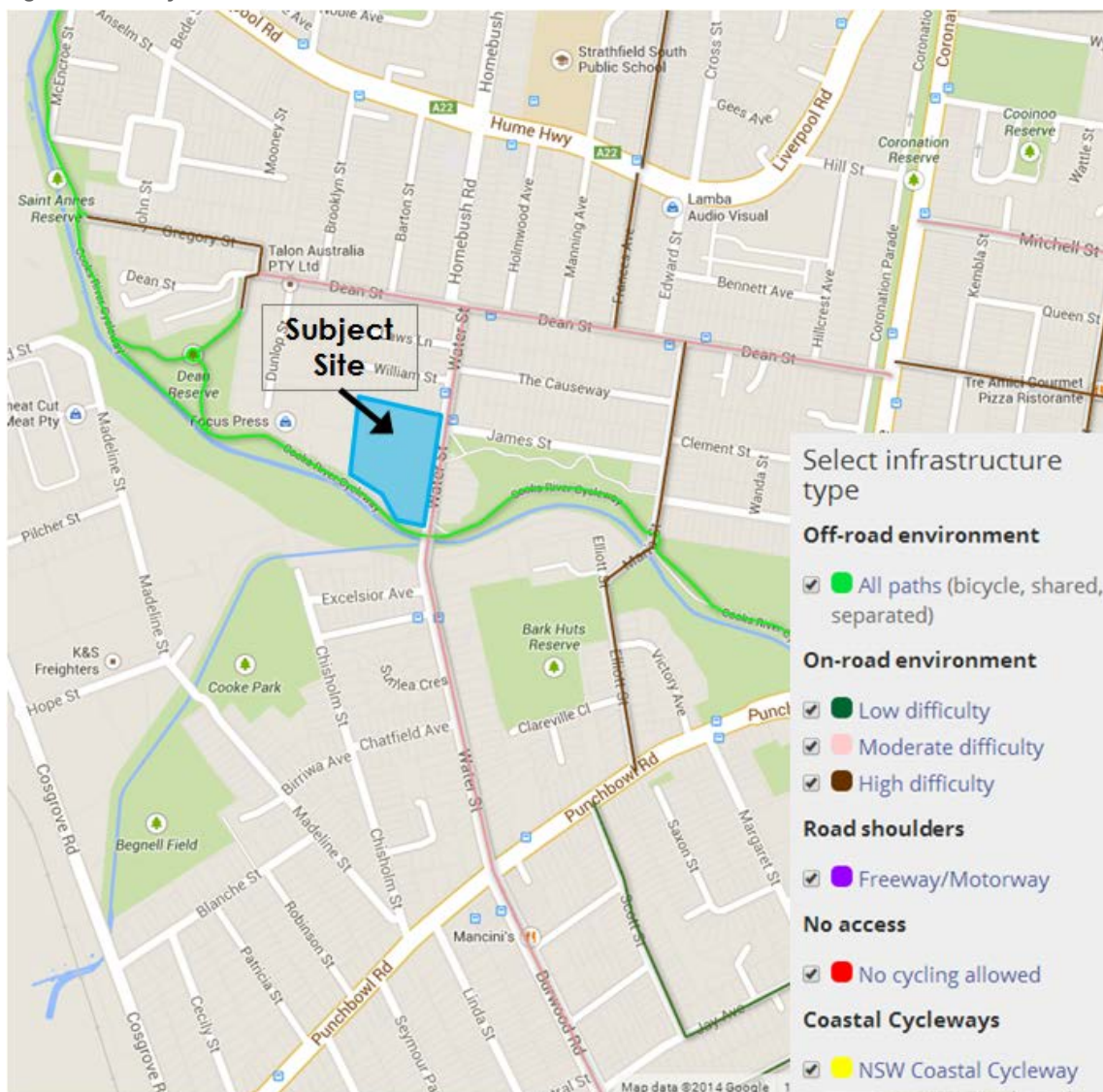
Table 2.3 indicates that buses to and from Hurstville/Burwood are provided at 15-minute intervals during the morning and afternoon peak periods and 30-minute intervals during the off-peak period.

2.5 Pedestrian & Cycle Infrastructure

Pedestrian paths are located along both sides of Water Street.

The current Strathfield Council's bay to bay cycle path map indicates that the Cooks River Cycleway exists along the southern boundary of the site. Further information on the cycleway network is available from the NSW Cycleway Finder. Figure 2.2 shows the bicycle information for Strathfield South.

Figure 2.2: Bicycle Information



Source: Reproduced from NSW Cycleway Finder (http://www.bicycleinfo.nsw.gov.au/maps/cycleway_finder.html)

Figure 2.2 shows that the site has a reasonably good connectivity to the existing cycle facilities.

3. Development Proposal

The site is currently zoned "IN1" General Industrial under Strathfield Environmental Plan 2012. It is proposed to seek rezoning of the site to Medium Density Residential as recommended in the Strathfield Council's Land Use and Employment Strategy¹, June 2010.

The proposal will involve demolition of the existing industrial buildings and construction of new residential buildings to accommodate about 361 residential units.

Vehicular access to and from the basement car park would be provided off Water Street via driveways located approximately 30m and 55m south of the James Street intersection. The existing seven driveways for the industrial sites would be removed to be replaced with two driveways to serve the proposed development.

The proposed car park would accommodate about 579 car parking spaces. The suitability of the car parking provision is discussed in Section 4 of this report.

A plan showing the indicative development plan is shown in Appendix A.

¹ Strathfield at the Crossroads of Sydney, An Economic Land Use and Employment Strategy, Strathfield Council, June 2010

4. Car Parking

The car parking provision requirements for residential flat buildings are set out in Strathfield Municipal Council *Part C of Strathfield Consolidated Development Control Plan (DCP), Multiple-Unit Housing*. The following minimum parking requirements are presented in this DCP:

- 1 bedroom dwelling – 1 space/dwelling
- 2 bedroom dwelling – 1.5 spaces/dwelling
- 3 or more bedroom dwelling – 2 spaces/dwelling
- Visitor parking – 1 space for every 5 dwellings or part thereof.

A review of the car parking requirement rates and the proposed mix results in a parking requirement for the proposed development is summarised in Table 4.1 below.

Table 4.1: Indicative Car Parking Requirements

Use	Size	Parking Rate	Parking Requirement
1 bedroom dwelling	102	1 space/dwelling	102
2 bedroom dwelling	229	1.5 spaces/dwelling	344
3 bedroom dwelling	30	2 spaces/dwelling	60
Visitor space		1 space/5 dwellings	73
Total			579 spaces

Based on the above, the proposed development is required to provide about 579 car parking spaces.

The development would provide this level of car parking to comply with Council's car parking requirements.

5. Traffic Impact Assessment

Traffic generation estimates for the existing industrial sites and the proposed residential development have been sourced from the RMS Guide to Traffic Generating Developments (2002). The following peak hour traffic generation rates are presented in the RMS Guide:

- Factories – 1 vehicle trip per 100m² gross floor area
- Medium density residential flat building
 - one or two bedrooms – 0.4 to 0.5 vehicle trip per dwelling
 - three or more bedrooms – 0.5 to 0.65 vehicles trip per dwelling.

With regard to the existing site, the total site area is 13191m². The site is however not developed to a density of a modern industrial use. The current GLA of the buildings is only 3,815m², which is only 28% of the site area. Any reuse of the site for industrial use would probably a minimum of 50% of the site area for GFA – that is approximately 6500m².

Estimates of peak hour traffic volumes resulting from the proposal are set out in Table 5.1.

Table 5.1: Traffic Generation Estimates

	Size	Traffic Generation Rate		Vehicle Movements	
		AM Peak	PM Peak	AM Peak	PM Peak
Industrial Use					
Factories	6,500m² GFA	1 veh trip /100m² GFA	1 veh trip /100m² GFA	65	65
Proposed Use					
Residential	331 One or two bedroom units	0.4 – 0.5 veh trips /unit	0.4 – 0.5 veh trips /unit	132-166 Av 149	132-166 Av 149
	30 Three bedroom units	0.5 – 0.65 veh trips /unit	0.5 – 0.65 veh trips /unit	15-20 Av 17	15-20 Av 17
Difference				+101	+101

The comparison of the traffic generation from an industrial use and proposed residential use as calculated in Table 5.1 indicates that the proposed development would generate about 101 additional vehicle trips during the peak hour compared to the existing use.

The residential development would generate at its peak approximately 2 and a half vehicles per minute which will be divided between its two access points. This is approximately 1.5 additional vehicles per minute compared to an industrial use of the site.

This increase is relatively minor and it is expected that the proposal would not have any adverse traffic impact on the road network in the vicinity of the site. However, it is anticipated that intersection modelling would be required in any subsequent development application to assess these impacts on nearby intersection.

It is also important to consider that the proposed residential development would generate predominantly light vehicle movements and these would replace the relatively high proportion of heavy vehicle movements generated by an industrial use. As the surrounding properties are generally low and medium density residential uses, the removal of heavy vehicle movements to and from the site would enhance the amenity of existing residents.

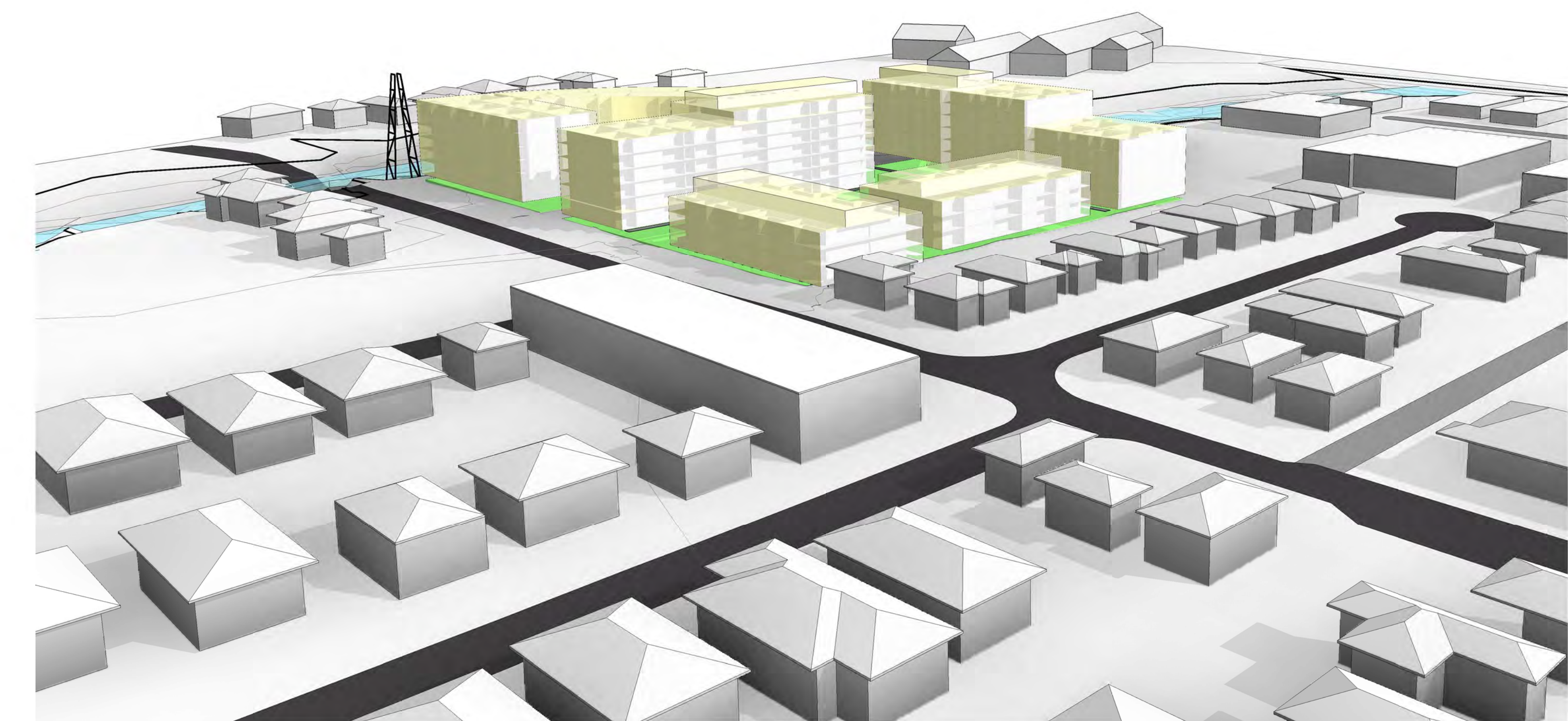
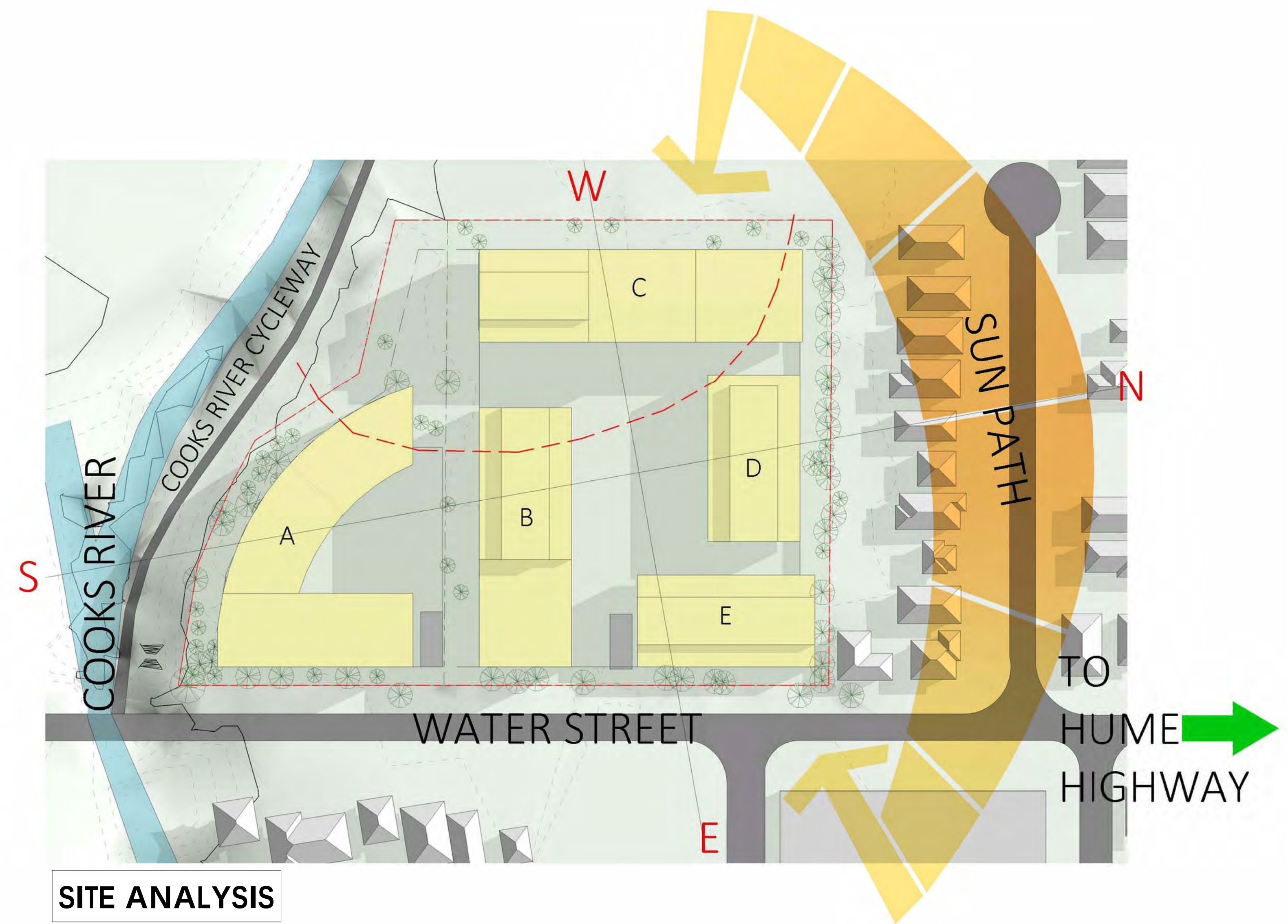
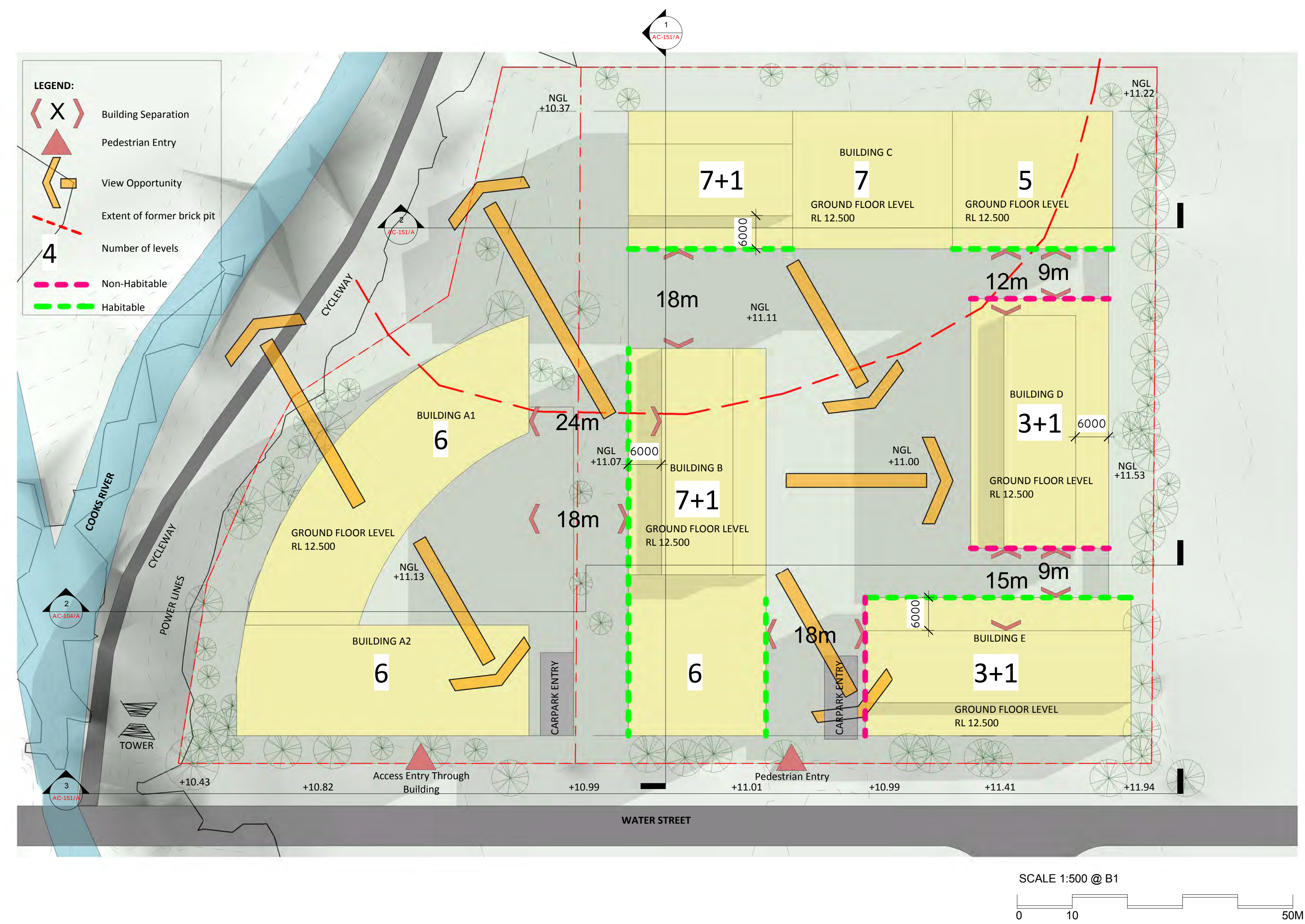
6. Conclusion

Based on the analysis and discussions presented within this report, the following conclusions are made:

- i The existing industrial buildings cover a site area of 13191m².
- ii The site is however not developed to a density of a modern industrial use. The current GFA of the buildings is only 3,815m², which is only 28% of the site area.
- iii Any reuse of the site for industrial use would probably result in a minimum of 50% of the site area being used as GFA – that is approximately 6500m²
- iv The site is currently zoned “IN1” General Industrial under Strathfield Environmental Plan 2012. It is proposed to seek rezoning of the site to Medium Density Residential.
- v The proposal will involve demolition of the existing buildings and construct residential building accommodating 371 apartments.
- vi The vehicular access for the proposed development would be via two driveways off Water Street. This will replace the existing seven driveways used by industrial sites.
- vii The proposed development generates a statutory parking requirement of 579 spaces.
- viii Car parking would be provided to comply with Council's requirement.
- ix The residential development would generate approximately 2.5 vehicles per minute during the peak hour.
- x The comparison of the traffic generation from an industrial use and the proposed residential use indicates that the proposed development would generate about 101 additional vehicle trips during the peak hour compared to the existing use (which is approximately 1.5 vehicles per minute).
- xi Although the increase in additional vehicle trips is relatively minor, it is expected that that intersection modelling would be required in any subsequent development application to assess the impacts of the residential traffic on nearby intersections.
- xii The proposed residential development would generate predominantly light vehicle movements and these would replace the relatively high proportion of heavy vehicle movements generated by an industrial use. As the surrounding properties are generally low and medium density residential uses, the removal of heavy vehicle movements to and from the site would enhance the amenity for existing residents.

Appendix A

Proposed Indicative Layout Plans



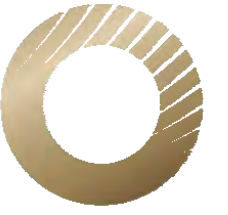
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t. (+61) 2 9319 4388 e. mail@marks.net.au www.marks.net.au
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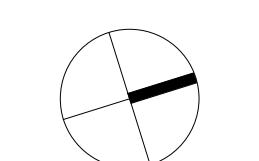
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Issue Date Description

7-23 WATER STREET,
STRATHFIELD &
25-33 WATER STREET,
STRATHFIELD

TRUE NORTH



DRAWING TITLE
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Drawing Number
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*DARK TONED TREES - EXISTING/ RETAINED

VIEW A

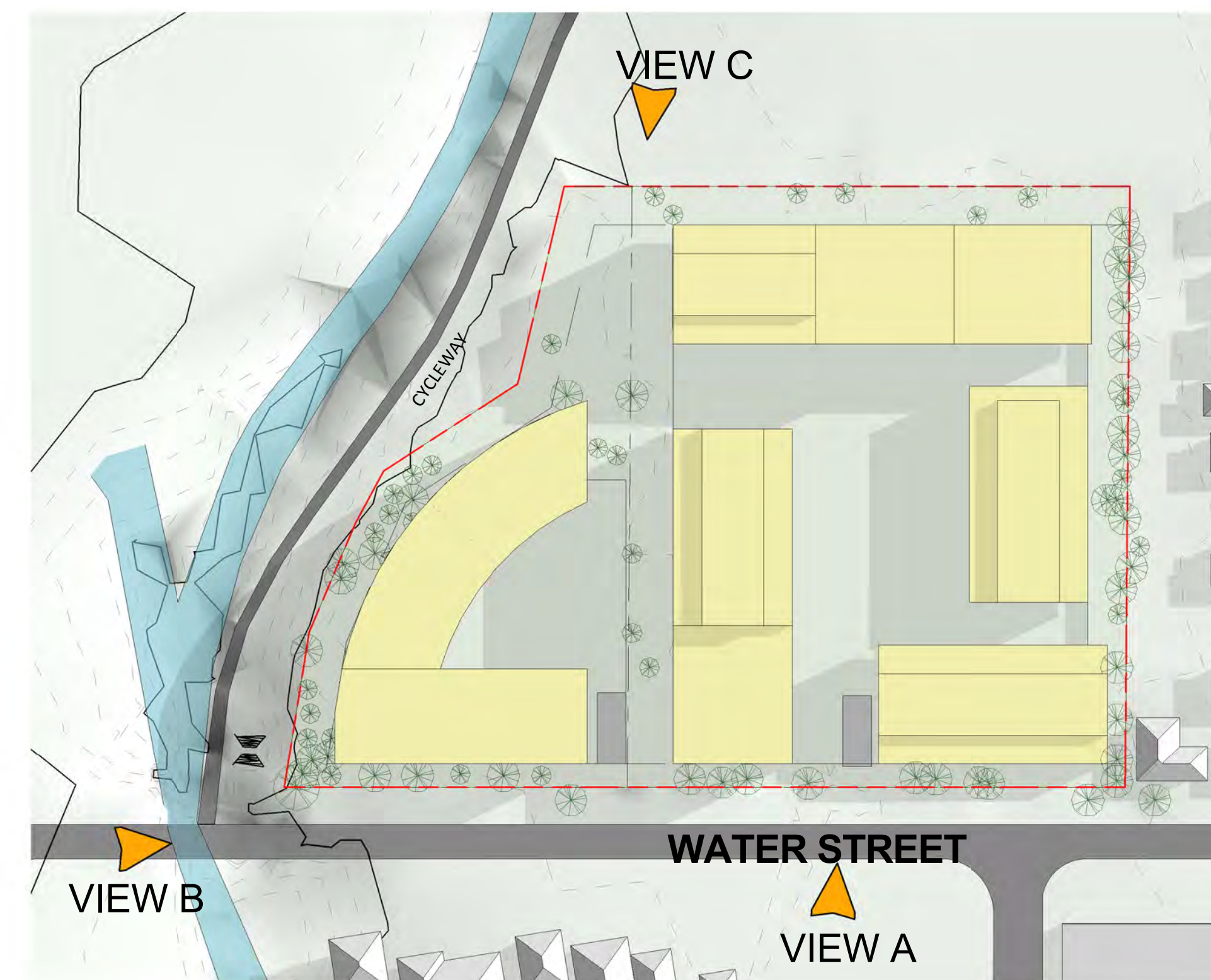


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VIEW B



VIEW C



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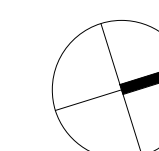
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Issue Date Description

7-23 WATER STREET,
STRATHFIELD &
25-33 WATER STREET,
STRATHFIELD

TRUE NORTH



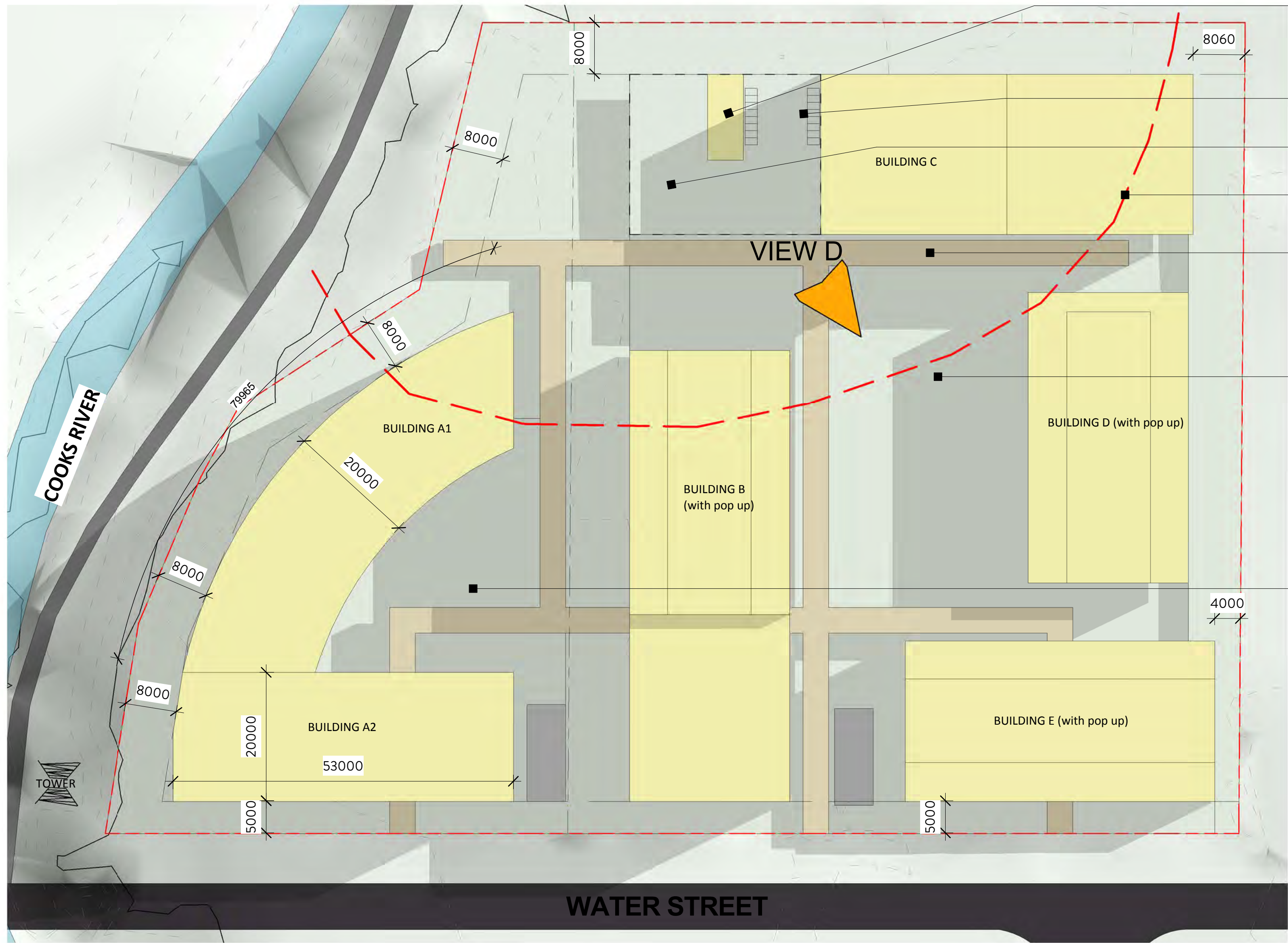
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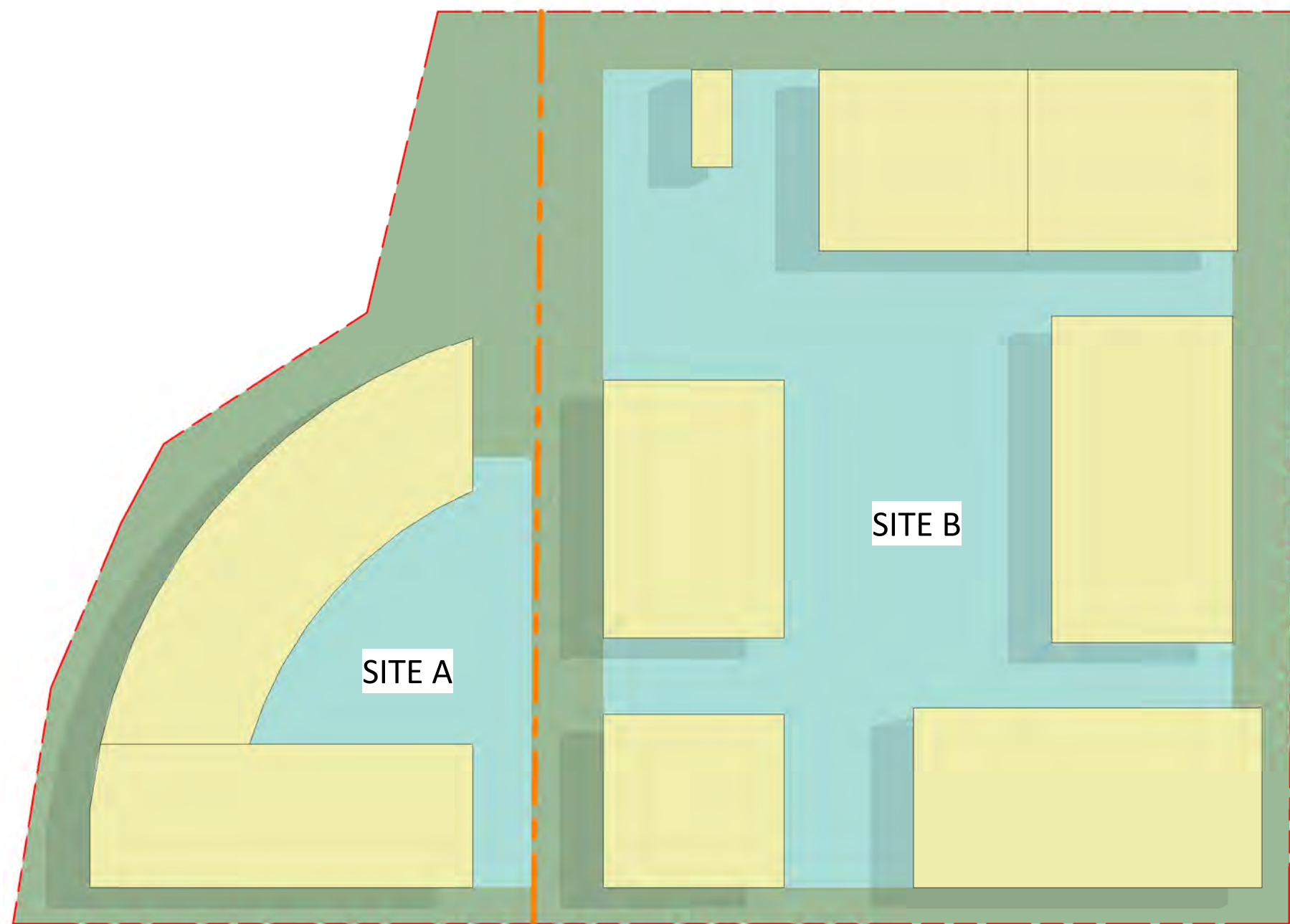
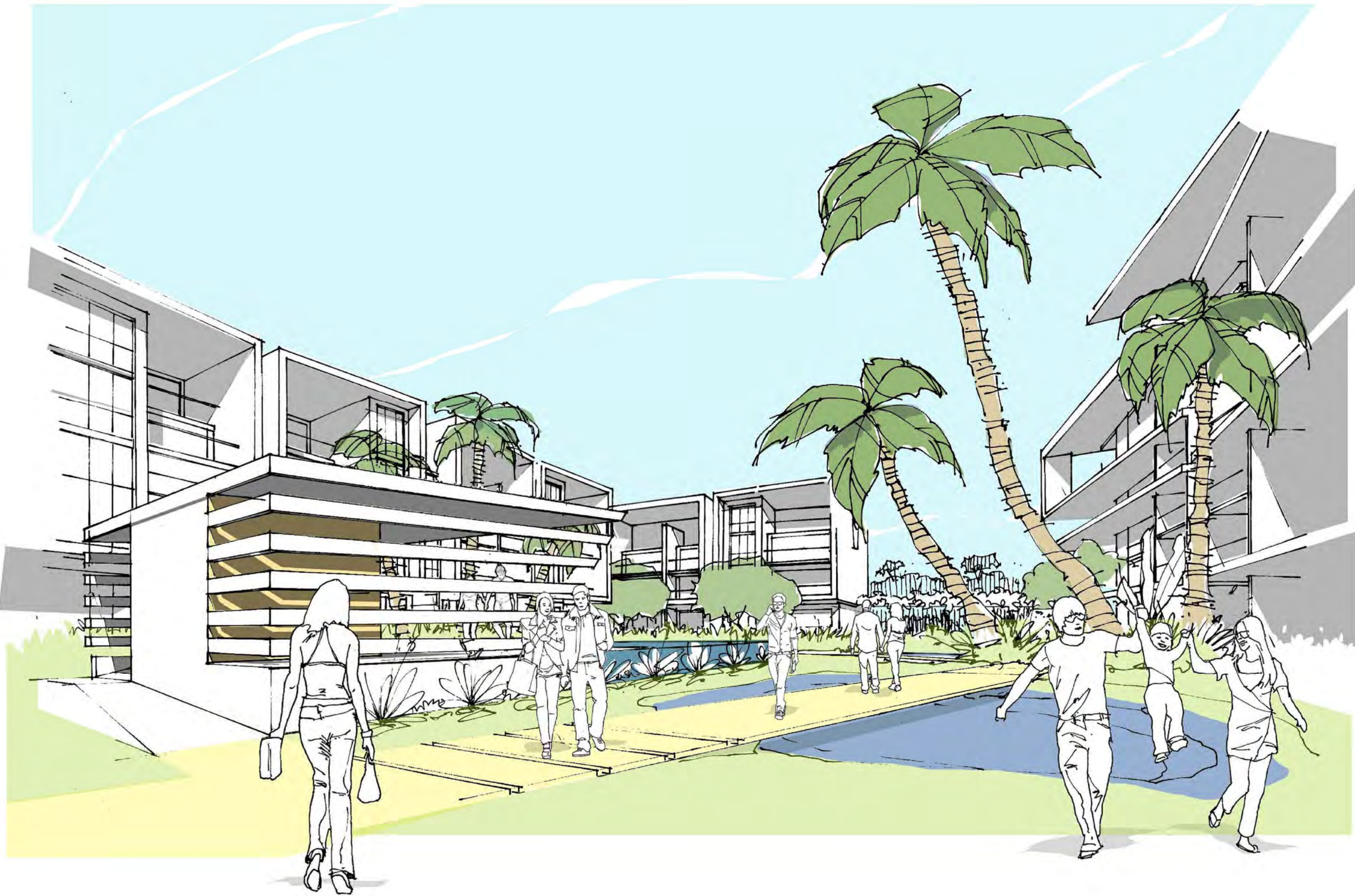
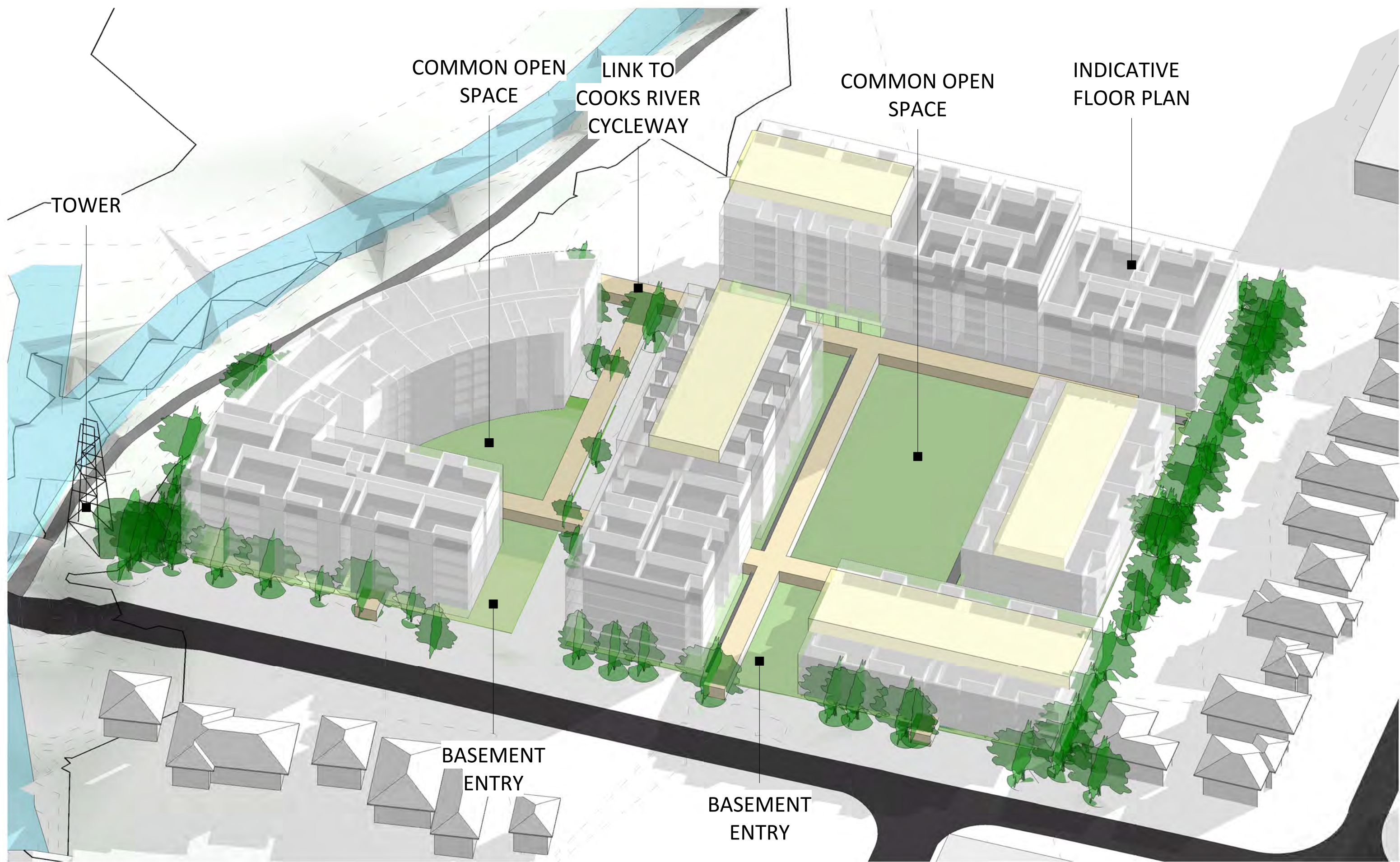
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COMMON OPEN SPACE & PEDESTRIAN LINKS



- DEEP SOIL LANDSCAPE
- PODIUM LANDSCAPE

Area Schedule (Gross Building)	
Name	Area
PODIUM LANDSCAPE SITE B	4634 m ²
PODIUM LANDSCAPE SITE A	1182 m ²
DEEP SOIL SITE A	2247 m ²
DEEP SOIL SITE B	3212 m ²

CONSOLIDATED DEEP SOIL	28%
SITE A	39%
SITE B	24%

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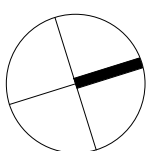
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25-33 WATER STREET,
STRATHFIELD

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COMMON OPEN SPACE AND
DEEP SOIL

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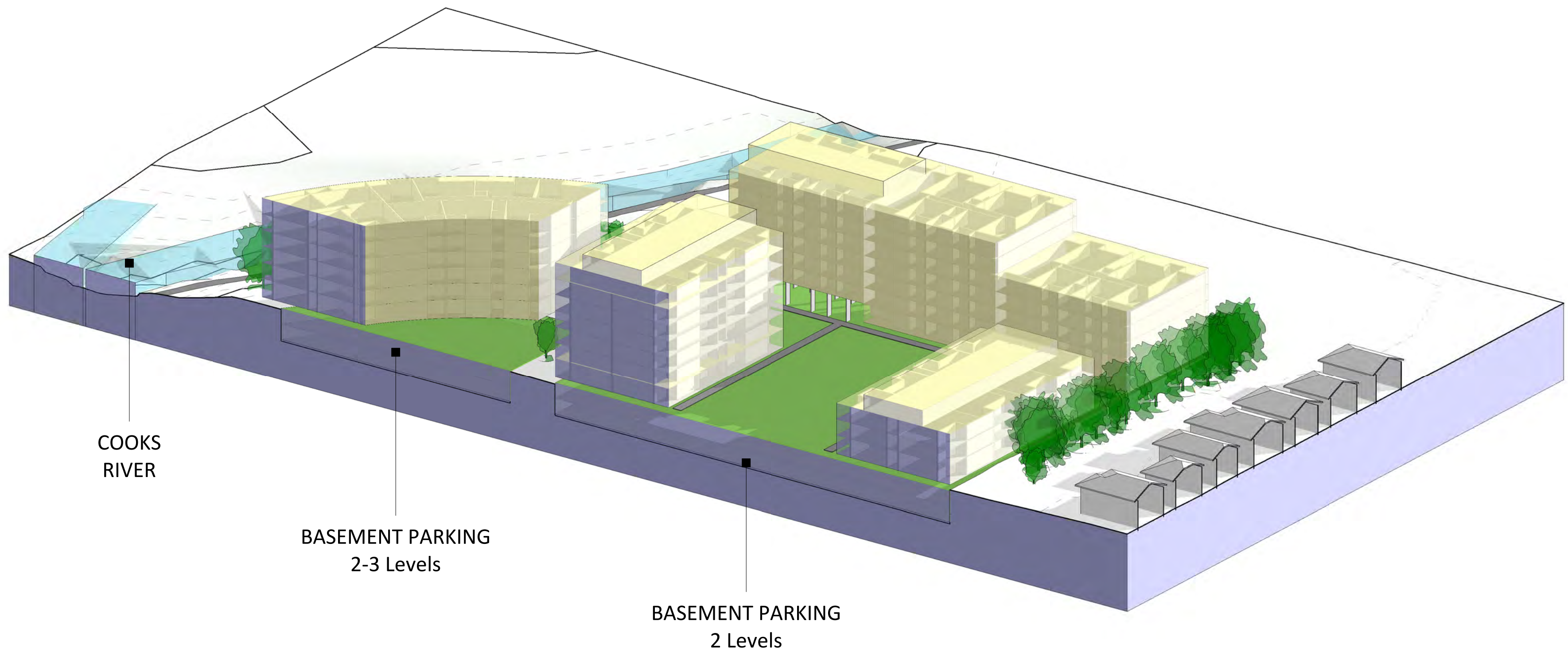
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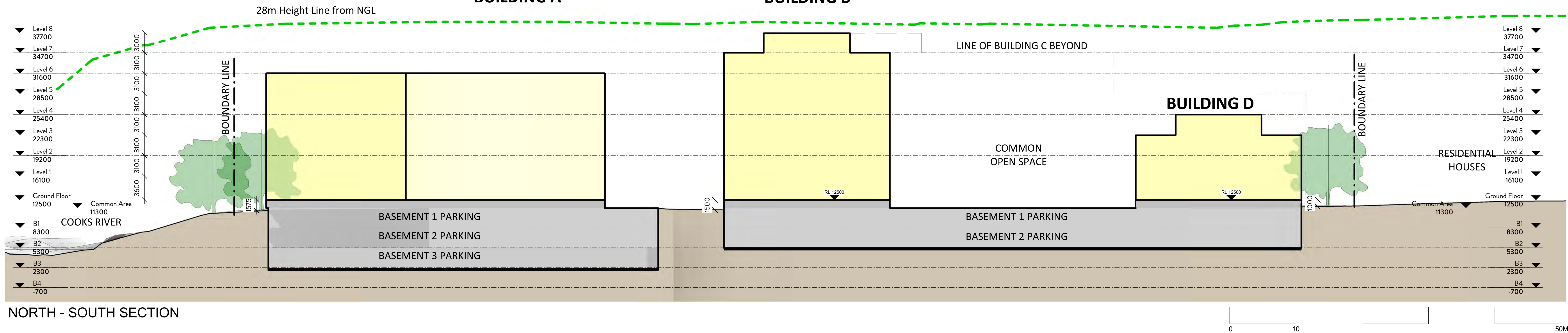
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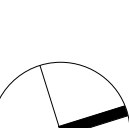
Development is composed of 5 building blocks with levels ranging from 3 to 8 residential levels and a maximum of 3 basement parking levels.



BUILDING B

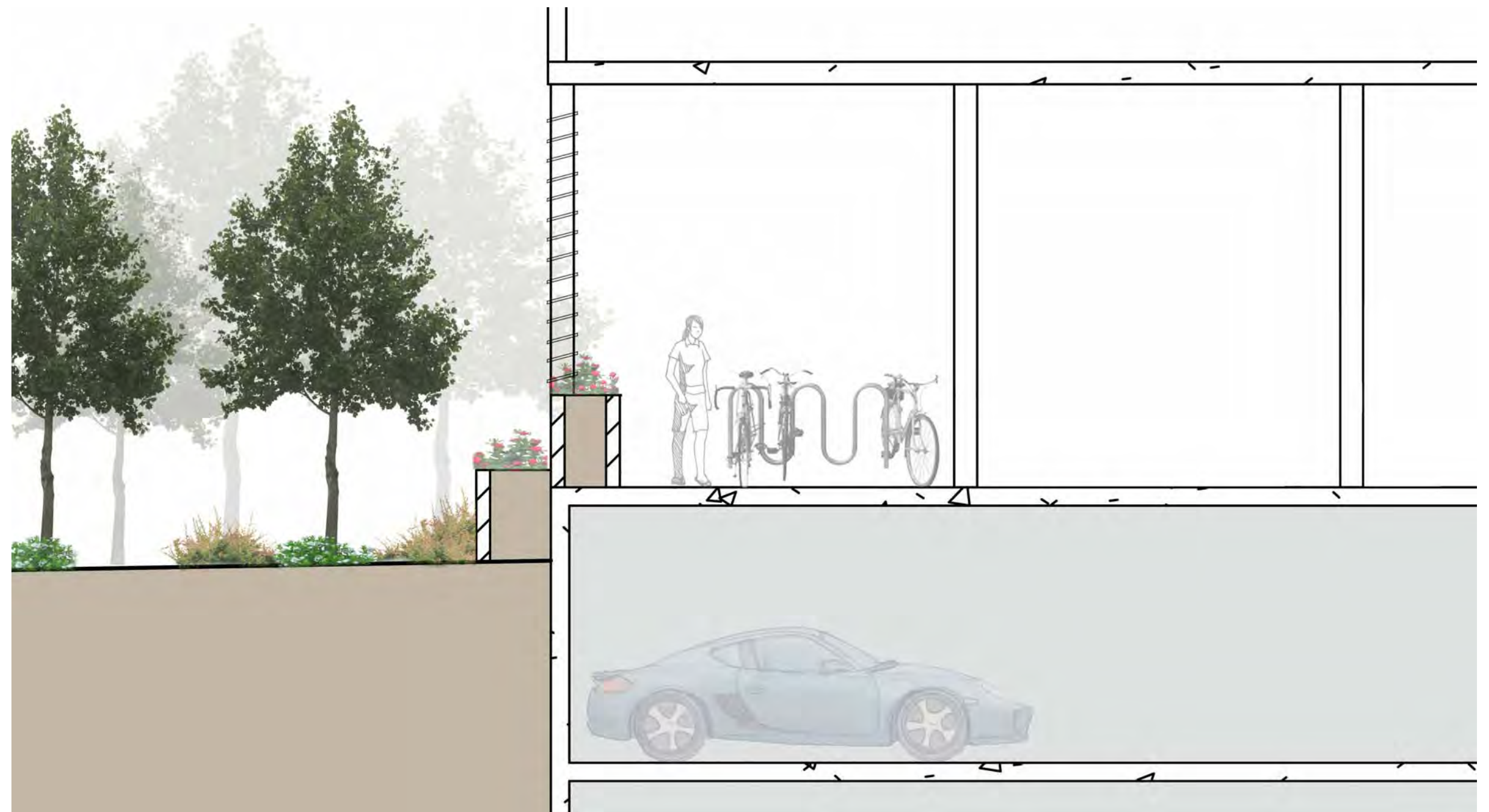


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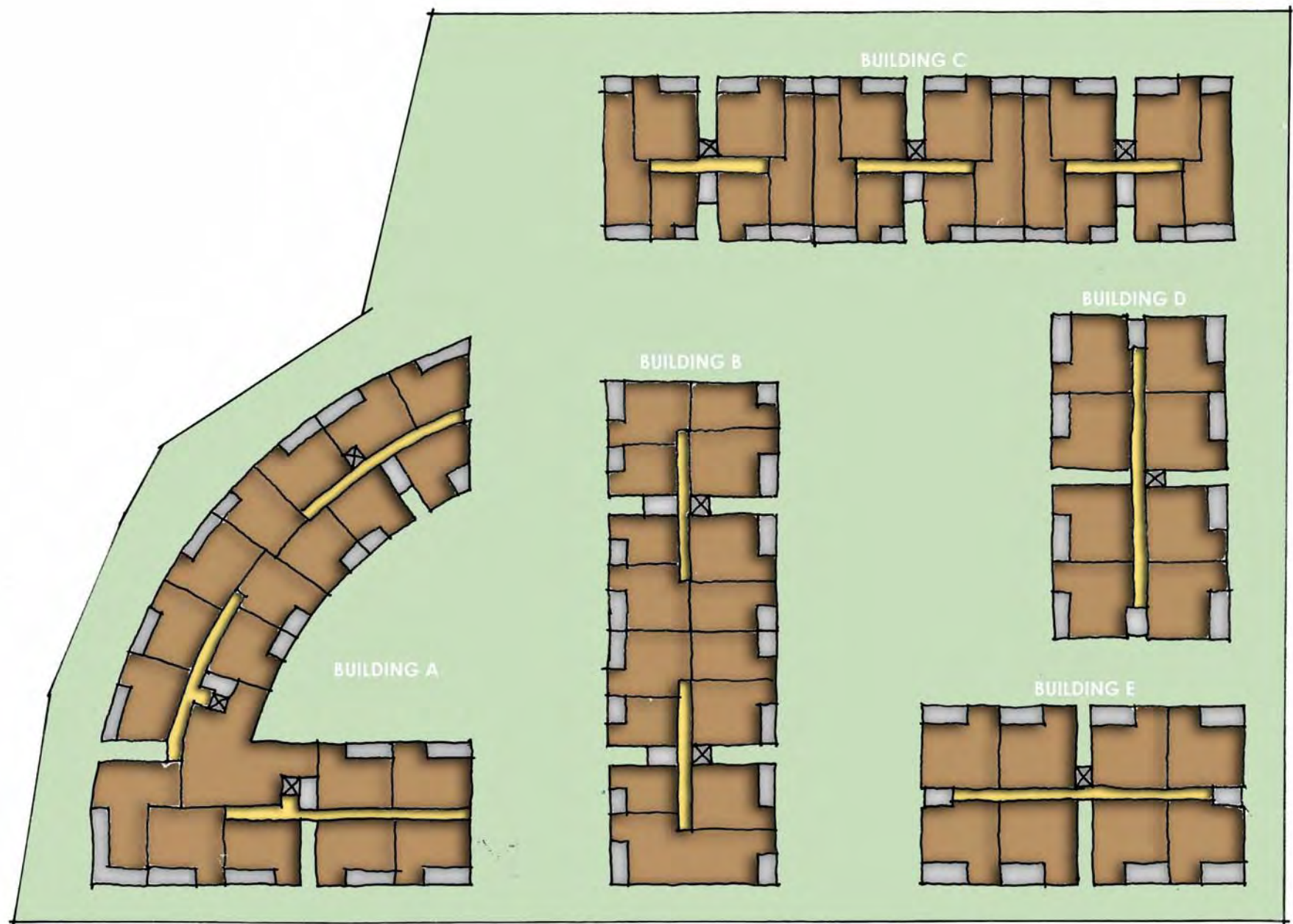
ARCHITECT ROBERTSON + MARKS EST 1892 Ground Level 11-17 Buckingham St. Surry Hills 2010 Australia t. (+61) 2 9319 4388 e. mail@marks.net.au www.marks.net.au ANDREW SCARVELIS • STEVEN COOK	CLIENT  CrownGroup	REVISIONS <table><tr><th>Issue</th><th>Date</th><th>Description</th><th>Rx</th></tr></table>	Issue	Date	Description	Rx	REVISIONS <table><tr><th>Issue</th><th>Date</th><th>Description</th><th>Rx</th></tr></table>	Issue	Date	Description	Rx	7-23 WATER STREET, STRATHFIELD & 25-33 WATER STREET, STRATHFIELD	TRUE NORTH 	DRAWING TITLE BUILDING HEIGHTS & MASS
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Issue	Date	Description	Rx											
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SECTION A



SECTION B



TYPICAL FLOOR LAYOUT

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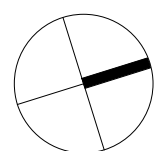
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25-33 WATER STREET,
STRATHFIELD

TRUE NORTH



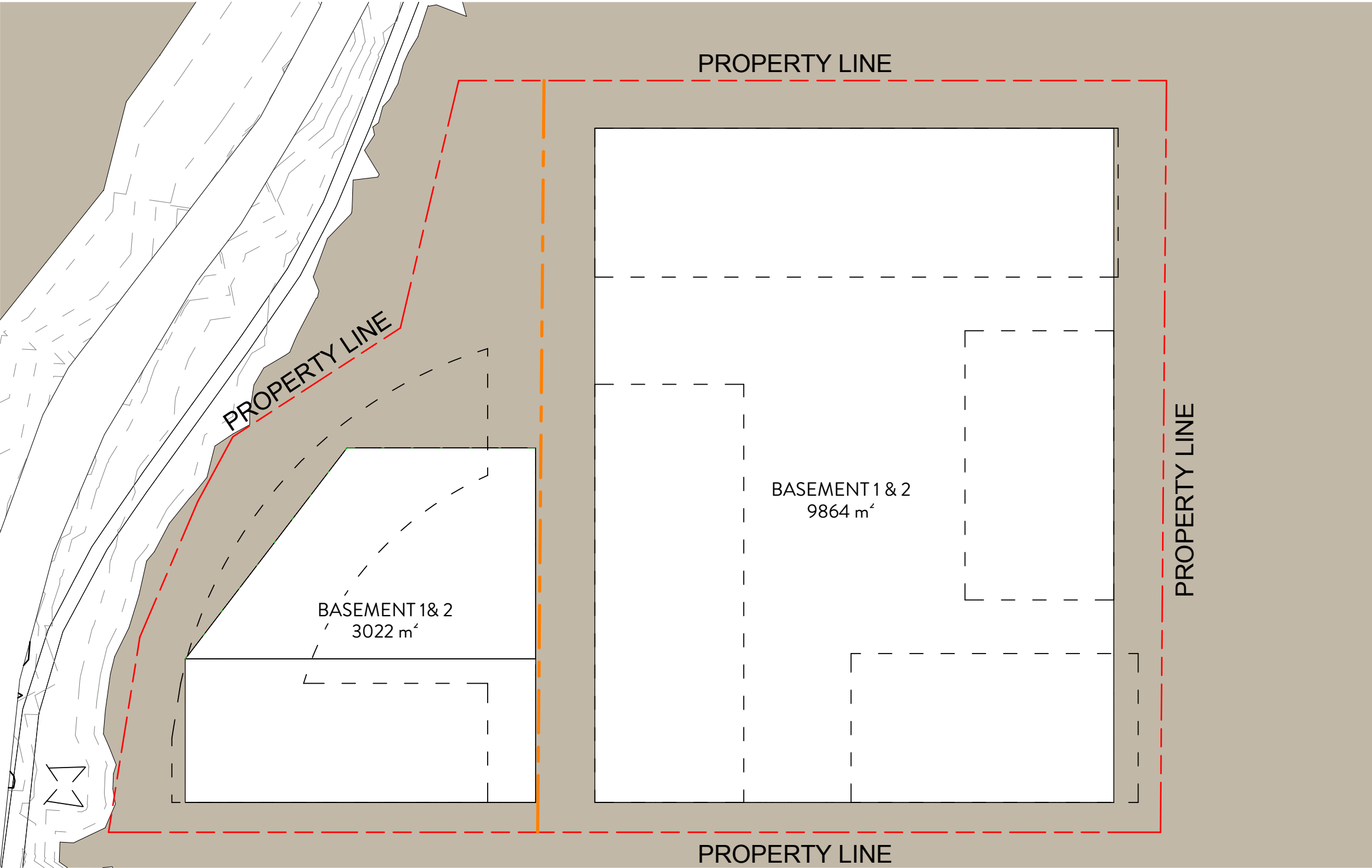
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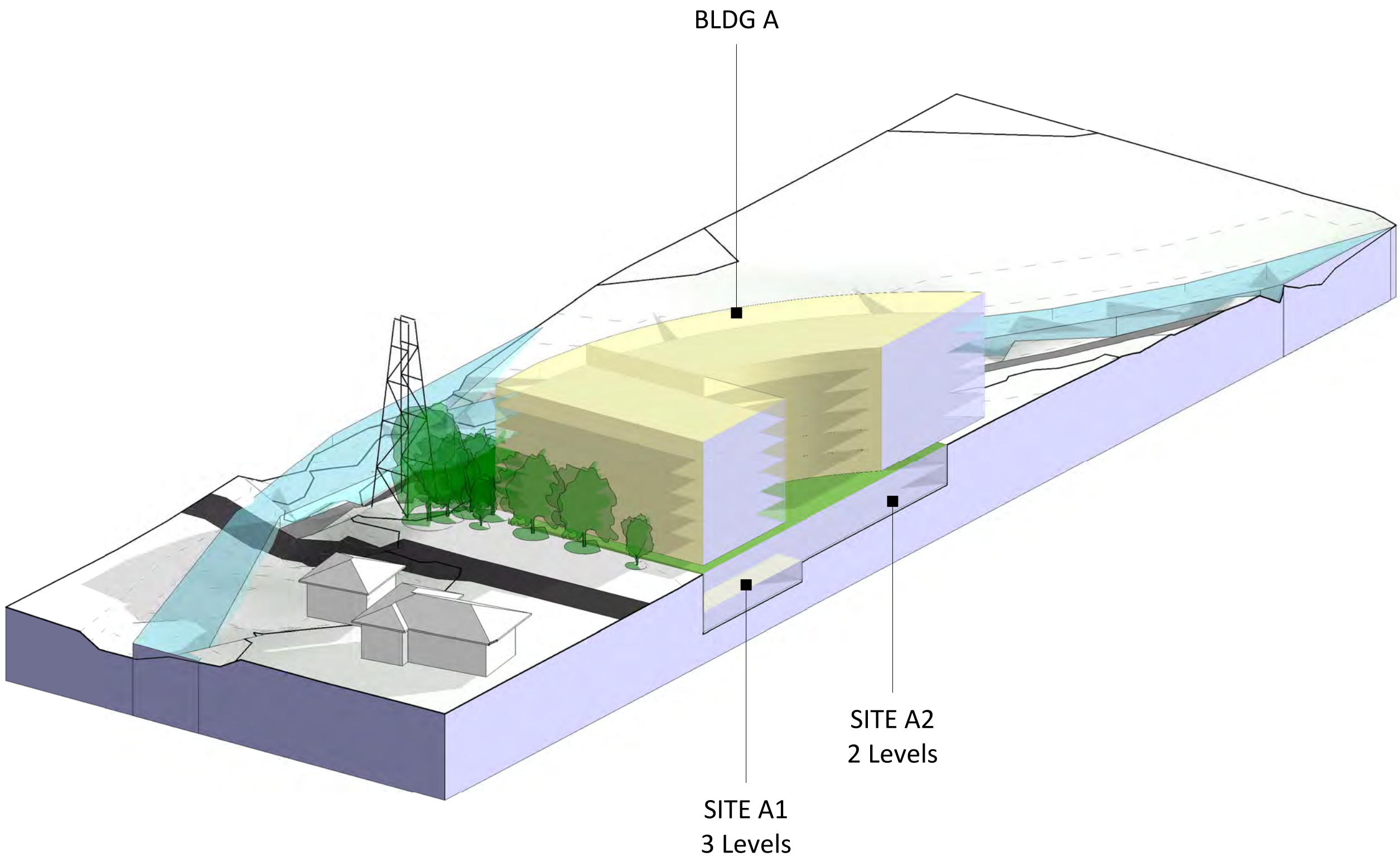
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BASEMENT 1 & 2



SITE A

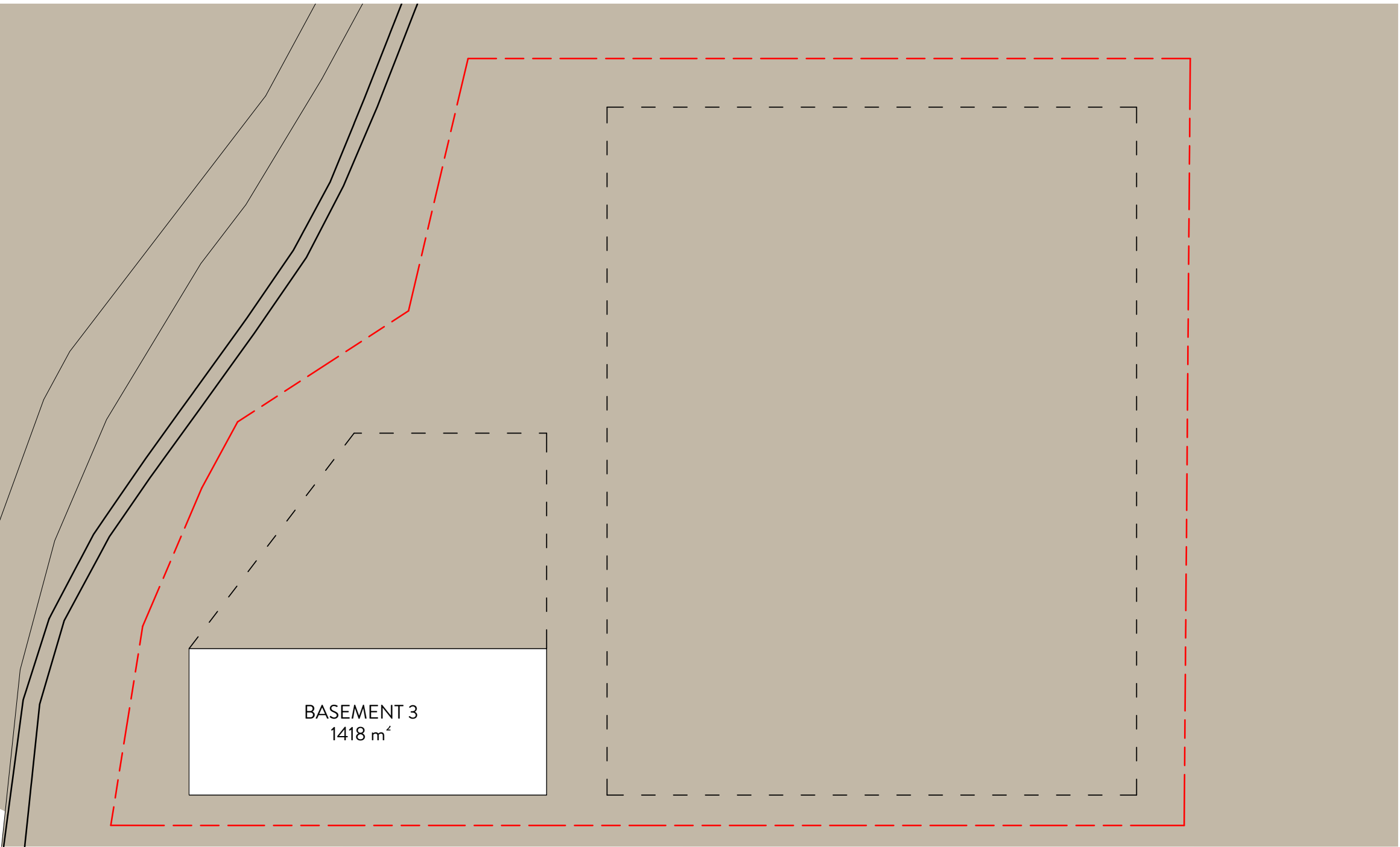
BASEMENT PARKING & CUT AND FILL SCHEDULE

Site A:
3 Levels of parking

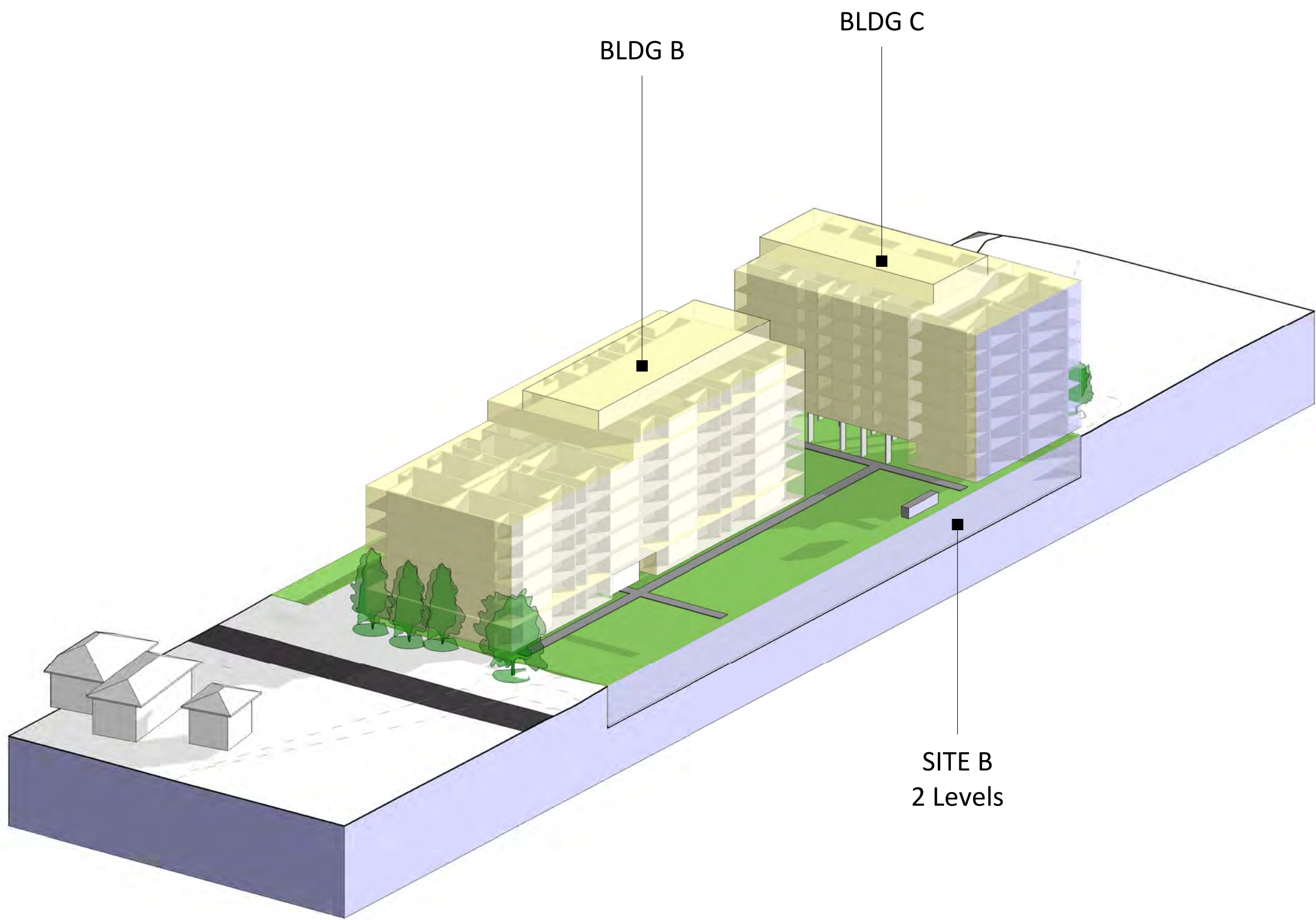
Site B:
2 Levels of parking

Cut and Fill Schedule			
Name	Cut	Fill	Net cut/fill
Site A1	13068.24 m³	0.00 m³	-13068.24 m³
Site A2	10052.49 m³	0.00 m³	-10052.49 m³
Site B2	58586.89 m³	0.00 m³	-58586.89 m³
			-81707.61 m³

Cut and fill numbers are based on
3000mm floor to floor carpark heights



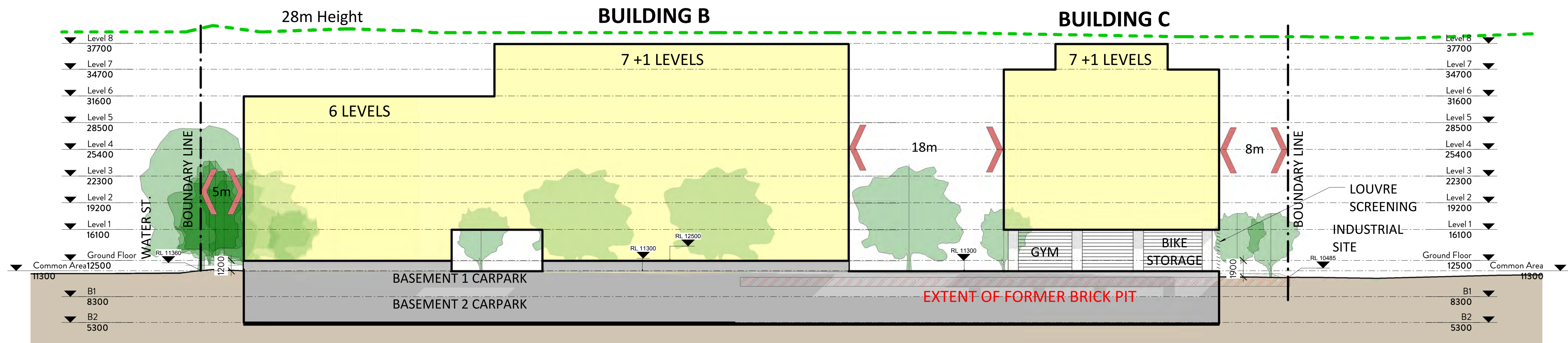
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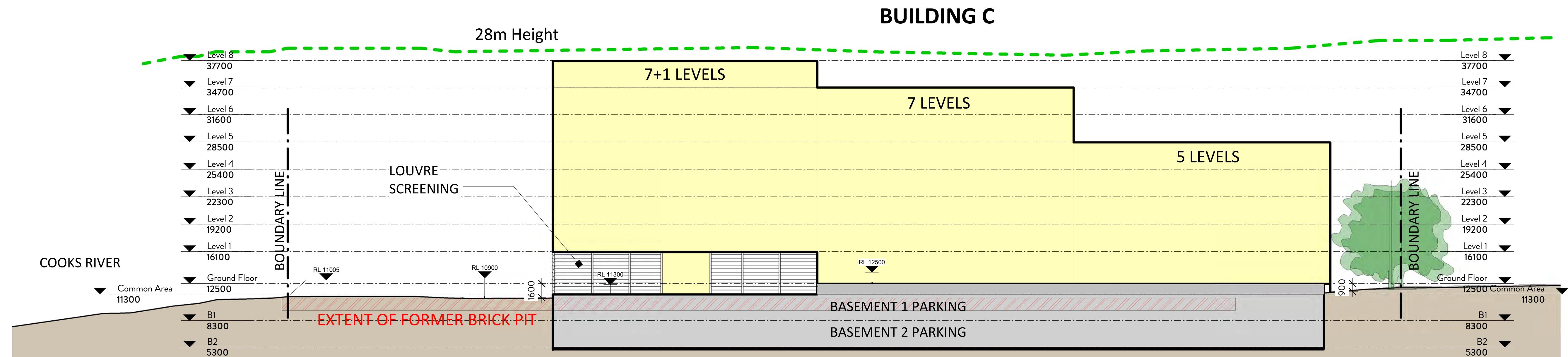
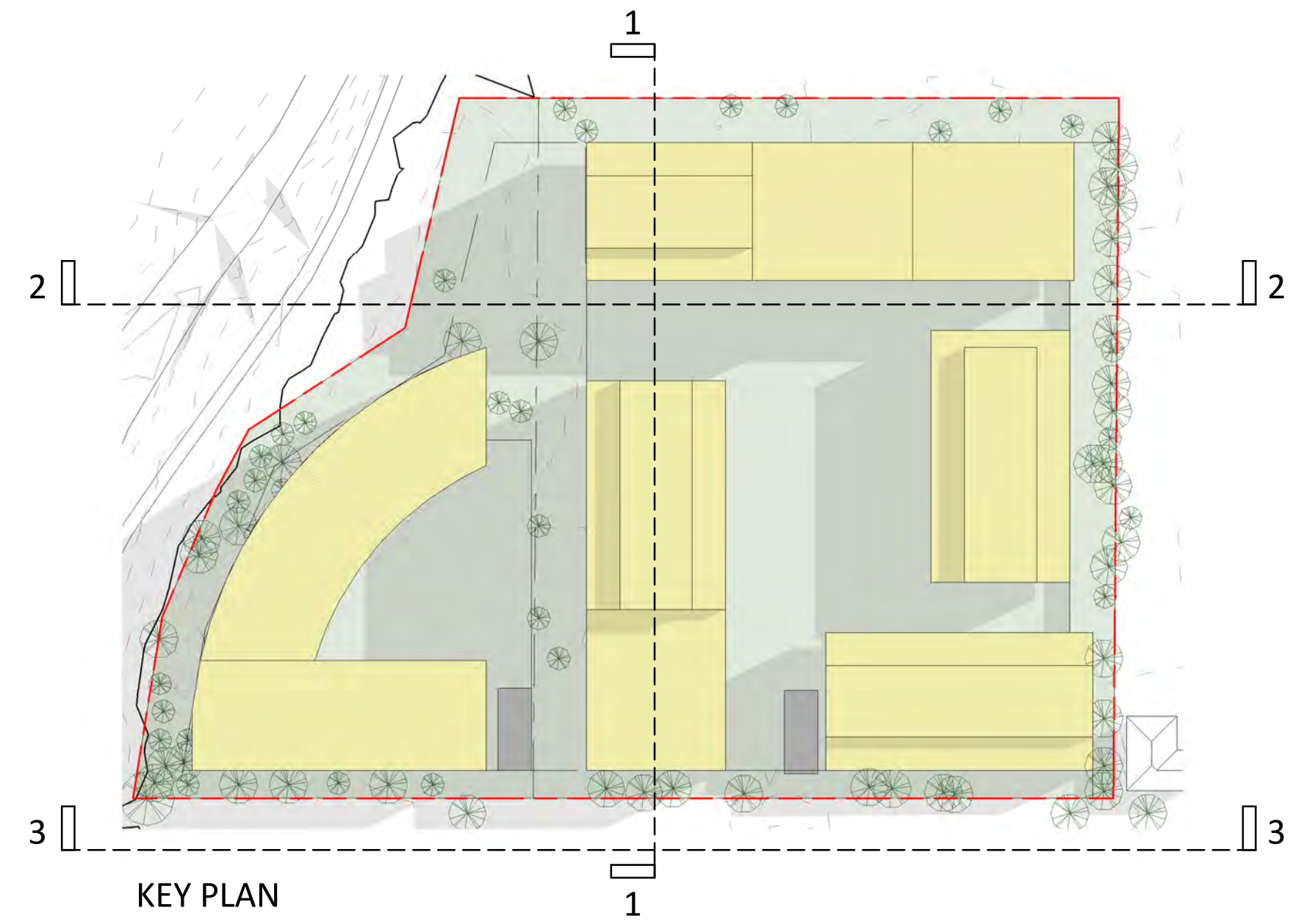
SITE B

PLANNING PROPOSAL

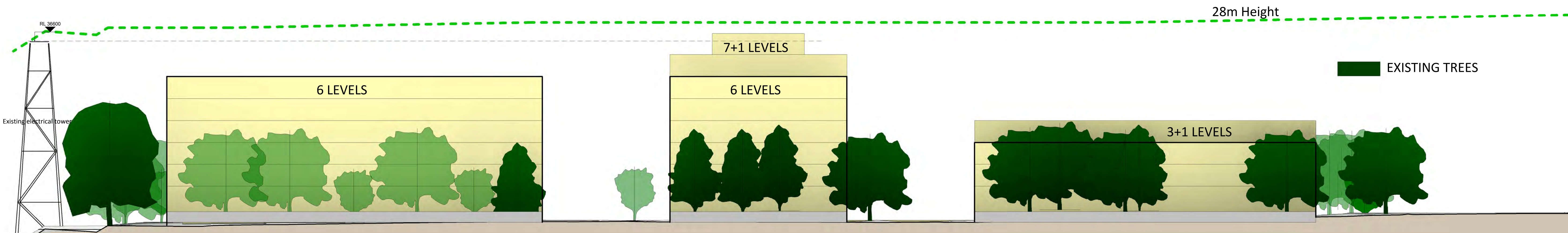
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						SCALE : 1 : 750 @B1 DATE : 27/01/16	Drawing Number AC-106/A		
						NOTES Dimensions - Contractors to check all dimensions on site prior to commencing construction. Do not scale from this drawing. Use given dimensions. Copyright © This document is copyright. All rights reserved.		ROBERTSON+MARKS	



1 Building Section 1
1 : 250



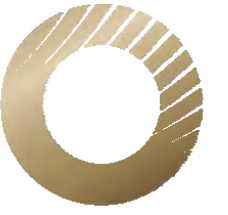
2 Building Section 2
1 : 250



3 FRONT ELEVATION (WATER STREET)
1 : 250

PLANNING PROPOSAL

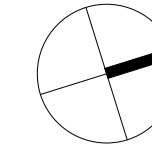
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REVISIONS
Issue Date Description Bx

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Issue Date Description Bx

7-23 WATER STREET,
STRATHFIELD &
25-33 WATER STREET,
STRATHFIELD

TRUE NORTH


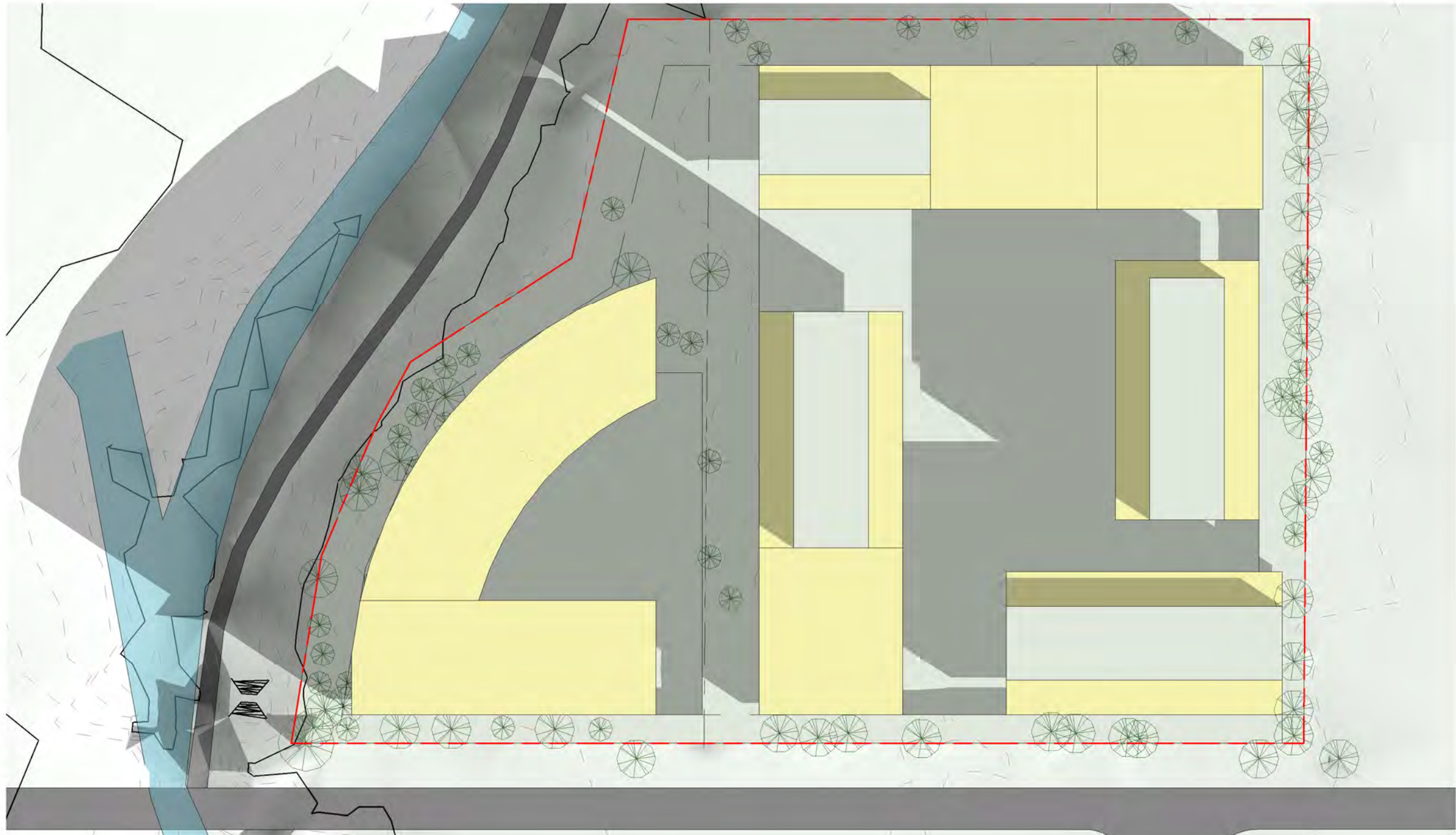
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SCALE : As indicated @B1
DATE : 27/01/16

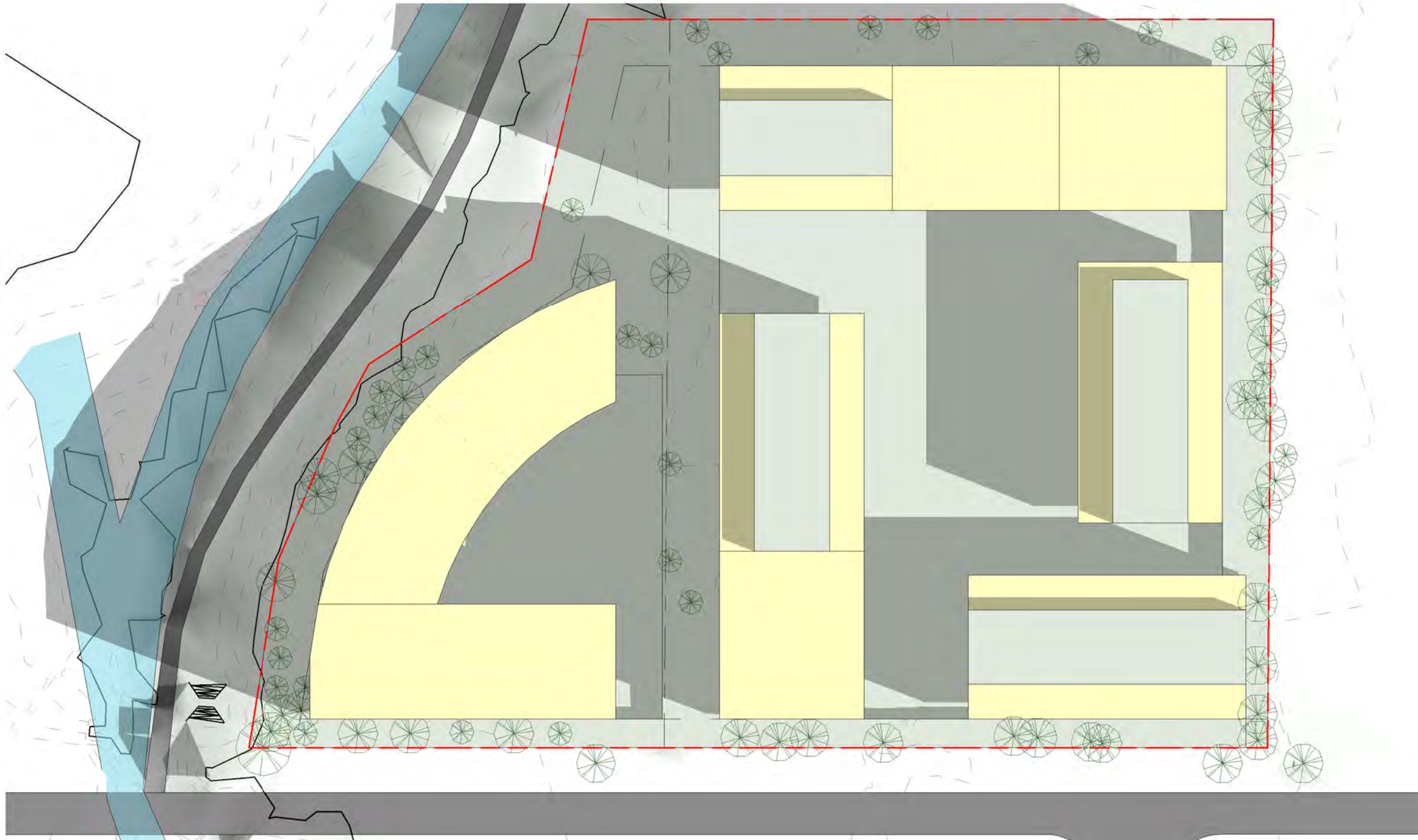
Drawing Number
AC-151/A

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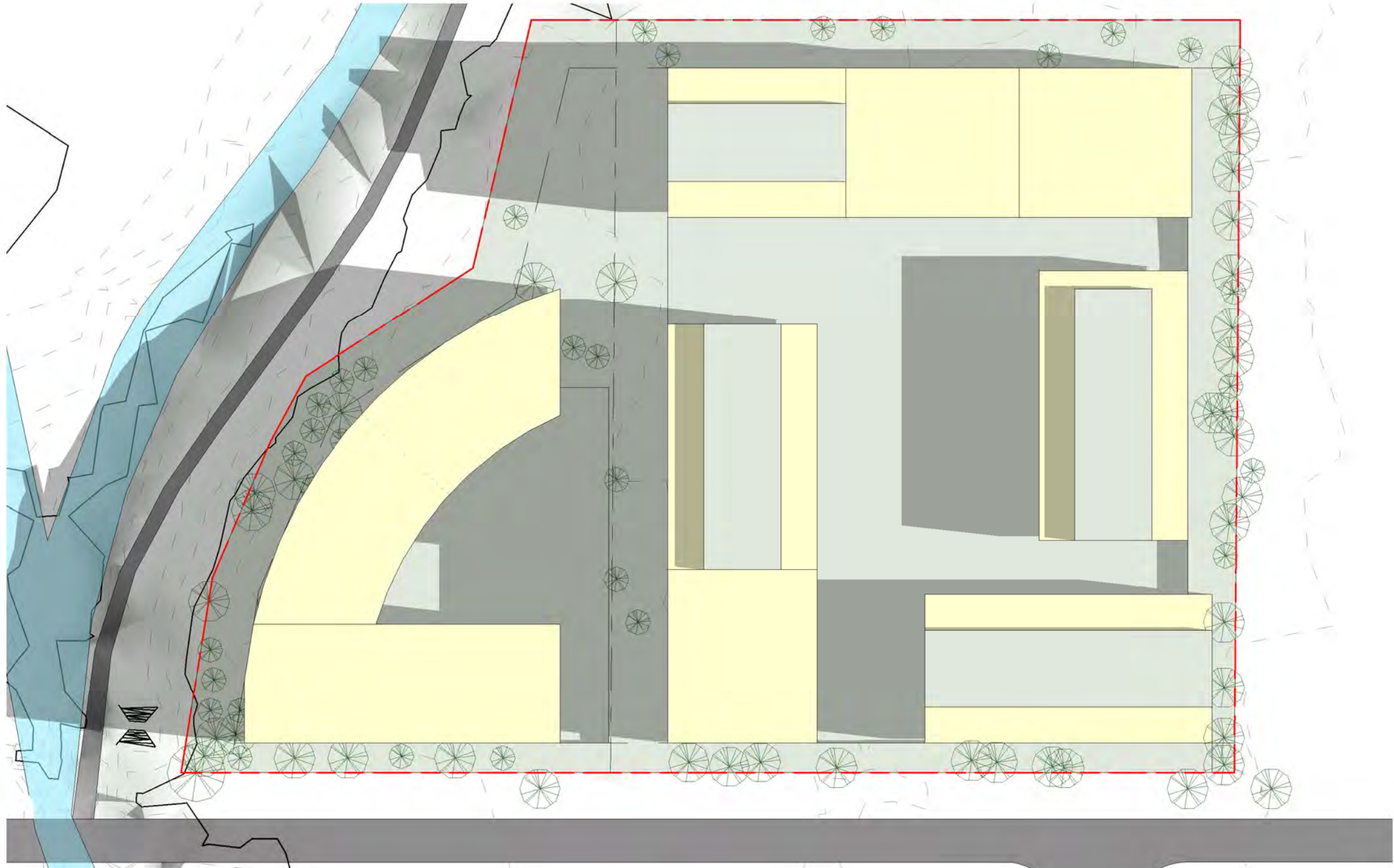
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1 SOLAR @ 0900
1 : 800



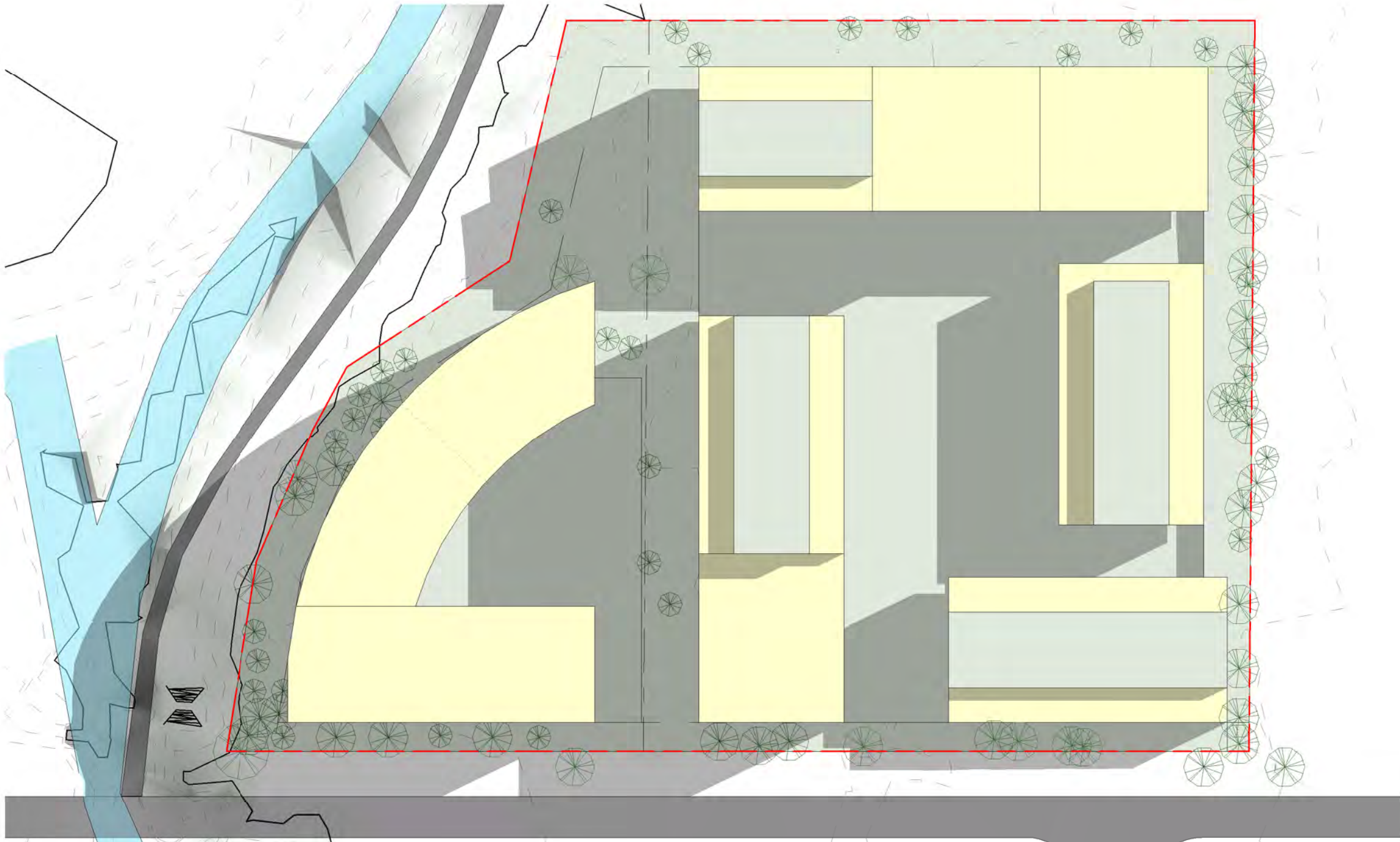
2 SOLAR @ 1000
1 : 800



3 SOLAR @ 1100
1 : 800



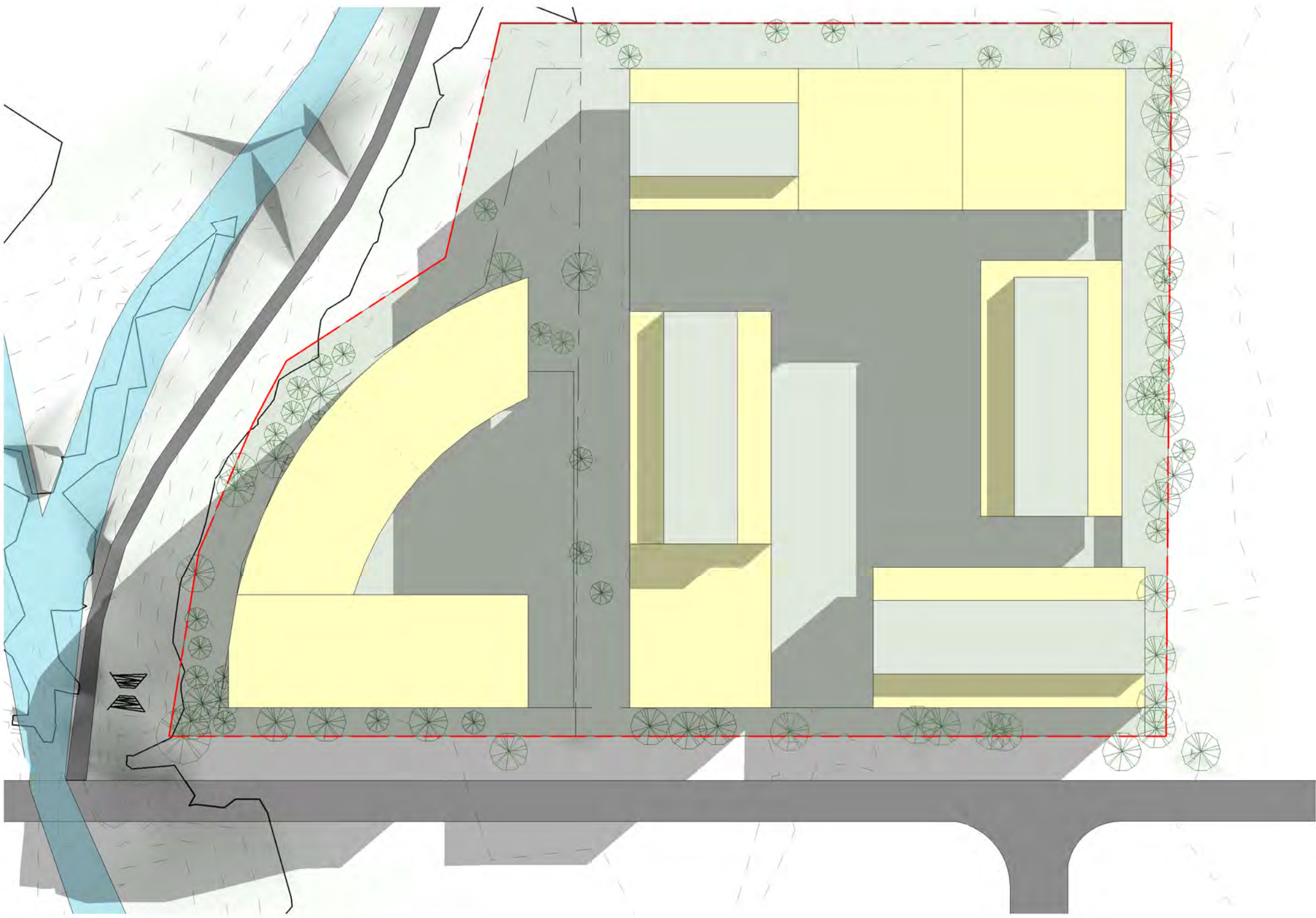
4 SOLAR @ 1200
1 : 800



5 SOLAR @ 1300
1 : 800



6 SOLAR @ 1400
1 : 800

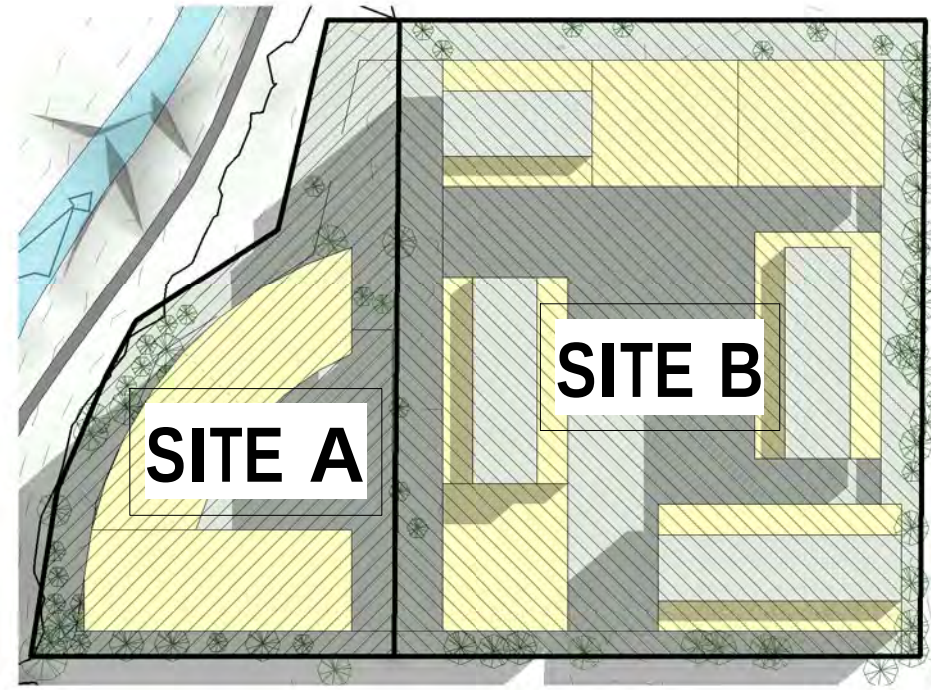


7 SOLAR @ 1500
1 : 800

SOLAR PERCENTAGE CALCULATION:

SITE A = 70% OF UNITS
SITE B = 73% OF UNITS

OVERALL = 71.5%



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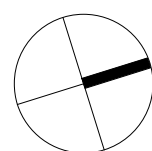
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REVISIONS

Issue Date Description

7-23 WATER STREET,
STRATHFIELD &
25-33 WATER STREET,
STRATHFIELD

TRUE NORTH



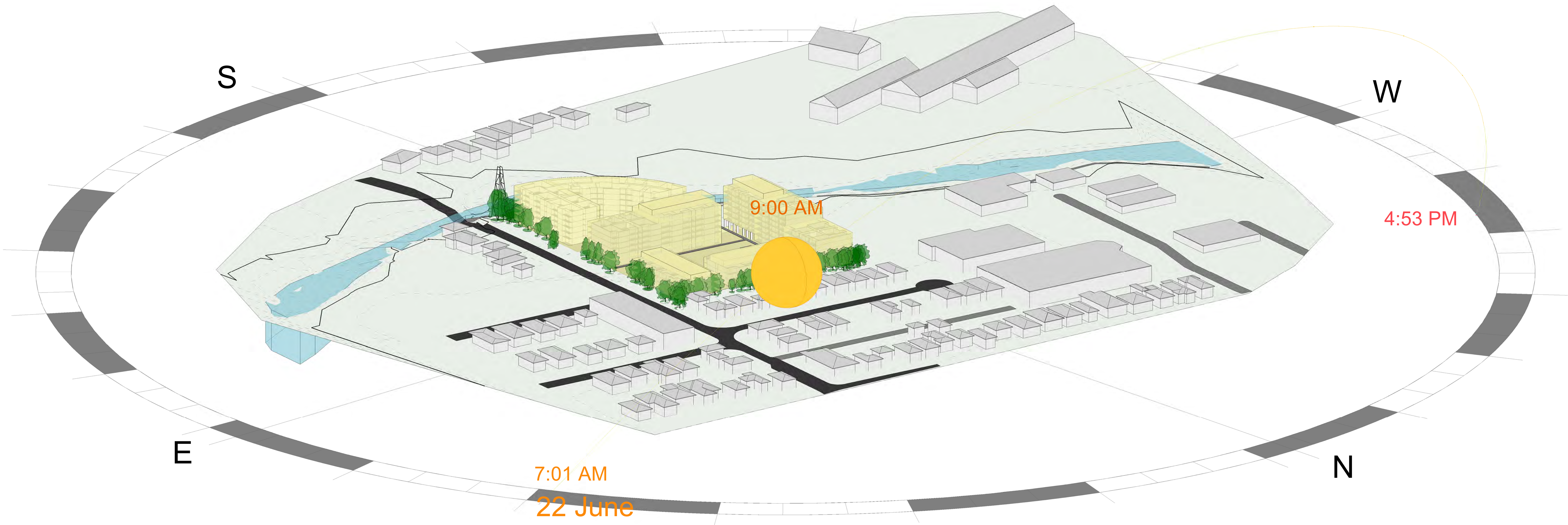
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SHADOW DIAGRAM

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DATE : 27/01/16

Drawing Number
AC-160/A

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1 SUN VIEW 0900 HRS

PLANNING PROPOSAL

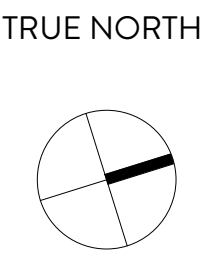
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Issue Date Description Bx

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25-33 WATER STREET,
STRATHFIELD



DRAWING TITLE
SUN VIEWS

SCALE : @B1
DATE : 27/01/16

Drawing Number
AC-801/A

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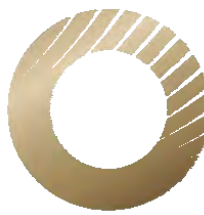
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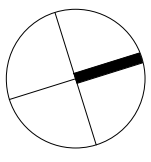
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Issue Date Description

7-23 WATER STREET,
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DRAWING TITLE
SUN VIEWS

SCALE : @B1
DATE : 27/01/16

Drawing Number
AC-802/A

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1 SUN VIEW 1100 HRS

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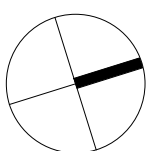
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REVISIONS

Issue Date Description

7-23 WATER STREET,
STRATHFIELD &
25-33 WATER STREET,
STRATHFIELD

TRUE NORTH



DRAWING TITLE
SUN VIEWS

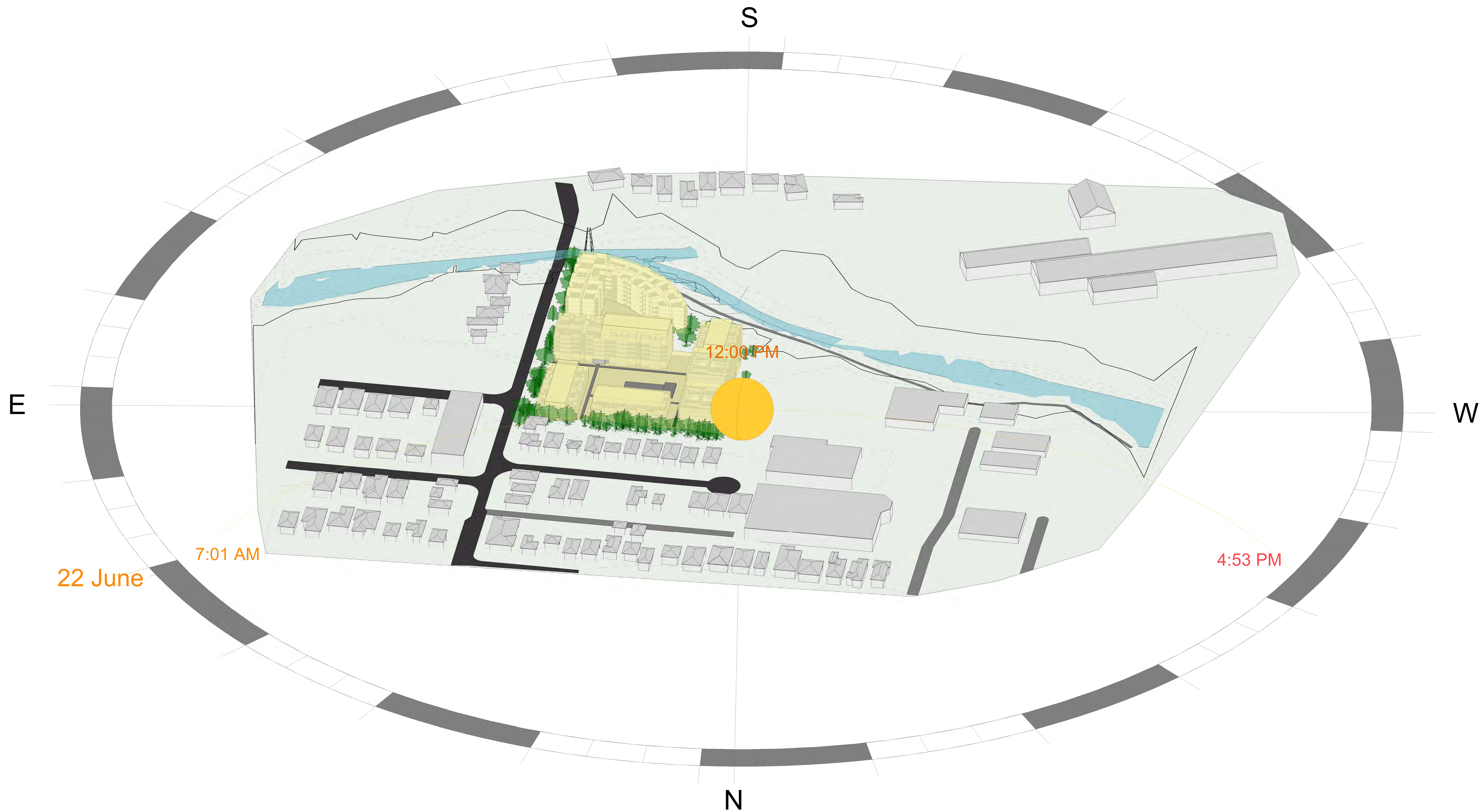
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DATE : 27/01/16

Drawing Number

AC-803/A

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1 SUN VIEW 1200 HRS

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Issue Date Description

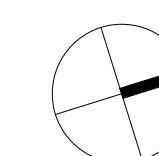
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Issue Date Description

7-23 WATER STREET,
STRATHFIELD &
25-33 WATER STREET,
STRATHFIELD

TRUE NORTH



DRAWING TITLE
SUN VIEWS

SCALE : @B1
DATE : 27/01/16

Drawing Number
AC-804/A

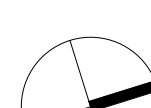
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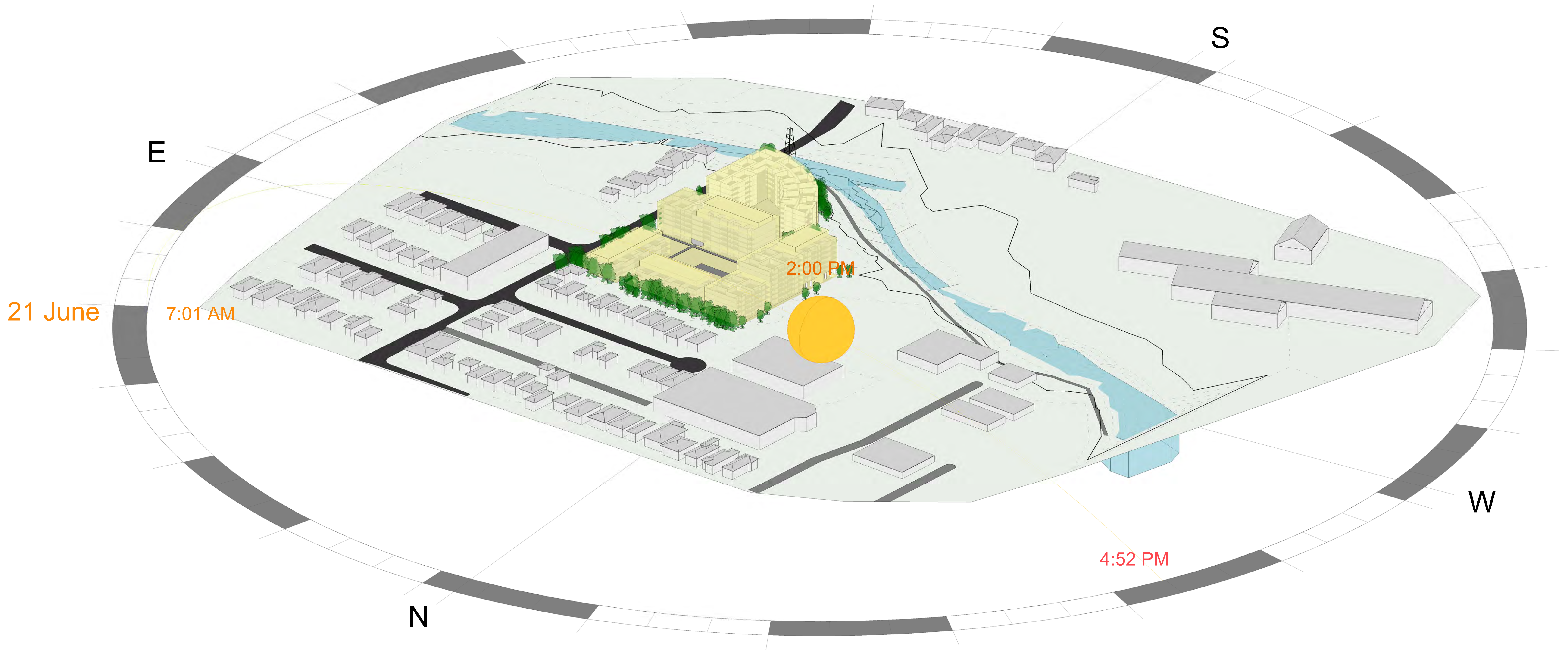
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1 SUN VIEW 1300 HRS

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1 SUN VIEW 1400 HRS

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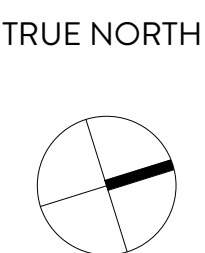
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7-23 WATER STREET,
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25-33 WATER STREET,
STRATHFIELD



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SUN VIEWS

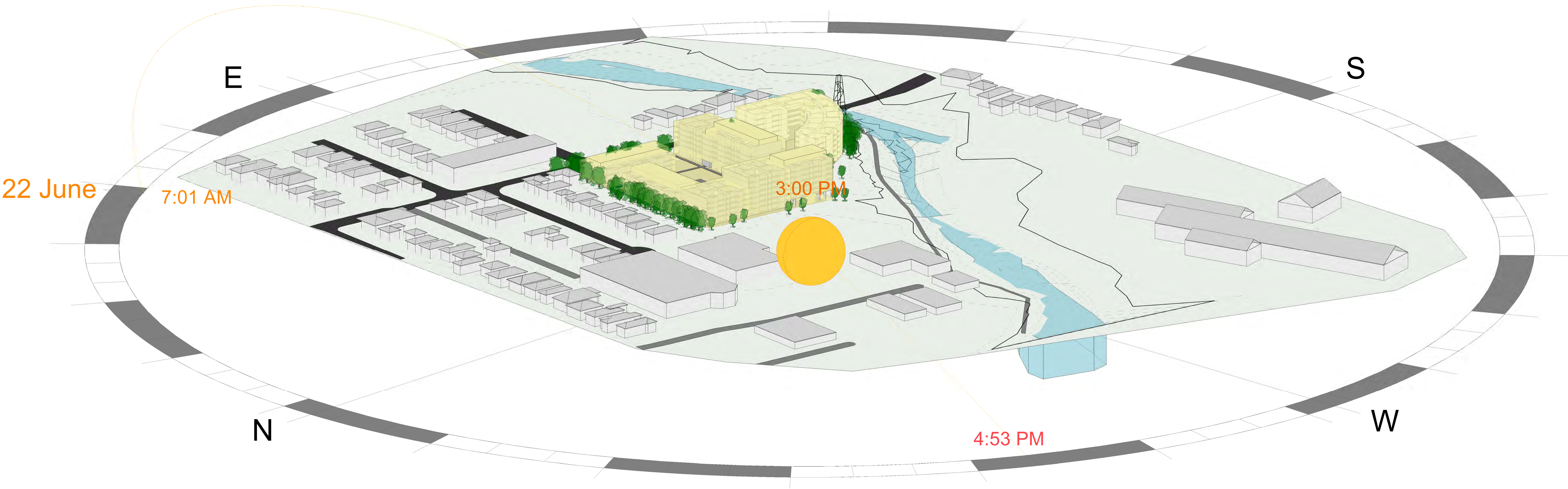
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AC-806/A

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1 SUN VIEW 1500 HRS

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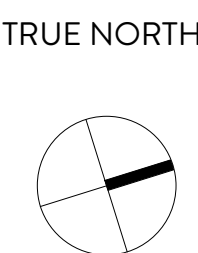
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ROBERTSON + MARKS
EST 1892
Ground Level 11-17 Buckingham St Surry Hills 2010 Australia
t. (+61) 2 9319 4388 e. mail@marks.net.au www.marks.net.au
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Issue Date Description Bx

7-23 WATER STREET,
STRATHFIELD &
25-33 WATER STREET,
STRATHFIELD



DRAWING TITLE
SUN VIEWS

SCALE : @B1
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Sydney A Level 6, 15 Help Street CHATSWOOD NSW 2067 PO Box 5254 WEST CHATSWOOD NSW 1515 P +612 8448 1800 E sydney@gta.com.au	Canberra A Tower A, Level 5, 7 London Circuit Canberra ACT 2600 P +612 6243 4826 E canberra@gta.com.au	Gold Coast A Level 9, Corporate Centre 2 Box 37, 1 Corporate Court BUNDALL QLD 4217 P +617 5510 4800 F +617 5510 4814 E goldcoast@gta.com.au	Perth A Level 27, 44 St Georges Terrace PERTH WA 6000 P +618 6361 4634 E perth@gta.com.au