

## **PINNACLE PLANNING**

**LOT 1362 MARITIME DRIVE  
JINDALEE**

## **DEVELOPMENT APPLICATION ACOUSTIC REPORT**

**SEPTEMBER 2022**

**OUR REFERENCE: 28867-2-21498**

DOCUMENT CONTROL PAGE

**DA ACOUSTIC REPORT**  
**LOT 1362 MARITIME DRIVE**  
**JINDALEE**

Job No: 21498

Document Reference: 28867-2-21498

FOR

**PINNACLE PLANNING**

**DOCUMENT INFORMATION**

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<b>Date of Issue:</b>	16 December 2021		

**REVISION HISTORY**

Revision	Description	Date	Author	Checked
1	Updated development application drawings	20/9/2022	GW	

**DOCUMENT DISTRIBUTION**

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## 1.0 INTRODUCTION

Herring Storer Acoustics was commissioned by Linic Pty Ltd, care of Pinnacle Planning, to conduct a preliminary review of the proposed development at Lot 1362 Maritime Drive, Jindalee.

This report has been based on the Development Application drawings provided.

## 2.0 PROPOSED DEVELOPMENT

The proposed development site is located at Lot 1362 Maritime Drive, Jindalee.

The development consists of an 8 floor building, with basement parking, commercial units on ground floor and 7 floors of apartments.

The following summarises the development:

### **Undercroft Level**

Parking.

### **Ground Level**

Residential Apartments.

Commercial Tenancy.

### **Levels 1 and 2**

Residential Apartments.

## 3.0 CRITERIA

### 3.1 BCA PROVISIONS

For Class 2 or 3 buildings, Part F5 of the National Construction Code (NCC), outlines the minimum acoustic isolation of apartments. The following summarises the acoustic criteria:

#### 3.1.1 Walls

Wet to wet	$R_W + C_{tr}$ not less than 50 dB.
Living to living	$R_W + C_{tr}$ not less than 50 dB.
Wet to living construction.	$R_W + C_{tr}$ not less than 50 dB plus discontinuous
Kitchens to living construction.	$R_W + C_{tr}$ not less than 50 dB plus discontinuous
SOU to Lobby	$R_W$ not less than 50 dB.

Note: Where kitchens are part of an open living area, we consider the kitchen to be part of the living area and in these cases a discontinuous construction is required. This also includes cases where kitchens are back-to-back, however, discontinuous construction is only required on one side.

### 3.1.2 Floors

Floors  $R_w + C_{tr}$  not less than 50 dB.

Impact Isolation  $L_{n,w}$  not more than 55 dB is recommended.

Note: The impact isolation criteria under the BCA is an  $L_{n,w}$  of not more than 62 dB. However, as a member firm of the Association of Australasian Acoustic Consultants, (AAAC) we recommend a criteria of an  $L_{n,w}$  of not more than 55 dB be adopted for a development of this type.

### 3.1.3 Service Risers

to Habitable Rooms  $R_w + C_{tr}$  not less than 40 dB.

to Non-Habitable Rooms  $R_w + C_{tr}$  not less than 25 dB.

### 3.1.4 Hydraulics

The above requirements also apply to storm water down pipes.

### 3.1.5 Doors

Door (Connecting to a lobby)  $R_w$  not less than 30 dB.

The development will be designed to comply with the requirements of Part F5 of the BCA.

## 3.2 ENVIRONMENTAL PROTECTION (NOISE) REGULATIONS 1997

The *Environmental Protection (Noise) Regulations 1997* stipulate the allowable noise levels at any noise sensitive premises from other premises. The allowable or assigned noise levels for noise sensitive premises are determined by the calculation of an influencing factor, which is added to the baseline criteria set out in Table 1 of the Regulations. The baseline assigned noise levels are listed in Table 3.1. For commercial premises, the allowable or assigned noise levels are the same for all hours of the day. Table 3.1 also lists the assigned noise levels for commercial premises.

**TABLE 3.1 – ASSIGNED NOISE LEVELS**

Premises Noise	Receiving	Time of Day	Assigned Level (dB)		
			$L_{A10}$	$L_{A1}$	$L_{Amax}$
Noise sensitive premises within 15 metres of a dwelling		0700 - 1900 hours Monday to Saturday	45 + IF	55 + IF	65 + IF
		0900 - 1900 hours Sunday and Public Holidays	40 + IF	50 + IF	65 + IF
		1900 - 2200 hours all days	40 + IF	50 + IF	55 + IF
		2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and Public Holidays	35 + IF	45 + IF	55 + IF

Note: The  $L_{A10}$  noise level is the noise that is exceeded for 10% of the time.  
 The  $L_{A1}$  noise level is the noise that is exceeded for 1% of the time.  
 The  $L_{Amax}$  noise level is the maximum noise level recorded.

It is a requirement that noise from the site be free of annoying characteristics (tonality, modulation and impulsiveness) at other premises, defined below as per Regulation 9.

- “impulsiveness”** means a variation in the emission of a noise where the difference between  $L_{Apeak}$  and  $L_{Amax Slow}$  is more than 15dB when determined for a single representative event.
- “modulation”** means a variation in the emission of noise that –
- (a) is more than 3dB  $L_{A Fast}$  or is more than 3dB  $L_{A Fast}$  in any one-third octave band;
  - (b) is present for more at least 10% of the representative assessment period; and
  - (c) is regular, cyclic and audible.
- “tonality”** means the presence in the noise emission of tonal characteristics where the difference between –
- (a) the A-weighted sound pressure level in any one-third octave band; and
  - (b) the arithmetic average of the A-weighted sound pressure levels in the 2 adjacent one-third octave bands,
- is greater than 3 dB when the sound pressure levels are determined as  $L_{Aeq,T}$  levels where the time period T is greater than 10% of the representative assessment period, or greater than 8 dB at any time when the sound pressure levels are determined as  $L_{A Slow}$  levels.

Where the above characteristics are present and cannot be practicably removed, the following adjustments are made to the measured or predicted level at other premises.

**TABLE 3.2 – ADJUSTMENTS FOR ANNOYING CHARACTERISTICS**

Where tonality is present	Where modulation is present	Where impulsiveness is present
+ 5 dB	+ 5 dB	+ 10 dB

From a review of the development, the influencing factor for this development would be 1 dB, based on the following:

<b>Commercial Premises within inner circle.</b>	
20%	+ 1 dB
<b>Total IF</b>	<b>+ 1 dB</b>

Hence the influencing factor would be + 1 dB and the assigned noise levels would be as listed in Table 3.3.

**TABLE 3.3 - ASSIGNED OUTDOOR NOISE LEVEL**

Premises Noise	Receiving	Time of Day	Assigned Level (dB)		
			L <sub>A10</sub>	L <sub>A1</sub>	L <sub>Amax</sub>
Noise sensitive premises within 15 metres of a dwelling		0700 - 1900 hours Monday to Saturday	46	56	66
		0900 - 1900 hours Sunday and Public Holidays	41	51	66
		1900 - 2200 hours all days	41	51	56
		2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and Public Holidays	36	46	56

Note: L<sub>A10</sub> is the noise level exceeded for 10% of the time.  
 L<sub>A1</sub> is the noise level exceeded for 1% of the time.  
 L<sub>Amax</sub> is the maximum noise level.

We note that noise emissions from the premises need to comply with the requirements of the *Environmental Protection (Noise) Regulations 1997*. This primarily consists of mechanical services associated with the development.

### 3.3 NOISE INGRESS

#### **Inbound Noise Levels**

Given the location of the development, there is no specific policy that is required to be met.

Notwithstanding the above, it is recommended that the ambient noise level is measured during the design development phase of the project with the internal noise level design criteria adopted from typical noise ingress policies.

The design sound levels would be:

- L<sub>eq</sub> 35 dB(A) in sleeping areas (bedrooms); and
- L<sub>eq</sub> 40 dB(A) in living/work areas and other habitable rooms.

### 4.0 BCA REQUIREMENTS

The proposed development will be constructed to comply with the requirements of Part F5 of the NCC.

### 5.0 NOISE FROM DEVELOPMENT

The main source of noise from the proposed development will be from mechanical services consisting of air-conditioning plant and perhaps carpark ventilation fans. Noise received at neighbouring premises, and premises within the development, from these items need to comply with the assigned noise levels as determined under the *Environmental Protection (Noise) Regulations 1997*.

#### 5.1 MECHANICAL SERVICES

The main source of noise from the proposed development will be from mechanical services consisting of car-park ventilation fans and air-conditioning plant. Noise received at residence (neighbours and residence within the development) from these items need to comply with the assigned noise levels as determined under the *Environmental Protection (Noise) Regulations 1997*.

As the mechanical services could operate during the night, noise emissions from the development needs to comply with the assigned  $L_{A10}$  night period noise level of 36 dB(A) at residential premises. Potentially, noise emissions from mechanical services could be tonal, in which case an +5 dB(A) penalty for a tonal component could be applied to the resultant noise levels. Therefore, the design level at the neighbouring residential premises would be 31  $L_{A10}$  dB.

#### 5.1.1 Apartments

The air conditioning for the apartments is not yet known.

Once the design of the system is finalised, an acoustic assessment will be carried out of noise emissions from the mechanical plant and any noise amelioration required will be incorporated into the design to ensure compliance with the *Environmental Protection (Noise) Regulations 1997*.

#### 5.1.2 Car Park Exhaust Fan

Noise emissions from carpark exhaust fans, or indeed if any mechanical ventilation is required, will also need to comply with the Regulatory requirements. From previous projects, we believe that with careful fan selection and the incorporation of either 1D or 2D unpadded silencers, compliance with the *Environmental Protection (Noise) Regulations 1997* is normally achieved.

An assessment of noise emissions will be carried out once equipment has been selected and submitted for approval.



# **APPENDIX A**

## **DEVELOPMENT APPLICATION PLANS**

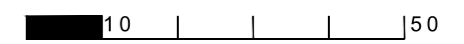
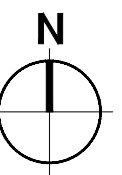


LOT 1362 MARITIME DRIVE, JINDALEE - 02/09/2022 - DA

PROEKT  
ARCHITECTURE



LOCATION PLAN



SCALE  
1:200 @ A1

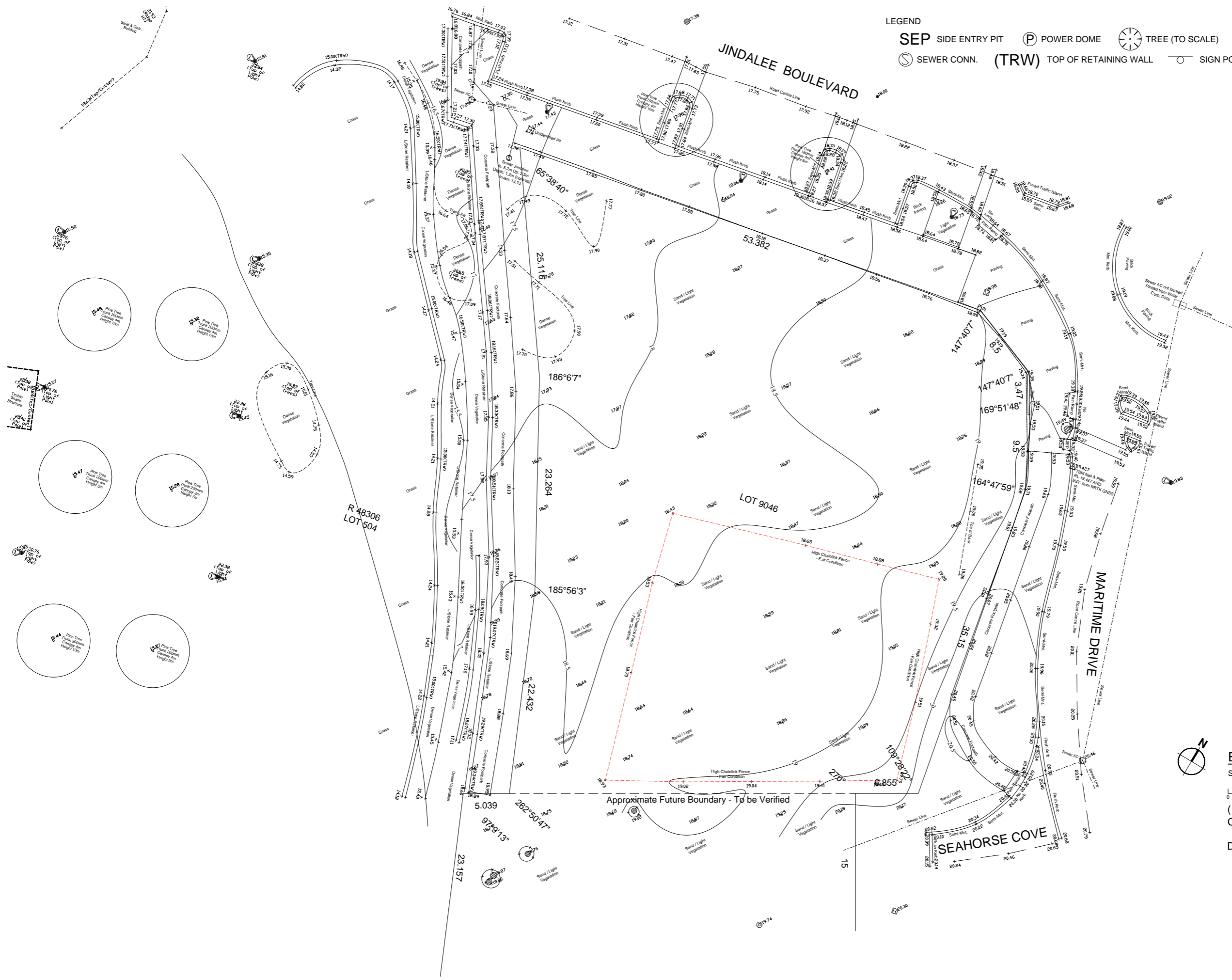
PROJECT TITLE  
SAUNTON JINDALEE  
LOT 1362 MARITIME DRIVE, JINDALEE  
02/09/2022

PROEKT  
ARCHITECTURE

PROJECT #  
2066  
DRAWING #  
SK01

LEGEND

- SEP SIDE ENTRY PIT
- (P) POWER DOME
- (T) TREE (TO SCALE)
- (Δ) TEMP. BENCHMARK
- (D) DRAINAGE AC
- (S) SEWER CONN.
- (TRW) TOP OF RETAINING WALL
- (O) SIGN POLE
- (L) LIGHT POLE
- (H) HYDRANT
- (V) VALVE



**EXISTING SITE SURVEY / DEMO PLAN**  
 SCALE 1:200 @ A1  
 0 10m  
 ( UNDERTAKEN BY VISION SURVEYS  
 CONSULTING ON 21/10/2021  
 DEMOLITION SHOWN IN RED )

SCALE  
 1:500 @ A1

PROJECT TITLE  
**SAUNTON JINDALEE**  
 LOT 1362 MARITIME DRIVE, JINDALEE  
 02/09/2022

PROJECT #  
 2066  
 DRAWING #  
**PROEKT**  
 ARCHITECTURE  
 SK02

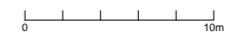
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LEGEND

- SEP SIDE ENTRY PIT
- (P) POWER DOME
- (T) TREE (TO SCALE)
- (Δ) TEMP. BENCHMARK
- (D) DRAINAGE AC
- (S) SEWER CONN.
- (TRW) TOP OF RETAINING WALL
- (O) SIGN POLE
- (L) LIGHT POLE
- (H) HYDRANT
- (V) VALVE



**SITE PLAN**  
SCALE 1:200 @ A1



LEGENDS

- (Solid Grey) BUILDING FORM
- (Grid Pattern) BALCONIES AND WALKWAYS

SCALE  
1:200 @ A1

PROJECT TITLE  
**SAUNTON JINDALEE**  
LOT 1362 MARITIME DRIVE, JINDALEE  
02/09/2022

PROJECT #  
2066  
DRAWING #  
**PROEKT**  
ARCHITECTURE  
SK03

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TOTAL : 47 APARTMENTS

DAYLIGHT AND VENTILATION

41/47 - 87% APARTMENTS RECEIVE MORE THAN 2hr OF SUNLIGHT  
 47/47 - 100% APARTMENTS ARE CAPABLE OF BEING CROSS VENTILATED

PLOT RATIO = 1.26

FLOOR AREA = 3877m<sup>2</sup>  
 SITE AREA = 3080m<sup>2</sup>

- 10x SHORT STAY ACCOMMODATION **A**
  - BED x 1
  - BATH x 1
- 3x APARTMENT TYPE **B**
  - BED x 1
  - STUDY x 1
  - BATH x 1
- 21x APARTMENT TYPE **C**
  - BED x 2
  - BATH x 2
- 3x APARTMENT TYPE **D**
  - BED x 2
  - BATH x 2
- 3x APARTMENT TYPE **E**
  - BED x 3
  - BATH x 2
- 1x APARTMENT TYPE **F**
  - BED x 3
  - BATH x 2
- 3x APARTMENT TYPE **G**
  - BED x 2
  - STUDY x 1
  - BATH x 2
- 3x APARTMENT TYPE **H**
  - BED x 3
  - BATH x 2



**UNDERCROFT FLOOR PLAN**  
 SCALE 1:200 @ A1



**GROUND FLOOR PLAN**  
 SCALE 1:200 @ A1

- LEGENDS**
- > PATH OF CROSS VENTILATION
  - > STREET ENGAGEMENT
  - HIGH WALL MOUNTED BICYCLE RACK

TOTAL : 47 APARTMENTS

DAYLIGHT AND VENTILATION

PLOT RATIO = 1.26

41/47 - 87% APARTMENTS RECEIVE MORE THAN 2hr OF SUNLIGHT

FLOOR AREA = 3877m<sup>2</sup>

47/47 - 100% APARTMENTS ARE CAPABLE OF BEING CROSS VENTILATED

SITE AREA = 3080m<sup>2</sup>

10x  
SHORT STAY  
ACCOMMODATION **A**

BED x 1  
BATH x 1

3 x  
APARTMENT TYPE **B**

BED x 1  
STUDY x 1  
BATH x 1

21 x  
APARTMENT TYPE **C**

BED x 2  
BATH x 2

3 x  
APARTMENT TYPE **D**

BED x 2  
BATH x 2

3 x  
APARTMENT TYPE **E**

BED x 3  
BATH x 2

1 x  
APARTMENT TYPE **F**

BED x 3  
BATH x 2

3 x  
APARTMENT TYPE **G**

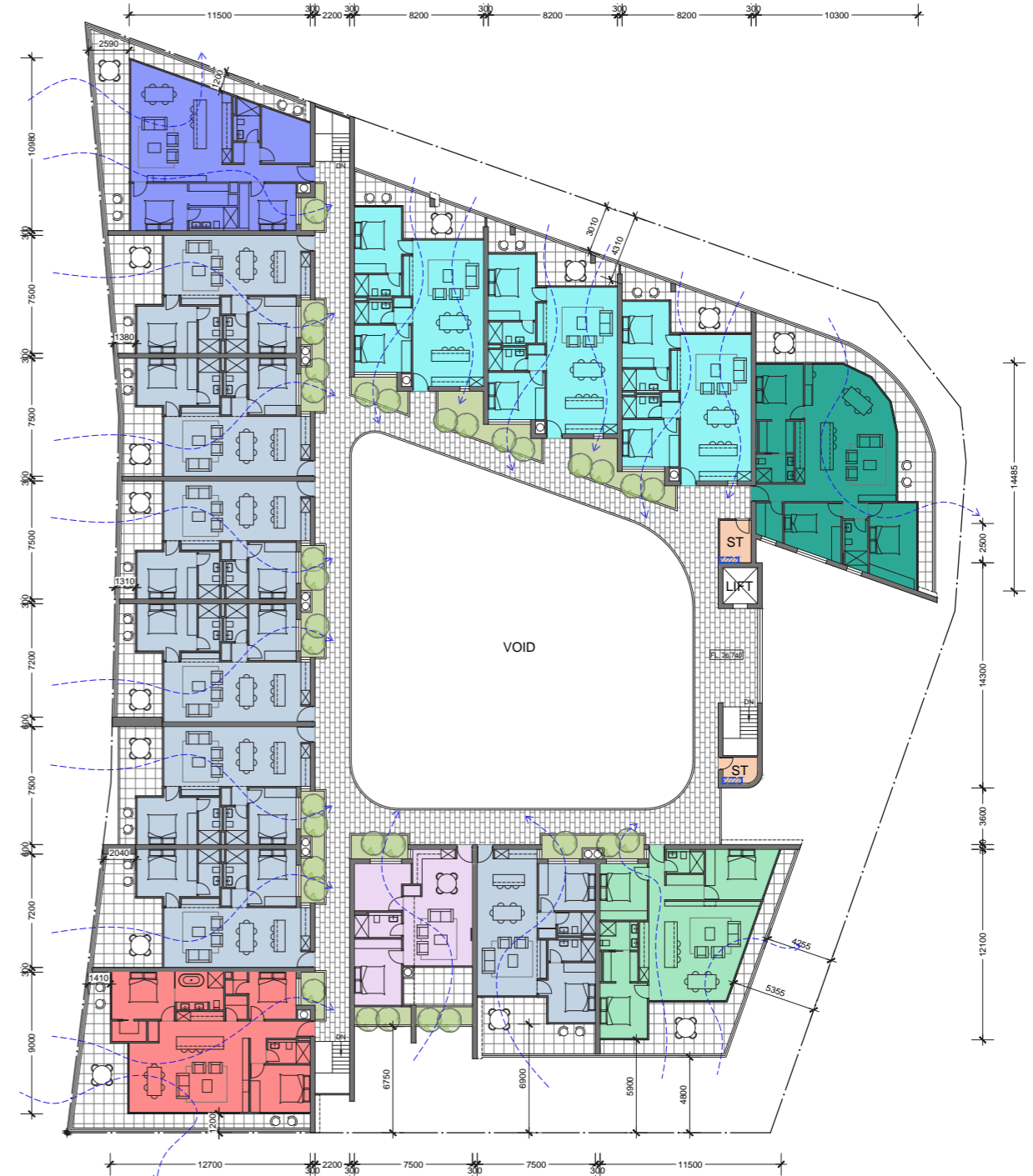
BED x 2  
STUDY x 1  
BATH x 2

3 x  
APARTMENT TYPE **H**

BED x 3  
BATH x 2



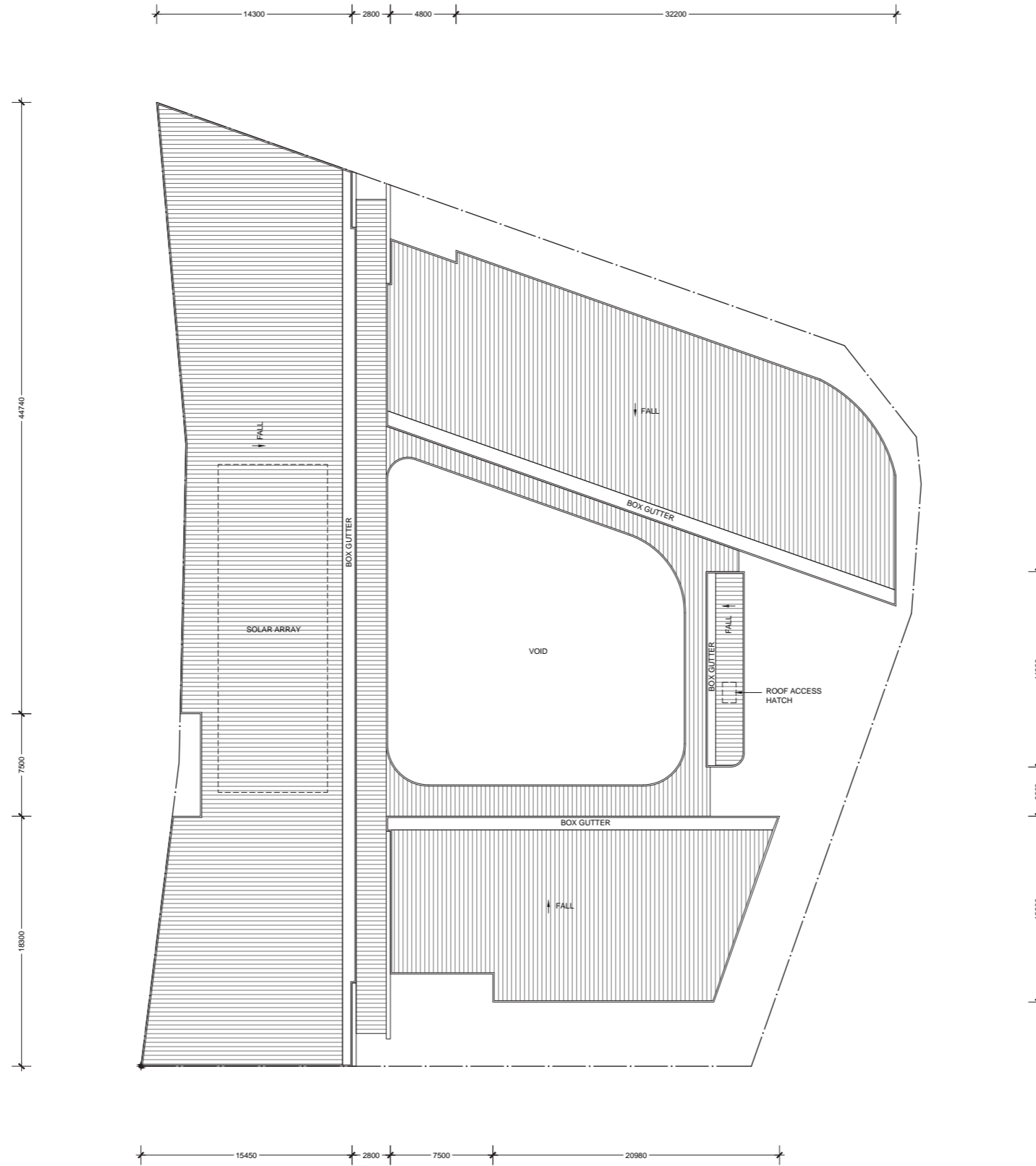
FIRST FLOOR PLAN  
SCALE 1:200 @ A1



GROUND FLOOR PLAN  
SCALE 1:200 @ A1

LEGENDS

- > PATH OF CROSS VENTILATION
- > STREET ENGAGEMENT
- HIGH WALL MOUNTED BICYCLE RACK



**ROOF PLAN**  
SCALE 1:200 @ A1

