FLOOD RISK MANAGEMENT PLAN

FLOOD RISK MANAGEMENT REPORT

62 Old Barrenjoey Road
AVALON

23 July 2021

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1. INTRODUCTION

The site has been identified by Northern Beaches Council as being flood affected for the 1 in 100 year storm event. This document details the measures to be taken to ensure that the risks to both the site buildings and occupants are minimised and managed in accordance with Council's DCP requirements.

It is the intention of the author that copies of this Flood Risk Management Report are kept by The Owner where it can be used to manage and prepare the site for a significant flood event.

It is also the intention that the Emergency Response Plan and associated signage be fixed to the wall in a clearly visible location in the existing premises.

The Owner will ultimately be responsible for the implementation of this plan and is responsible for ensuring tasks are undertaken or the delegation of those tasks.

2. SITE

The site is located in the Avalon area and is situated at the eastern end of the Avalon C.B.D. A site locality map is included in Appendix A.

The site covers 241 m^2 of area which grades evenly towards Old Barrenjoey Road to the west.

The site currently contains an existing single level commercial premises sitting on a concrete slab-on-ground. The premises has rear access from Edmund Hock Avenue.

3. PROPOSED DEVELOPMENT

It is proposed to demolish the existing building and construct a new 3 level building with commercial space on the ground floor with 2 residential units over.

Architectural details for the proposed works are contained in Appendix B.

4. FLOOD EVENTS

The site is identified as being flood affected for the 1 in 100 year storm event and maps illustrating the Council flood designations and data for the site are contained within Appendix C.

4.1 FORECASTS & WARNINGS

There are usually no specific warnings issued by the Bureau of Meteorology for Avalon and as such the monitoring of general warnings for the Sydney metropolitan area with respect to severe weather warnings will be critical in the process of managing risks to the site.

The Bureau of Meteorology website (www.bom.gov.au) has rainfall forecast maps and also any warnings for predicted severe weather events.

The Owner & other relevant occupants should have his/her mobile phone number added to the SES contact list for the issue of SMS alerts for severe weather warnings.

4.2 FLOOD DATA FOR THE SITE

The site is defined by Northern Beaches Council as being affected by the 1 in 100 year flood event. A summary of the mainstream flood information for the area of the proposed addition is as follows:

- 1 in 100 year Hazard Classification: **Medium**
- Flood Life Hazard Classification: **H3-H4**
- 1% Flood Hydraulic Category : **Flood Fringe**
- 1% Flood Level: **6.0m A.H.D.**

- Flood Planning Level **: 6.3m A.H.D.**
- Probable Maximum Flood level: **6.45m A.H.D.**

The relevant Council issued flood data is contained within an Appendix attached to this report.

4.3 FLOOD BEHAVIOUR

In a major flood event, the site can expect to experience flooding in the Old Barrenjoey roadway at the front of the site.

The site would be designated as flood fringe and subsequently the management of the flood risks is required to ensure the ongoing protection of life and property.

4.4 EMERGENCY RESPONSE

This Flood Risk Management Report recognises that protection of life is of primary importance, followed by a secondary philosophy of attempting to minimise damage and disruption to the site's proposed domestic operation.

The emergency response to a potential flood event will be initiated upon the occurrence of a certain 'trigger' threshold, upon which the emergency response plan will actioned.

4.5 THE EMERGENCY TRIGGER(S)

It is critical to the success of this plan that during extremely heavy & intense rainfall events, The Owner/Tenant is able to closely monitor the drainage conditions in the roadway at the front of the site.

The initial trigger for commencement of the emergency response plan follows the observation of overland stormwater flows inundating the roadway at the site frontage following extremely heavy and intense rainfall events.

Upon the visual confirmation of either of this trigger event, the evacuation responses described in Section 5 are to be enacted.

4.6 TIME NEEDED TO RESPOND

It is considered that a total period of 5 minutes would be required for The Owner or Tenant to secure the ground floor doors, turn off the relevant mains and services and ensure that all persons within the premises have been notified and are located to the nominated assembly point.

4.7 THE EMERGENCY ASSEMBLY POINT

Consistent with the H3-H4 flood life hazard classification, an appropriate emergency response to a flood event is to 'shelter-in-place' in the upper levels of the premises.

5 OWNER'S RESPONSIBILITIES

5.1 BEFORE THE FLOOD

Trigger for action: Always

- ➢ The Owner will ultimately be responsible for the implementation of this plan. The Owner will be responsible for ensuring tasks are undertaken or delegating those tasks.
- ➢ Through a systematic induction process, The Owner, ground floor Tenant & other relevant persons are to be made aware of the possibility of flooding and the procedures to be followed if a flood were to occur.
- ➢ The Owner should continue to develop detailed procedures to support the

actions required by this plan. Procedures will include clear responsibilities in the event of a flood, and back up resources should key persons not be present.

➢ The emergency response sign is to be permanently affixed to a wall in a highly visible location.

5.2 WHEN A FLOOD IS LIKELY

Trigger for action: When the forecasts predict severe weather or significant amounts of rainfall (land is saturated) are observed

➢ The Owner (or Tenant) will monitor weather forecasts and warnings.

➢ The Owner (or Tenant) should prepare for the potential emergency assembly at the nominated point.

5.3 DURING A FLOOD

Trigger for action: When flood waters are observed in the Old Barrenjoey Road roadway or as overland flows in the area at the rear or northern boundaries of the site:

- The phases of the evacuation shall be:

➢ The Owner (or Tenant) is to request all occupants to evacuate to the emergency assembly area in the upper levels of the premises.

➢ The Owner (or Tenant) is to sweep the premises following evacuation to ensure that all occupants have sought refuge to the emergency assembly area.

➢ The Owner (or Tenant) is to close the flood proof doors, turn off all power and water and other relevant facilities.

➢ The Owner is to evacuate to the emergency assembly area.

➢ Emergency services to be notified by The Owner of the situation at the site (Appendix F).

5.4 AFTER A FLOOD

Trigger for action: When emergency services give the all clear to return

- No persons should be allowed to leave the site while flooding is still occurring or has recently occurred.

- Occupants can leave the site only after the all clear has been given by emergency services or Council

- Where necessary, the site is to be checked by professionals before any re-use of the site or it's utility services.

- A de-brief is to be held between The Owner, Tenant and other occupants and may involve emergency services and/or council employees. The flood event and response procedures, including the use of this plan, are to be reviewed.

6.0 FLOOD COMPLIANCE

It is proposed to develop the site such that the objectives of Council's Flood Risk Management Policy are met.

6.1 SPECIFIC CONTROLS

Section B3.11 of the Pittwater 21 DCP controls are to be applied to each of the lots.

Medium Flood Risk Matrix – Business & Commercial Category

		Medium Flood Risk						
		Critical Uses	Vulnerable Uses	Subdivision	Residential	Business & Industrial	Recreational & Environmental	Concessional
A	Flood effects caused by Development	A1 A3 A4	A1 A3 A4	A1 A3	A1 A3	A1 A3	A2 A3	A2 A3
B	Drainage Infrastructure & Creek Works	B1 B2	B1 B2	B1 B2	B1 B2	B1 B2	B1 B2	
C	Building Components & Structural	C1 C2 C3	C1 C2 C3		C1 C2 C3	C1 C2 C3	C1 C2 C3	C1 C2 C3
D	Storage of Goods	D1 D2	D1 D2		D1 D2	D1 D2	D1 D2	D1 D2
E	Flood Emergency Response	E1 E2 E3	E1 E2 E3	E1 E4	E1 E2	E1 E2 E3	E1	E1
F	Floor Levels	F2 F3 F7	F2 F3 F7	F5	F1 F2 F3 F4 F6 F8 F9	F1 F2 F3 F4 F6 F8 F9 F10 F11	F2	F1 F2 F3 F4 F6 F11
G	Car Parking	G1 G4 G6 G7 G9 G10	G1 G4 G6 G7 G9 G10	G1	G1 G2 G3 G5 G6 G7 G8	G1 G2 G3 G4 G5 G6 G7	G1 G2 G3 G4 G5 G6 G7	G1 G2 G3 G4 G5 G6 G7
H	Fencing	H1	H1	H1	H1	H1	H1	H1
I	Pools	I1	I1	I1	I1	I1	I1	I1

Flood Effects Caused By Development

A1 – ***Development shall not be approved unless it can*** **be** ***demonstrated in a Flood Risk Management Report that it complies with the Flood Prone Lane Design Standard found on Council's webpage.***

Outcome – The provisions of this Flood Risk Management Report demonstrate that the flood risks have been adequately addressed in accordance with the provisions of the *Flood Prone Land Design Standard.*

A3 – ***The applicant shall include in their submission calculations to illustrate that any fill or other structures that reduce the total flood storage are replaced by compensatory works***

Outcome – The proposed works are in an area of the site designated as flood fringe, replace an existing ground level building and as such the loss of flood storage is not considered significant.

Drainage Infrastructure and Creek Works

B1 - Flood mitigation works or stormwater devices that modify a major drainage system, stormwater system, natural water course, floodway or flood behaviour within or outside the development site may be permitted subject to demonstration through a Flood Management Report that they comply with the Flood Prone Land Design Standard found on Council's webpage.

Outcome – As the site is already fully developed, the proposed development will not modify significantly modify the existing flood behaviour as existing flood storage and conveyance geometry is maintained and as such this requirement is considered satisfied.

B2 – A Section 88B notation under the Conveyancing Act 1919 may be required to be placed on the title describing the location and type of flood mitigation works with a requirement for their retention and maintenance.

Outcome – As the site is already fully developed, the proposed development will not modify significantly modify the existing flood behaviour as existing flood storage and conveyance geometry is maintained and as such this requirement is considered satisfied.

Building Components and Structural Soundness

C1 – All buildings shall be designed and constructed as flood compatible buildings in accordance with Reducing Vulnerability of **Buildings** ***to Flood Damage: Guidance on Building in Flood Prone Areas,***

Hawkesbury-Nepean Floodplain Management Steering Committee (2006).

Outcome – All new building elements are to be constructed for integrity and compatibility to the Probable Maximum Flood.

A table of equivalent flood compatible materials is contained within Appendix G.

C2 – ***All structures must be designed and constructed to ensure structural integrity up to the Flood Planning Level, taking into account the forces of floodwater, wave action, flowing water with debris, buoyancy and immersion. Structural certification shall be provided confirming the above. Where shelter-in-place refuge is to be provided the structural integrity is to be to the Probable Maximum Flood level.***

Outcome – All proposed building elements are to be designed, constructed and/or modified to ensure structural integrity for immersion and impact of velocity and debris up to the Probable Maximum Flood level of **6.45m A.H.D.**

C3 – ***All new electrical equipment, power points, wiring, fuel lines, sewerage systems or any other service pipes and connections must be waterproofed and/or located above the Flood Planning Level.***

All existing electrical equipment and power points located below the Flood Planning Level must have residual current devices installed that turn off all electricity supply to the property when flood waters are detected.

Outcome – All proposed electrical equipment, wiring, fuel lines and any other service pipes and connections are to be waterproofed to the Flood Planning Level of **6.30m A.H.D.**

Storage of Goods

D1 – ***Hazardous or potentially polluting materials shall not be stored below the Flood Planning Level unless adequately protected from floodwaters in accordance with industry standards.***

Outcome – The Owners (or Tenant) are to ensure storage of toxic or potentially polluting goods, materials or other products, which may be hazardous or pollute floodwaters, will not be permitted below the Flood Planning Level of **6.30m A.H.D**.

D2 – ***Goods, materials or other products which may be highly susceptible to water damage are to be located/stored above the Flood Planning Level.***

Outcome – The Owners are to ensure that storage of goods susceptible to water damage will not be permitted below the Flood Planning Level of **6.30m A.H.D**.

Flood Emergency Response

E1 – ***Development shall comply with Council's Flood Emergency Response Planning for Development in Pittwater Policy and the outcomes of any Flood Risk Emergency Assessment Report where it applies to the land.***

Outcome – The emergency response as detailed in this report is to 'shelter-in-place' for significant flood events.

E2 – ***New development must provide an appropriately sized area to safely shelter in place above the Probable Maximum Flood level and appropriate access to this area should be available from all areas within the development.***

Outcome – The emergency response is to shelter-in-place in the upper level of the premises which is easily accessible from all

areas within the premises. The Emergency assembly Point Plan is attached in Appendix D.

E3 – ***Adequate Warning Systems, Signage and Exits shall be installed to allow safe and orderly evacuation without reliance upon the SES or other authorised emergency services personnel.***

Outcome – An Emergency assembly Point Plan is attached in Appendix D.

Floor Levels

F1 – New floor levels within the development shall be at or above, the Flood Planning Level. A reduced Flood Planning Level may be considered only where it is permitted in this Development Control Plan. The structure must be flood proofed (wet or dry) to the Flood Planning Level. This control cannot be applied to critical or vulnerable uses.

Outcome – The ground floor level is at the designated Flood Planning Level of 6.45m AHD.

All new works are to be in accordance with Council's requirements for 'Building Components and Structural Soundness' as previously described in this report.

F2 – All development structures must be designed and constructed so as not to impede the floodway or flood conveyance on the site, as well as ensuring no loss of flood storage in a 1% AEP Event.

Outcome – The proposed works are considered to be located within the flood fringe and as such there will be no significant loss of flood storage or conveyance area and hence the existing flow regime will not be affected.

F3 – Where the lowest floor has been elevated to allow the passage of flood waters, a restriction shall be imposed on the title of the land, pursuant to S88B of the Conveyancing Act confirming that the undercroft area is not to be enclosed.

Outcome – This requirement not applicable.

F6 – ***Any existing floor level may be retained below the Flood Planning Level when undertaking a first floor addition provided that:***

(a) it is not located within a floodway;

(b) there is no increase to the building footprint below the Flood Planning Level

(c) it is flood proofed to the Flood Planning Level;

Outcome – It is not proposed to retain any existing floor structure.

F8 – ***The minimum floor level of any first-floor additions shall be at or above the Probable Maximum Flood Level.***

Outcome – Not applicable as no new first floor additions is proposed.

F10 – ***Consideration may be given to a minimum floor level for the first 5 metres from the street front of new development in business zonings below the Flood Planning Level provided it can be demonstrated that it complies with the Flood Prone Land Design Standard.***

Outcome – The proposal seeks to utilise this provision and provide a $30m^2$ foyer at the Old Barrenjoey Road entrance. This foyer would then step up into the main retail space at R.L. 6.45m A.H.D.

The provision of a foyer at the street frontage is consistent with other recent development along the streetscape and not considered to be significant as the proposed works are to be situated in an area designated as 'flood fringe'.

As the emergency response strategy is to stay-in-place, note that all new building elements are to be designed, constructed and/or modified to ensure structural integrity for immersion and impact of velocity and debris up to the Probable Maximum Flood Level.

Car Parking

G1 - ***Open carpark areas and carports shall not be located within a floodway.***

Outcome – Complies as new parking areas to be provided at the rear of the site and are not within a floodway.

G2 - ***The lowest floor level of open carparks and carports (unroofed or with open sides) shall be constructed no lower than the natural ground levels.***

Outcome – Complies as new parking areas are top be at approximately the existing ground levels.

G3 - All enclosed car parks must be protected from inundation up to the relevant flood planning level.

Outcome – No new enclosed carpark area is proposed.

G4 - All enclosed car parks must be protected from inundation up to the relevant flood planning level.

Outcome – No new enclosed carpark area is proposed.

G5 - Enclosed Garages must be located at or above the 1% AEP level

Outcome – No new enclosed garage area is proposed.

G6 - Enclosed Garages must be located at or above the 1% AEP level.

Outcome – No new enclosed garage area is proposed.

G7 - Where a driveway is required to be raised it must be demonstrated that there is no loss to flood stage in the 1% AEP flood event and no impact on flood conveyance through the site.

Outcome – No new driveway is proposed.

Fencing

H1 - Fencing, including pool fencing, shall be designed so as not to impede the flow of flood waters and not to increase flood affectation on surrounding land. Appropriate fencing must comply with the Flood Prone Land Design Standard in addition to other regulatory requirements of pool fencing.

Outcome – No new fencing is proposed.

Pool

I1 - ***Pools located within the 1% AEP flood extent are to be in-ground, with coping flush with natural ground level.***

Outcome – No new pool is proposed.

7.0 SUMMARY

This report is a plan for the site for major flood events to be incorporated by The Owners into the on-going management protocols for the site to manage the flood risks.

The report contains procedural information to ensure the safety of occupants during flood events and also to ensure the satisfactory performance any new building elements.

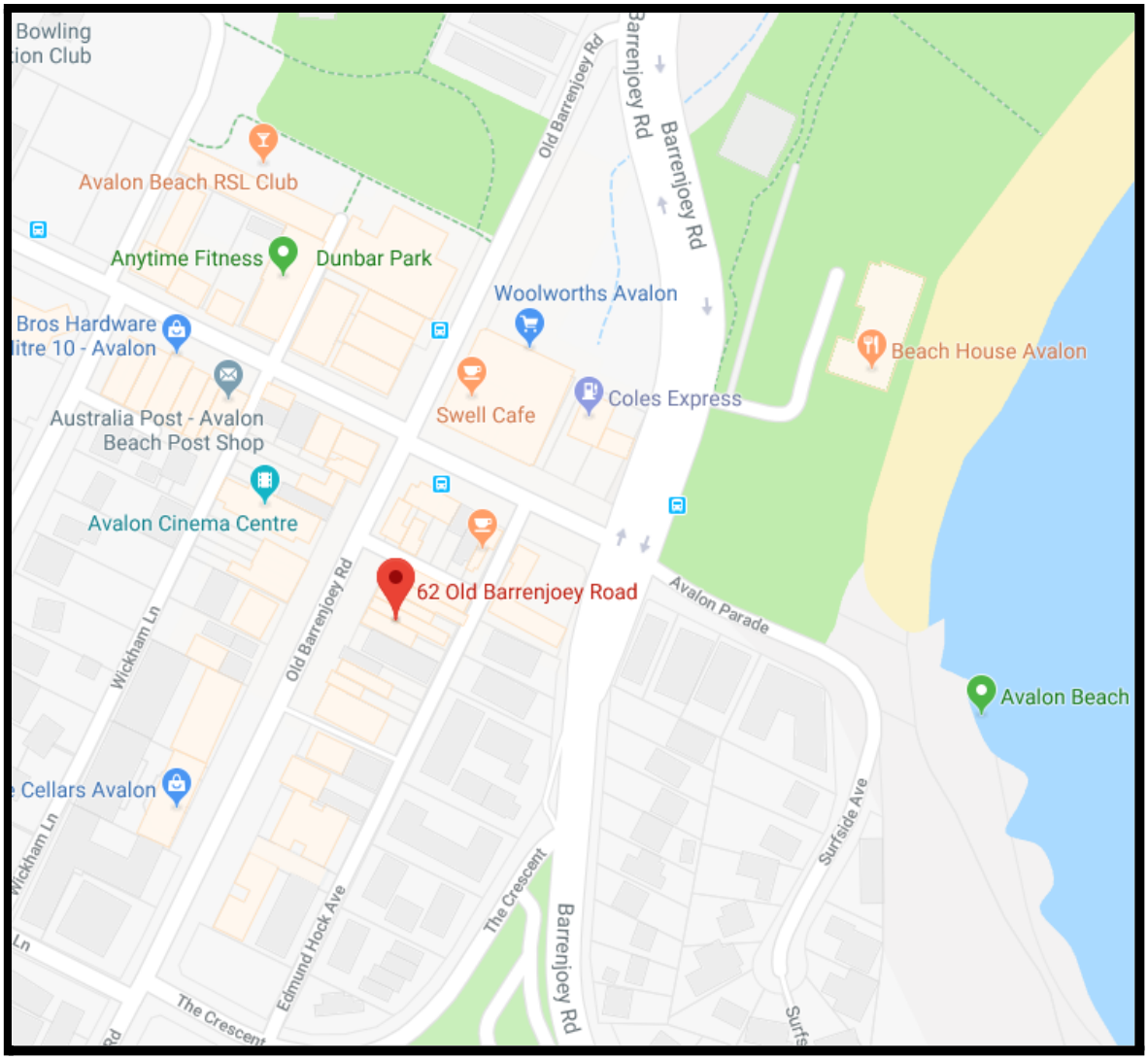
The recommendations and strategies within this report ensure compliance with Pittwater 21 DCP Part B3.11 'Flood Prone Land'.

Should you have any questions or queries please do not hesitate to contact the undersigned.

TAYLOR CONSULTING

D M SCHAEFER - Director
B.E. Civil (Hons) M.I.E. Aust.

Appendix A

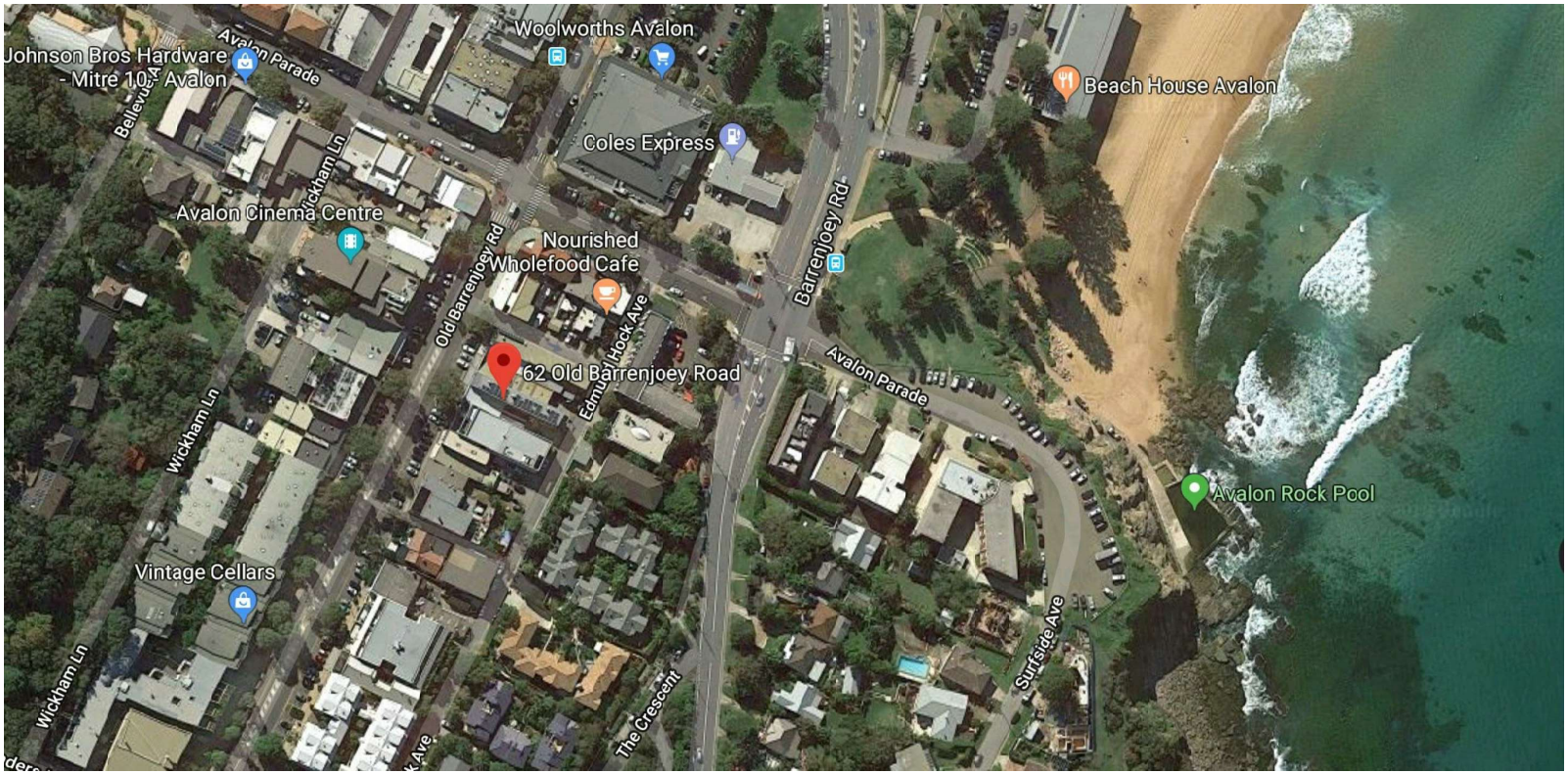


Locality Map - 62 Old Barrenjoey, Newport

Appendix B

Proposed Commercial & Residential development at:

62 OLD BARRENJOEY RD AVALON BEACH



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A121	WINTER SOLAR ACCESS 1
A122	WINTER SOLAR ACCESS 2

PROJECT DATA

- FRONTAGE : 6.95m
- SITE AREA : 241.5sqm
- GOUND FLOOR GFA : 147 sqm
- LEVEL 1 GFA :143 sqm
- LEVEL 2 GFA : 72 sqm
- COMMERCIAL AREA: 90 sqm
- TOTAL GFA : 362 sqm
- TOTAL LANDSCAPED AREA: 74.73 sqm

- FSR : 362/241.5 = 1.5 : 1

- CAR PARKING : 4 CAR SPACES

COMMERCIAL & RESIDENTIAL DEVELOPMENT AT 62 OLD BARRENJOEY RD AVALON BEACH

AW	Drawn by
SG	Checked by
18009	Project number
20/06/2021	Date

AUDAA ARCHITECTURE + URBAN DESIGN ATELIER, AUSTRALIA
Nominated Architect: Shaheer Gobran - Registration No:4883

TITLE SHEET

A101

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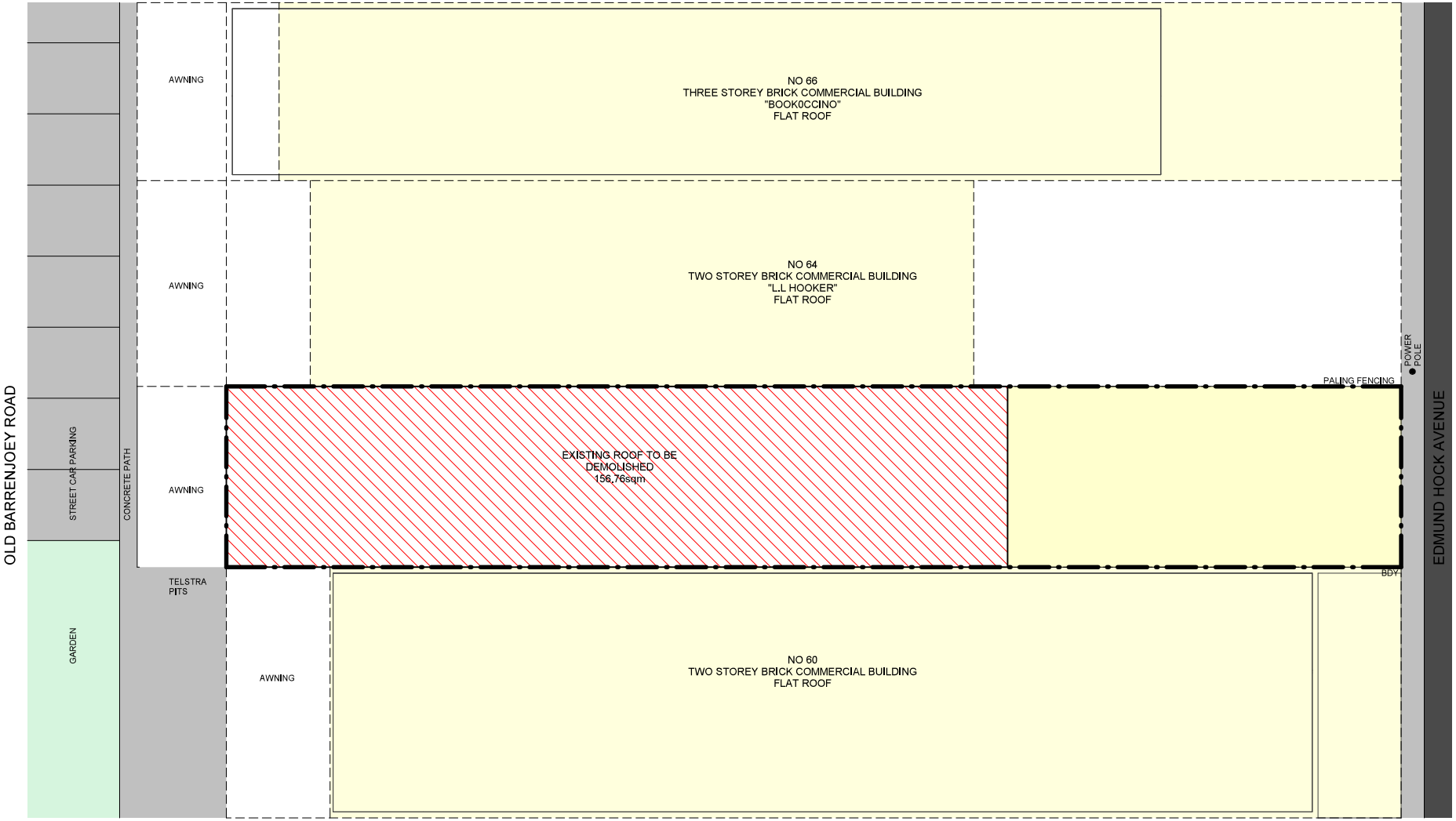

COMMERCIAL & RESIDENTIAL DEVELOPMENT AT
62 OLD BARRENJOEY RD
AVALON BEACH

ZA	Drawn by
SG	Checked by
18009	Project number
20/06/2021	Date

AUDAA
ARCHITECTURE + URBAN DESIGN ATELIER, AUSTRALIA
Nominated Architect: Shaheer Gobran - Registration No:4883

DEMOLITION

A102

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1 SITE ANALYSIS
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	COMMERCIAL & RESIDENTIAL DEVELOPMENT AT 62 OLD BARRENJOEY RD AVALON BEACH	AW Drawn by	AUDAA ARCHITECTURE + URBAN DESIGN ATELIER, AUSTRALIA Nominated Architect: Shaheer Gobran - Registration No:4883	A103	REV 01
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		18009 Project number	SITE ANALYSIS	Scale	1 : 750
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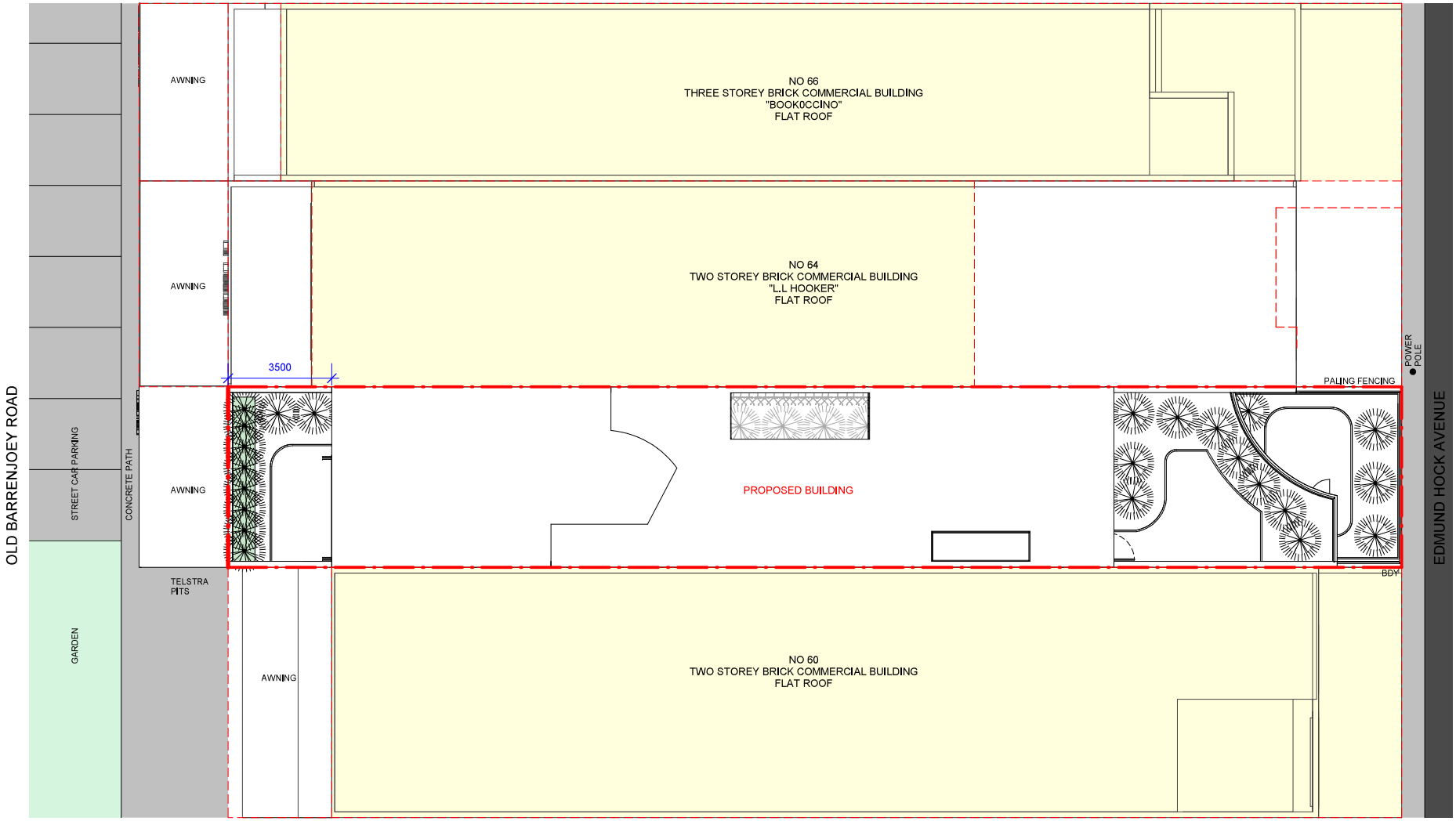

1 SITE PLAN
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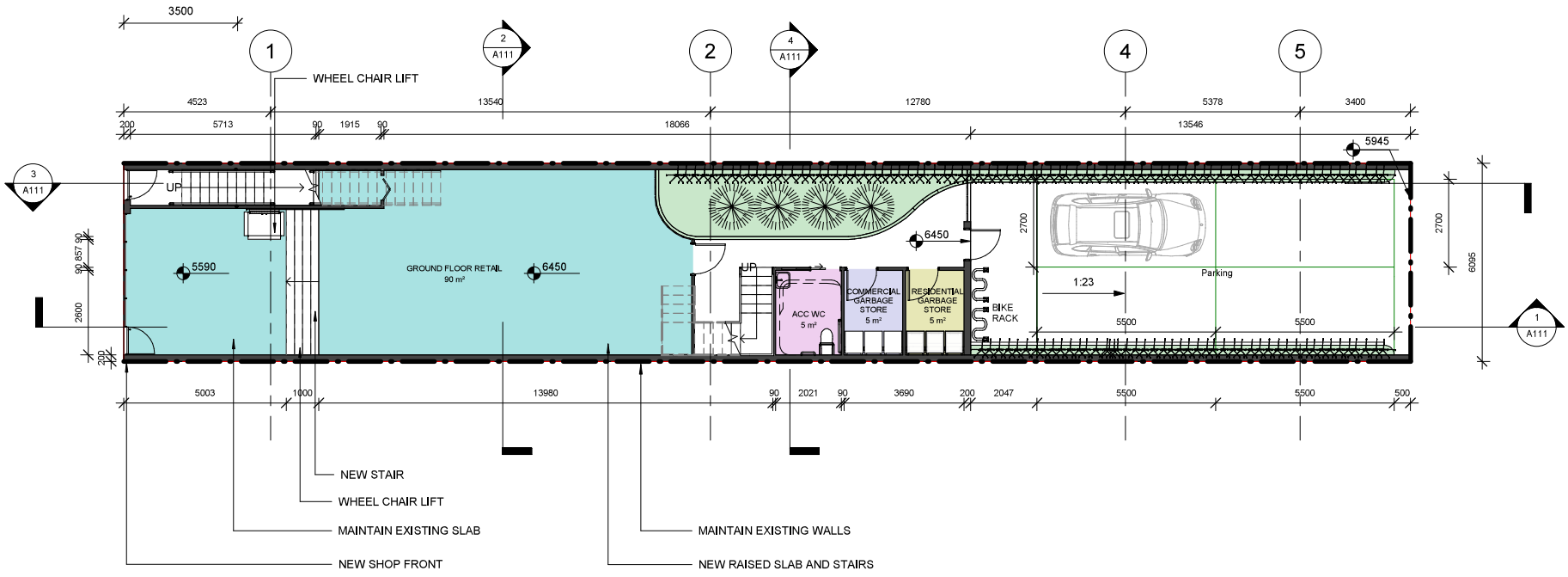

1 GF

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COMMERCIAL & RESIDENTIAL DEVELOPMENT AT 62 OLD BARRENJOEY RD AVALON BEACH	ZA	Drawn by	AUDAA ARCHITECTURE + URBAN DESIGN ATELIER, AUSTRALIA Nominated Architect: Shaheer Gobran - Registration No:4883
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	18009	Project number	GROUND
	20/06/2021	Date	

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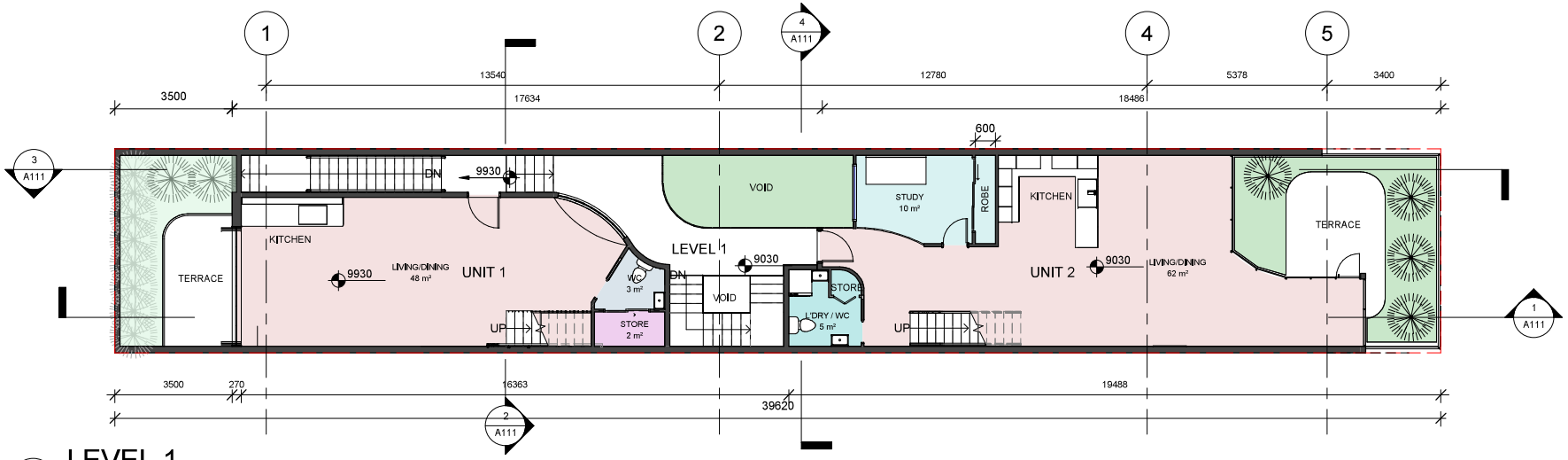

1 LEVEL 1
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COMMERCIAL & RESIDENTIAL DEVELOPMENT AT
62 OLD BARRENJOEY RD
AVALON BEACH

ZA	Drawn by
SG	Checked by
18009	Project number
20/06/2021	Date

AUDAA
ARCHITECTURE + URBAN DESIGN ATELIER, AUSTRALIA
Nominated Architect: Shaheer Gobran - Registration No:4883

LEVEL 1

A106

REV 01

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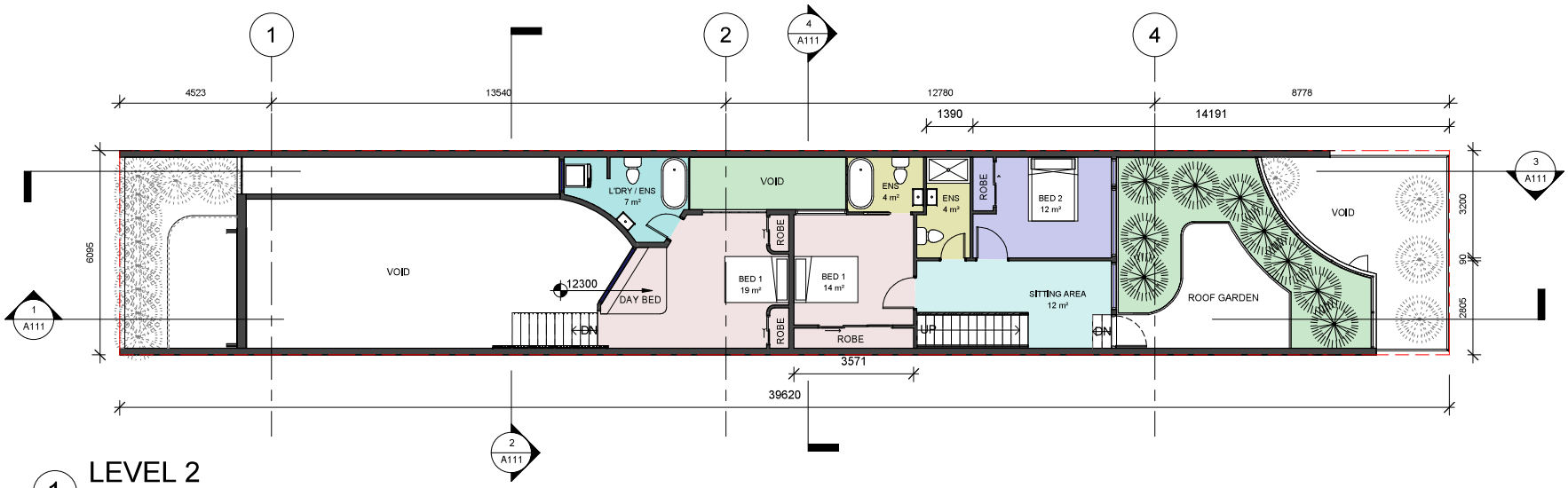

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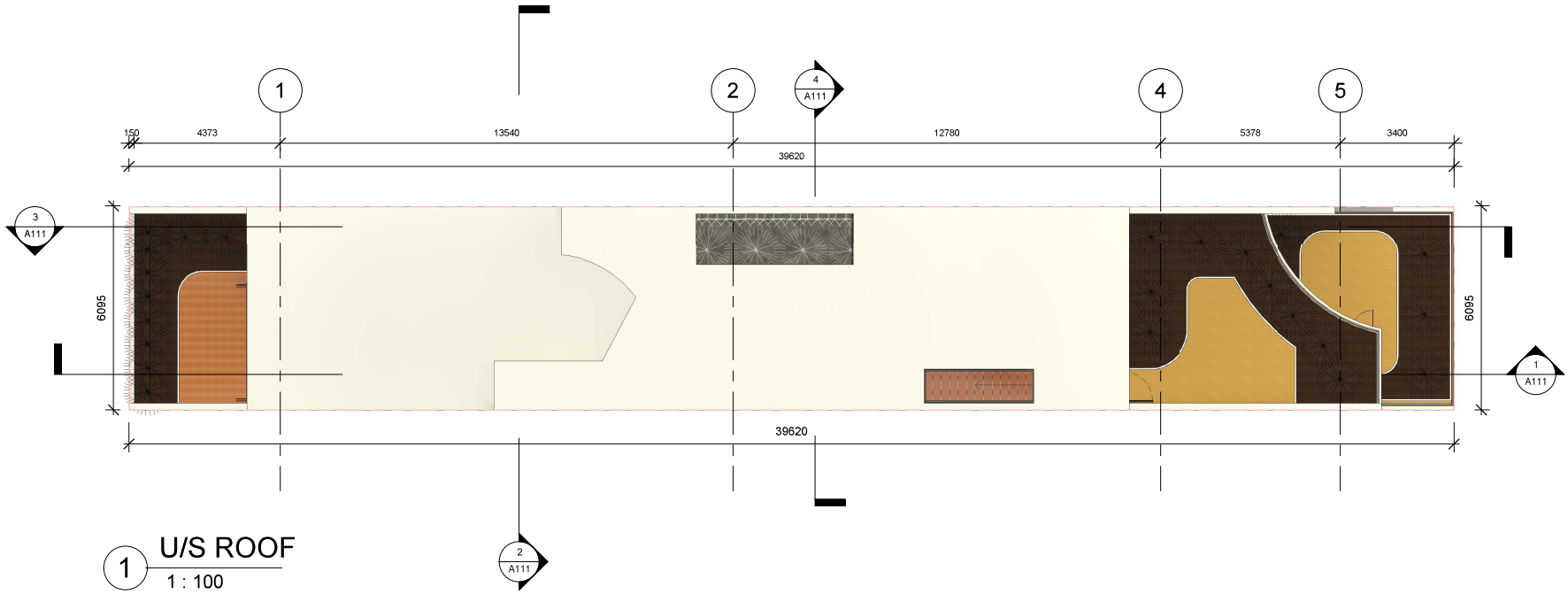

1 U/S ROOF
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	COMMERCIAL & RESIDENTIAL DEVELOPMENT AT 62 OLD BARRENJOEY RD AVALON BEACH	ZA Drawn by SG Checked by 18009 Project number 20/06/2021 Date	AUDAA ARCHITECTURE + URBAN DESIGN ATELIER, AUSTRALIA Nominated Architect: Shaheer Gobran - Registration No:4883 ROOF	A108 REV 01 Scale 1 : 100

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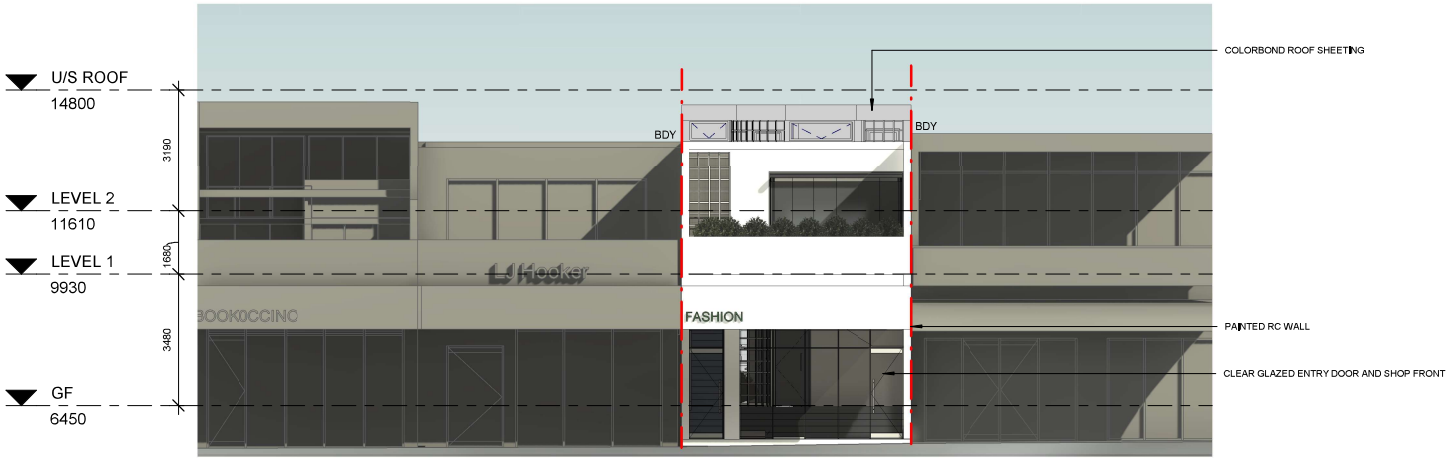

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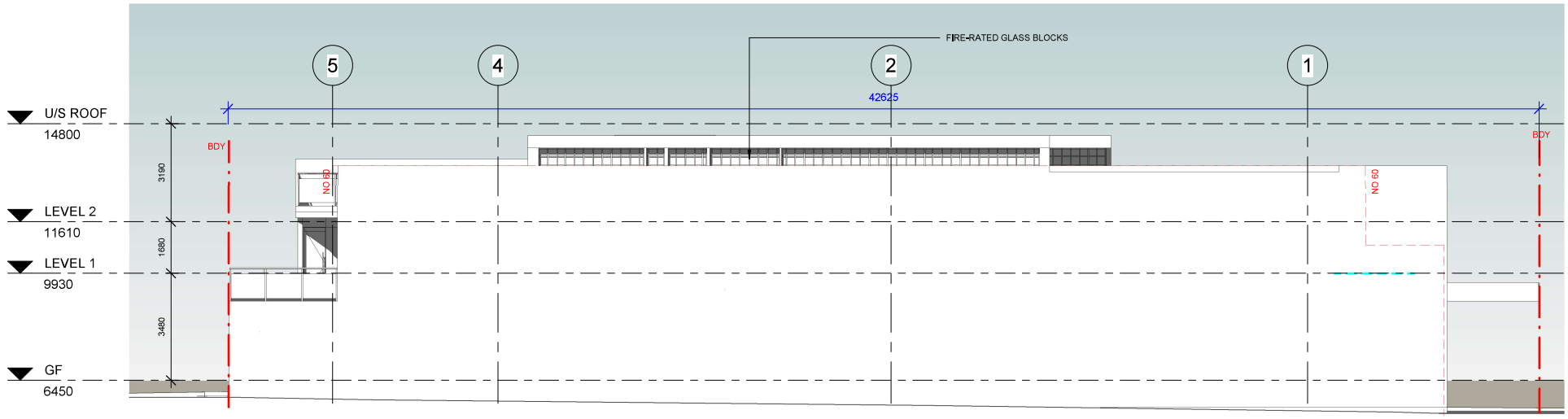

3 NORTH
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COMMERCIAL & RESIDENTIAL DEVELOPMENT AT 62 OLD BARRENJOEY RD AVALON BEACH	ZA	Drawn by	AUDAA ARCHITECTURE + URBAN DESIGN ATELIER, AUSTRALIA Nominated Architect: Shaheer Gobran - Registration No:4883
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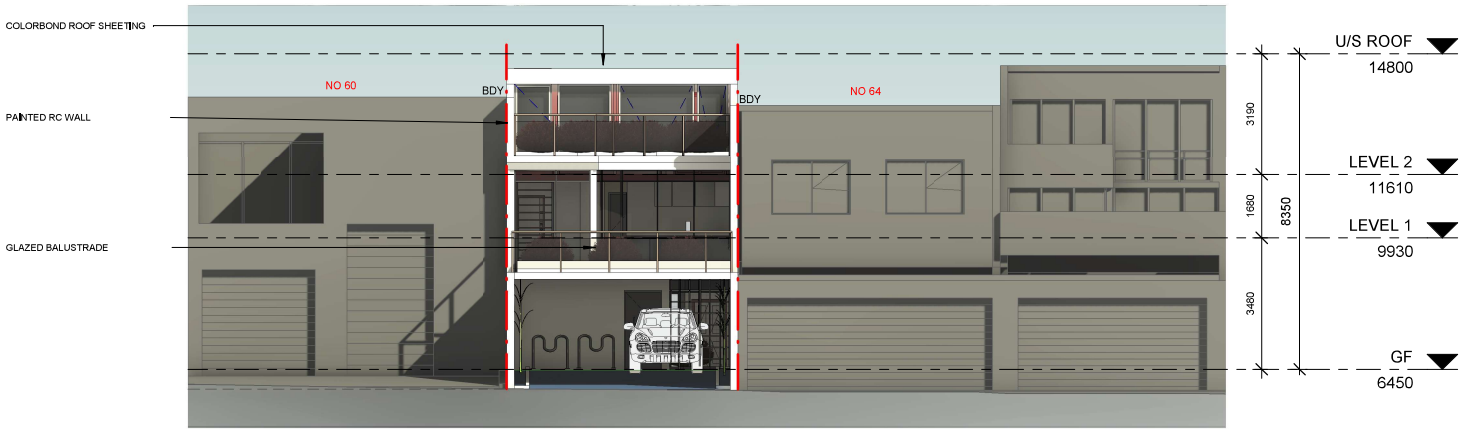

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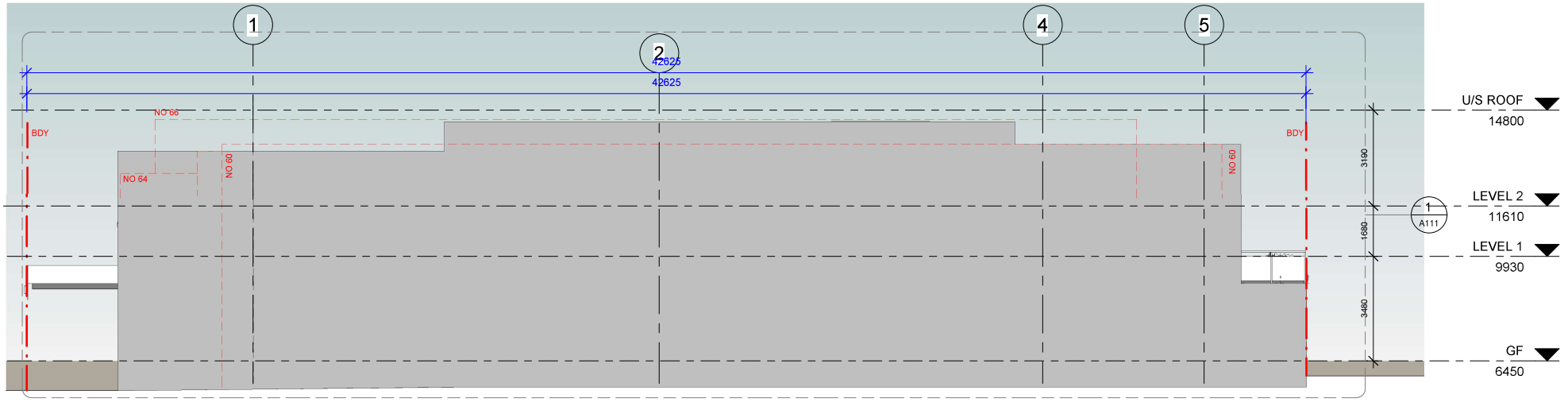

1 SOUTH
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	COMMERCIAL & RESIDENTIAL DEVELOPMENT AT 62 OLD BARRENJOEY RD AVALON BEACH	ZA Drawn by SG Checked by 18009 Project number 20/06/2021 Date	AUDAA ARCHITECTURE + URBAN DESIGN ATELIER, AUSTRALIA Nominated Architect: Shaheer Gobran - Registration No:4883 ELEVATIONS 2	A110 REV 01 Scale 1 : 100

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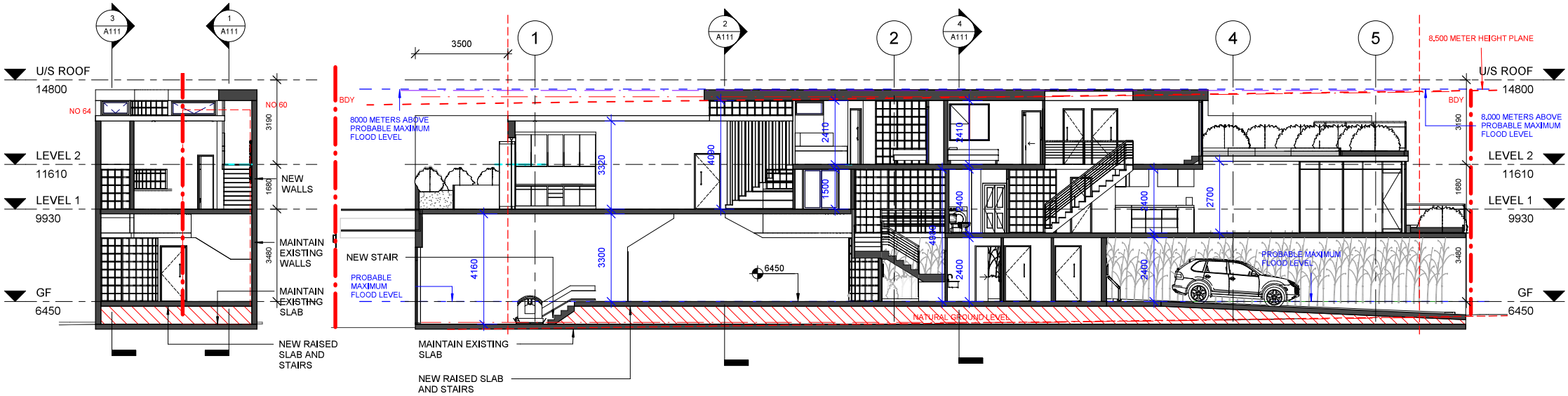

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1 SECTION1
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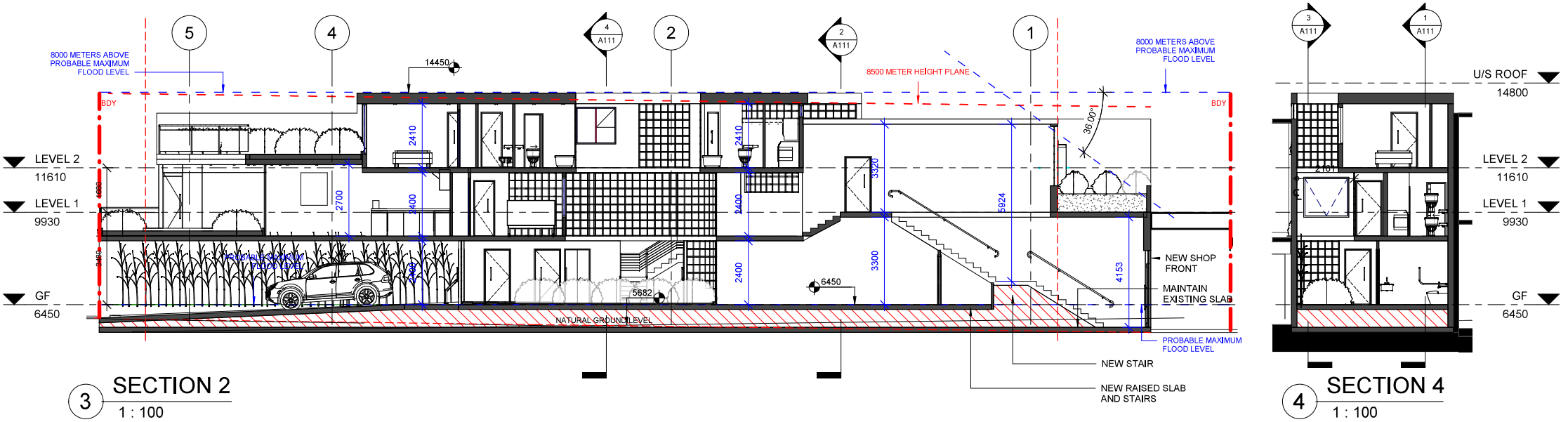

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4 SECTION 4
1 : 100

COMMERCIAL & RESIDENTIAL DEVELOPMENT AT 62 OLD BARRENJOEY RD AVALON BEACH	ZA — Drawn by	AUDAA ARCHITECTURE + URBAN DESIGN ATELIER, AUSTRALIA	A111
	SG — Checked by	Nominated Architect: Shaheer Gobran - Registration No:4883	REV 01
	18009 — Project number	SECTIONS	
	20/06/2021 — Date		Scale 1 : 100

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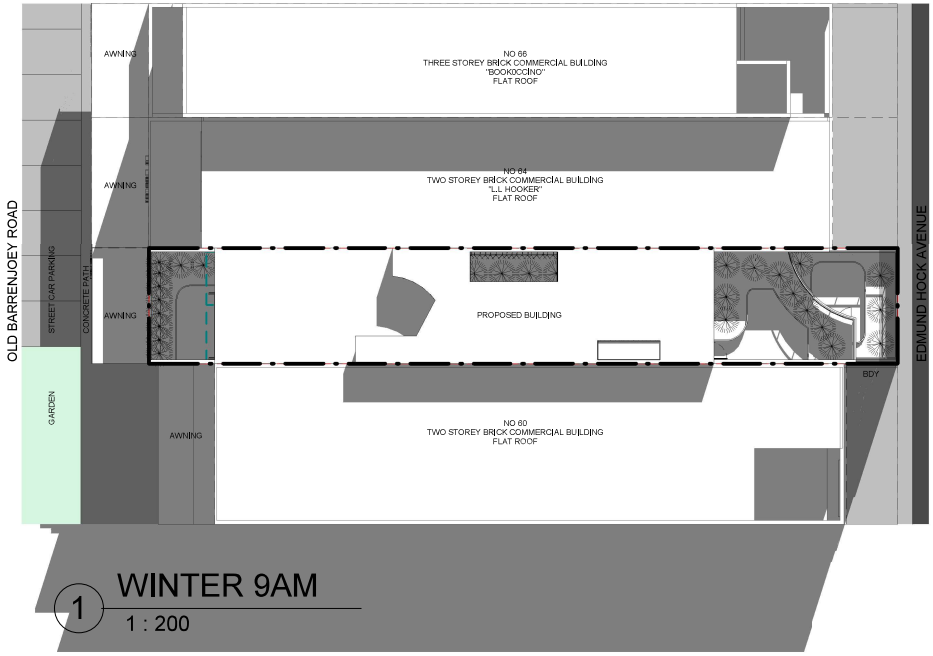

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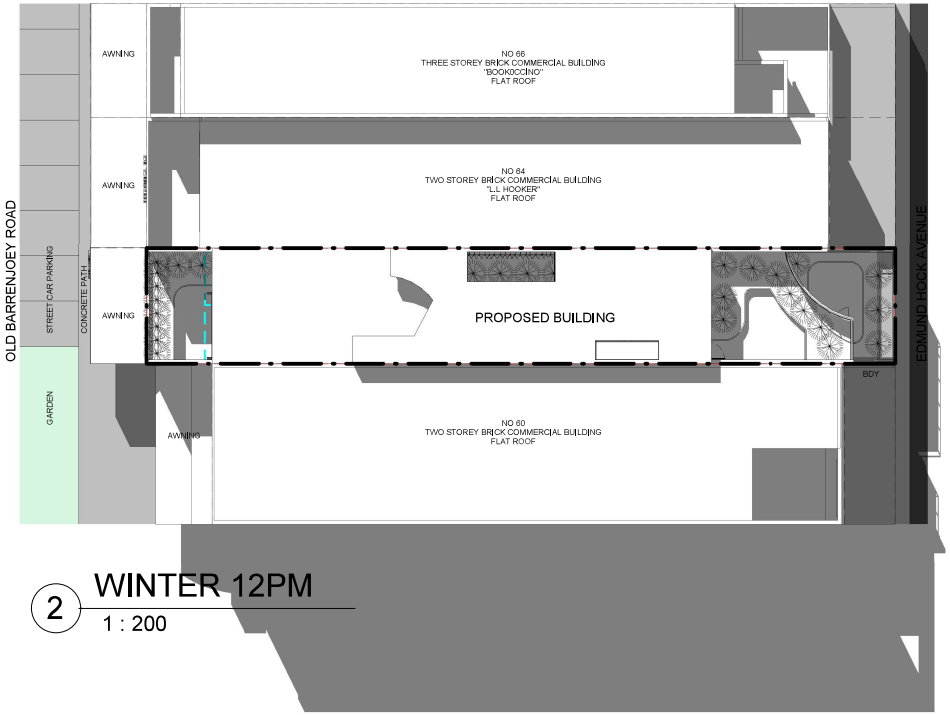

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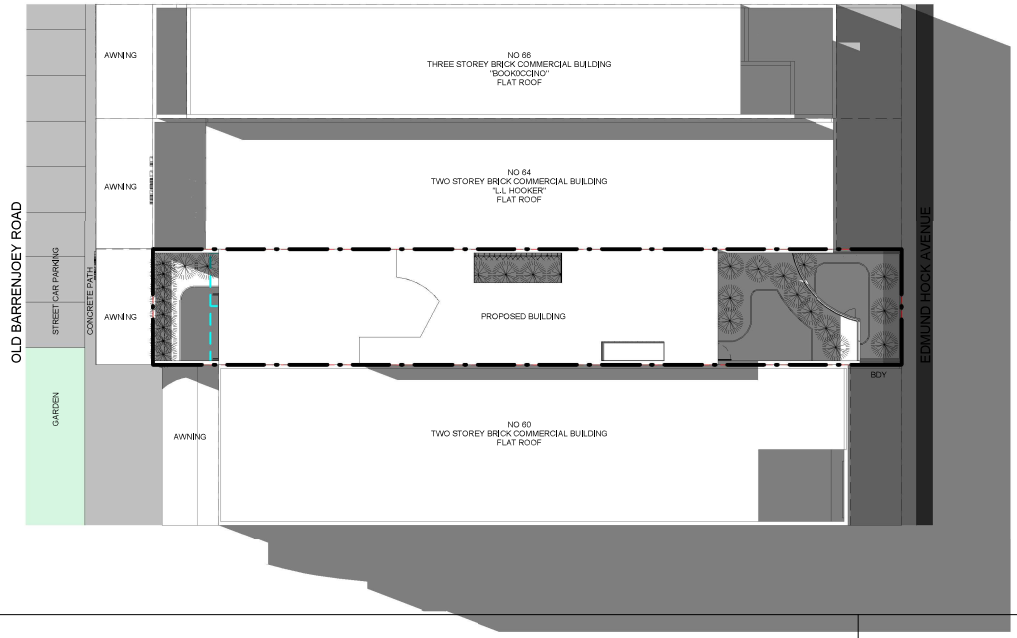

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COMMERCIAL & RESIDENTIAL DEVELOPMENT AT
62 OLD BARRENJOEY RD
AVALON BEACH

ZA	Drawn by
SG	Checked by
18009	Project number
20/06/2021	Date

AUDAA
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Nominated Architect: Shaheer Gobran - Registration No:4883

SHADOW DIAGRAMS 21st JUNE

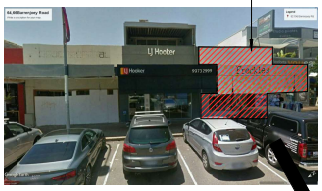
A112

REV 01

Scale 1 : 200

2021/6/23 10:19:03

70



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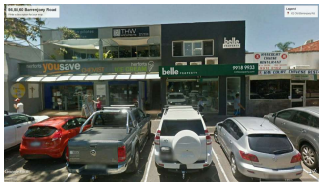

66

64

SUBJECT SITE

62

60,58

56

54

52

50

50

48

ELEVATION MASSING INSPIRED BY THE FACADES OF STREET'S PREDOMINANT SCALE AND SIZE

PARAPET WALL ALIGNING WITH ADJOINING BUILDINGS

AWNING TO MAINTAIN CONTINUITY WITH ADJOINING

NON OBSTRUCTIVE GLAZED ENTRY TO THE APARTMENTS

PLANTER BOX TO INTRODUCE A GREEN ELEMENT OT THE FACADE

NON OBSTRUCTIVE GLAZED ENTRY TO THE STORE TO MAINTAIN CONTINUITY

COMMERCIAL & RESIDENTIAL DEVELOPMENT AT
62 OLD BARRENJOEY RD
AVALON BEACH

AW	Drawn by
SG	Checked by
18009	Project number
20/06/2021	Date

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STREETSCAPE

A113

REV 01

Scale 1 : 75

2021/6/23 10:19:06

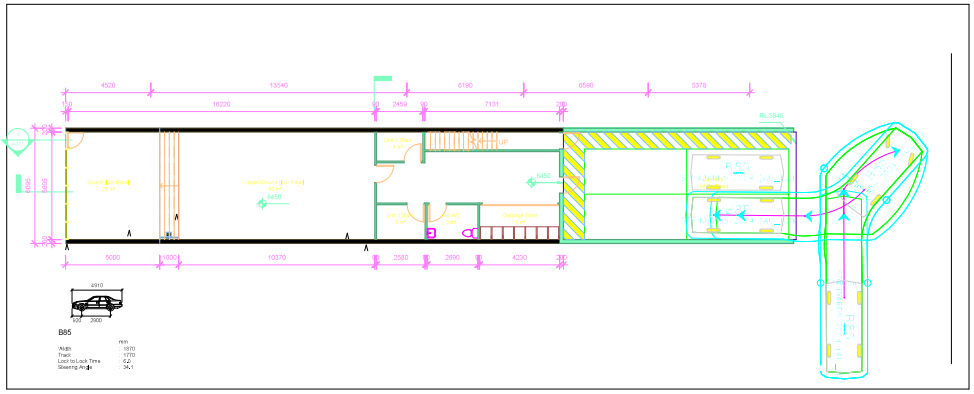
LYSAGHT KLIP LOK
COLORBOND - "SHALE GREY"

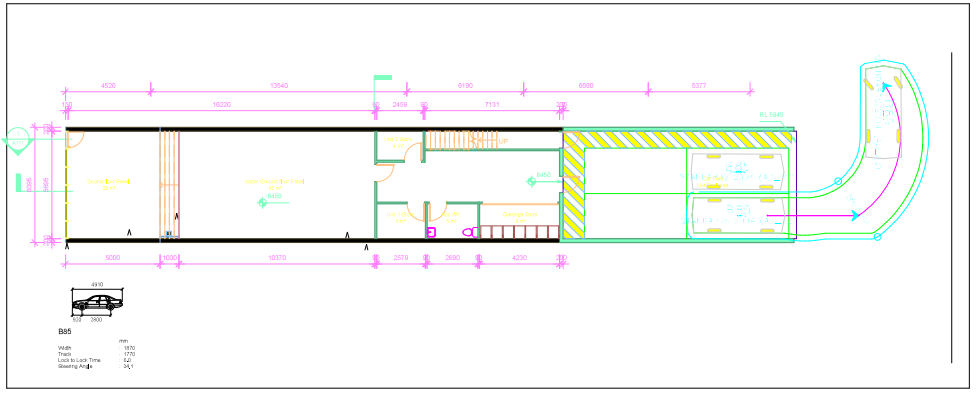
ACCENT COLOUR:
DULUX - VIVID WHITE

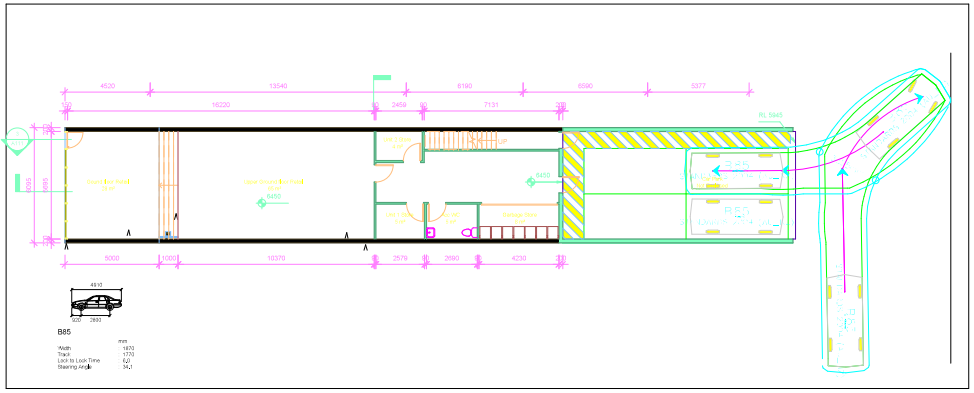
NEW WINDOWS & FOLDING DOORS:
NATURAL ANODISED ALUMINIUM

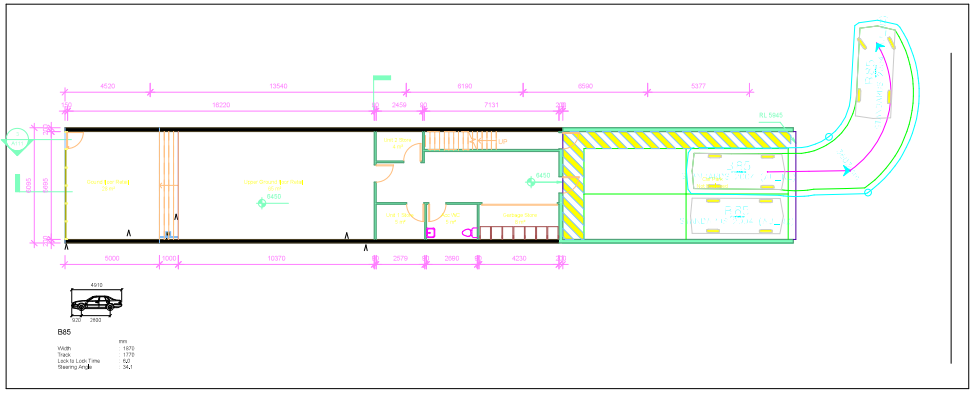
	COMMERCIAL & RESIDENTIAL DEVELOPMENT AT 62 OLD BARRENJOEY RD AVALON BEACH	ZA Drawn by SG Checked by 18009 Project number 20/06/2021 Date	AUDAA ARCHITECTURE + URBAN DESIGN ATELIER, AUSTRALIA Nominated Architect: Shaheer Gobran - Registration No:4883 FINISHES
			A114 REV 01 Scale

2021/6/23 10:19:06









	COMMERCIAL & RESIDENTIAL DEVELOPMENT AT 62 OLD BARRENJOEY RD AVALON BEACH	Author	Drawn by	AUDAA ARCHITECTURE + URBAN DESIGN ATELIER, AUSTRALIA Nominated Architect: Shaheer Gobran - Registration No:4883	A115 REV 01
		Checker	Checked by		
		18009	Project number	PARKING SWEPT PATHS	Scale
		20/06/2021	Date		

2021/6/23 10:19:06

	COMMERCIAL & RESIDENTIAL DEVELOPMENT AT 62 OLD BARRENJOEY RD AVALON BEACH	AW	Drawn by	AUDAA ARCHITECTURE + URBAN DESIGN ATELIER, AUSTRALIA Nominated Architect: Shaheer Gobran - Registration No:4883	A116 REV 01
		SG	Checked by		
		18009	Project number	RENDER 1	Scale
		20/06/2021	Date		

2021/6/23 10:19:06

	COMMERCIAL & RESIDENTIAL DEVELOPMENT AT 62 OLD BARRENJOEY RD AVALON BEACH	AW Drawn by	AUDAA ARCHITECTURE + URBAN DESIGN ATELIER, AUSTRALIA	A117	REV 01
		SG Checked by	Nominated Architect: Shaheer Gobran - Registration No:4883		
		18009 Project number	RENDER 2	Scale	
		20/06/2021 Date			

2021/6/23 10:19:07

	COMMERCIAL & RESIDENTIAL DEVELOPMENT AT 62 OLD BARRENJOEY RD AVALON BEACH	Author	Drawn by	AUDAA ARCHITECTURE + URBAN DESIGN ATELIER, AUSTRALIA Nominated Architect: Shaheer Gobran - Registration No:4883	A118 REV 01
		Checker	Checked by		
		18009	Project number	RENDER 3	Scale
		20/06/2021	Date		

2021/6/23 10:19:07

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		SG	Checked by		
		18009	Project number	RENDER 4	Scale
		20/06/2021	Date		

2021/6/23 10:19:07

COMMERCIAL & RESIDENTIAL DEVELOPMENT AT
62 OLD BARRENJOEY RD
AVALON BEACH

AW	Drawn by
SG	Checked by
18009	Project number
20/06/2021	Date

AUDAA
ARCHITECTURE + URBAN DESIGN ATELIER, AUSTRALIA
Nominated Architect: Shaheer Gobran - Registration No:4883

RENDER 5

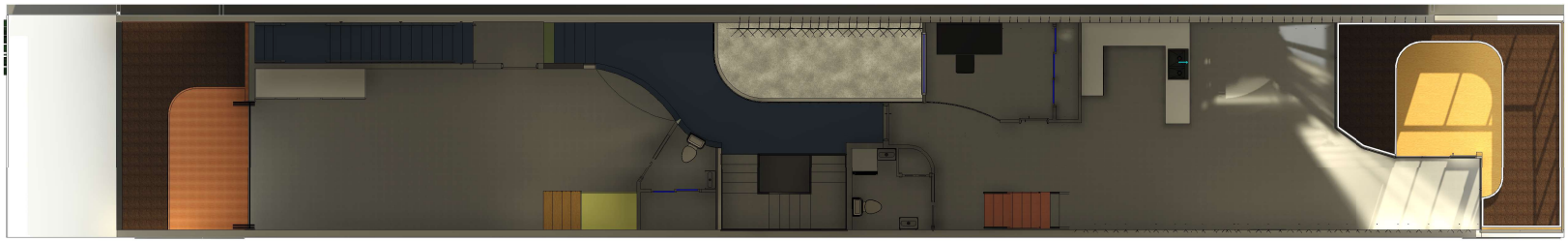
A120

REV 01

Scale

2021/6/23 10:19:07

1 JUNE 8AM



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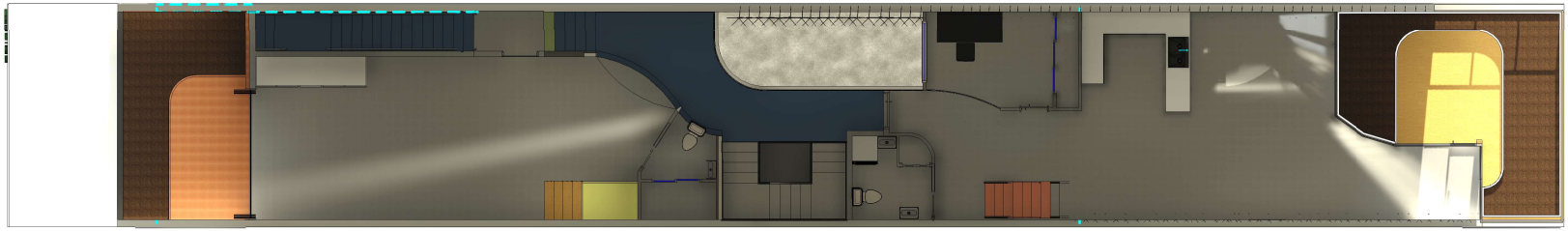

3 JUNE 10AM

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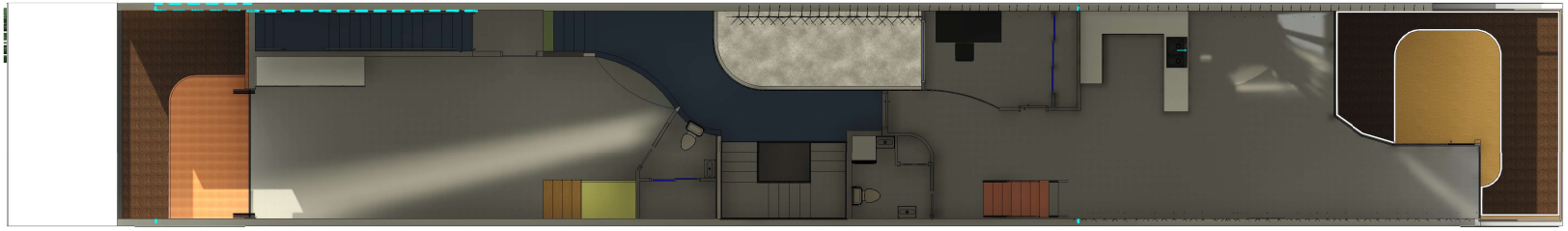
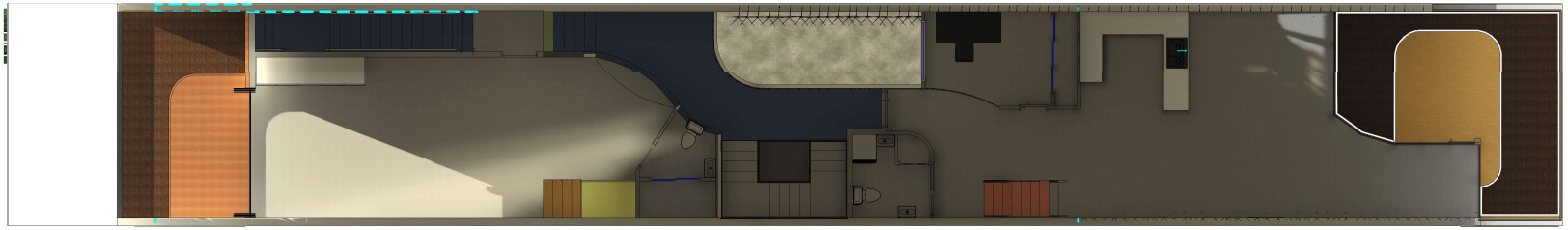
		SG	Checked by		
		18009	Project number	WINTER SOLAR ACCESS 1	Scale
		20/06/2021	Date		

2021/6/23 10:19:22



1 JUNE 12PM



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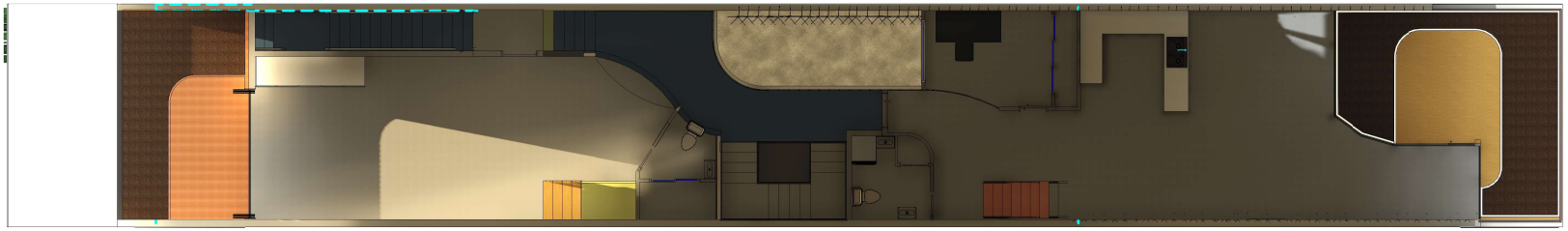

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		SG	Checked by		
		18009	Project number	WINTER SOLAR ACCESS 2	Scale
		20/06/2021	Date		

2021/6/23 10:19:36

Appendix C

FLOOD INFORMATION REQUEST - COMMON

Property: 62 Old Barrenjoey Rd, Avalon Beach
Lot DP: C//399767
Issue Date: 06/02/2019
Flood Study Reference: Avalon to Palm Beach Floodplain Risk Management Study and Plan 2017, NSW Public Works - MHL

Flood Information for lot:

Flood Life Hazard Category – See Map A

1% AEP – See Flood Map B

1% AEP Maximum Water Level[3]: 6.0 mAHD

1% AEP Maximum Peak Depth from natural ground level[3]: 0.28 m

1% AEP Maximum Velocity: 0.19 m/s

1% AEP Provisional Flood Hazard: Low **See Flood Map E**

1% AEP Hydraulic Categorisation: Flood fringe **See Flood Map F**

Flood Planning Area – See Flood Map C

Flood Planning Level (FPL)[1,2, 3 &4]: 6.3 m AHD

Probable Maximum Flood (PMF) – See Flood Map D

PMF Maximum Water Level[2]: 6.45 m AHD

PMF Maximum Depth from natural ground level: 1.03 m

PMF Maximum Velocity: 1.06 m/s

Flood Risk Precinct – See Map G

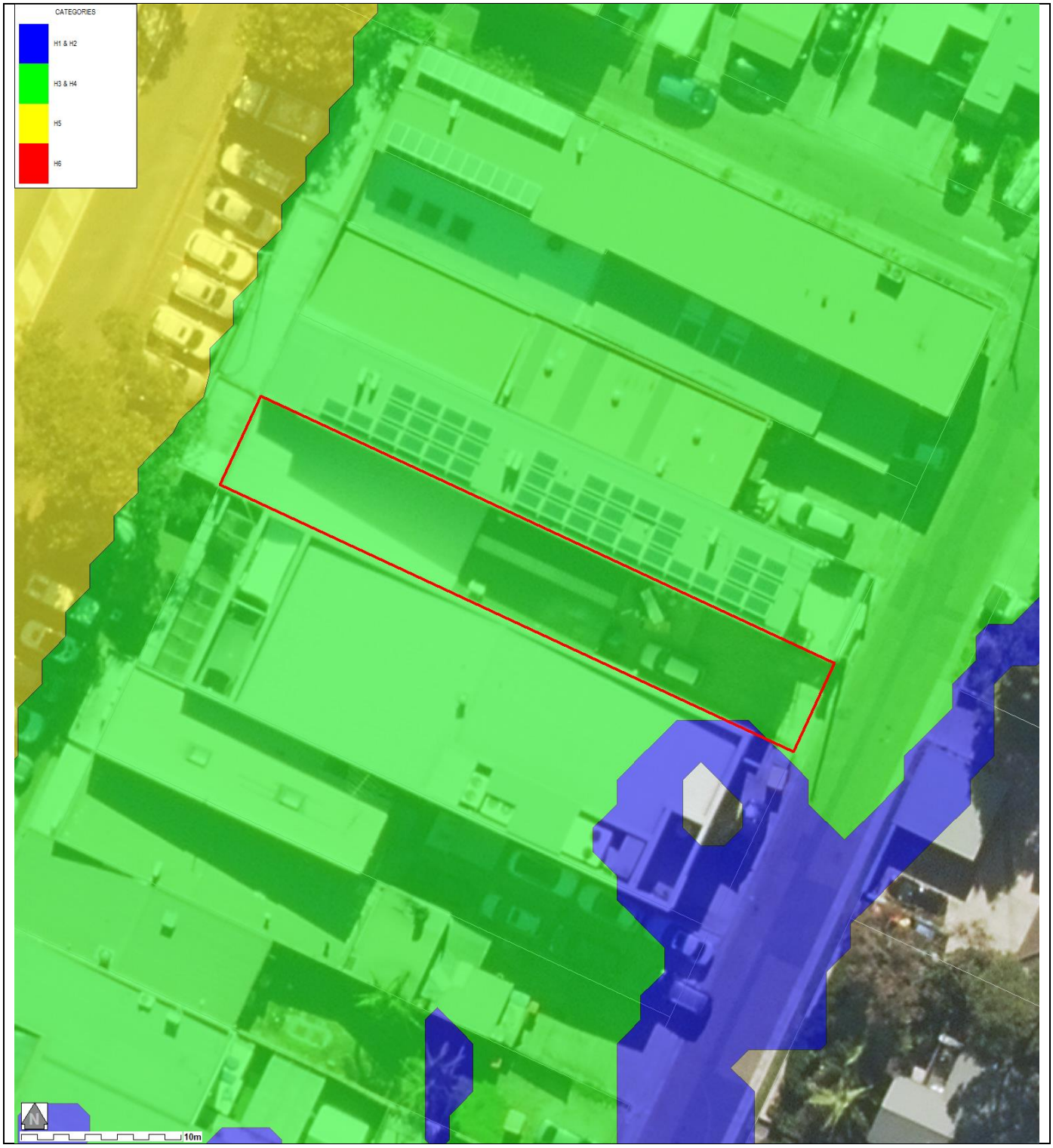
[1]The flood information does not take into account any local overland flow issues nor private stormwater drainage systems.
[2]Overland flow/mainstream water levels may vary across a sloping site, resulting in variable minimum floor/ flood planning levels across the site.

[3]Intensification of development in the former Pittwater LGA requires the consideration of climate change impacts which may result in higher minimum floor levels than those indicated on this flood advice.
[4]Vulnerable/critical developments require higher minimum floor levels using the higher of the PMF or Flood Planning Level

General Notes:

- All levels are based on Australian Height Datum (AHD) unless otherwise noted.
- This is currently the best available information on flooding; it may be subject to change in the future.
- Council recommends that you obtain a detailed survey of the above property and surrounds to AHD by a registered surveyor to determine any features that may influence the predicted extent or frequency of flooding. It is recommended you compare the flood level to the ground and floor levels to determine the level of risk the property may experience should flooding occur.
- Development approval is dependent on a range of issues, including compliance with all relevant provisions of Northern Beaches Council's Local Environmental Plans and Development Control Plans.
- Please note that the information contained within this letter is general advice only as a detail survey of the property as well as other information is not available. Council recommends that you engage a suitably experienced consultant to provide site specific flooding advice prior to making any decisions relating to the purchase or development of this property.
- The Flood Studies on which Council's flood information is based are available on Council's website.

FLOOD MAP A: FLOOD LIFE HAZARD CATEGORY



Notes:

- Refer to 'Flood Emergency Response Planning for Development in Pittwater Policy' for additional information on the Flood Life Hazard Categories and Pittwater 21 DCP Control B3.25.
- Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Avalon to Palm Beach Floodplain Risk Management Study and Plan) and aerial photography (Source Near Map 2014) are indicative only.

FLOOD MAP B: FLOODING - 1% AEP EXTENT

Notes:

- Extent represents the 1% annual Exceedance Probability (AEP) flood event.
- Flood events exceeding the 1% AEP can occur on this site.
- Extent does not include climate change.
- Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Avalon to Palm Beach Floodplain Risk Management Study and Plan) and aerial photography (Source Near Map 2014) are indicative only.

FLOOD MAP C: FLOOD PLANNING AREA EXTENT

Notes:

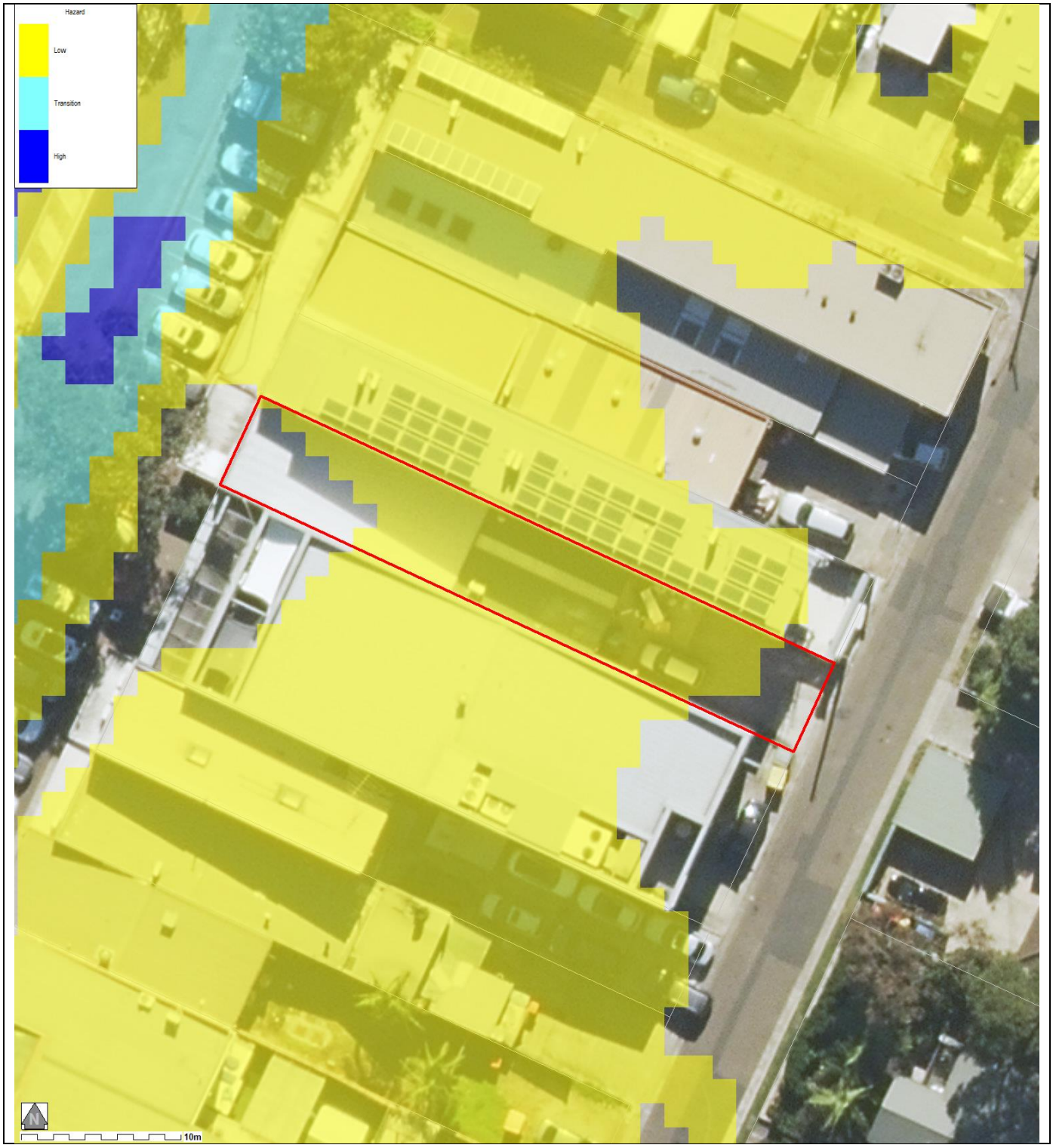
- Extent represents the 1% annual Exceedance Probability (AEP) flood event + freeboard.
- Extent does not include climate change.
- Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Avalon to Palm Beach Floodplain Risk Management Study and Plan) and aerial photography (Source Near Map 2014) are indicative only.

FLOOD MAP D: PROBABLE MAXIMUM FLOOD EXTENT

Notes:

- Extent represents the Probable Maximum Flood (PMF) flood event.
- Extent does not include climate change.
- Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Avalon to Palm Beach Floodplain Risk Management Study and Plan) and aerial photography (Source Near Map 2014) are indicative only.

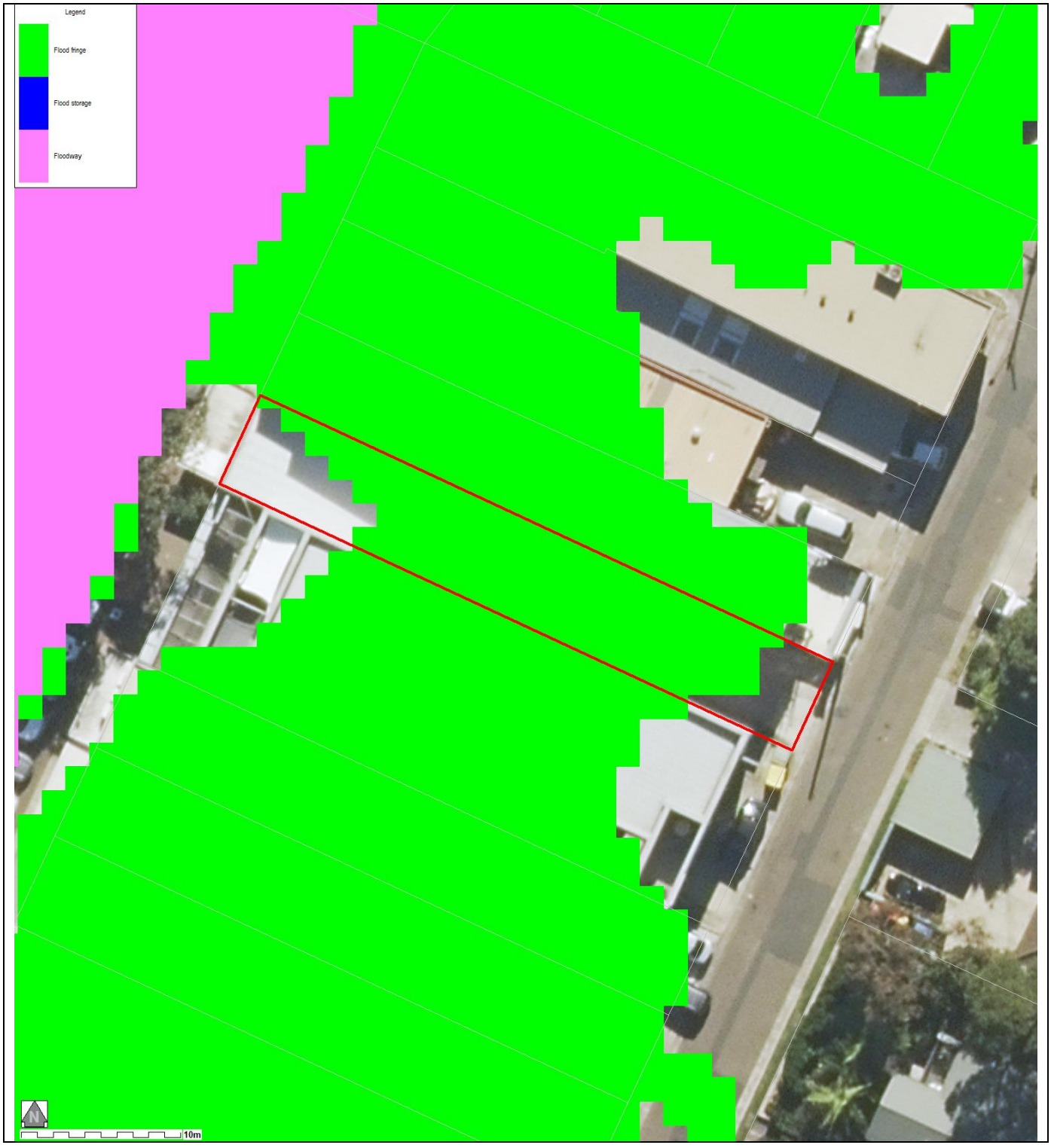
FLOOD MAP E – 1% AEP FLOOD HAZARD EXTENT MAP



Notes:

- Extent represents the 1% annual Exceedance Probability (AEP) flood event.
- Extent does not include climate change.
- Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Avalon to Palm Beach Floodplain Risk Management Study and Plan) and aerial photography (Source: NearMap 2014) are indicative only.

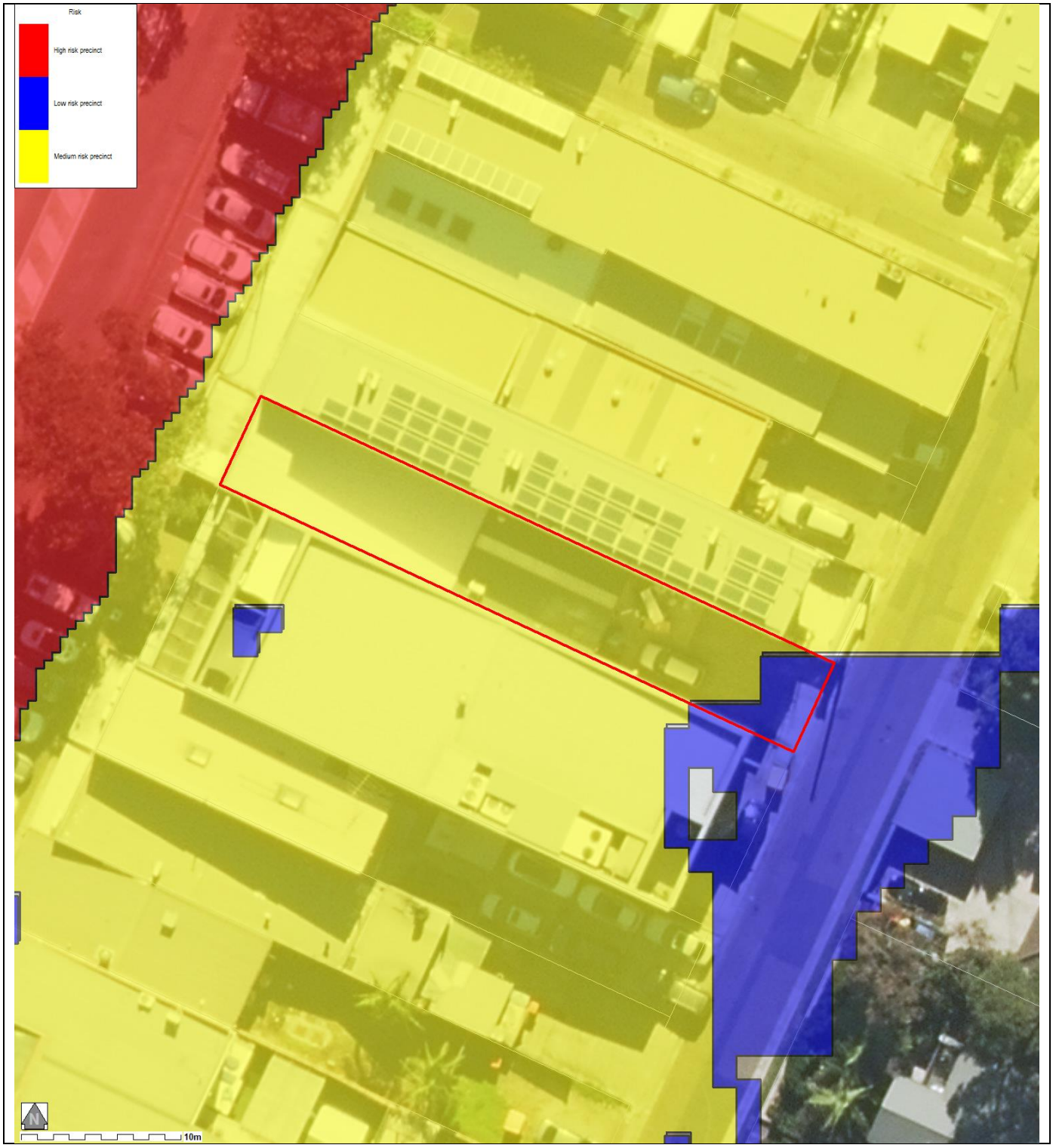
FLOOD MAP F – 1% AEP FLOOD HYDRAULIC CATEGORY EXTENT MAP



Notes:

- Extent represents the 1% annual Exceedance Probability (AEP) flood event.
- Extent does not include climate change.
- Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Avalon to Palm Beach Floodplain Risk Management Study and Plan) and aerial photography (Source: NearMap 2014) are indicative only.

FLOOD MAP G – FLOOD RISK PRECINCT MAP



Notes:

- **Low Flood Risk precinct** means all flood prone land not identified within the High or Medium flood risk precincts.
- **Medium Flood Risk precinct** means all flood prone land that is (a) within the 1% AEP Flood Planning Area; and (b) is not within the high flood risk precinct.
- **High Flood Risk precinct** means all flood prone land (a) within the 1% AEP Flood Planning Area; and (b) is either subject to a high hydraulic hazard, within the floodway or subject to significant evacuation difficulties (H5 and or H6 Life Hazard Classification).

Appendix D

EMERGENCY FLOOD EVACUATION PROCEDURE

Flood waters can rise very rapidly on this site

Once a warning is received for a possible flood or flood waters start to overtop the kerb and gutter in Old Barrenjoey Road at the front of the site:

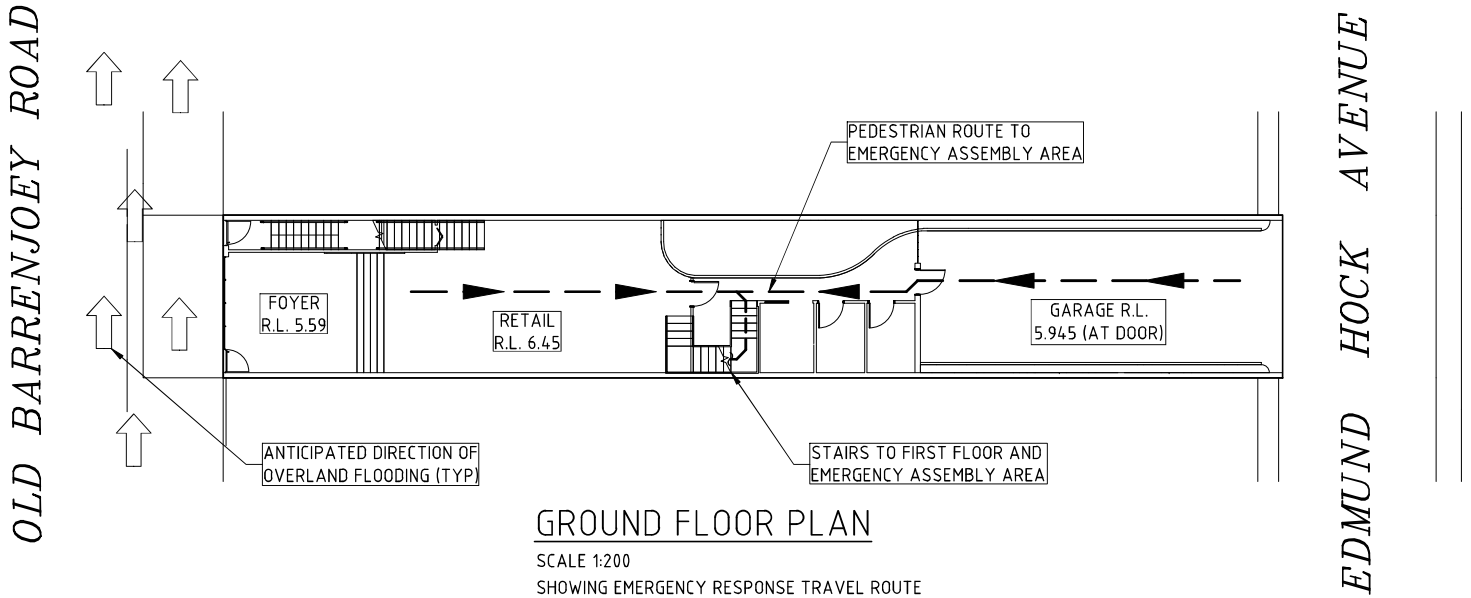
1. All occupants should be at the assembly point by the time the flood waters reach the front boundary of the site.
2. The Owner is to close the front doors and turn off all power, water and other ground floor level services.
3. All occupants to retreat to the emergency assembly area on the first floor level.
4. Nominated occupants to sweep the existing ground floor level following evacuation to ensure that all occupants have sought refuge at the emergency assembly point.
5. Emergency services to be notified by The Owner of the situation at site.

THIS SITE CAN FLOOD

NEVER DRIVE, WALK OR RIDE THROUGH FLOODWATERS

When emergency services give the all clear to return:

The site will only be opened for occupants to leave once floodwaters have subsided and the emergency services have given the all clear to return.



GROUND FLOOR PLAN

SCALE 1:200

SHOWING EMERGENCY RESPONSE TRAVEL ROUTE

TITLE

FLOOD EMERGENCY RESPONSE PLAN
62 OLD BARRENJOEY ROAD, AVALON

DRAWN	DATE	CHECKED	SCALE @ A3
CJM	23 JULY 2021	BE Civil (Hons) MIE Aust.	1:200

TAYLOR CONSULTING
CIVIL & STRUCTURAL ENGINEERS

DRAWING NO
SHEET – 3/A

"Seascape" Suite 7 22-26 Fisher Rd Dee Why NSW 2099 | T 02 9982 7092 | F 02 9982 5898 | enquire@taylorconsulting.net.au | www.taylorconsulting.net.au

Appendix E

Flood Checklists

BEFORE A FLOOD

Trigger for action: Always

Action	Status
● All occupants to be made aware of site flooding potential	
● Develop detailed emergency procedures, responsibilities and resources	
● Provide all occupants with a flood evacuation plan and advise of their responsibilities and delegations	
● Maintain an emergency contacts list	
● Update evacuation procedures annually	

WHEN A FLOOD IS LIKELY

Trigger for action: When the forecasts predict severe weather or significant amounts of rainfall are observed:

Action	Status
● Monitor the severe weather forecasts and predictions	
● The Owner (or tenant) to close the front and Carport door & prepare for subsequent evacuation to the upper levels of the dwelling.	
● Occupants should stay-in-place' until the flood event has ceased	
● The Owner to advise decision to SES.	

DURING A FLOOD

Trigger for action: When water is sighted ponding across the footpath in Old Barrenjoey Road:

Action	Status
● Evacuation will be undertaken in an orderly fashion	
● The phases of the evacuation shall be:	
➢ The Owner to request all occupants to proceed to the emergency assembly point.	
➢ All Occupants should be at the assembly point by the time the flood waters reach the rear boundary of the site.	
➢ The Owner to close the front entry & carport (flood proofed) doors and turn off all power and water, close off vents and other ground floor level facilities.	
➢ The Owner to retreat to the emergency assembly area.	
➢ Nominated occupants to sweep the existing premises following evacuation to ensure that all occupants have sought refuge in the emergency assembly point.	
● Emergency services to be notified by The Owner of the situation at site.	

Appendix F

Emergency Contacts

To be completed by The Owner

Name	Organisation	Role	Contact
	Emergency Services	Fire/ambulance/police	000
	Woollahra Council	Disaster Co-ordination Centre	
	State Emergency Service	SES Local Controller	132 500
	Hospital		

Appendix G

Flood Compatible Materials & Building Components

BUILDING COMPONENT	FLOOD COMPATIBLE MATERIAL	BUILDING COMPONENT	FLOOD COMPATIBLE MATERIAL
Flooring and Sub-floor Structure	▪ concrete slab-on ▪ ground monolith ▪ construction ▪ suspension reinforced ▪ concrete slab	Doors	▪ solid panel with water proof adhesives ▪ flush door with marine ply filled with closed cell foam ▪ painted metal construction ▪ aluminium or galvanised steel frame
Floor Covering	▪ clay tiles ▪ concrete, precast or in situ ▪ concrete tiles ▪ epoxy, form-in-place ▪ mastic flooring, formed in-place ▪ rubber sheets or tiles with chemical-set adhesives ▪ silicone floors formed in-place ▪ vinyl sheets or tiles with chemical-set adhesive ▪ ceramic tiles, fixed with mortar or chemical-set adhesive	Wall and Ceiling Linings	▪ fibro-cement board ▪ brick, face or glazed ▪ clay tile glazed in waterproof mortar ▪ concrete ▪ concrete block ▪ steel with waterproof applications ▪ stone, natural solid or veneer, waterproof grout ▪ glass blocks ▪ glass ▪ plastic sheeting or wall with waterproof adhesive
Wall Structure	▪ solid brickwork, blockwork, reinforced, concrete or mass concrete	Insulation Windows	▪ foam (closed cell types) ▪ aluminium frame with stainless steel

			▪ rollers or similar corrosion and water resistant material
Roofing Structure (for Situations where the Relevant Flood Level is Above the Ceiling)	▪ reinforced concrete construction ▪ galvanised metal construction	Nails, Bolts, Hinges and Fittings	▪ brass, nylon or stainless steel ▪ removable pin hinges ▪ hot dipped galvanised steel wire, nails or similar.

Electrical and Mechanical Equipment For dwellings constructed on land to which this Plan applies, the electrical and mechanical materials, equipment and Installation should conform to the following requirements.	Heating and Air Conditioning Systems Heating and air conditioning systems should, to the maximum extent possible, be installed in areas and spaces of the house above the relevant flood level. When this is not feasible every precaution should be taken to minimise the damage caused by submersion according to the following guidelines.
Main power supply Subject to the approval of the relevant authority the incoming main commercial power service equipment including all metering equipment, shall be located above the relevant flood level. Means shall be available to easily disconnect the dwelling from the main power supply.	Fuel Heating systems using gas or oil as a fuel should have a manually operated valve located in the fuel supply line to enable fuel cut-off.
Wiring All wiring, power outlets, switches, etc, should to the maximum extent possible, be located above the relevant flood level. All electrical wiring installed below the relevant flood level should be	Installation The heating equipment and fuel storage tanks should be mounted on and securely anchored to a foundation pad of sufficient mass to overcome buoyancy and prevent movement that

suitable for continuous submergence in water and should contain no fibrous components. Earth core linkage systems (or safety switches) are to be installed. Only submersible-type splices should be used below the relevant flood level. All conducts located below the relevant designated flood level should be so installed that they will be self draining if subjected to flooding.	could damage the fuel supply line. All storage tanks should be vented to an elevation of 600 millimetres above the relevant flood level.
Equipment All equipment installed below or partially below the relevant flood level should be capable of disconnection by a single plug and socket assembly.	Ducting All ductwork located below the relevant flood level should be provided with openings for drainage and cleaning. Self draining may be achieved by constructing the ductwork on a suitable grade. Where ductwork must pass through a water-tight wall or floor below the relevant flood level, the ductwork should be protected by a closure assembly operated from above relevant flood level.
Reconnection Should any electrical device and/or part of the wiring be flooded it should be thoroughly cleaned or replaced and checked by an approved electrical contractor before reconnection.	Ancillary Structures (steps, pergolas, etc) Suitable water tolerant materials should be used such as masonry sealed hardwood and corrosive resistant metals. Copper Chrome Arsenate (CCA) treated timber is not a suitable material.