Clause 4.6 Variation

Request to Vary Clause 4.3 in Richmond Valley Local Environmental Plan 2012

PROPERTY: 17 McDonald Place, Evans Head
OUR REF: 220269
DATE: 16 April 2024

Newton Denny Chapelle Surveyors Planners Engineers

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Appendix E	Waste Management Plan *HMC Environmental Consulting Pty Ltd*

Request to Vary Clause 4.3 in RVLEP2012

Property Address:	17 McDonald Place, Evans Head
Date:	16 April 2024
Prepared by:	Karina Vikstrom Newton Denny Chapelle

Site and Proposed Development

1. Describe the Site

Table 1: Site Details

Property Address	17 McDonald Place, Evans Head
Property Description	Lot 7 DP 14089 Parish of Riley, County of Richmond McDonald Place & Elm Street road reserves
Registered Owner	17 The Evans Pty Ltd
Proponent	17 The Evans Pty Ltd ATF 17 The Evans Trust
Applicant	Newton Denny Chapelle for and on behalf of the proponent
Local Authority	Richmond Valley Council
Site Area	822m^2
Easements	No
Existing Land Use	Existing commercial building
Local Planning Instrument	Richmond Valley Local Environmental Plan 2012
Land Zoning	R1 General Residential
Maximum Building Height	9.5 metres
Floor Space Ratio	Nil
Integrated Referrals	Nil
Other Referral	Essential Energy

The subject site is located at 17 McDonald Place, Evans Head and is identified as Lot 7 DP 14089. The site has a total area of 822m^2. It is generally rectangular in shape and forms the corner allotment on the McDonald Place and Elm Street frontages.

The site is centrally located within Evans Head and is zoned R1 General Residential Zone pursuant to the Richmond Valley Local Environmental Plan 2012. The subject site contains an existing commercial building previously used as a takeaway food and drink premises, positioned within the north-western corner of the property. The rear of the property contains vacant grassed area and landscape vegetation.

The subject site is bordered on all four frontages by the following uses:

- McDonald Place to the north, with an existing public reserve further north;
- Club Evans RSL to the east, with existing carparking associated with the Club directly adjacent the site;

- Elm Street to the west, with residential development further west; and
- Carparking associated with the Club Evans RSL to the south; with residential development further south.

Plate 1 identifies the site within the local context, **Plate 2** provides an air view of the land.

Plate 1: Locality Plan of the Subject Site

Plate 2: Aerial View of Site

Plates 3 to 5 illustrate the site the subject of the current application.

Plate 3: View of subject site from McDonald Place frontage

Plate 4: View of subject site from Elm Street frontage

Plate 5: View of subject site from corner

Site inspection and searches of local government records indicate the key site characteristics as outlined within **Table 2** below.

Table 2: Site Analysis

Site Characteristics	Comment
Existing structures within the subject site	Existing commercial building
Easements	Nil
Topography within the subject site	Generally flat.
Vegetation within the subject site	Existing landscape vegetation is provided at the site which will be removed as part of this development.
Infrastructure services	The subject site is connected to all essential infrastructure including water, sewer, NBN, telecommunications and electricity. The site has frontage to two public roads being McDonald Place & Elm Street.
Hazard Mapping	• **Acid Sulfate Soils** – The site is mapped as containing Class 3 Acid Sulfate Soils. • **Coastal Management SEPP** – The subject site is mapped within the coastal use and coastal environment areas of the SEPP.
Adjoining land uses	Refer to above.
Biodiversity Conservation	The site is not identified on the Biodiversity Values Map. Clearing of existing landscape vegetation is proposed.

2. Describe the Proposed Development

Development consent is sought from Richmond Valley Council for the construction of a shop top housing development comprising ground level commercial premises and parking, and ten (10) residential apartments located on the first and second storey, and associated works at 17 McDonald Place, Evans Head. The development is proposed to include three storeys comprising the following components:

- **Ground floor**
  - Commercial premises located on the corner of McDonald Place & Elm Street;
  - Car and bicycle parking accessed from Elm Street, with exit onto McDonald Place;
  - Waste, general storage and services; and
  - Residential foyer and lift access;
- **First and Second Floor**
  - Ten (10) residential units with 5 units located on each level.
- **Roof top terrace and lift overrun including mechanical plant and equipment**

The project includes awnings above the footpaths within the adjacent McDonald Place and Elm Street road reserves, and is inclusive of demolition works, vegetation removal, infrastructure servicing including stormwater management, sewer and water servicing. Strata title subdivision is also proposed.

Alfresco Dining will be provided on the public footpath as 'exempt development' utilizing the framework provided by *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* specifically Part 2, Division 1, Subdivision 20A, Footpaths – Outdoor Dining.

The proposed development will be constructed of a variety of materials including face brick, concrete balustrade, timber cladding, green walls, glass, screen metal doors and metal timber look balustrade. Reference should also be made to *Barker Architects* design set within **Appendix A** of this request. which provide detailed design of the proposed development.

Plate 1: Artist impression of the proposed shop top housing development

Planning Instrument, Development Standard & Proposed Variation

3. What is the Environmental Planning Instrument you are seeking to vary?

Richmond Valley Local Environmental Plan 2012

4. What is the site's zoning?

R1 General Residential Zone.

5. Identify the Development Standard to be Varied

Clause & Name of Development Standard

Clause 4.3 – Height of Building

Objectives of the Development Standard

(a) to establish the maximum height for buildings,
(b) to ensure that the height of buildings complements the streetscape and character of the area in which the buildings are located,
(c) to minimise visual impact, disruption of views, loss of privacy and loss of solar access to existing development.

6. Identify the type of Development Standard to be Varied

Is the development standard numeric or non-numeric?

Numeric

7. What is the numeric value of the development standard in the environmental planning instrument?

9.5m

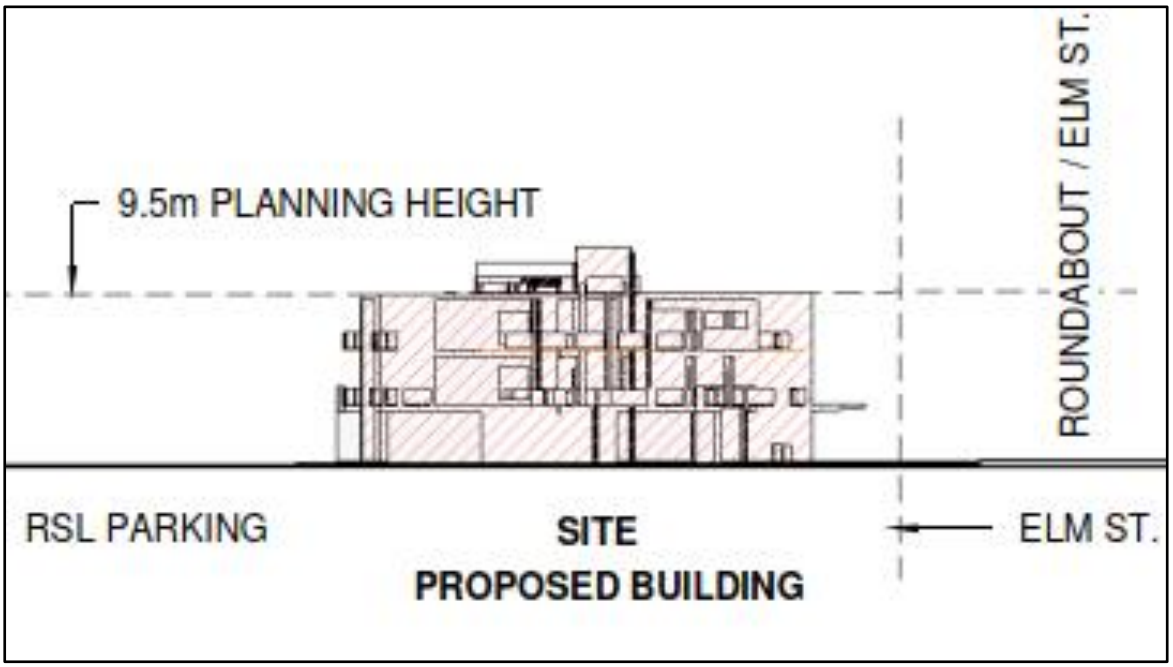
8. What is the difference between the existing and proposed numeric values? What is the percentage variation (between the proposal and the environmental planning instrument)?

The proposal has a building height of 12m.

Part of the proposal exceeds the maximum 9.5m development standard by 2.5m, which is a percentage variation of 29.16%.

The exceedance relates only to the lift overrun, plant room and the balustrading to the rooftop deck.

9. Visual representation of the proposed variation (if relevant)



Justification for the Proposed Variation

10. How is compliance with the development standard unreasonable or unnecessary in the circumstances of this particular case?

Note: There are 5 common ways that compliance with a development standard may be demonstrated to be unreasonable or unnecessary (items a to e). An applicant must satisfy at least one. This list is not exhaustive – there may be other ways available.

a) Are the objectives of the development standard achieved notwithstanding the non-compliance? (Give details if applicable)

The objectives of the development standard are reproduced below, together with the project's response

(a) to establish the maximum height for buildings,

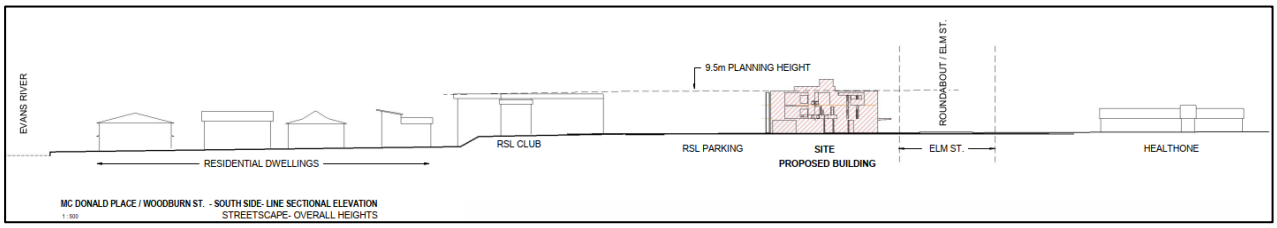
Comment: The exceedance relates only to the lift overrun, plant room and rooftop deck. A significant majority of the building has a building height of 9.35m, which complies with the building height standard. The lift overrun, plant room and rooftop deck provide an additional height of 2.35m for a small portion of the building.

(b) to ensure that the height of buildings complements the streetscape and character of the area in which the buildings are located,

Comment:

- The proposed height is not considered to be inconsistent with the surrounding development form and the desired development form given the LEP provisions applicable to the site. As shown within the streetscape elevation provided below, the height of the shop top housing development is generally consistent with the adjoining RSL Club building. The following Plate

illustrates this arrangement, with an enlarged version of this document provided within the architectural design plans at **Appendix 1.**



(c) to minimise visual impact, disruption of views, loss of privacy and loss of solar access to existing development.

Comment:

- Shadow diagrams are provided within the architectural plan set within **Appendix 1.** As demonstrated within the shadow diagrams, overshadowing from the lift overrun and mechanical plant/equipment & rooftop terrace (being the components which exceed the maximum building height) essentially overshadows onto the proposed shop top housing building, and does not provide additional overshadowing on adjoining properties compared to that part of the building that fully complies with the maximum height provision.
- As detailed within the architectural design plans at **Appendix 1**, the lift overrun, mechanical plant/equipment and rooftop terrace are located within the centre of the building, and are provided significant setbacks to the property boundaries, being 13.194 metres to the south, 6.735 metres to the west, 6.694 metres to the east, and 10.476 metres to the north. As a result, the additional height provided by the lift overrun and mechanical plant/equipment does not result in additional overshadowing impacts of the adjoining properties (above that which will result from the broader building).
- Balconies are provided to the first and second floor residential units within the shop top housing development, with screening provided to ensure privacy to both the units, and surrounding developments. The balconies provided are similar to those provided within the existing two storey dwelling on the corner of Elm Street and Cedar Street (2 Cedar Street). Given the location of the subject site, and surrounding developments, it is not considered the proposed development will result in any loss of views.
- The proposed development involves the construction of a shop top housing development within an existing residential zoned site. The proposed development provides an architecturally designed building which has been design in accordance with development standards, and with consideration to the existing architectural form of the Evans Head locality. In this regard, the proposed development and height of the building is considered to be consistent with and complement the streetscape and character of the area. Given the location of the subject site, and separation between existing developments by virtue of the existing road reserves, no impacts are considered likely on privacy, views or solar access.

b) Are the underlying objectives or purpose of the development standard not relevant to the development? (Give details if applicable)

N/a

c) Would the underlying objective or purpose be defeated or thwarted if compliance was required? (Give details if applicable)

N/a

Has the development standard been virtually abandoned or destroyed by the council's own actions in granting consents departing from the standard? (Give details if applicable)

N/a

e) Is the zoning of the land unreasonable or inappropriate so that the development standard is also unreasonable or unnecessary? (Give details if applicable)

N/a

11. Are there sufficient environmental planning grounds to justify contravening the development standard?

Note: Environmental planning grounds are matters that relate to the subject matter, scope and purpose of the EP&A Act including the Act's objects (see Part A, Chapter 2.6 of this guide). They must relate to the aspect of the proposed development that contravenes the development standard and not simply promote the benefits of the development as a whole. You must provide substantive justification as to why the contravening the development standard is acceptable.

Comment: Development consent is sought from Richmond Valley Council for the construction of a shop top housing development comprising ground level commercial premises and parking, and ten (10) residential apartments located on the first and second storey, and associated works at 17 McDonald Place, Evans Head. The 'building proper' complies with the building height control. The height exceedance relates to the lift overrun, mechanical plant/equipment and rooftop terrace.

Potential Direct Impacts

The potential direct impacts of the exceedance to the building height control for these parts of the building are summarised below, together with the proposal's response to these issues:

- **Overshadowing** – As detailed within the architectural design plans at **Appendix 1**, the lift overrun, mechanical plant/equipment and rooftop terrace are located within the centre of the building, and are provided significant setbacks to the property boundaries, being 13.194 metres to the south, 6.735 metres to the west, 6.694 metres to the east, and 10.476 metres to the north. As a result, the additional height provided by the lift overrun and mechanical plant/equipment does not result in additional overshadowing impacts of the adjoining properties (above that which will result from the broader building).

- **Overlooking –** The lift overrun, plant & equipment are 'mechanical' in nature and do not result in overlooking or privacy concerns. The rooftop terrace is situated centrally on the rooftop and separated from the edges of the building by the mechanical enclosure to the east, and substantial non trafficable areas to the other boundaries (between 6.69m and 10.47m deep). As such, view lines from the terrace will be 'distant' in nature. Furthermore,

there are no residential uses in close proximity to the site resulting in no particular privacy concerns for neighbours.

- **Scale of building within streetscape** – As illustrated in the Architectural Design Plans at **Appendix A**, the lift overrun, mechanical plant/equipment and rooftop terrace are located centrally within the roof form. The perspective drawings confirm that these elements will not be readily visible. The following extracts from the plan set illustrate this arrangement.

In addition, we note that the adjoining RSL building represents a substantial structure within the streetscape. The proposed building is therefore not inconsistent with the scale of the development in the locality.

Potential Indirect Impacts

By placing the lift over-run and mechanical plant on the roof, this theoretically enables a minor increase in development yield for the site (compared to that which would be possible if this infrastructure was placed within the height limit).

The potential indirect impacts of the exceedance to the building height control for these parts of the building are summarised below, together with the proposal's response to these issues:

Traffic – The Traffic Impact Assessment for the project (refer **Appendix B**) confirms that the road network has adequate capacity to accommodate the development and that the adequate measures are in place to accommodate parking., site distances and pedestrian safety. The assessment concludes that "*based on this assessment we recommend that the proposed development be approved from a traffic engineering perspective*".

A theoretical minor reduction in yield (resulting from a development compliant with the height controls) would result in a corresponding minor reduction in traffic generation. As such, it is reasonable to assume that a development fully compliant with the height controls would not alter the conclusions within this report.

- **Noise** – The Noise Impact Assessment for the project (Refer **Appendix C**) confirms that the noise impact of the proposed development results in sound pressure levels at adjacent receivers that are compliant with the relevant Project Noise Trigger Level, provided conditions outlined in the report are followed. We note that these includes that al-fresco should be limited to McDonald Place, with no al-fresco on the Elm Street footpath. The report concludes that "*based on our assessment, we recommend this proposal is approved from an acoustic perspective*".

  A theoretical minor reduction in yield (resulting from a development compliant with the height controls) would result in a corresponding minor reduction in noise generation. As such, it is reasonable to assume that a development fully compliant with the height controls would not alter the conclusions within this report.

  Servicing – The Engineering Services Report for the project (Refer **Appendix D**) confirms that the proposal is able to be adequately serviced. The report concludes that "*on the basis of this assessment we recommend this development for approval from an engineering services perspective*".

  A theoretical minor reduction in yield (resulting from a development compliant with the height controls) would result in a corresponding minor reduction in service demands. As such, it is reasonable to assume that a development fully compliant with the height controls would not alter the conclusions within this report.

- **Waste management** – The Waste Management Plan for the project (Refer **Appendix E**) confirms that "The proposed waste management arrangements within this report are considered adequate for the purposes of the demolition, construction and occupation

associated with the proposed Shop-Top development of the existing commercial land located Lot 7 DP 14089, 17 McDonald Place, Evans Head".

A theoretical minor reduction in yield (resulting from a development compliant with the height controls) would result in a corresponding minor reduction in waste generation. As such, it is reasonable to assume that a development fully compliant with the height controls would not alter the conclusions within this report.

The minor theoretical increase in yield does not alter the assessments within the Statement of Environmental Effects relating to demolition, contamination, geotechnical consideration or Acid Sulfate Soils.

In addition, we make the following general observations regarding the proposal:

- The placement of the plant on the roof minimises potential noise impacts on future residents in the building (compared to placing the infrastructure on the lower levels of the building).

- The placement of the lift overrun on the roof ensures that all levels of the building are accessible to residents without the need to climb stairs.

12. Is there any other relevant information relating to justifying a variation of the development standard? (If required)

The subject land is zoned R1 General Residential however is considered a unique site surrounded by a mixture of commercial, recreational and residential land uses.

This project has been designed to be compatible with the existing and desired future amenity of the locality and will support the use of the land for residential and commercial purposes. In addition, the development is largely consistent with the development controls for the locality. The application is supported by a range of technical reports which demonstrate the proposals compliance with the relevant legislation, policies and standards. As such, the proposal is considered to be in the public interest.

Appendix A

Architectural Design Plans

Barker Architects

17 McDonald Place Evans Head

Drawing List			
Sheet Number	Sheet Name	Drawn By	Current Revision
A000	TITLE SHEET	HS	A
A001	LOCATION & OVERALL SITE PLAN	FA	A
A002	LOCAL CONTEXT PLAN	FA	A
A003	STREETSCAPE-STREETSCAPE-SECTION & VIEWSSECTION & VIEWS	FA	A
A004	SITE ANALYSIS PLAN	HS	A
A005	SHADOW DIAGRAMS	LB	A
A006	SOLAR ACCESS NE UNITS 1,2,3,6,7,8	HS	A
A007	SOLAR ACCESS NW UNITS 4,5,9 & 10	HS	A
A008	NATURAL VENTILATION	HS	A
A100	PROPOSED SITE PLAN	LB	A
A200	GROUND FLOOR	HS	A
A201	LEVEL ONE	HS	A
A202	LEVEL TWO	LB	A
A400	ROOF	HS	A
A500	ELEVATIONS NE	HS	A
A501	ELEVATION SW	LB	A
A600	SECTIONS	HS	A
A601	SECTIONS	HS	A
A900	WINDOW SCHEDULE	HS	A
A901	DOOR SCHEDULE	HS	A

Regulated Design Record			
Project Address:	17 McDonald Place Evans Head- NSW		
Project Name:	Multi Use Development		
Consent No:	DA TBC	Body Corporate Reg No:	TBC
Drawing Title:	TITLE SHEET	Drawing No:	A000

No.	Date	Description	DP Full Name | Reg No.
A	12.03.24	DA Issue	Luke Barker | 8910

NOTES

NOMINATED ARCHITECT:
Luke Barker 8910

TITLE SHEET

2205 | Multi Use Development

17 The Evans Trust

17 McDonald Place Evans Head- NSW

sheet no.	A000
scale @A2:	
date:	Jan 24
drawn:	HS
revision	A

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BARKER ARCHITECTS

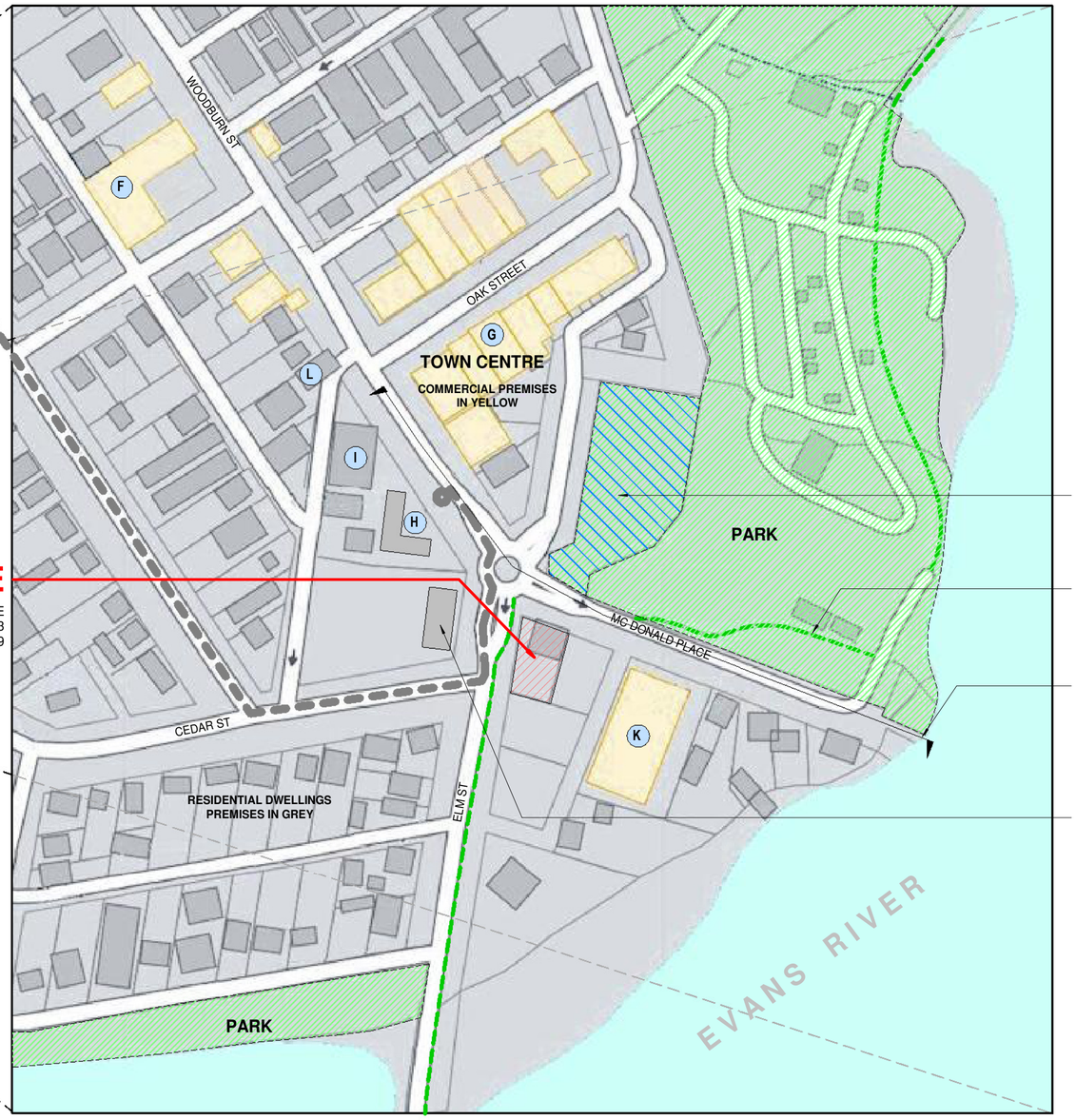
SOURCE: BASE MAP FROM SIX MAPS

SCALE : NTS

NO. 660
BUS ROUTE
(BALLINA - EVANS HEAD)

SITE

17 MC DONALD PLACE
EVANS HEAD - NSW - 2473
LOT 8 - DP 14089



NEW TEMPORARY
HOUSING VILLAGE

CYCLE PATH

FOR STREETSCAPE
ELEVATION & VIEWS, SEE
DRAWING A003

NEW BUILDING UNDER
CONSTRUCTION

SOURCE: BASE MAP FROM GOOGLE MAPS

SCALE 1:2000

BLOCK PLAN SHOWING BUIDING PATTERN / TYPOLOGY

KEY

A & B : MAIN ACCESS ROADS FROM M1- PACIFIC MOTORWAY
C : HERITAGE AVIATION MUSEUM
D : K12 SCHOOL
E : FIRE & RESCUE NSW FIRE STATION
F : IGA - GROCERY STORE
G : TOWN CENTRE (GROCERY STORE / NEWS AGENT/ CHEMIST/ RESTAURANTS, HOTEL)
H : EVANS HEAD HEALTHONE (MEDICAL CENTRE)
I : PUBLIC LIBRARY
K : CLUB EVANS RSL
L : MEDICAL CENTRE

Regulated Design Record			
Project Address:	17 McDonald Place Evans Head- NSW		
Project Name:	Multi Use Development		
Consent No:	DA TBC	Body Corporate Reg No:	TBC
Drawing Title:	LOCATION & OVERALL SITE PLAN	Drawing No:	A001

No.	Date	Description	DP Full Name | Reg No.
A	12.03.24	DA Issue	Luke Barker | 8910

NOTES

LOCATION & OVERALL
SITE PLAN
2205 | Multi Use Development

17 The Evans Trust

17 McDonald Place Evans Head- NSW

sheet no.	A001
scale @A2:	1 : 2000
date:	Jan 24
drawn:	FA
revision	A

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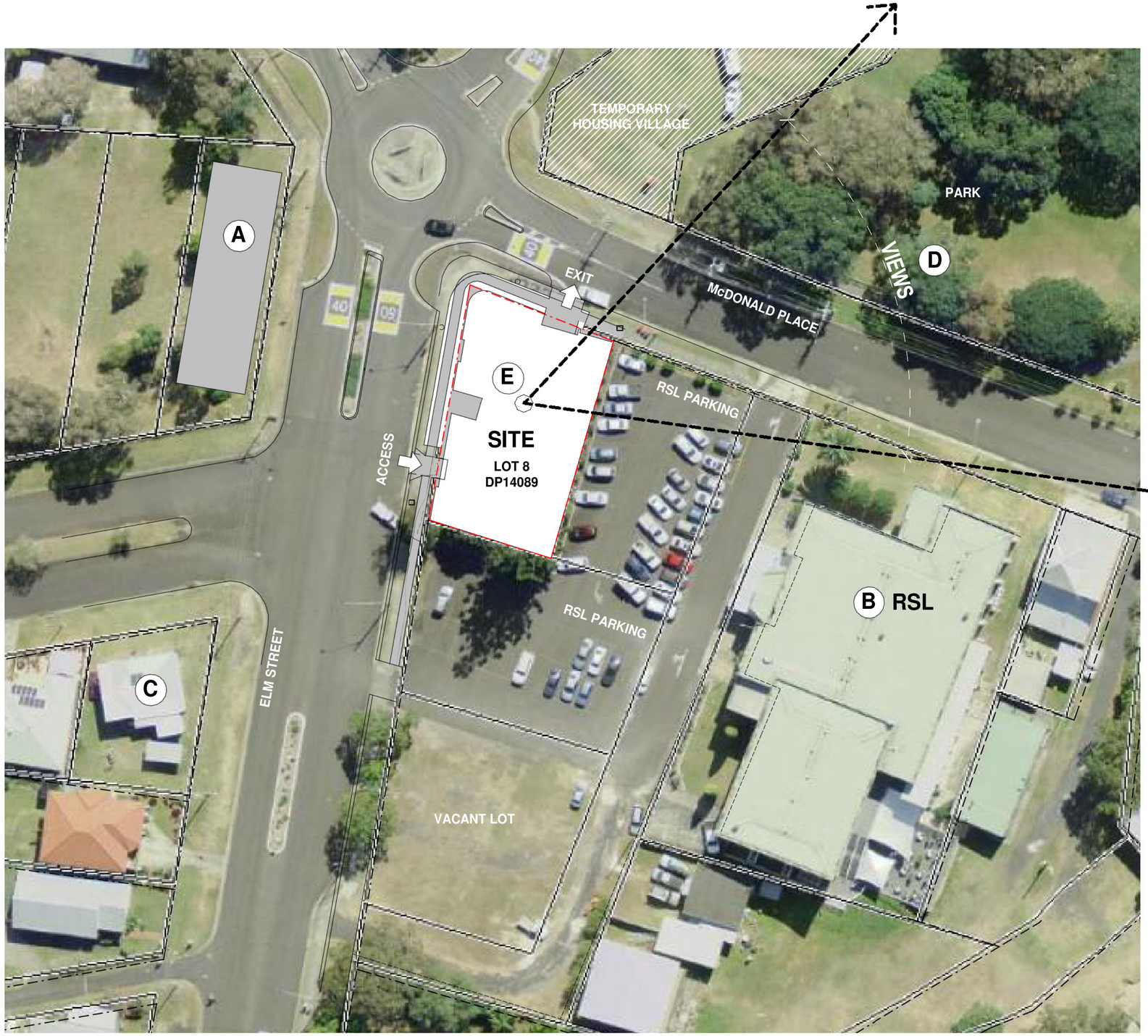

A : NEW , TWO LEVEL RESIDENTIAL BUILDING

B : RSL CLUB, TWO LEVEL BRICK BUILDING

C : TYPICAL TIMBER FRAMED 1 & 2 LEVEL RESIDENTIAL DWELLINGS

D : VIEWS TO EVANS RIVER

E : THE SITE IS GENERALLY FLAT WITH AN AVERAGE DATUM OF RL 5.00 AHD. MCDONALD PLACE SLOPES TOWARDS EVANS RIVER

F : THERE ARE NO SIGNIFICANT NOISE SOURCES AFFECTING THE SITE - REFER ACOUSTIC REPORT FROM INGEN CONSULTING FOR DETAILS

Regulated Design Record			
Project Address:	17 McDonald Place Evans Head- NSW		
Project Name:	Multi Use Development		
Consent No:	DA TBC	Body Corporate Reg No:	TBC
Drawing Title:	LOCAL CONTEXT PLAN	Drawing No:	A002

No.	Date	Description	DP Full Name | Reg No.
A	12.03.24	DA Issue	Luke Barker | 8910

NOTES

NOMINATED ARCHITECT:
Luke Barker 8910

LOCAL CONTEXT PLAN

2205 | Multi Use Development

17 The Evans Trust

17 McDonald Place Evans Head- NSW

sheet no.	A002
scale @A2:	1 : 500
date:	Jan 24
drawn:	FA
revision	A

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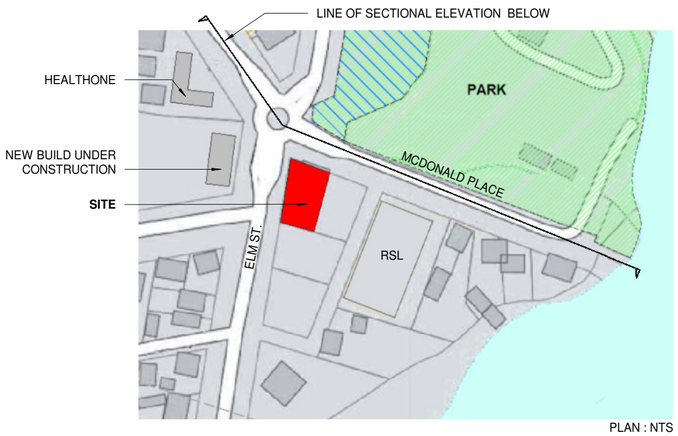
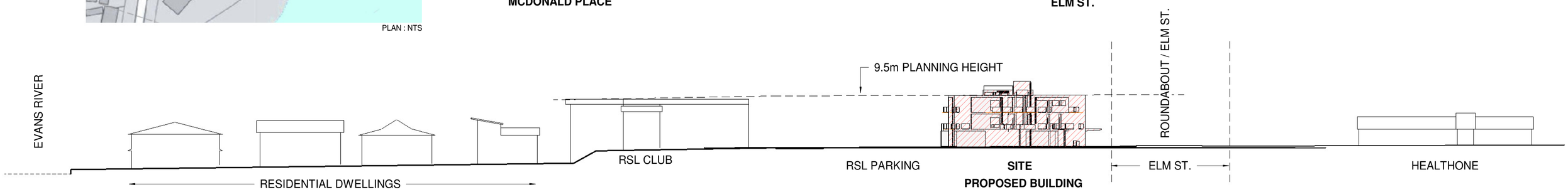


PLAN : NTS

VIEW DOWN MCDONALD PLACE SHOWING THE EXISTING BUILDING ON SITE AND THE RSL CLUB IN THE BACKGROUND

MCDONALD PLACE

ELM ST.



MC DONALD PLACE / WOODBURN ST. - SOUTH SIDE- LINE SECTIONAL ELEVATION

1 : 500

STREETSCAPE- OVERALL HEIGHTS

NE PERSPCTIVE FROM MCDONALD PLACE

SW PERSPCTIVE FROM ELM STREET

N PERSPCTIVE FROM MCDONALD PLACE

Regulated Design Record			
Project Address:	17 McDonald Place Evans Head- NSW		
Project Name:	Multi Use Development		
Consent No:	DA TBC	Body Corporate Reg No:	TBC
Drawing Title:	STREETSCAPE- STREETSCAPE- SECTION & VIEWSSECTION & VIEWS	Drawing No:	A003

No.	Date	Description	DP Full Name | Reg No.
A	12.03.24	DA Issue	Luke Barker | 8910

NOTES

STREETSCAPE- STREETSCAPE- SECTION & VIEWSSECTION & VIEWS

2205 Multi Use Development

17 The Evans Trust

17 McDonald Place Evans Head- NSW

sheet no.	A003
scale @A2:	1 : 500
date:	Jan 24
drawn:	FA
revision	A

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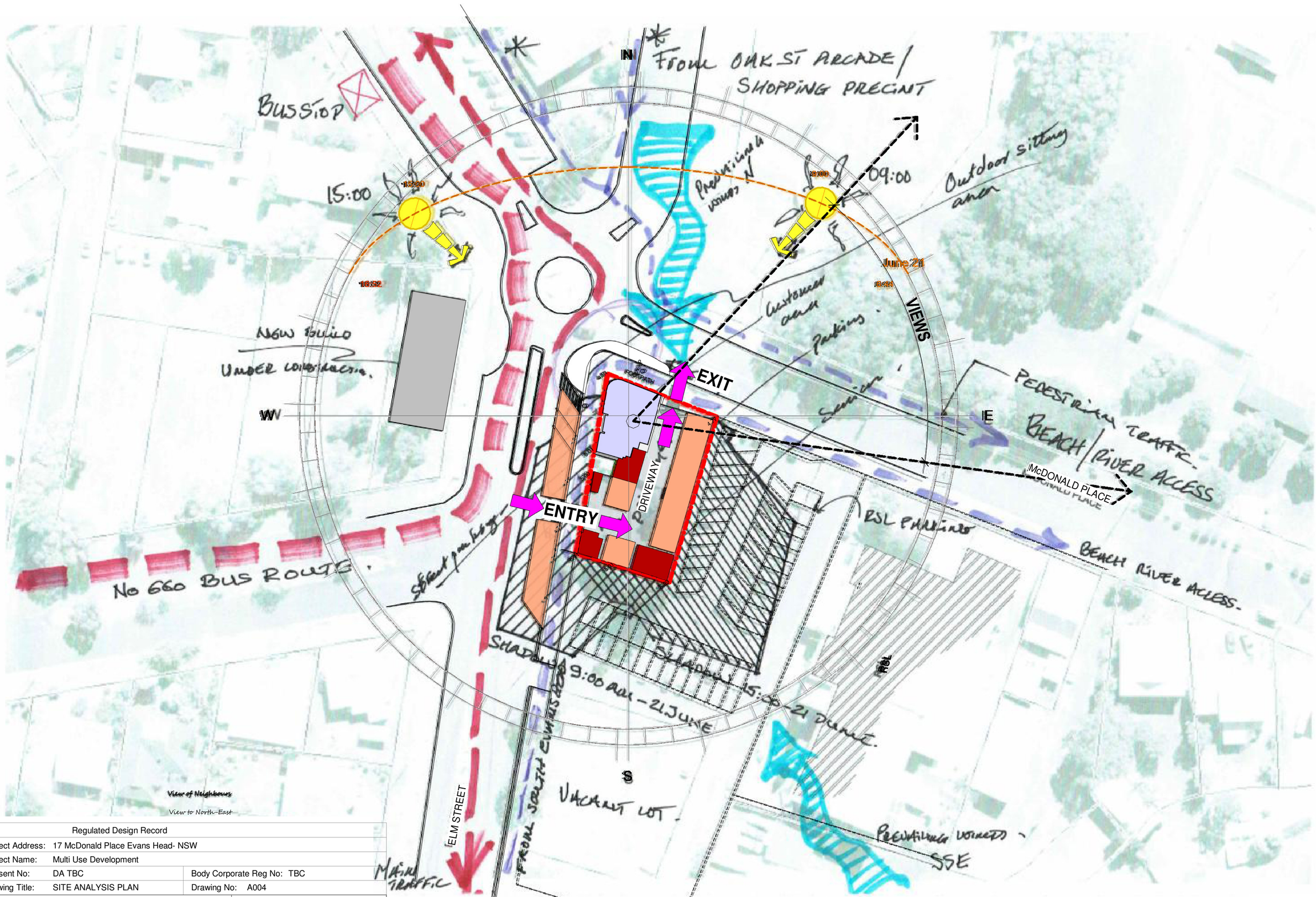

Regulated Design Record			
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Project Name:	Multi Use Development		
Consent No:	DA TBC	Body Corporate Reg No:	TBC
Drawing Title:	SITE ANALYSIS PLAN	Drawing No:	A004

No.	Date	Description	DP Full Name | Reg No.
A	12.03.24	DA Issue	Luke Barker | 8910

NOTES

NOMINATED ARCHITECT:
Luke Barker 8910

SITE ANALYSIS PLAN

2205 | Multi Use Development

17 The Evans Trust

17 McDonald Place Evans Head- NSW

sheet no.	A004
scale @A2:	As indicated
date:	Jan 24
drawn:	HS
revision	A

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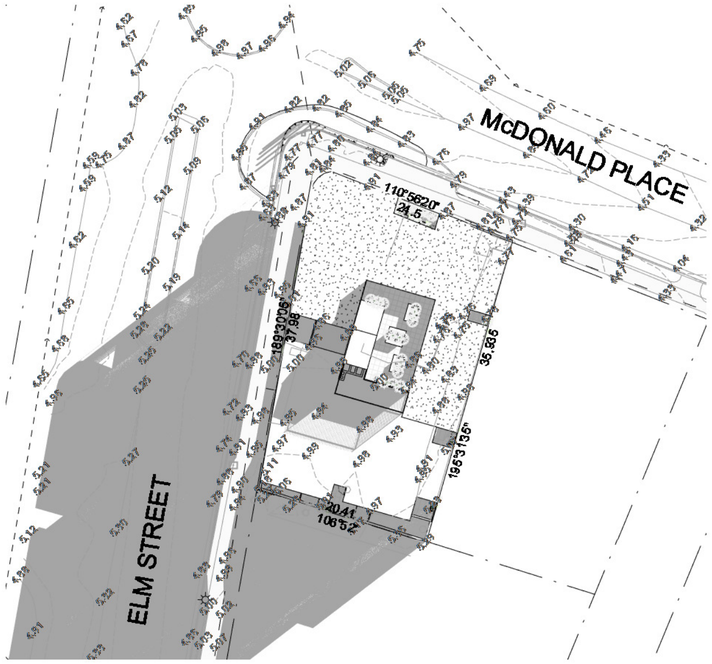
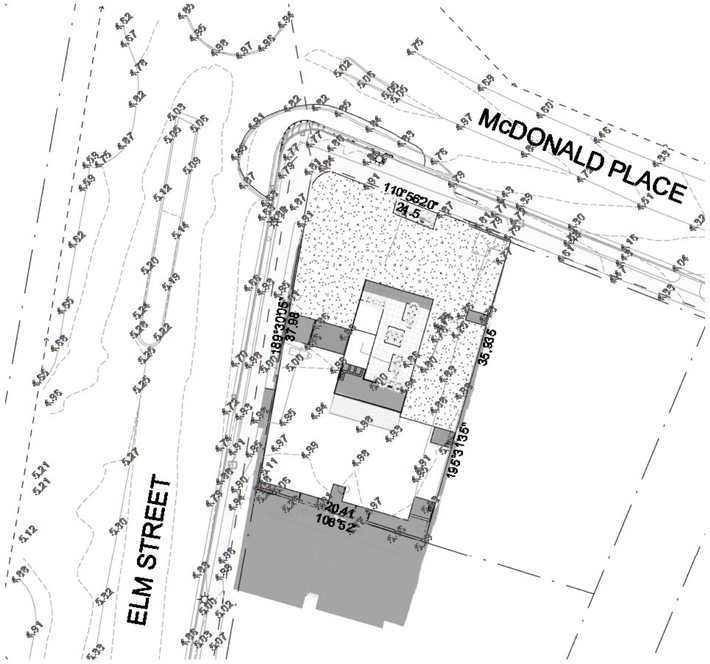
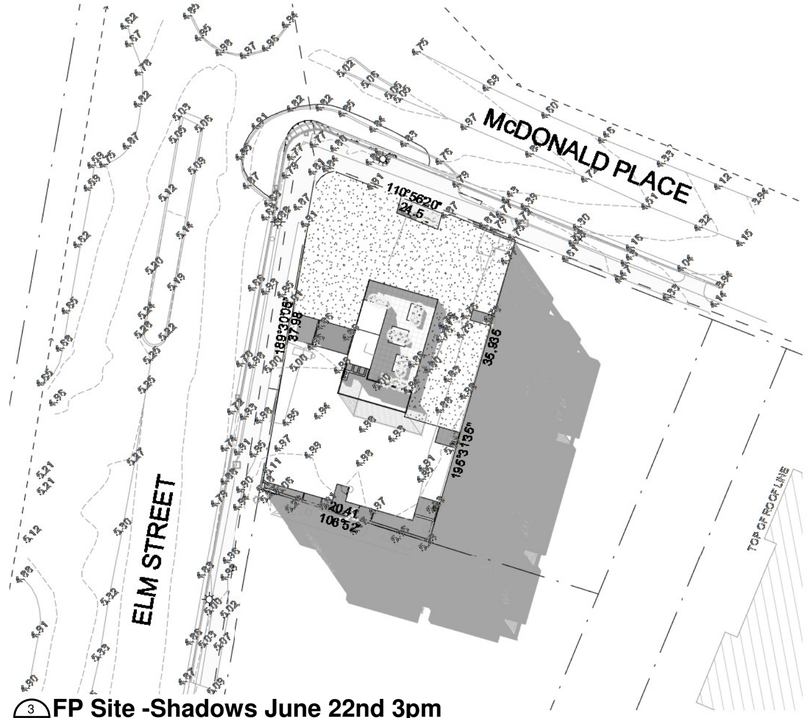
BARKER ARCHITECTS



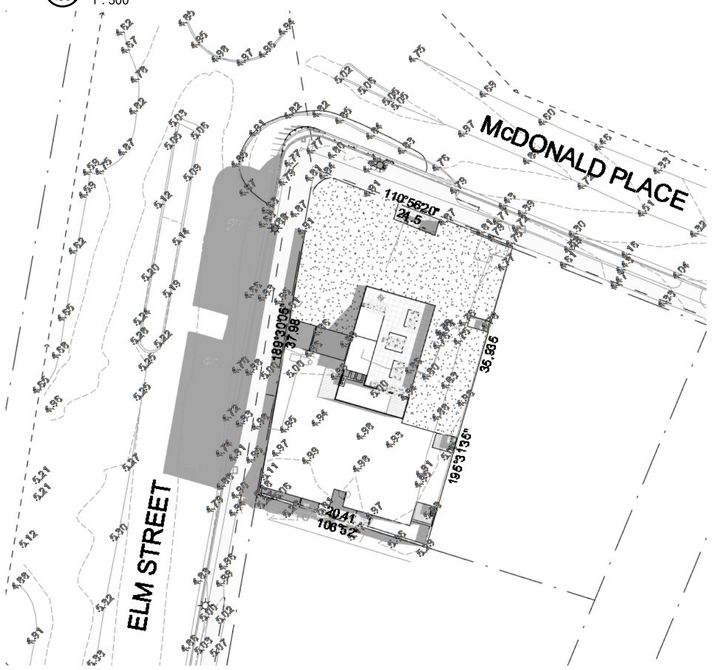
1 A500 **FP Site -Shadows June 22nd 9am**
1 : 500



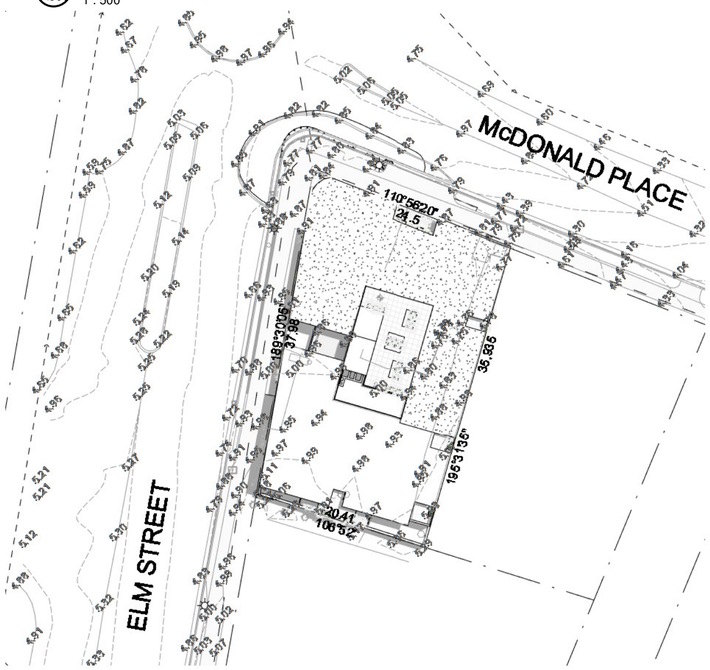
2 A500 **FP Site -Shadows June 22nd NOON**
1 : 500



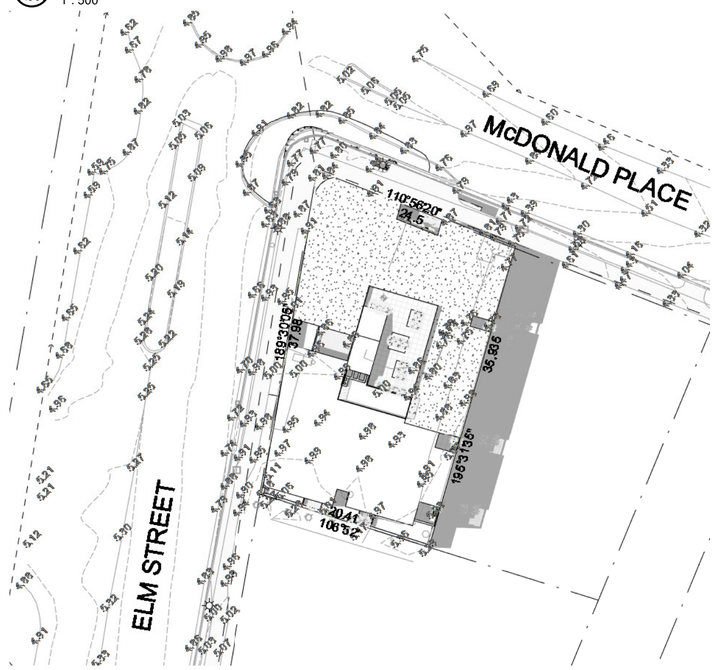
3 A500 **FP Site -Shadows June 22nd 3pm**
1 : 500



4 A500 **FP Site -Shadows Dec 22nd 9am**
1 : 500



5 A500 **FP Site -Shadows Dec 22nd NOON**
1 : 500



6 A500 **FP Site -Shadows Dec 22nd 3pm**
1 : 500

Regulated Design Record			
Project Address:	17 McDonald Place Evans Head- NSW		
Project Name:	Multi Use Development		
Consent No:	DA TBC	Body Corporate Reg No:	TBC
Drawing Title:	SHADOW DIAGRAMS	Drawing No:	A005

No.	Date	Description	DP Full Name | Reg No.
A	12.03.24	DA Issue	Luke Barker | 8910

NOTES

SHADOW DIAGRAMS
2205 | Multi Use Development
17 The Evans Trust
17 McDonald Place Evans Head- NSW

sheet no.	A005
scale @A2:	1 : 500
date:	Jan 24
drawn:	LB
revision	A

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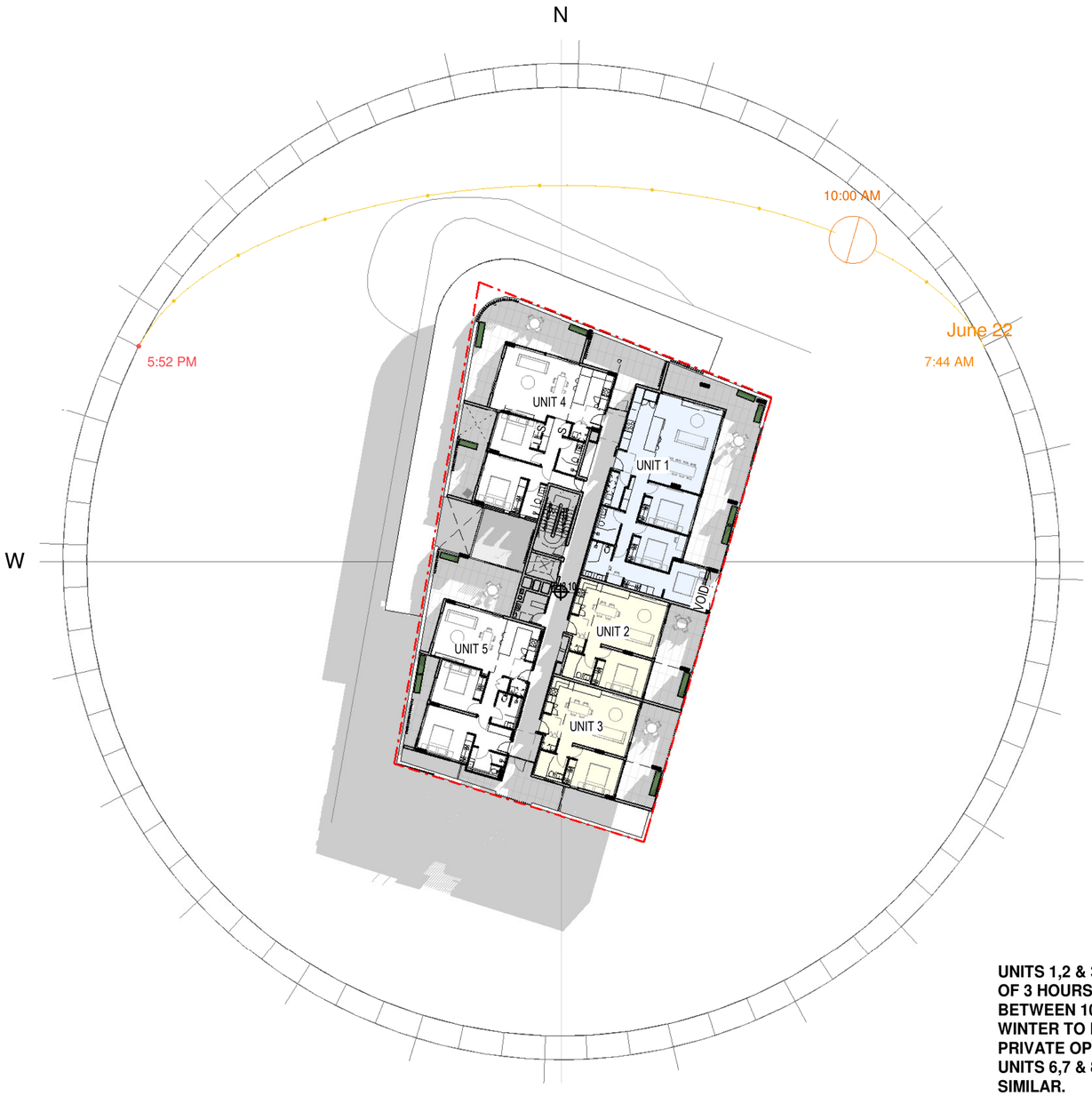

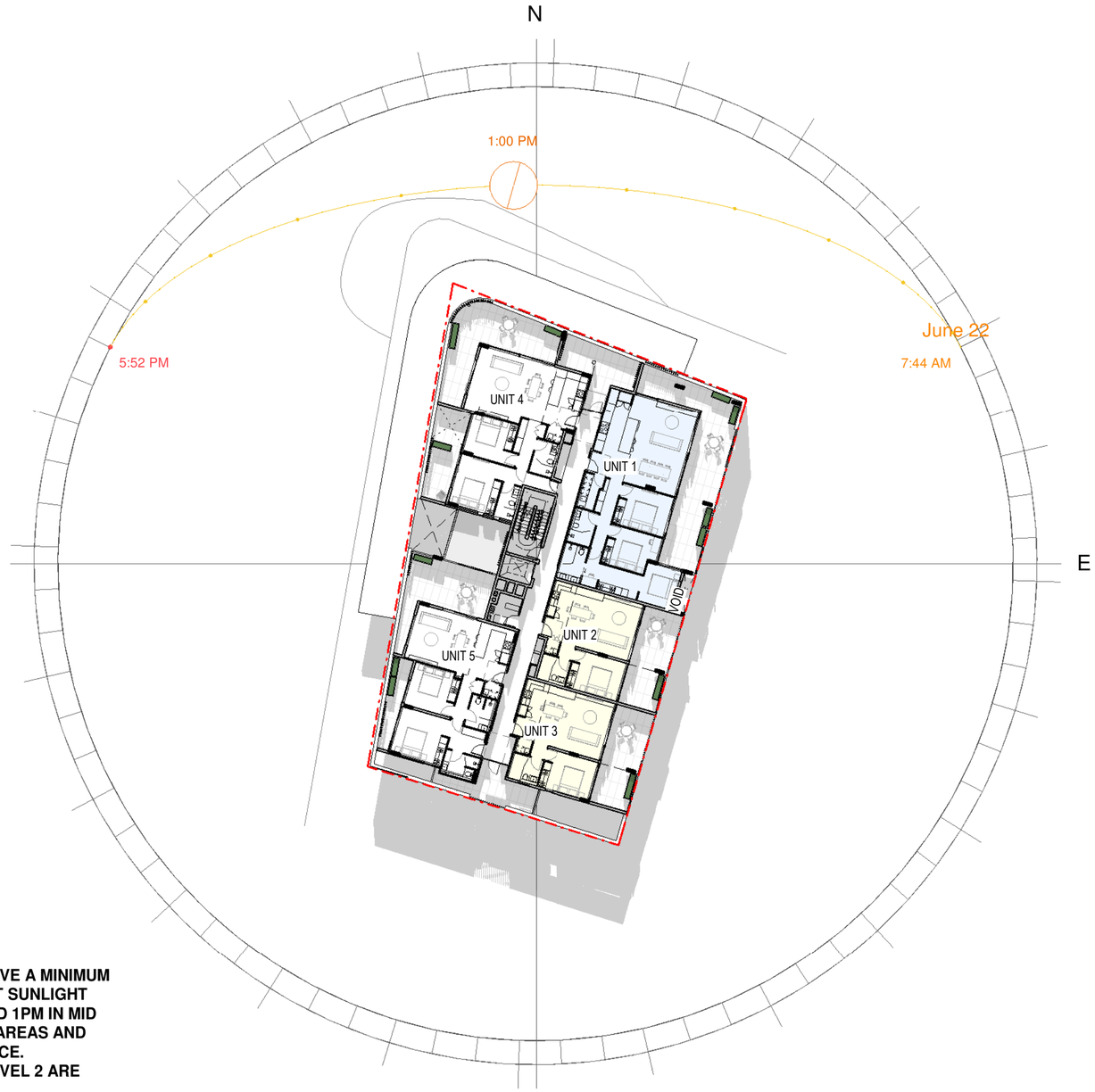

UNITS 1,2 & 3 RECEIVE A MINIMUM OF 3 HOURS DIRECT SUNLIGHT BETWEEN 10AM AND 1PM IN MID WINTER TO LIVING AREAS AND PRIVATE OPEN SPACE.
UNITS 6,7 & 8 ON LEVEL 2 ARE SIMILAR.

Regulated Design Record			
Project Address:	17 McDonald Place Evans Head- NSW		
Project Name:	Multi Use Development		
Consent No:	DA TBC	Body Corporate Reg No:	TBC
Drawing Title:	SOLAR ACCESS NE UNITS 1,2,3,6,7,8	Drawing No:	A006

No.	Date	Description	DP Full Name | Reg No.
A	12.03.24	DA Issue	Luke Barker | 8910

NOTES

SOLAR ACCESS NE UNITS 1,2,3,6,7,8

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sheet no.	A006
scale @A2:	1 : 300
date:	Jan 24
drawn:	HS
revision	A

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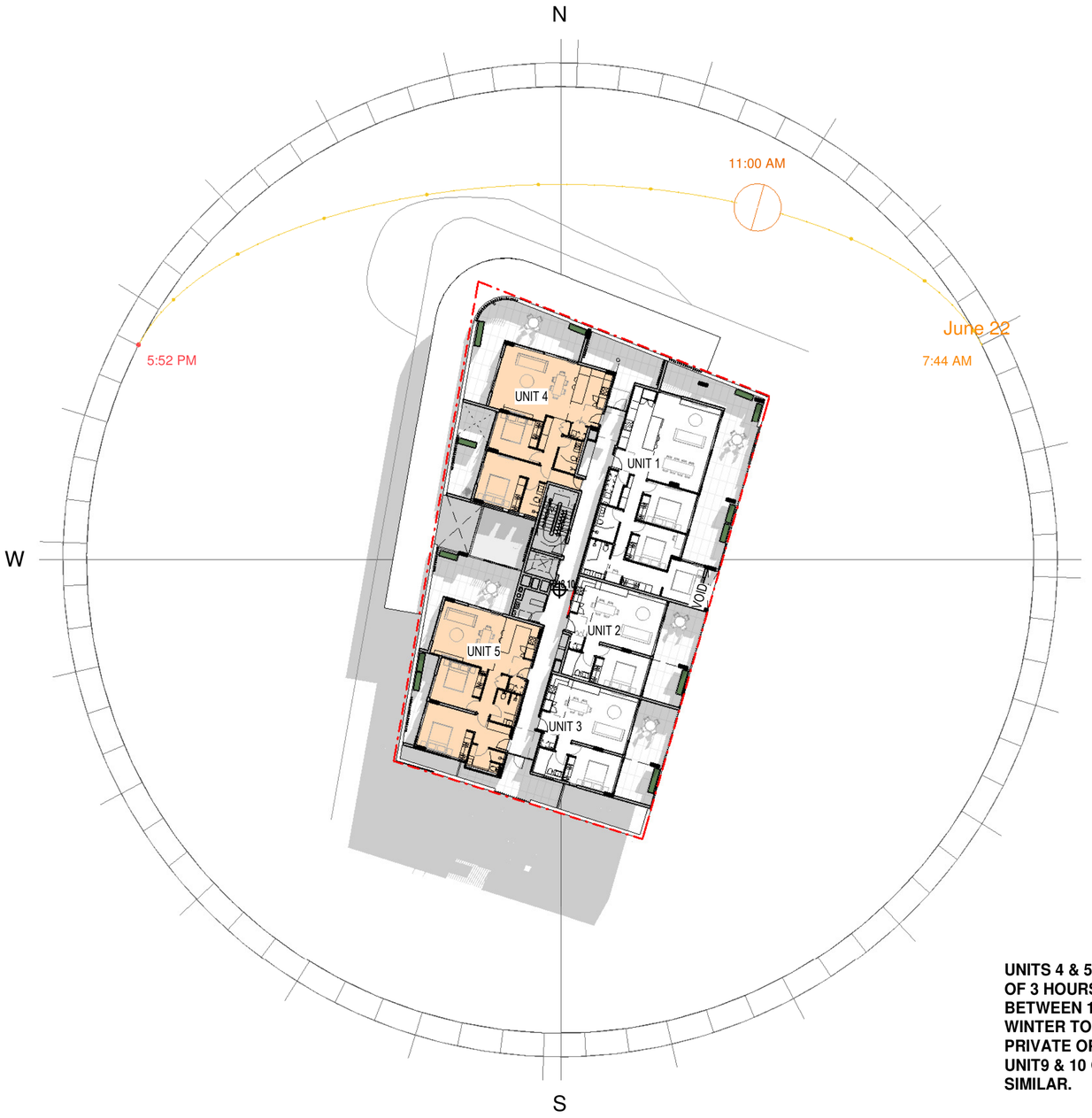

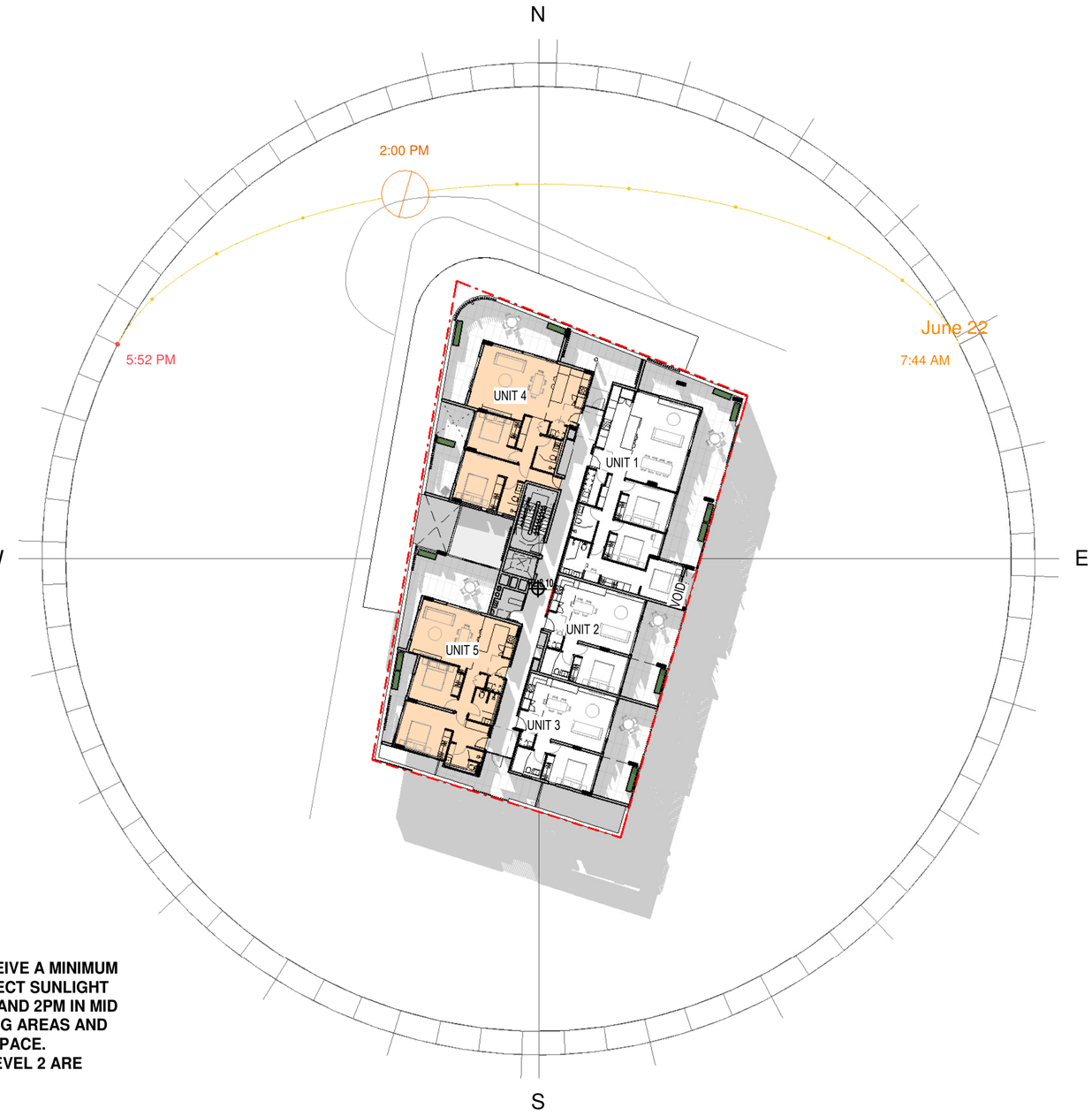

UNITS 4 & 5 RECEIVE A MINIMUM OF 3 HOURS DIRECT SUNLIGHT BETWEEN 11AM AND 2PM IN MID WINTER TO LIVING AREAS AND PRIVATE OPEN SPACE.
UNIT9 & 10 ON LEVEL 2 ARE SIMILAR.

Regulated Design Record			
Project Address:	17 McDonald Place Evans Head- NSW		
Project Name:	Multi Use Development		
Consent No:	DA TBC	Body Corporate Reg No:	TBC
Drawing Title:	SOLAR ACCESS NW UNITS 4,5,9 & 10	Drawing No:	A007

No.	Date	Description	DP Full Name | Reg No.
A	12.03.24	DA Issue	Luke Barker | 8910

NOTES

SOLAR ACCESS NW UNITS 4,5,9 & 10

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sheet no.	A007
scale @A2:	1 : 300
date:	Jan 24
drawn:	HS
revision	A

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UNITS 1, 4 & 5 ARE CROSS VENTILATED/ UNIT 2 & 3 HAVE NATURAL VENTILATION VIA OPERABLE WINDOWS AND DOORS ON LEVEL 1.
LEVEL 2 IS SIMILAR.
60% OF UNITS ARE CROSS VENTILATED.

1 BR APARTMENT
2 BR APARTMENT
3 BR APARTMENT

Regulated Design Record			
Project Address:	17 McDonald Place Evans Head- NSW		
Project Name:	Multi Use Development		
Consent No:	DA TBC	Body Corporate Reg No:	TBC
Drawing Title:	NATURAL VENTILATION	Drawing No:	A008

No.	Date	Description	DP Full Name | Reg No.
A	12.03.24	DA Issue	Luke Barker | 8910

NOTES

NATURAL VENTILATION

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sheet no.	A008
scale @A2:	As indicated
date:	Jan 24
drawn:	HS
revision	A

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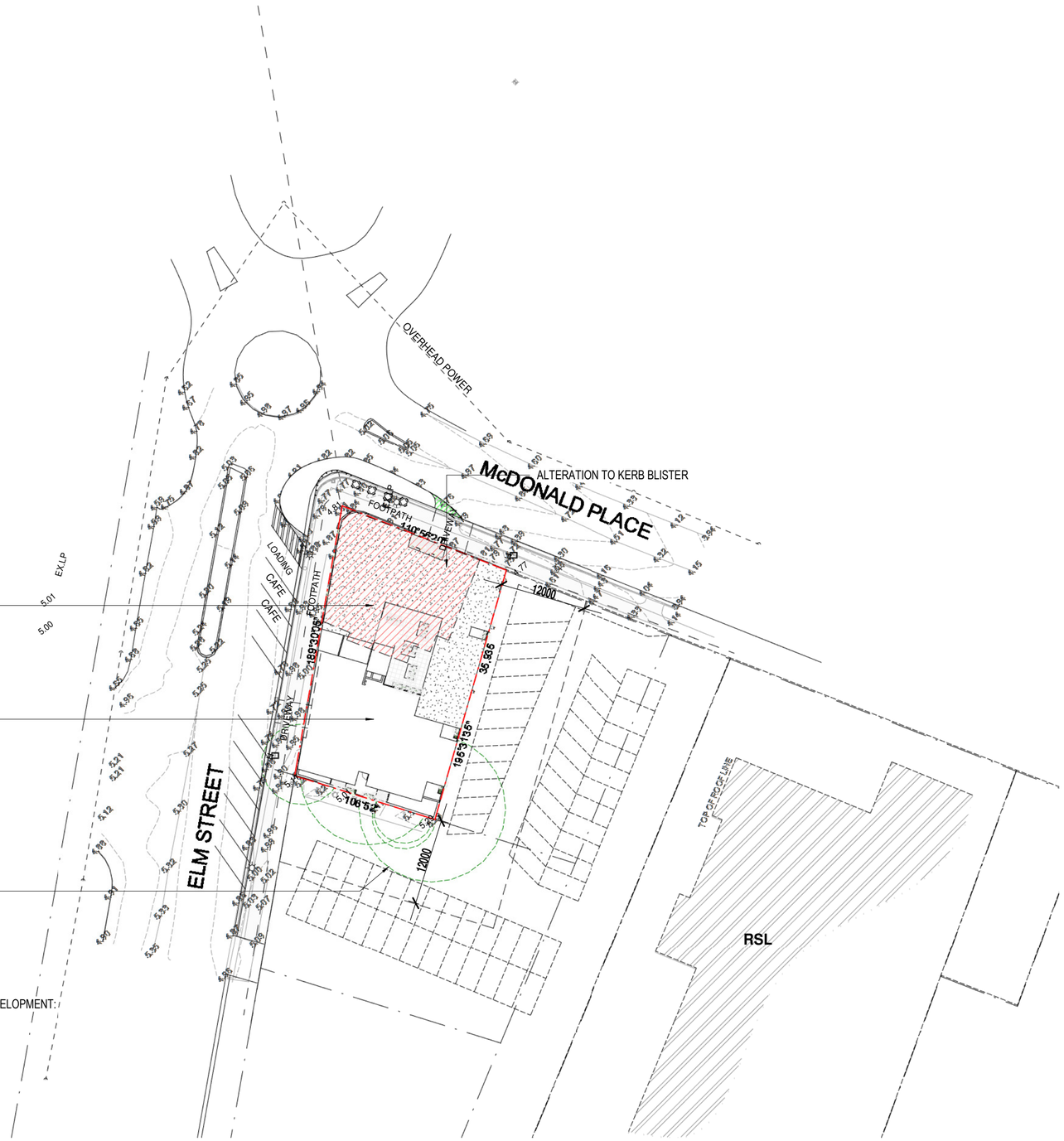
BARKER ARCHITECTS

SITE
17 McDonald Place, EVANS HEAD - NSW
LOT 8 / DP 14089

EXISTING BUILDING TO BE DEMOLISHED (RED HATCH)
REFER TO DEMOLITION WORK PLAN BY HMC ENVIRONMENTAL CONSULTING DATED OCTOBER 2023

PROPOSED BUILDING

EXISTING TREES TO BE REMOVED
REFER TO ARBORIST REPORT BY MODERN TREE CONSULTANT DATED JUNE 2023



PARKING TO RVC DCP PART 1.4
TABLE I-4.1 MINIMUM ON-SITE CAR PARKING REQUIREMENTS FOR DEVELOPMENT:
SHOP TOP HOUSING: 1 PER DWELLING + 1 VISITOR PARK = 11
RESTAURANT/CAFE: 1 PER 30m² GFA = 5
TOTAL = 16
ACCESS PARKING AS PER DCP A-9 1 PER 5 UNITS = 2

FOR DETAILS, REFER TO SURVEY DRAWING BY
NEWTON DENNY CHAPPELLE
DRAWING NO. 220269-01-SU-DS-01

Regulated Design Record			
Project Address:	17 McDonald Place Evans Head- NSW		
Project Name:	Multi Use Development		
Consent No:	DA TBC	Body Corporate Reg No:	TBC
Drawing Title:	PROPOSED SITE PLAN	Drawing No:	A100

No.	Date	Description	DP Full Name | Reg No.
A	12.03.24	DA Issue	Luke Barker | 8910

NOTES

PROPOSED SITE PLAN
2205 | Multi Use Development
17 The Evans Trust
17 McDonald Place Evans Head- NSW

sheet no.	A100
scale @A2:	1 : 500
date:	Jan 24
drawn:	LB
revision	A

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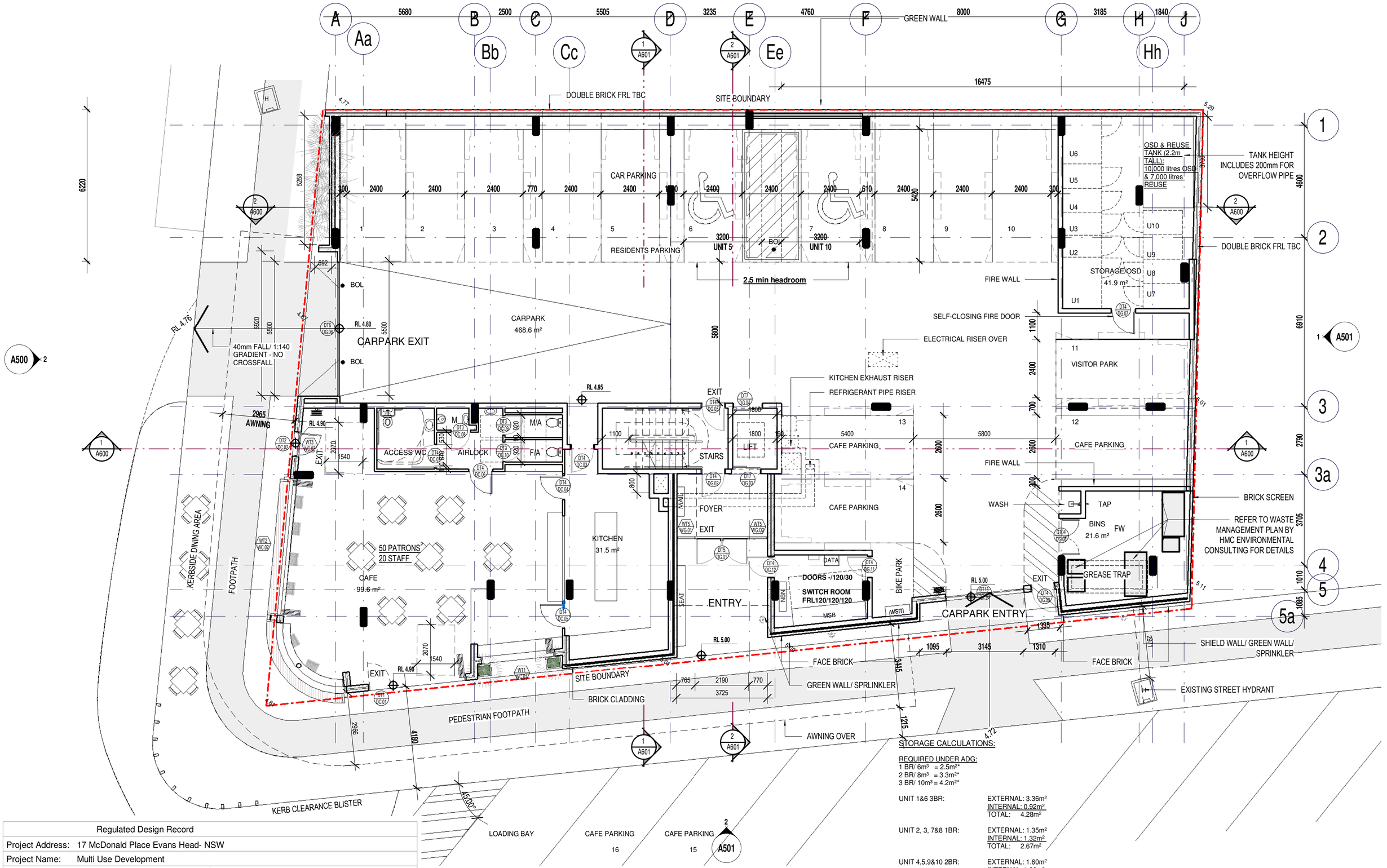

STORAGE CALCULATIONS:

REQUIRED UNDER ADG:
1 BR/ 6m³ = 2.5m²*
2 BR/ 8m³ = 3.3m²*
3 BR/ 10m³ = 4.2m²*

UNIT 1&6 3BR:	EXTERNAL: 3.36m²	
	INTERNAL: 0.92m²	
	TOTAL: 4.28m²	
UNIT 2, 3, 7&8 1BR:	EXTERNAL: 1.35m²	
	INTERNAL: 1.32m²	
	TOTAL: 2.67m²	
UNIT 4,5,9&10 2BR:	EXTERNAL: 1.60m²	
	INTERNAL: 1.90m²	
	TOTAL: 3.50m²	

* @ 2.4m HEIGHT
EXTERNAL STORAGE IS PROVIDED ON CARPARK LEVEL IN A SEPARATE ROOM.

Regulated Design Record			
Project Address:	17 McDonald Place Evans Head- NSW		
Project Name:	Multi Use Development		
Consent No:	DA TBC	Body Corporate Reg No:	TBC
Drawing Title:	GROUND FLOOR	Drawing No:	A200

No.	Date	Description	DP Full Name | Reg No.
A	12.03.24	DA Issue	Luke Barker | 8910

NOTES

GROUND FLOOR

2205 | Multi Use Development

17 The Evans Trust

17 McDonald Place Evans Head- NSW

sheet no.	A200
scale @A2:	As indicated
date:	Jan 24
drawn:	HS
revision	A

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Regulated Design Record			
Project Address:	17 McDonald Place Evans Head- NSW		
Project Name:	Multi Use Development		
Consent No:	DA TBC	Body Corporate Reg No:	TBC
Drawing Title:	LEVEL ONE	Drawing No:	A201

No.	Date	Description	DP Full Name | Reg No.
A	12.03.24	DA Issue	Luke Barker | 8910

NOTES

LEVEL ONE

2205 | Multi Use Development

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sheet no.	A201
scale @A2:	As indicated
date:	Jan 24
drawn:	HS
revision	A

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Regulated Design Record			
Project Address:	17 McDonald Place Evans Head- NSW		
Project Name:	Multi Use Development		
Consent No:	DA TBC	Body Corporate Reg No:	TBC
Drawing Title:	LEVEL TWO	Drawing No:	A202

No.	Date	Description	DP Full Name | Reg No.
A	12.03.24	DA Issue	Luke Barker | 8910

NOTES

NOMINATED ARCHITECT:
Luke Barker 8910

LEVEL TWO

2205 | Multi Use Development

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sheet no.	A202
scale @A2:	As indicated
date:	Jan 24
drawn:	LB
revision	A

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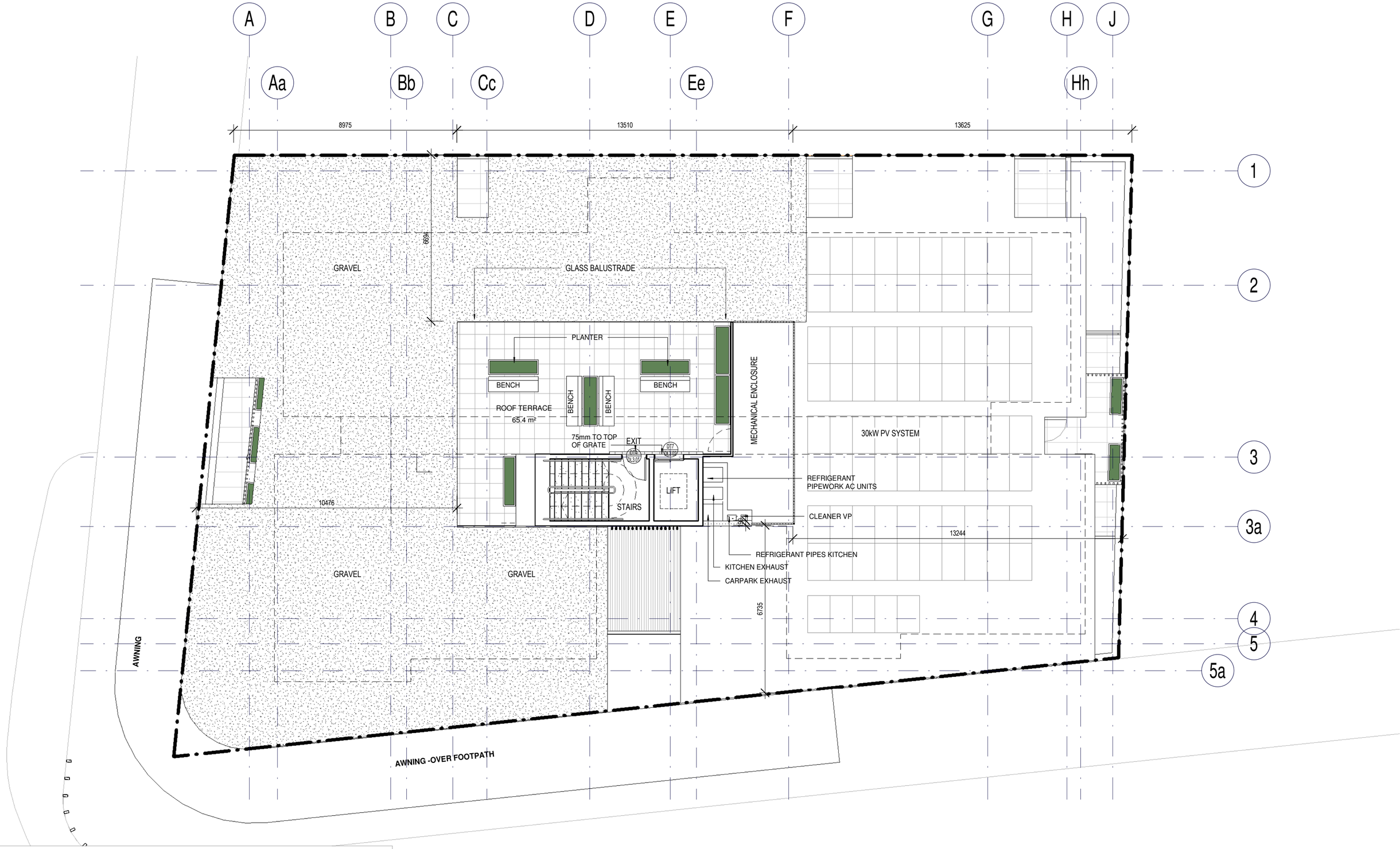

Regulated Design Record			
Project Address:	17 McDonald Place Evans Head- NSW		
Project Name:	Multi Use Development		
Consent No:	DA TBC	Body Corporate Reg No:	TBC
Drawing Title:	ROOF	Drawing No:	A400

No.	Date	Description	DP Full Name | Reg No.
A	12.03.24	DA Issue	Luke Barker | 8910

NOTES

ROOF

2205 | Multi Use Development

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17 McDonald Place Evans Head- NSW

sheet no.	A400
scale @A2:	1 : 100
date:	Jan 24
drawn:	HS
revision	A

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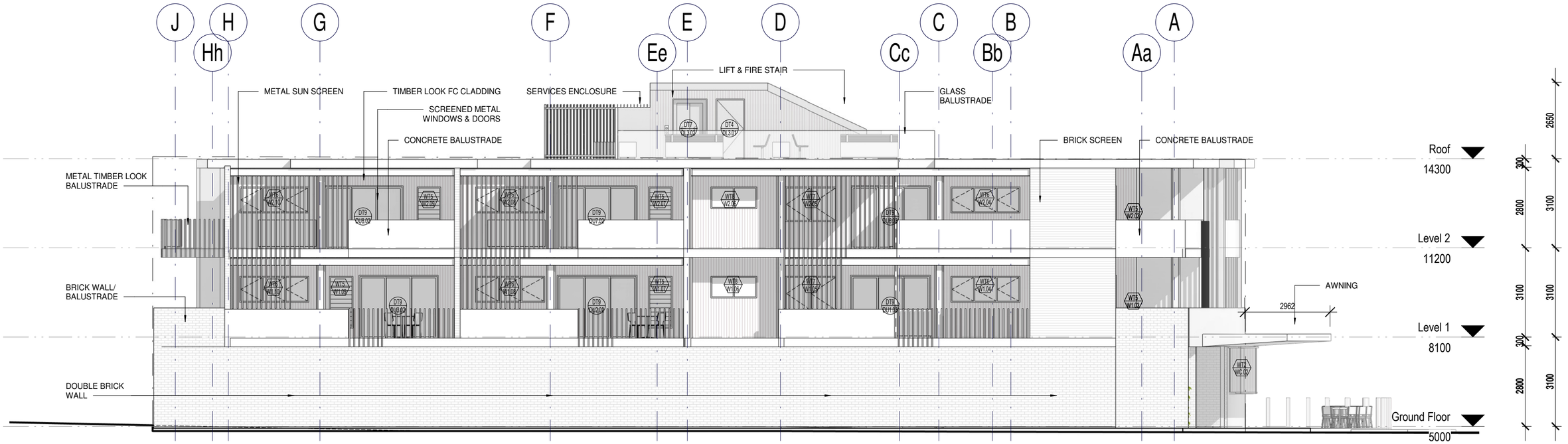
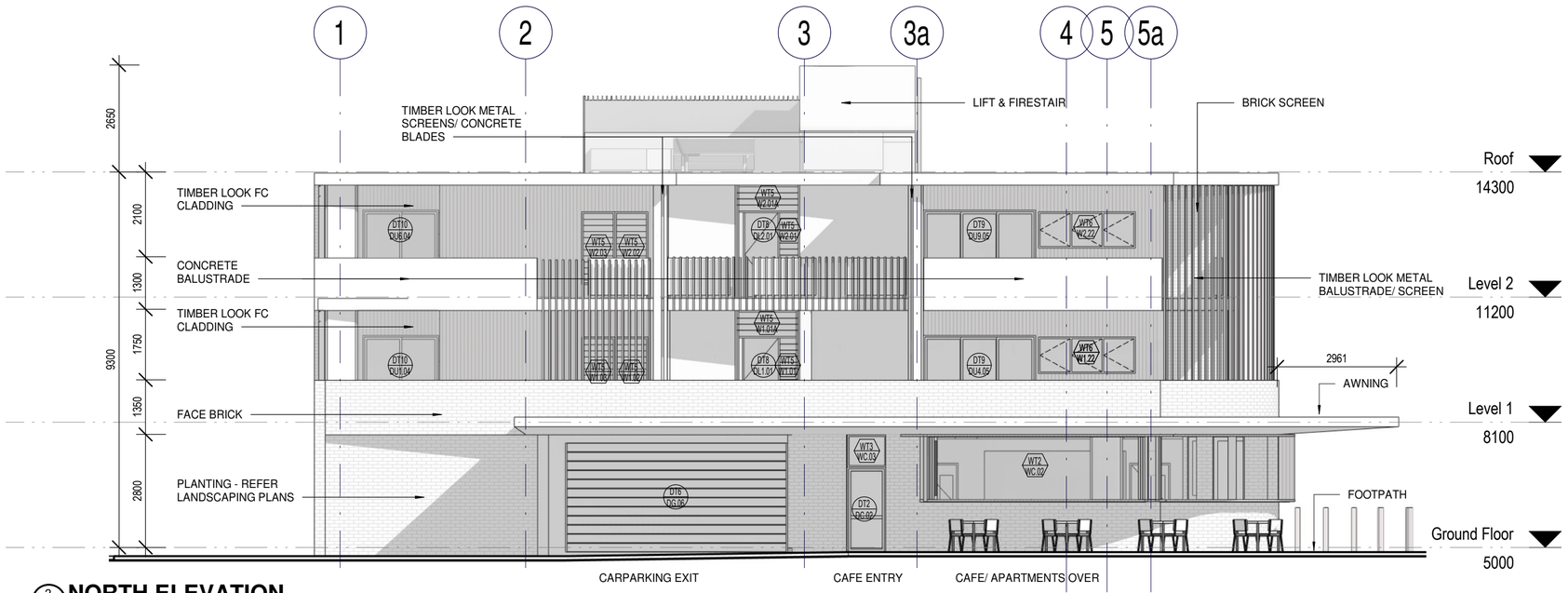


1 A201 **EAST ELEVATION**
1 : 100



2 A200 **NORTH ELEVATION**
1 : 100

Regulated Design Record			
Project Address:	17 McDonald Place Evans Head- NSW		
Project Name:	Multi Use Development		
Consent No:	DA TBC	Body Corporate Reg No:	TBC
Drawing Title:	ELEVATIONS NE	Drawing No:	A500

No.	Date	Description	DP Full Name | Reg No.
A	12.03.24	DA Issue	Luke Barker | 8910

NOTES

ELEVATIONS NE

2205 | Multi Use Development

17 The Evans Trust

17 McDonald Place Evans Head- NSW

sheet no.	A500
scale @A2:	1 : 100
date:	Jan 24
drawn:	HS
revision	A

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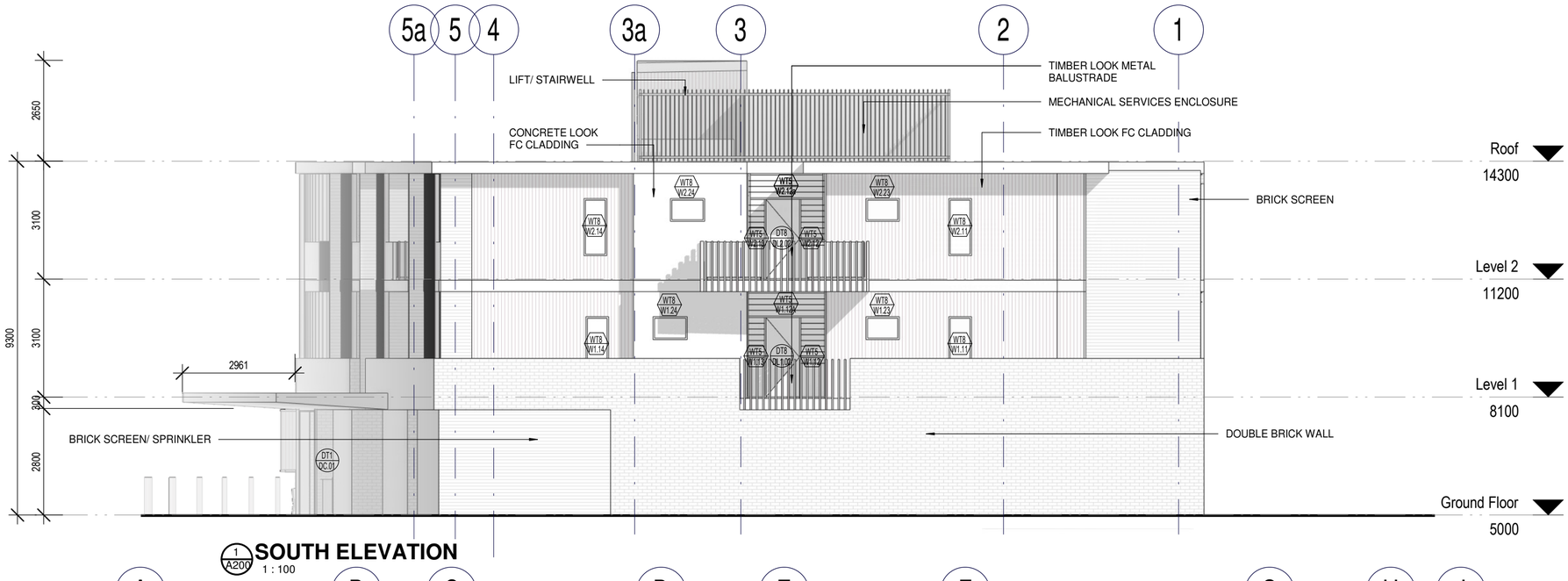
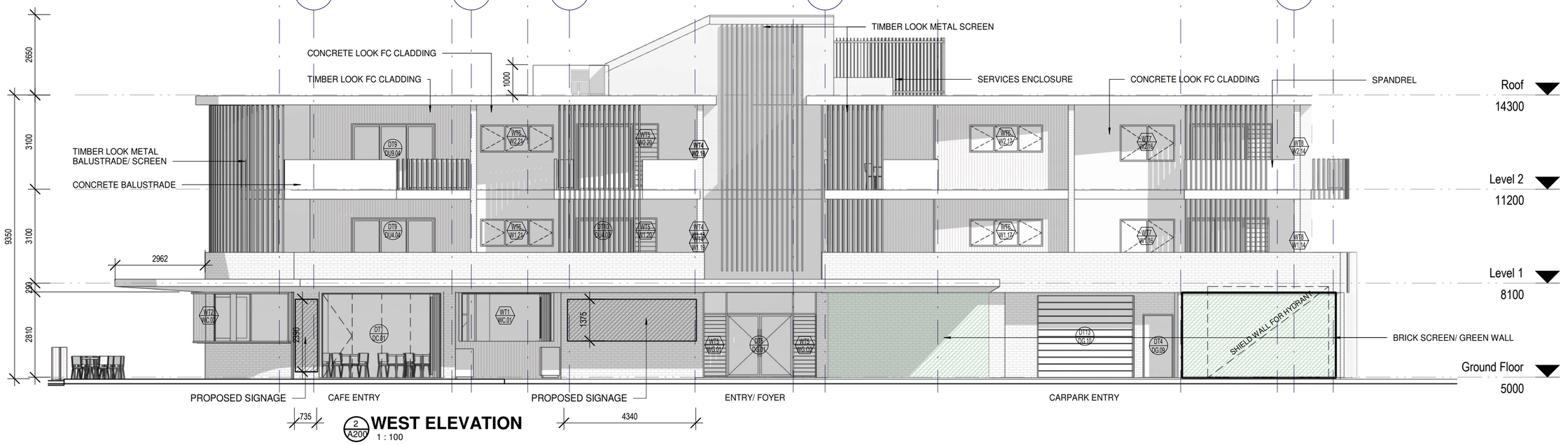


1 A200 **SOUTH ELEVATION**
1 : 100



2 A200 **WEST ELEVATION**
1 : 100

Regulated Design Record			
Project Address:	17 McDonald Place Evans Head- NSW		
Project Name:	Multi Use Development		
Consent No:	DA TBC	Body Corporate Reg No:	TBC
Drawing Title:	ELEVATION SW	Drawing No:	A501

No.	Date	Description	DP Full Name | Reg No.
A	12.03.24	DA Issue	Luke Barker | 8910

NOTES

ELEVATION SW

2205 | Multi Use Development

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sheet no.	A501
scale @A2:	1 : 100
date:	Jan 24
drawn:	LB
revision	A

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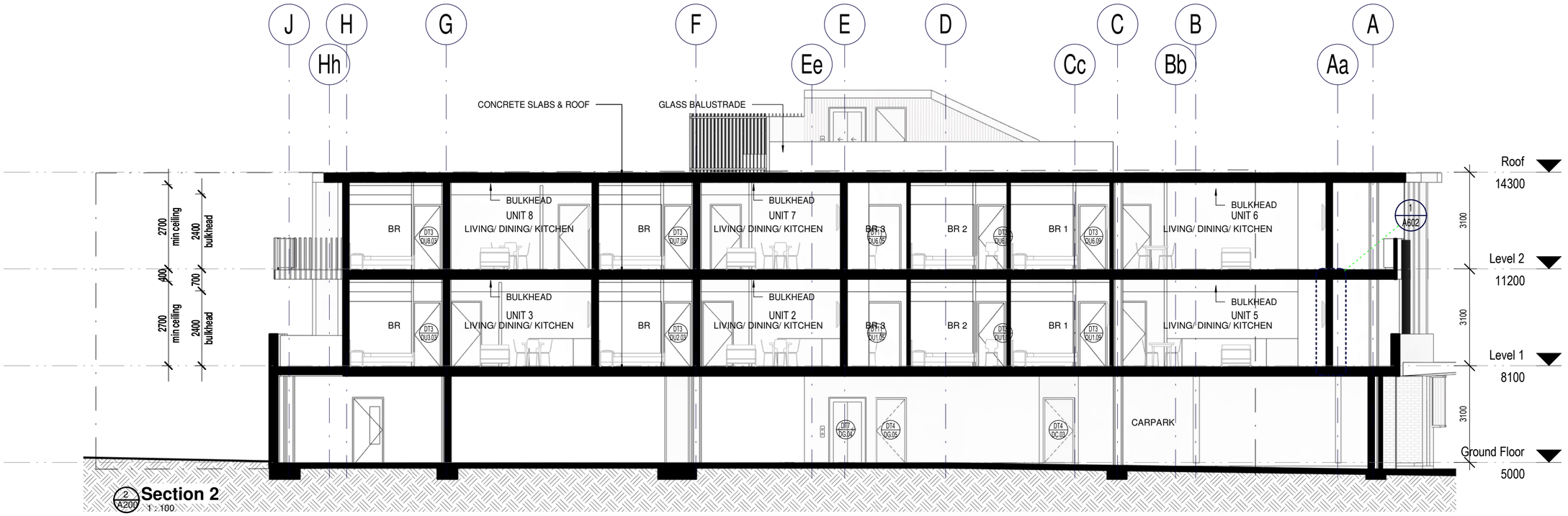
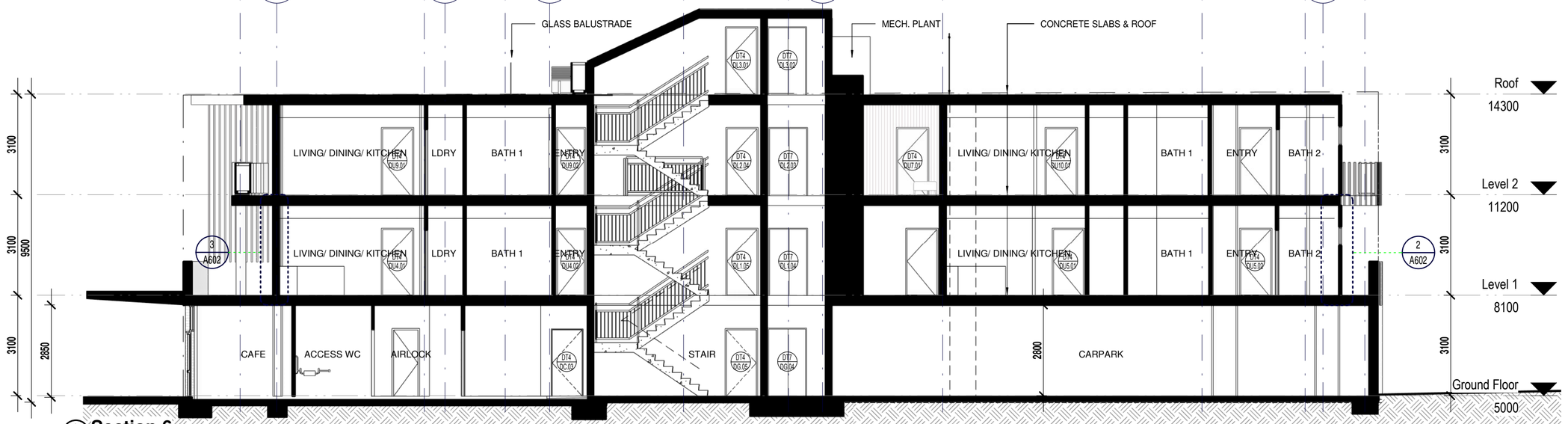


2 A200 **Section 2**
1 : 100



1 A200 **Section 6**
1 : 100

Regulated Design Record			
Project Address:	17 McDonald Place Evans Head- NSW		
Project Name:	Multi Use Development		
Consent No:	DA TBC	Body Corporate Reg No:	TBC
Drawing Title:	SECTIONS	Drawing No:	A600

No.	Date	Description	DP Full Name | Reg No.
A	12.03.24	DA Issue	Luke Barker | 8910

NOTES

SECTIONS

2205 | Multi Use Development

17 The Evans Trust

17 McDonald Place Evans Head- NSW

sheet no.	A600
scale @A2:	1 : 100
date:	Jan 24
drawn:	HS
revision	A

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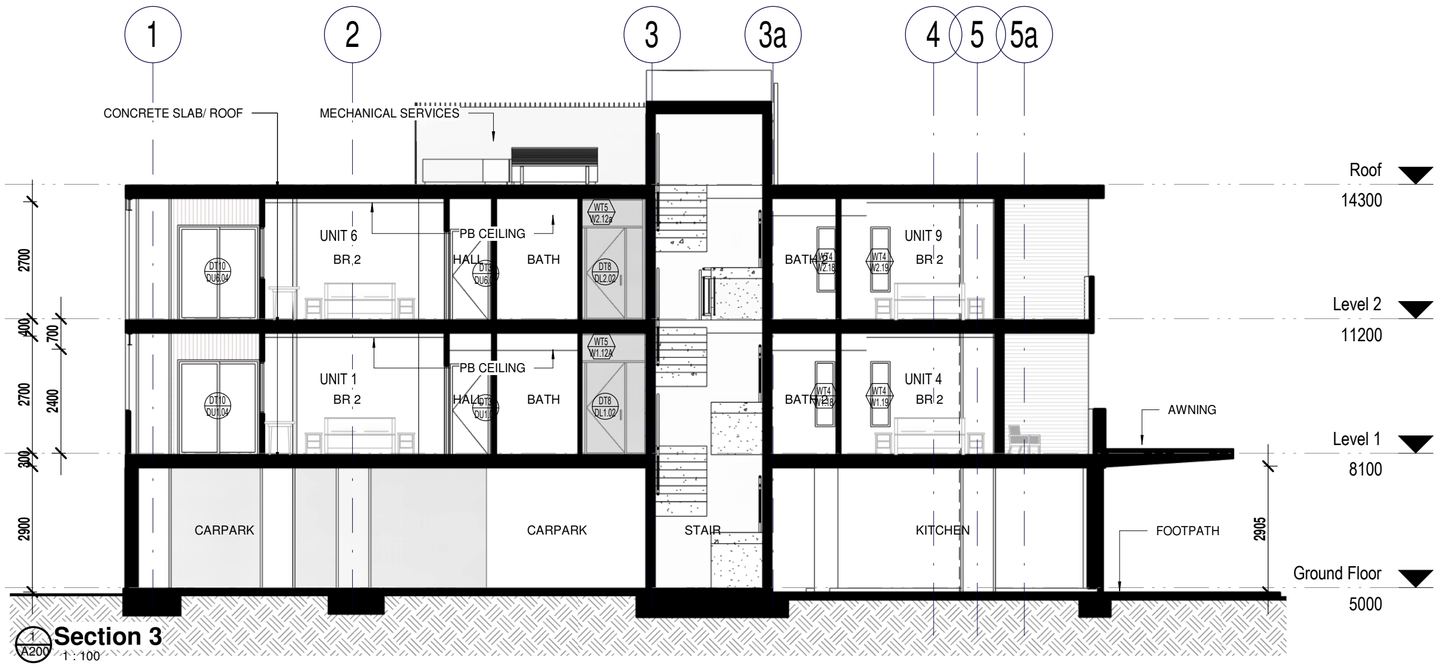
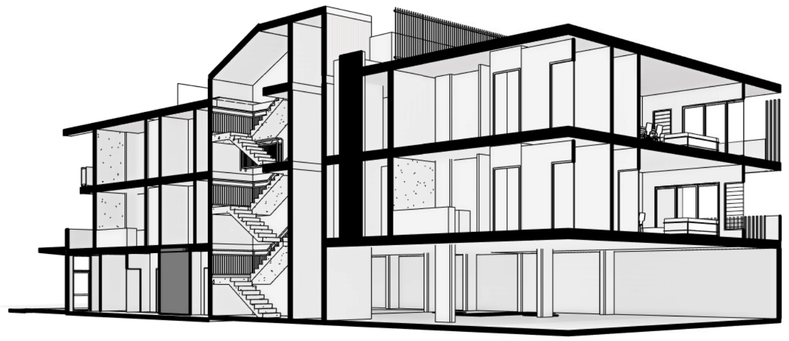
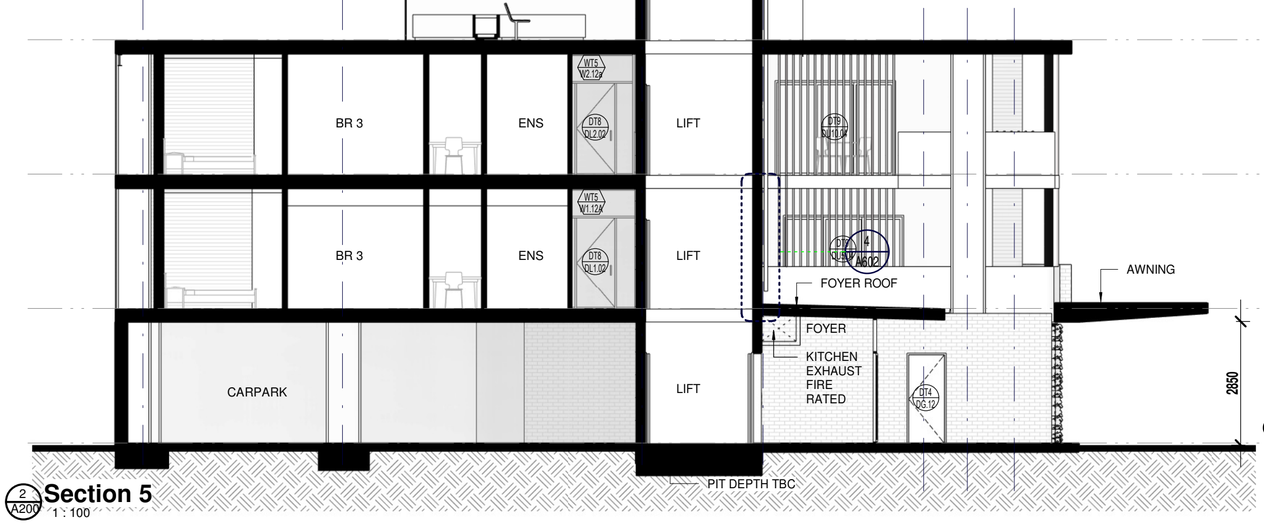


1 A200 **Section 3**
1 : 100



3 **3D View South-West Copy 1**



2 A200 **Section 5**
1 : 100

Regulated Design Record			
Project Address:	17 McDonald Place Evans Head- NSW		
Project Name:	Multi Use Development		
Consent No:	DA TBC	Body Corporate Reg No:	TBC
Drawing Title:	SECTIONS	Drawing No:	A601

No.	Date	Description	DP Full Name | Reg No.
A	12.03.24	DA Issue	Luke Barker | 8910

NOTES

SECTIONS

2205 | Multi Use Development

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17 McDonald Place Evans Head- NSW

sheet no.	A601
scale @A2:	1 : 100
date:	Jan 24
drawn:	HS
revision	A

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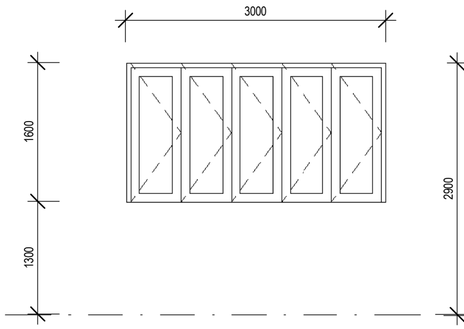
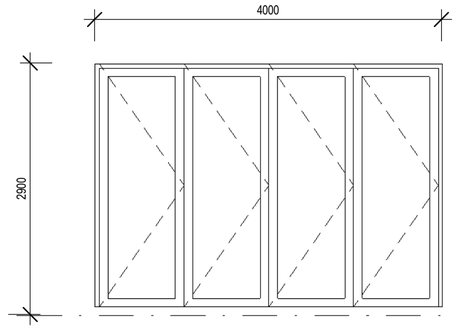
BARKER ARCHITECTS

Window Schedule

Mark	Location	Description	Width	Height	Material	Glazing	Comments
W1.01	Level 1 Corridor	WT 5 Louvre	400	2080	Aluminium	Refer BASIX	
W1.01A	Level 1 Corridor	WT 5 Louvre	1420	600	Aluminium		
W1.02	Unit 1 Living	WT 5 Louvre	820	1800	Aluminium		
W1.03	Unit 1 Living	WT 5 Louvre	820	1800	Aluminium		
W1.04	Unit 1 Dining	WT 6 Casement	2400	900	Aluminium		
W1.05	Unit 1 BR 2	WT 7 Casement	1800	1200	Aluminium		
W1.06	Unit 1 BR 3	WT 8 Fixed	1600	750	Aluminium		FRL
W1.07	Unit 2 Living	WT 5 Louvre	820	1800	Aluminium		
W1.08	Unit 2 BR	WT 6 Casement	2400	900	Aluminium		
W1.09	Unit 3 Living	WT 5 Louvre	820	1800	Aluminium		
W1.10	Unit 3 BR	WT 6 Casement	2400	900	Aluminium		
W1.11	Unit 3 BR	WT 8 Fixed	600	1500	Aluminium		
W1.12	Level 1 Corridor	WT 5 Louvre	615	2080	Aluminium		
W1.12A	Level 1 Corridor	WT 5 Louvre	1995	600	Aluminium		
W1.13	Level 1 Corridor	WT 5 Louvre	420	2080	Aluminium		
W1.14	Unit 5 BR 2	WT 8 Fixed	600	1500	Aluminium		
W1.15	Unit 5 BR 2	WT 5 Louvre	820	2057	Aluminium		
W1.16	Unit 5 BR 1	WT 7 Casement	1800	1200	Aluminium		
W1.17	Unit 5 Living	WT 6 Casement	2400	900	Aluminium		
W1.18	Unit 4 Ensuite	WT 5 Louvre	450	1500	Aluminium		Frosted Glass
W1.19	Unit 4 BR 2	WT 5 Louvre	450	1500	Aluminium		
W1.20	Unit 4 BR 2	WT 5 Louvre	820	2057	Aluminium		
W1.21	Unit 4 BR 1	WT 6 Casement	2400	900	Aluminium		
W1.22	Unit 4 Living	WT 6 Casement	2400	900	Aluminium		
W1.23	Unit 3 Bath		900	600	Aluminium		
W1.24	Unit 5 Bath		900	600	Aluminium		
W2.01	Level 2 Corridor	WT 5 Louvre	460	2080	Aluminium		
W2.01A	Level 2 Corridor	WT 5 Louvre	1470	600	Aluminium		
W2.02	Unit 6 Living	WT 5 Louvre	820	1800	Aluminium		
W2.03	Unit 6 Living	WT 5 Louvre	820	1800	Aluminium		
W2.04	Unit 6 Dining	WT 6 Casement	2400	900	Aluminium		
W2.05	Unit 6 bedroom 2	WT 7 Casement	1800	1200	Aluminium		
W2.06	Unit 6 Bedroom 3	WT 8 Fixed	1600	750	Aluminium		FRL
W2.07	Unit 7 Living	WT 5 Louvre	820	1800	Aluminium		
W2.08	Unit 7 Bedroom	WT 6 Casement	2400	900	Aluminium		
W2.09	Unit 8 Living	WT 5 Louvre	820	1800	Aluminium		
W2.10	Unit 8 Bedroom	WT 6 Casement	2400	900	Aluminium		
W2.11	Unit 8 Bedroom	WT 8 Fixed	600	1500	Aluminium		
W2.12	Level 2 Corridor	WT 5 Louvre	570	2080	Aluminium		
W2.12a	Level 2 Corridor	WT 5 Louvre	1900	600	Aluminium		
W2.13	Level 2 Corridor	WT 5 Louvre	370	2080	Aluminium		
W2.14	Unit 10 Bedroom 2	WT 8 Fixed	600	1500	Aluminium		
W2.15	Unit 10 Bedroom 2	WT 5 Louvre	820	2057	Aluminium		
W2.16	Unit 10 Bedroom 1	WT 7 Casement	1800	1200	Aluminium		
W2.17	Unit 10 Living	WT 6 Casement	2400	900	Aluminium		
W2.18	Unit 9 Bath 2	WT 5 Louvre	450	1500	Aluminium		Frosted Glass
W2.19	Unit 9 bedroom 2	WT 5 Louvre	450	1500	Aluminium		
W2.20	Unit 9 bedroom 2	WT 5 Louvre	820	2057	Timber/ Aluminium		
W2.21	Unit 9 Bedroom 1	WT 6 Casement	2400	900	Aluminium		
W2.22	Unit 9 Living	WT 6 Casement	2400	900	Aluminium		
W2.23	Unit 8 Bath		900	600	Aluminium		
W2.24	Unit 10 Bath		900	600	Aluminium		
WC.01	Cafe	WT 1 Stacking	3000	1600	Timber/ Aluminium		
WC.02	Cafe	WT 2 Stacking	5600	1600	Timber/ Aluminium		
WC.03	Cafe	WT 3 Highlight	1000	800	Timber/ Aluminium		
WG.01	Foyer	WT 5 Louvre	705	2040	Aluminium		
WG.O2	Foyer	WT 5 Louvre	710	2040	Aluminium		
Grand total: 57							



WT1
1 : 50



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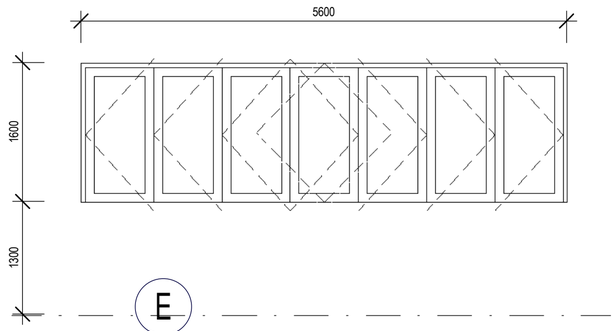

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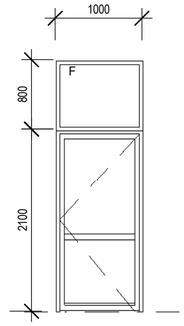

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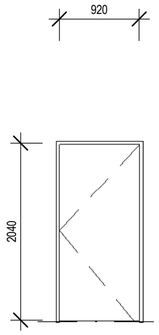

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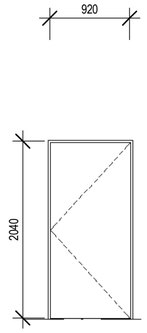

REFER SCHEDULE FOR FRL

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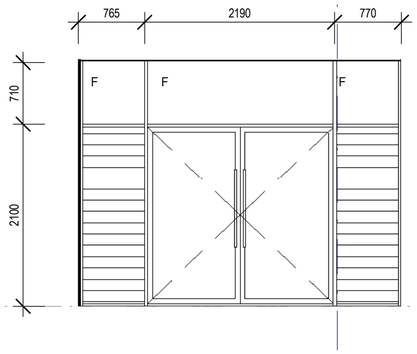

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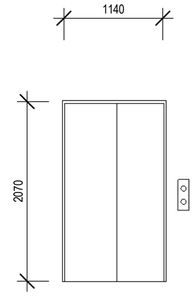

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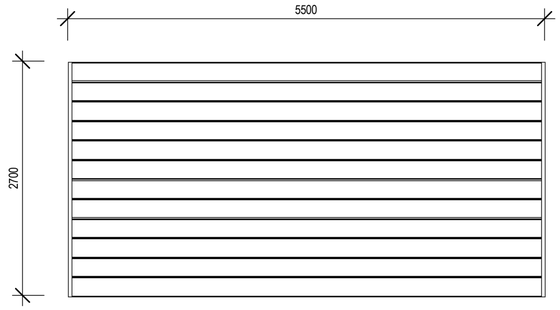

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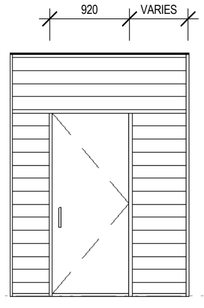

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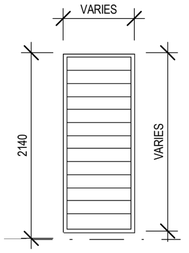

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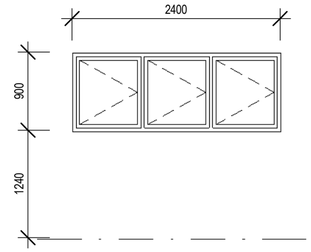

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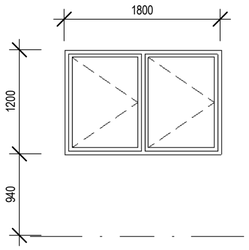

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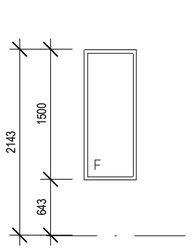

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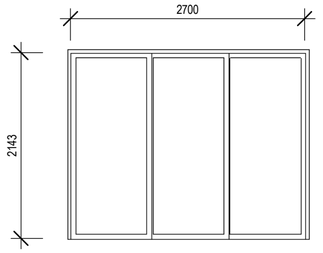

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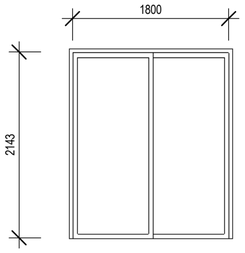

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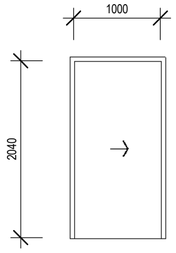

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Regulated Design Record			
Project Address:	17 McDonald Place Evans Head- NSW		
Project Name:	Multi Use Development		
Consent No:	DA TBC	Body Corporate Reg No:	TBC
Drawing Title:	WINDOW SCHEDULE	Drawing No:	A900

No.	Date	Description	DP Full Name | Reg No.
A	12.03.24	DA Issue	Luke Barker | 8910

NOTES

WINDOW SCHEDULE

2205 | Multi Use Development

17 The Evans Trust

17 McDonald Place Evans Head- NSW

sheet no.	A900
scale @A2:	1 : 50
date:	Jan 24
drawn:	HS
revision	A

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BARKER ARCHITECTS

No.	Location	Type	Height	Width	Door Material / Finish	Frame Material	Fire Rated	Seals	Comments
DC.01	Cafe Entry	DT1/Bi-Fold Glazed	2800	4000					
DC.02	Cafe Entry	DT2/Hinged	2040	920	Glass	Aluminium	NO	Weather	PC or anodised
DC.03	Kitchen Entry	DT3/Hinged	2040	920	Steel/TBC	Steel	FRL TBC		Self Closing
DC.04	Kitchen/Cafe	DT4/Hinged	2040	920	Hollow Core	Timber	NO		Paint finish/ Vision Panel
DC.05	Kitchen/Cafe	DT4/Hinged	2040	920	Hollow Core	Timber	NO		Paint finish/ Vision Panel
DC.06	Airlock	DT4/Hinged	2040	920	Hollow Core	Timber	NO		Paint finish
DC.07	Access WC	DT3/Hinged	2040	920					
DC.08	Male WC	DT3/Hinged	2040	750					
DC.09	Male Ambulant WC	DT3/Hinged	2040	750	Hollow Core	Timber	NO		Paint finish
DC.10	Female Ambulant WC	DT3/Hinged	2040	750	Hollow Core	Timber	NO		Paint finish
DG.01	Foyer	DT5/Hinged Double	2040	2150	Glass	Aluminium	NO		
DG.02	Ground Floor Stairs	DT3/Hinged	2040	920	Steel/TBC	Steel	-/60/30		Self Closing
DG.03	Ground Floor Lift	DT7/ Lift Door	2100	900			-/60/-		By Lift Supplier
DG.04	Ground Floor Lift	DT7/ Lift Door	2100	900			-/60/-		By Lift Supplier
DG.05	Ground Floor Stairs	DT3/Hinged	2040	920	Steel/TBC		-/60/30		Self Closing
DG.06	Driveway	DT6/Panel lift	2700	5500					
DG.07	Ground Floor Store	DT4/Hinged	2040	920			FRL TBC		
DG.08	Ground Floor Store	DT4/Hinged	2040	1440					
DG.09	Carpark Exit	DT3/Hinged	2040	920					
DG.10	Carpark Entry	DT6/Panel lift	2700	3200					
DG.11	Switchroom	DT4/Hinged	2040	820	Steel/TBC		-/120/30		Self Closing
DG.12	Carpark Exit	DT4/Hinged	2040	820	Steel/TBC		-/60/30		Self Closing
DL1.01	Level1 Garden	DT8/ Hinged	2080	850	Glass	Aluminium			
DL1.02	Level1 Garden	DT8/ Hinged	2080	880	Glass	Aluminium			
DL1.03	Level 1 Cleaner	DT4/Hinged	2040	920	Hollow Core	Timber	-/60/30		Self Closing
DL1.04	Level 1 Lift	DT7/ Lift Door	2100	900			-/60/-		By Lift Supplier
DL1.05	Level 1 Stair	DT4/Hinged	2040	920	Steel/TBC		-/60/30		Self Closing
DL2.01	Level 2 Garden	DT8/ Hinged	2080	820					
DL2.02	Level 2 Garden	DT8/ Hinged	2080	880					By Lift Supplier
DL2.03	Level 2 Lift	DT7/ Lift Door	2100	900			-/60/-		Self Closing
DL2.04	Level 2 Stair	DT4/Hinged	2040	920			-/60/30		Self Closing
DL3.01	Roof Stairs	DT4/Hinged	2040	920			-/60/30		Self Closing
DL3.02	Roof Lift	DT7/ Lift Door	2100	900			-/60/-		By Lift Supplier
DU1.01	Unit 1 Entry	DT4/Hinged	2040	920		Aluminium	-/60/30		Self Closing
DU1.02	Unit 1 Living	DT9/ Sliding	2143	2700					
DU1.03	Unit 1 BR1	DT9/ Sliding	2143	2700					
DU1.04	Unit 1 BR 3	DT10/Sliding	2143	1800					
DU1.05	Unit1 Ensuite	DT12/ Cupbd	2040	1000		SOLID CORE / PAINTED			INTERNAL- CAVITY SLIDER
DU1.06	Unit1 Corridor	DT3/Hinged	2040	820					
DU1.07	Unit 1 BR 2	DT3/Hinged	2040	820					
DU1.08	Unit 1 Bathroom	DT3/Hinged	2040	820					
DU1.09	Unit 1 BR1	DT3/Hinged	2040	820					
DU1.10	Unit 1 Laundry	DT3/Hinged	2040	820					
DU2.01	Unit 2 entry	DT4/Hinged	2040	920			-/60/30		Self Closing
DU2.02	Unit 2 Living	DT9/ Sliding	2143	2700					
DU2.03	Unit 2 BR	DT3/Hinged	2040	820					
DU2.04	Unit 2 Bath	DT3/Hinged	2040	820					
DU2.05	Unit 2 Laundry	DT12/ Cupbd	2040	1000					
DU3.01	Unit 3 entry	DT4/Hinged	2040	920			-/60/30		Self Closing
DU3.02	Unit 3 Living	DT9/ Sliding	2143	2700					
DU3.03	Unit 3 BR	DT3/Hinged	2040	820					
DU3.04	Unit 3 Bath	DT3/Hinged	2040	820					
DU3.05	Unit 3 Laundry	DT12/ Cupbd	2040	1000					
Grand total: 53									

No.	Location	Type	Height	Width	Door Material / Finish	Frame Material	Fire Rated	Seals	Comments
DU4.01	Unit 4 Entry	DT4/Hinged	2040	920			-/60/30		Self Closing
DU4.02	Unit 4 Entry	DT3/Hinged	2040	820					
DU4.03	Unit 4 BR 2	DT10/Sliding	2143	1800					
DU4.04	Unit 4 Living	DT9/ Sliding	2143	2700					
DU4.05	Unit 4 Living	DT9/ Sliding	2143	2700					
DU4.06	Unit 4 Laundry	DT12/ Cupbd	2040	1000					
DU4.07	Unit 4 Store	DT12/ Cupbd	2040	1000					
DU4.08	Unit 4 Bath	DT3/Hinged	2040	820					
DU4.09	Unit 4 BR 1	DT3/Hinged	2040	820					
DU4.10	Unit 4 hall	DT3/Hinged	2040	820					
DU4.11	Unit 4 Bath	DT3/Hinged	2040	820					
DU5.01	Unit 5 Entry	DT4/Hinged	2040	920			-/60/30		Self Closing
DU5.02	Unit 5 Entry	DT4/Hinged	2040	920			-/60/30		Self Closing
DU5.03	Unit 5 BR 2	DT10/Sliding	2143	1800					
DU5.04	Unit 5 Living	DT9/ Sliding	2143	2700					
DU5.05	Unit 5 laundry	DT12/ Cupbd	2040	1000		Timber			Paint finish
DU5.06	Unit 5 Store	DT12/ Cupbd	2040	1000					
DU5.07	Unit 5 Bath	DT3/Hinged	2040	820					
DU5.08	Unit 5 BR 1	DT3/Hinged	2040	820					
DU5.09	Unit 5 Hall	DT3/Hinged	2040	820					
DU5.10	Unit 5 Bath2	DT3/Hinged	2040	820					
DU6.01	Unit 6 Entry	DT4/Hinged	2040	920			-/60/30		Self Closing
DU6.02	Unit 6 Living	DT9/ Sliding	2143	2700					
DU6.03	Unit 6 BR1	DT9/ Sliding	2143	2700					
DU6.04	Unit 6 BR3	DT10/Sliding	2143	1800					
DU6.05	Unit 6 Ensuite	DT12/ Cupbd	2040	1000		Timber			Paint finish
DU6.06	Unit 6 BR 3	DT3/Hinged	2040	820					
DU6.07	Unit 6 BR 2	DT3/Hinged	2040	820					
DU6.08	Unit 6 Bath	DT3/Hinged	2040	820					
DU6.09	Unit 6 BR1	DT3/Hinged	2040	820					
DU6.10	Unit 6 Laundry	DT3/Hinged	2040	820					
DU7.01	Unit 7 Entry	DT4/Hinged	2040	920			-/60/30		Self Closing
DU7.02	Unit 7 Living	DT9/ Sliding	2143	2700					
DU7.03	Unit 7 BR	DT3/Hinged	2040	820					
DU7.04	Unit 7 Bath	DT3/Hinged	2040	820					
DU7.05	Unit 7 laundry	DT12/ Cupbd	2040	1000					
DU8.01	Unit 8 Entry	DT4/Hinged	2040	920			-/60/30		Self Closing
DU8.02	Unit 8 Living	DT9/ Sliding	2143	2700					
DU8.03	Unit 8 BR	DT3/Hinged	2040	820					
DU8.04	Unit 8 Bath	DT3/Hinged	2040	820					
DU8.05	Unit 8 Laundry	DT12/ Cupbd	2040	1000					
DU9.01	Unit 9 entry	DT4/Hinged	2040	920			-/60/30		Self Closing
DU9.02	Unit 9 entry	DT3/Hinged	2040	820					
DU9.03	Unit 9 BR2	DT10/Sliding	2143	1800					
DU9.04	Unit 9 Living	DT9/ Sliding	2143	2700					
DU9.05	Unit 9 Living	DT9/ Sliding	2143	2700					
DU9.06	Unit 9 Laundry	DT12/ Cupbd	2040	1000					
DU9.07	Unit 9 Store	DT12/ Cupbd	2040	1000					
DU9.08	Unit 9 Bath1	DT3/Hinged	2040	820					
DU9.09	Unit 9 BR1	DT3/Hinged	2040	820					
DU9.10	Unit 9 Hallway	DT3/Hinged	2040	820					
DU9.11	Unit 9 Bath2	DT3/Hinged	2040	820					
DU10.01	Unit 10 entry	DT4/Hinged	2040	920			-/60/30		Self Closing
DU10.02	Unit 10 entry	DT4/Hinged	2040	920					
DU10.03	Unit 10 BR2	DT10/Sliding	2143	1800					
DU10.04	Unit 10 Living	DT9/ Sliding	2143	2700					
DU10.05	Unit 10 Laundry	DT12/ Cupbd	2040	1000					
DU10.06	Unit 10 Store	DT12/ Cupbd	2040	1000					
DU10.07	Unit 10 Bath1	DT3/Hinged	2040	820					
DU10.08	Unit 10 BR1	DT3/Hinged	2040	820					
DU10.09	Unit 10 hallway	DT3/Hinged	2040	820					
DU10.10	Unti 10 Bath2	DT3/Hinged	2040	820					
Grand total: 62									

Regulated Design Record			
Project Address:	17 McDonald Place Evans Head- NSW		
Project Name:	Multi Use Development		
Consent No:	DA TBC	Body Corporate Reg No:	TBC
Drawing Title:	DOOR SCHEDULE	Drawing No:	A901

No.	Date	Description	DP Full Name | Reg No.
A	12.03.24	DA Issue	Luke Barker | 8910

NOTES

NOMINATED ARCHITECT:
Luke Barker 8910

DOOR SCHEDULE

2205 | Multi Use Development

17 The Evans Trust

17 McDonald Place Evans Head- NSW

sheet no.	A901
scale @A2:	
date:	Jan 24
drawn:	HS
revision	A

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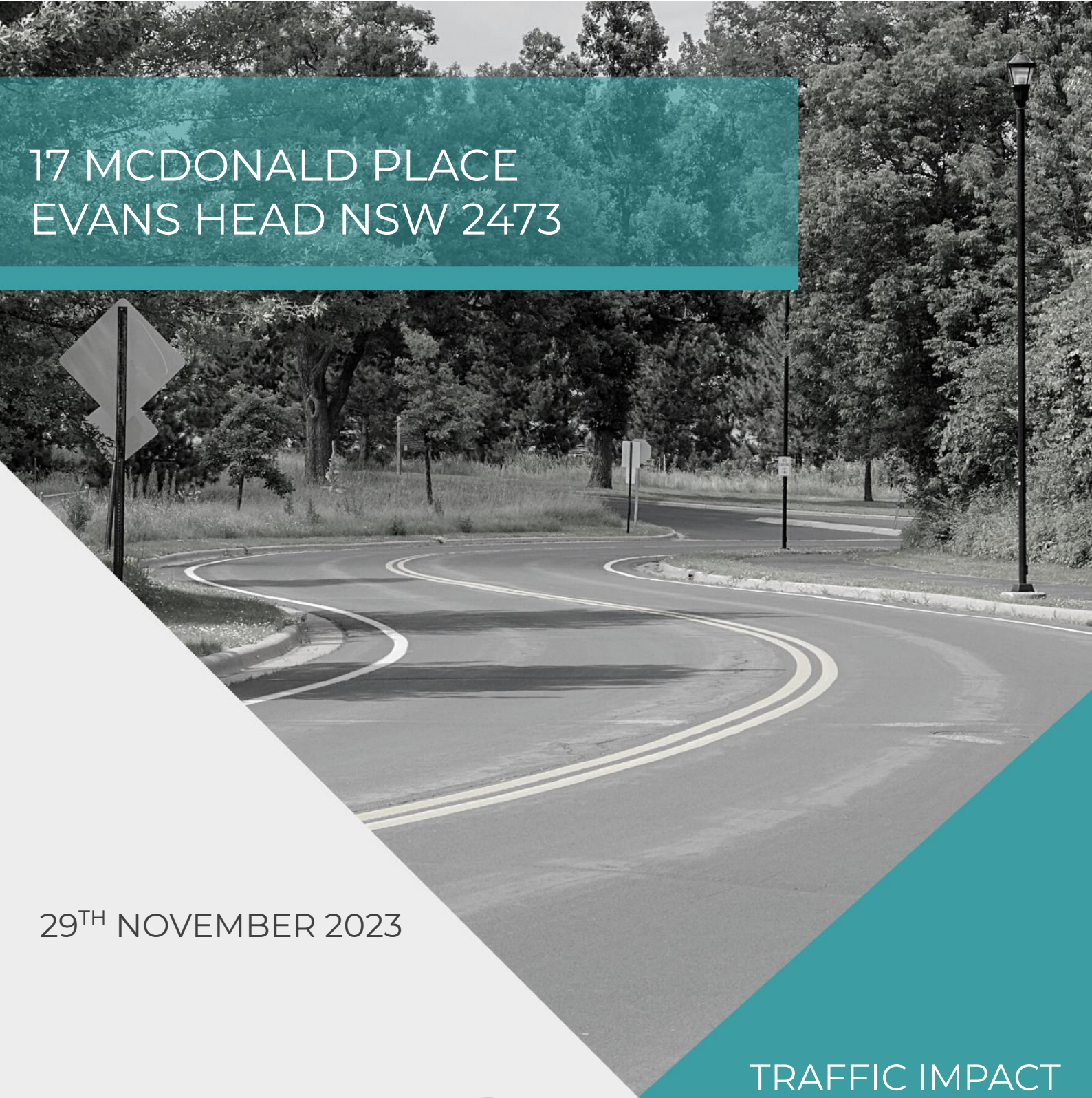
BARKER ARCHITECTS

Appendix B

Traffic Impact Assessment

Ingen Consulting Pty Ltd

17 MCDONALD PLACE
EVANS HEAD NSW 2473



29TH NOVEMBER 2023

TRAFFIC IMPACT ASSESSMENT

INGEN
CONSULTING
ENGINEERED WITH PURPOSE

DOCUMENT CONTROL

Revision number	Description	Prepared	Reviewed	Issued	Issue date
A	Client Review	JN	MK	MK	22/9/23
B	Development Application	JN	MK	MK	29/11/23

Document title: Traffic Impact Assessment

Document number: J1279_TIS

Author: Jordy Nasario, BEng (Civil), *Dip. Proj. Mng.*

Client name: 17 The Evans Trust

Client's representative: Lewis Barakat

Approved for use by:

Name: Michiel Kamphorst **Signature:** **Date:** 29th November 2023

MSc, BSc, RPEng, RPEQ, NER, PRE, MAAS

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TABLE OF FIGURES

TABLE OF TABLES

1. INTRODUCTION

Ingen Consulting P/L has been engaged by 17 The Evans Trust Pty to prepare a Traffic Impact Assessment (TIA) for a proposed mixed use development at 17 McDonald Place, Evans Head NSW 2473.

1.1. Scope

The purpose of this report is to quantify the traffic impact of this development on the surrounding road network. In particular, this report seeks to:

- Demonstrate compliance with relevant chapters requirements of the Richmond Valley Council Development Control Plans
- Demonstrate compliance with the safety components of the Austroads Guide to Road Design series.
- Address relevant items recommended for a Traffic Impact Study in the 2002 RTA Guide to Traffic Generating Developments (GTTGD)
- Analyse the impact of the through traffic on the surrounding road network.

1.2. Standards, policies and guidelines

This TIA has been prepared in accordance with the following standards, guidelines and policies:

- Richmond Valley Council DCP 2015 Part I
- Guide to Traffic Generating Developments (RTA, 2002)
- Guide to Traffic Generating Developments, Updated Surveys (RMS 2013)
- Austroads Guide to Traffic Management
- Austroads Guide to Road Design
- Australian/New Zealand Standard 2890 series

1.3. Site description

The subject site is located on the corner of McDonald Place and Elm Street, Evans Head. Its address is 17 McDonalds Place, Evans Head NSW 2473, with Lot/Plan number registered as Lot 7 DP 14089 within the R1- General Residential zone. The site has an area of 822.02m^2.

According to the survey drawing by Newton Denny Chapelle (refer to Appendix A), there is a single-storey weatherboard building located on site, which would be demolished.

A further description of the existing road network is provided in Chapter 2.

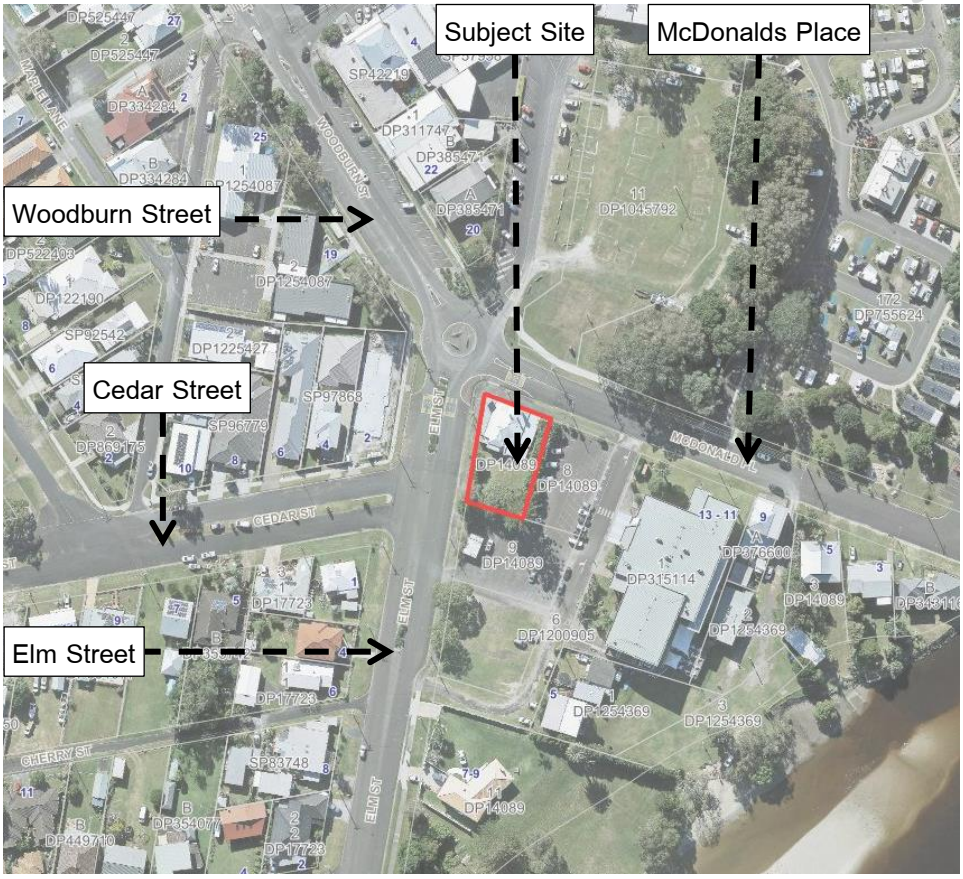

Figure 1 | Site location, *Source of map: Richmond Valley Council intramap 2023*

1.4. Proposed development

The proposed development involves a shop top house development. The proposed layout features a ground floor café and undercover parking with access off Elm Street and exit onto McDonald Place, and ten (10) dwellings with 1 to 3 bedrooms on 1st and 2nd floors. More information on the proposed layout can be found in the DA drawings by Barker Architects. For a general overview of the proposed layout, please refer to Figure 2, Figure 3 and Figure 4.

The proposed development commercial space (café) hours of operation will be from 6am to 10pm.

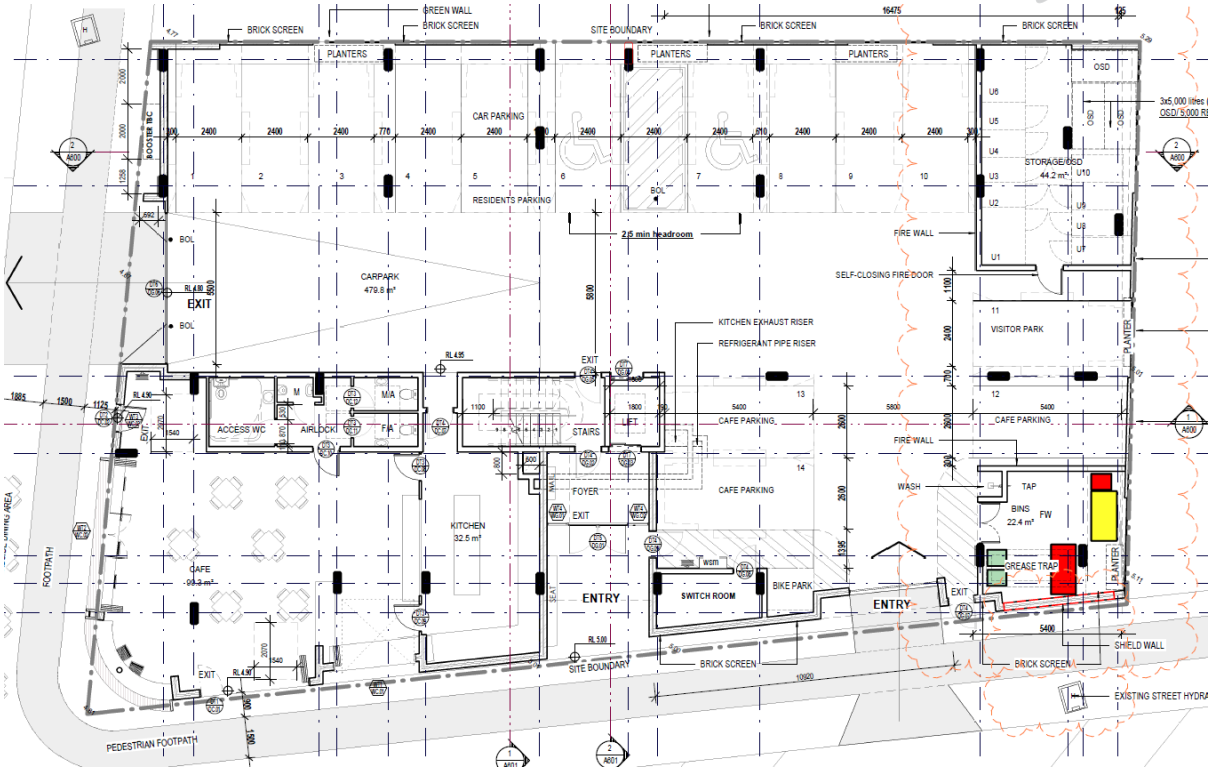

Figure 2 | Proposed layout plan ground floor, *Source: Barker Architects*

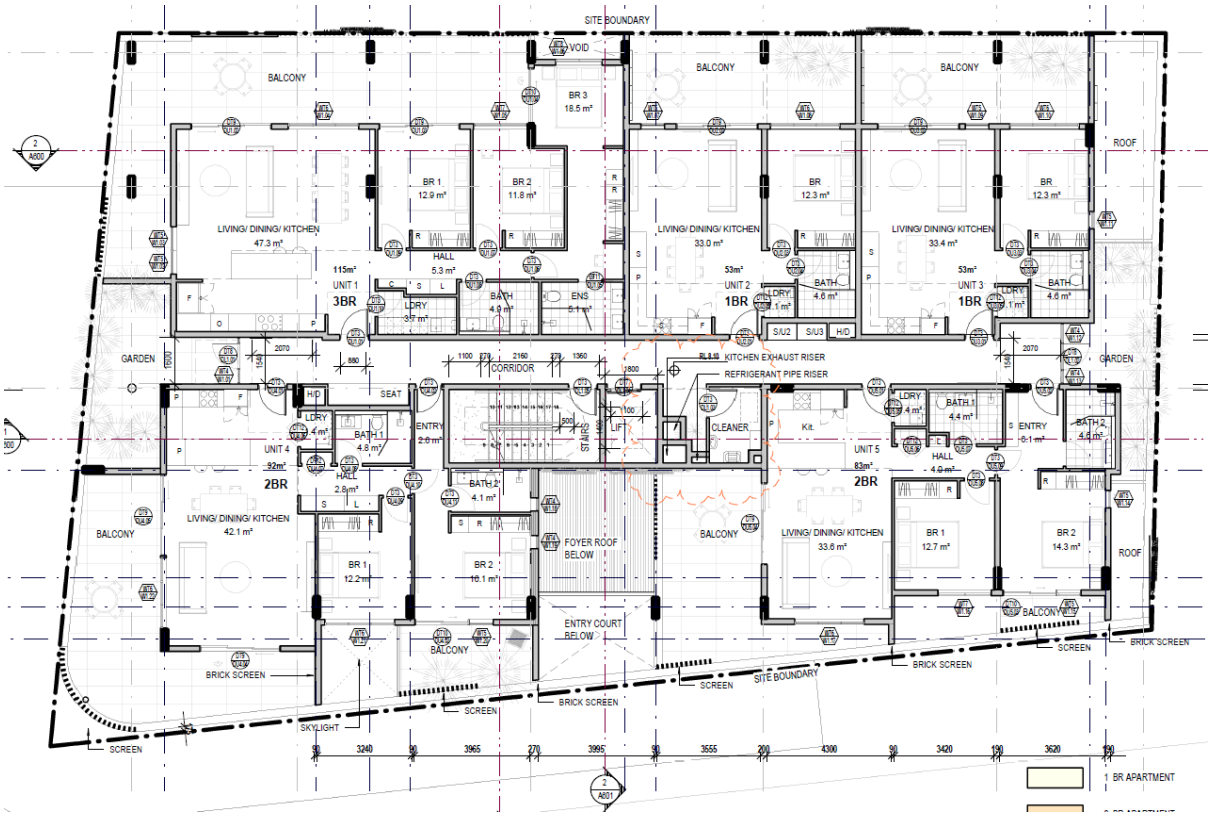

Figure 3 | Proposed layout plan 1st floor, *Source: Barker Architects*

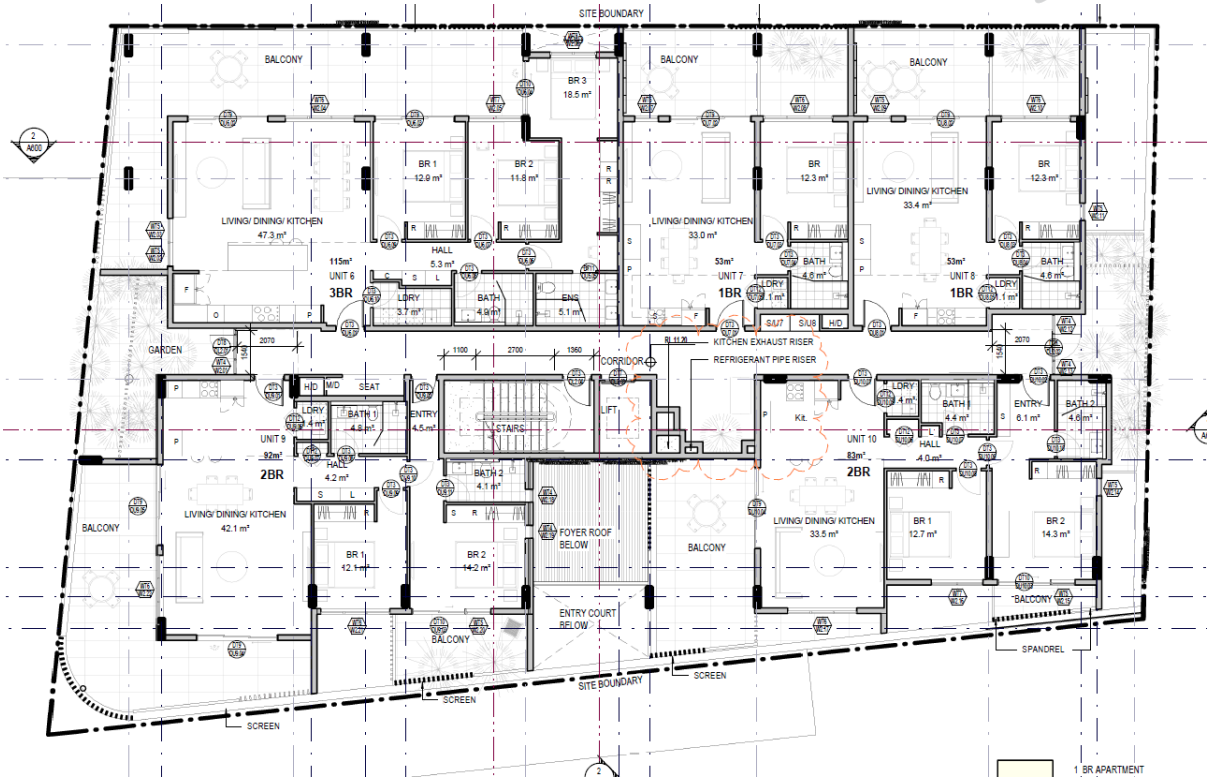

Figure 4 | Proposed layout plan 2nd floor, *Source: Barker Architects*

2. EXISTING CONDITIONS

2.1. Elm Street

Elm Street is a 2 lane, 2-way asphalt un-delineated sealed road. Parallel off-street car parking and footpaths are available on both sides of the street. The road carriageway is approx. 21.5m wide, measuring between invert of the kerbs adjacent to the subject site, divided with landscaping medians (approx. 2.8m wide). There is no travel lane delineation, but based on aerial photography both travel lanes are estimated to be more than 4 metres wide. Elm Street pavement is in good condition, and the street is subject to the built-up area speed limit of 50km/hr.

According to NRLG Development Specification D1 Geometric Road Design (Urban and Rural), Elm Street is of similar functionality to a distributor road with a maximum traffic volume of 3000+ vpd (although this road has mountable kerb in some parts).

Road Type	Maximum Traffic Volume (vpd) [1]	Maximum Speed [2] (km/h)	Carriageway Width (m)[3][10] Min	Parking Provisions Within Road Reserve	Kerbing [4]	Footpath Requirement [15] minimum	Bicycle path Requirement	Verge Width (m) minimum (each side)	Minimum Road Reserve Width (m)
Access Street	100	40	6	Carriageway	Mountable	No	No	3	14
Local Street	2000	50	7-9	Carriageway	Mountable	Network Dependent	Network Dependent	3.5	15-17
Collector Street	3000	50	11	Carriageway	Mountable	One side [16]	Network Dependent	3.5	18
Distributor Road	3000+	60	13	Carriageway	Upright	One Side	Network Dependent	3.5	20

Figure 5 | Characteristics of roads in residential areas, *Source: NRLG Development Specification D1*

Figure 6 | Dalley Street looking north, *Source: Google Street View.*

2.2. McDonald Place

McDonald Place is a 2 lane, 2-way asphalt un-delineated sealed road. The road is approximately 11 metres wide, measuring between invert of the kerbs adjacent to the subject site, with off-street parallel car parking available on both sides of the street. Adjacent to the subject site, pedestrian footpaths are available on both sides of the street. There is no travel lane delineation, but based on aerial photography both travel lanes are estimated to be approx. 3 metres wide. McDonald Place pavement is in good condition, and the street is subject to the built-up area speed limit of 50km/hr.

Following the characteristics shown in Figure 5, McDonald Place is of similar functionality to a collector road with a maximum traffic volume of 3000 vpd (although this road has upright kerb on one side instead of mountable kerb).

Figure 7 | McDonald Place looking west, *Source: Google Street View.*

2.3. Elm Street / Woodburn Street / McDonald Place roundabout

The roundabout of Elm Street / Woodburn Street / McDonald Place is a signed, delineated, and paved intersection situated in the northwest corner of the subject site. All approaches are relatively flat controlled by “roundabout give-way” signs and concrete splitter islands. Central island is approx. 12 meters, and circulatory roadway is approx. 7.5 metres. Existing pedestrian crossing is located on the northern Elm Street approach. Overall, the existing intersection is in good condition.

Figure 8 | Elm Street / Woodburn Street / McDonald place roundabout plan view, *Source: RVC intramap 2023.*

Figure 9 | Elm Street / Woodburn Street / McDonald place roundabout looking south, *Source: Google Street View.*

2.4. Woodburn Street

Woodburn Street is a 2 lane, 2-way asphalt delineated sealed road. The road is approximately 22 metres wide, measuring between invert of the kerbs adjacent to the community health centre, with off-street angle car parking available on both sides of the street. Pedestrian footpath is available on both sides of the street. According to existing delineation, both travel lanes are estimated to be approx. 3.5 metres wide. Woodburn Street has an existing bus stop zone adjacent to the community health centre. The pavement is in good condition, and the street is subject to the built-up area speed limit of 50km/hr.

Following the characteristics shown in Figure 5, Woodburn Street is of similar functionality to a distributor road with a maximum traffic volume of 3000+ vpd.

Figure 10 | Woodburn Street looking northwest, *Source: Google Street View*

3. DEVELOPMENT IMPACT

3.1. Trip generation

Traffic generation is estimated using the October 2002 *Guide to Traffic Generating Developments from RTA* (today named TfNSW). The following generation rates were used to estimate this proposed development trip generation. Note that GTGD does not state any trip generation rates for shop top housing.

- Restaurant:
  - Daily vehicle trips: 60 per 100m^2 gross floor area (GFA).
  - Evening peak hour vehicle trips: 5 per 100m^2 gross floor area (GFA).
- Medium density residential flat building (up to 2 bedrooms):
  - Daily vehicle trips: 4-5 per dwelling.
  - Peak hour vehicle trips: 0.4-0.5 per dwelling.
- Medium density residential flat building (up to 3 bedrooms):
  - Daily vehicle trips: 5-6.5 per dwelling.
  - Peak hour vehicle trips: 0.5-0.65 per dwelling.

Based on the rates above, the proposed trip generation could be estimated as demonstrated in Table 1.

Table 1 | Proposed net trip generation

Land use	Description	Daily trips rate	Peak trips rate	Calculated daily trips	Calculated evening peak trips
Restaurant	Café and amenities GFA - 151.2sqm	60/100m2 GFA	5/100m2 GFA	90.72	7.56
Medium density residential flat building (up to 2 bedrooms)	8 units with 1-2 bedrooms	5 per dwellings	0.5 per dwellings	40.00	4.00
Medium density residential flat building (up to 3 bedrooms)	2 units with 3 bedrooms	6.5 per dwellings	0.65 per dwellings	13.00	1.30
Total				**144**	**13**

3.2. Car parking requirements

Off-street car parking demand for this development is estimated as per Part I of the Richmond Valley Council DCP 2015 Table I.4.1. As per the proponent's town planner's instructions, the following car park requirements for the type of land use were adopted.

- Pub/Hotel premises restaurants or cafés function centre:
  - 1 space per 30m^2 of ground floor area (GFA).
- Shop top housing:
  - 1 space per dwelling
  - 1 visitor space per 10 dwellings.

Based on the rates above, the calculated number of car park spaces for this development is 16, refer to Table 2. The proposed off-street undercover car park on the ground floor features 10 spaces for residents (2 PWD spaces), 1 space for visitors, and 3 spaces for the café users, thus totalling 14. This leaves a shortfall of 2 parking spaces for the development.

Table 2 | Car parking demand

Land use	Description	Parking rate	Required number of car parks
Pub/Hotel premises restaurants or cafés function centre	Café and amenities GFA - 151.2sqm	1 space per 30m2	5.04
Shop top housing	10 dwellings	1 space per dwelling	10.00
		1 visitor space per 10 dwelings	1.00
Total			**16**

Note that this proposed development includes a formalisation of 45° on-street parking adjacent to the subject site in Elm Street, which will give more parking spaces for the community since cars are currently parking in parallel. It is recommended that this line marking formalisation be used to offset the shortfall in parking spaces. Refer to section 3.10 for details on the proposed Elm Street line marking.

If RVC does accept this line marking formalisation as an offset, a Voluntary Planning Agreement (VPA) is also an option to offset the number of shortfall car parks in accordance with RVC DCP Part I.

3.3. PWD parking.

Two car spaces for a Person with Disability (PWD) are proposed on-site. AS/NZS 2890.6 defines that each PWD car park bay must have a combination of a dedicated non-shared space and a shared area on one side of the dedicated space. Both areas must have minimum dimensions of 2.4 metres wide and 5.4 metres long. Also, a shared area of 2.4x2.4m must be provided at one end of the dedicated non-shared space, which can be at the front or at the rear.

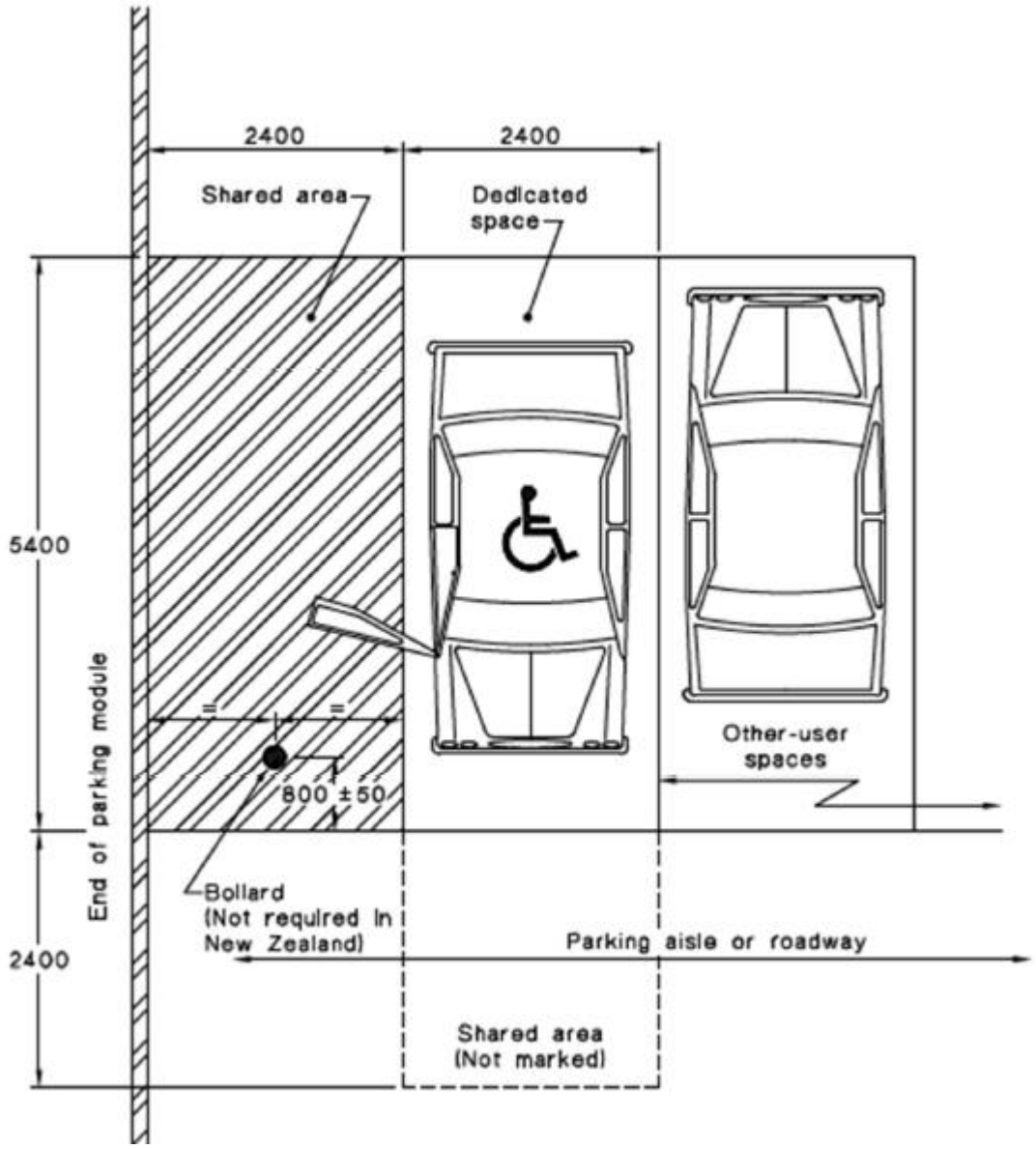

Figure 11 | Example of PWD angle parking bay, *Source: AS/NZS 2890.6*

3.4. Loading bay requirements

Loading on-site is not possible due to impractical service bay height clearance requirements for a ground-floor level car park within a multi-storey building. For this reason, an on-street loading within the new 45° Elm Street line marking is proposed. SRV swept path was undertaken and the results are satisfactory, refer to Appendix B.

In e-mail correspondence dated 19th of September 2023, Council's development engineer provided the following advice regarding the loading bay location:

> *"Loading bays are generally required on-property, There is potential for loading/unloading on-street (for example - there are loading bays in the Casino CBD) however I could not confirm if this location is acceptable as it is required to go through our assets section and the Local Traffic Committee (LTC) for approval. If applied for in the future application, it will be forwarded to Assets and the LTC for approval through the assessment process."*

It is anticipated that the proposed loading bay location will be reviewed by Council staff in context of the overall merits of the proposal.

3.5. Bicycle space requirements

Neither the 2002 GTTGD nor Richmond Valley Council DCP state a requirement for bicycle parking for a medium-density residential flat building, top housing, or similar development. Therefore, no specific bicycle parking spaces are required for this development. However, the proposed development features bicycle parking spaces within the undercover car parking, and the design must be in accordance with AS2890.3

3.6. Vehicle access location and width

The proposed development features one undercover off-street car park with access off Elm Street and exit onto McDonald Place, refer to Figure 2. This access/exit should comply with the minimum width, location, and sight distance in accordance with AS/NZS 2890.1:2004. Minimum widths and the location will be discussed below, and the minimum sight distance will be discussed in section 3.7.

The minimum driveway width should comply with AS/NZS 2890.1:2004 Clause 3.2.1. This clause specified that any car parking class 3 with less than 25 parking spaces fronting a local street should have a minimum entry width of 3 – 5.5m, and if separate, both entry and exit widths should be 3m min. We recommend the exit opening is constructed as a 6m wide door, however with bollards and linemarking to force exiting vehicle to drive out in the middle of that door to create additional sight lines to pedestrians using the McDonald Place footpath.

AS/NZS 2890.1:2004 Section 3.2.3 requires that access driveways should be 6m away from the tangent point of an intersection. The roundabout intersection tangent point is approx. 12 metres west of the proposed development exit point, and approx. 25m north from the access. Therefore, the proposed location complies.

3.7. Vehicle exit sight distance

According to AS/NZS 2890.1:2004 Section 3.2.4, a min. 45m or desirably 69m vehicle sight distance from the driver's perspective should be provided to vehicles leaving the subject site onto a 50 km/h posted speed limit frontage road.

Based on our site investigations, McDonald Place and Woodburn Street are relatively flat and both provide more than the minimum and desirable sight distance outlined in AS/NZS 2890.1:2004.

Figure 12 | Vehicle exit sight line to the left

Figure 13 | Vehicle exit sight line to the right

Note that, the existing light pole relocation by Essential Energy is part of the proposed road works on McDonald Street.

3.8. Pedestrian sight distances

AS/NZS 2890.1:2004 Section 3.2.4 states that clear sight lines should be provided at the property boundary as shown in Figure 14. The proposed building does not provide a 2.5m setback from the boundary. However, the pre-lodgement meeting held on 25th of October 2022 advised that appropriate signage should be installed for access points and pedestrian approaches to access point. This will be combined with bollards and linemarking to force cars to exit in the middle of the 6m wide exit door to assist with mitigation this issue.

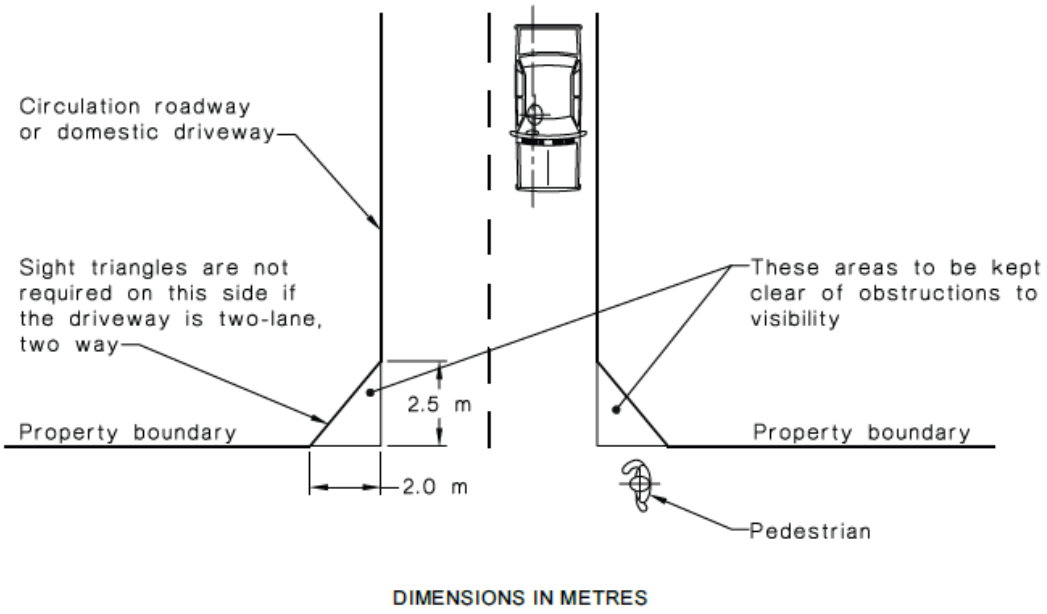

Figure 14 | Minimum sight lines for pedestrian safety, *Source: AS/NZS 2890.1:2004*

3.9. Parking modules and circulation roadway

In accordance with AS 2890.1, the dimensions of internal circulation and car park modules must align with the specific requirements for each classification of off-street car parking facilities. The proposed development off-street car park can be classified as user 1A (e.g. residential, domestic and employee parking) for the dwellings and user 3 (short-term city and town centre parking, parking stations, hospital and medical centres) for the commercial premise.

According to the required number of car parks, refer to section 3.2, the proposed development will need 11 spaces for user class 1A and 5 spaces for user class 3.

AS/NZS 2890.1:2004 states min. width and length of 2.4x5.4m user class 1A, and 2.6x5.4m for user class 3. Minimum aisle width must be 5.8m for both classes.

3.10. Elm Street line marking

The pre-lodgement meeting held on the 25th of October 2022 advised that formalisation of line marking will be required as part of this development application. The proposed development will install 45° angle parking along the frontage of the site in Elm Street in accordance with AS 2890.5.

Adjacent to the subject line, Elm Street currently is about 9.8m wide from kerb to median. AS 2890.5 states a minimum overall width required from kerb to separation line for a 45° angle parking must be

10.2m. If the existing central island is reduced to a normal roundabout splitter island, with the same layout as McDonald Place approach, enough space for a 45° angle parking would be available.

The proposed line marking will be long enough to accommodate the SRV loading bay and eight car park spaces. Currently, the existing non-line marked parking in the same area accommodates about six vehicles, indicating that the proposal is likely to create an additional of two car park spaces, offsetting the shortfall explained in section 3.2.

Proposed Elm Street 45° angle parking layout plan is shown in Appendix A. B-99, where the increase of car parking is demonstrated. SRV swept path analysis are shown in Appendix B, and the results are satisfactory.

Note that, if RVC does not consent with the existing median island reduction to accommodate the proposed 45° angle parking. Instead, 30° angle parking can be considered and no median island reduction will be needed, but this likely reduces the car parking yield.

4. CONCLUSIONS AND RECOMMENDATIONS

The purpose of this report is to quantify the impact of the operations of the proposed development on the surrounding road network, in particular with respect to traffic generation and parking demand.

We provide the following conclusions and recommendations:

- Due to its existing conditions, the road network surrounding the subject site can handle a significant volume of traffic as explained in chapter 2.
- The net traffic increase as a result of the development is demonstrated in chapter 3.1.
- The required number of car park will can be achieved as explained in section 3.2.
  The Proposed off-street PWD car parking spaces must have share zone complying with AS 2890.6.
- Off-street SRV is proposed as explained in section 3.4.
- The proposed bicycle spaces must comply with AS2890.3.
- The vehicle access/exit location and width comply with AS2890.1 as explained in section 3.6.
- Enough sight distance is available for the proposed exit point in McDonald Place, refer to section 3.7.
- Pedestrian safety can be achieved with appropriate signage as explained in 3.8.
- Adequate internal circulation is provided in accordance with AS 2890.1 as explained in section 3.9.
- Formalisation of line marking in Elm Street is part of this proposed development and can be used to offset the shortfall number of off-street parking. Either 45° or 30° angle parking can be used, preferable 45° angle parking. Refer to section 3.10.

Based on this assessment we recommend that the proposed development be approved from a traffic engineering perspective.

REFERENCES

Guide to Traffic Generating Developments, Roads and Traffic Authority, Version 2.2, October 2002.

AS/NZS 2890.1:2004 Parking Facilities Part 1: Off-Street Car Parking, Australian Standard, 2004.

AS/NZS 2890.2:2002 Parking Facilities Part 2: Off-Street Commercial Vehicle Facilities, Australian Standards, 2002.

AS/NZS 2890.5:1993 Parking Facilities Part 5: On-Street Parking, Australian Standard, 1993.

Richmond Valley Development Control Plan 2015 Part I Other Considerations, Richmond Valley Council, Casino, December 2015.

APPENDIX A – ELM STREET LINE MARKING PLAN

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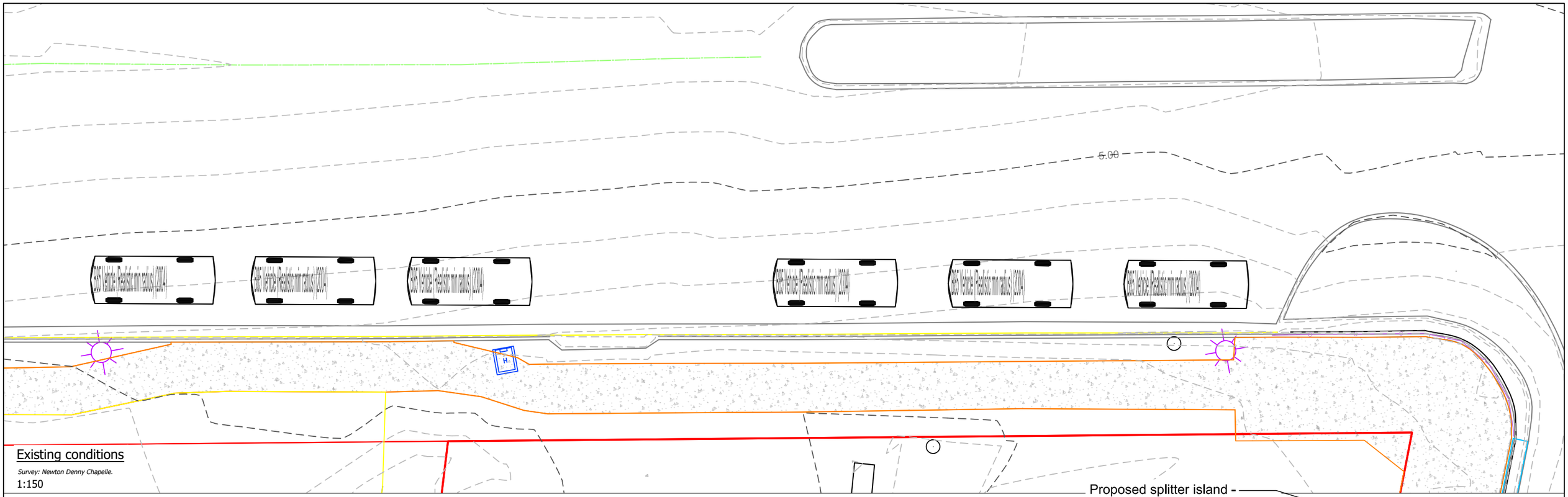

REV:	DESCRIPTION:	DATE:	DRAWN:	REVIEWED:	APPROVED:
A	**Draft For Review**	**31/10/23**	**JN**	**MK**	**MK**

APPROVED BY:
Michiel Kamphorst,
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Signed: Date: **31/10/23**

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PROJECT:
DA drawings for shop top mixed used development at 17 McDonald Place in Evans Head, NSW

DRAWING TITLE:
On-site Parking

PROJECT NUMBER: **J1279**

ORIGINAL SIZE: **A3**

DRAWING NUMBER: **J1279_C301**

REVISION: **A**

APPENDIX B – ELM STREET SWEPT PATH ANALYSIS

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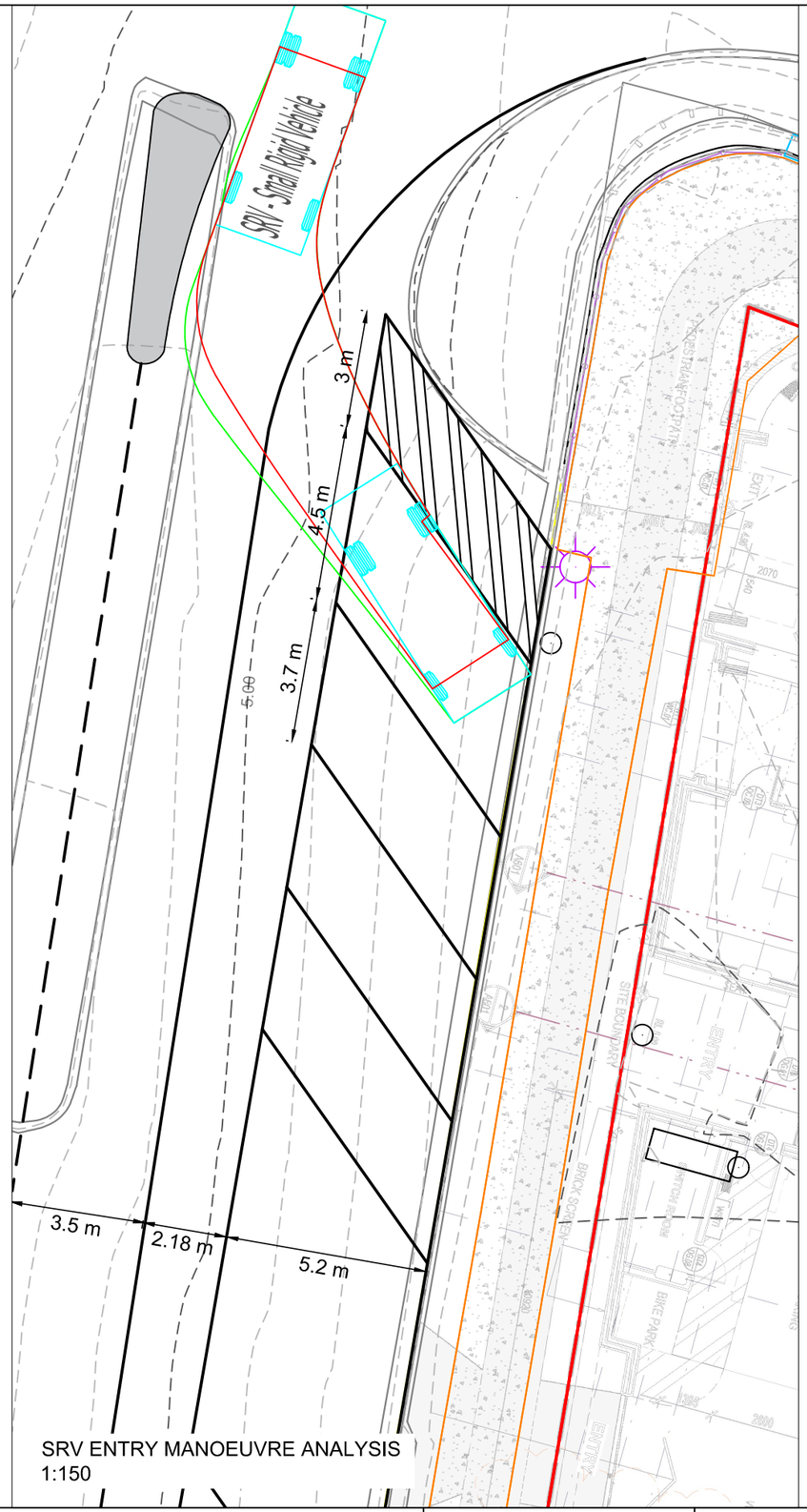
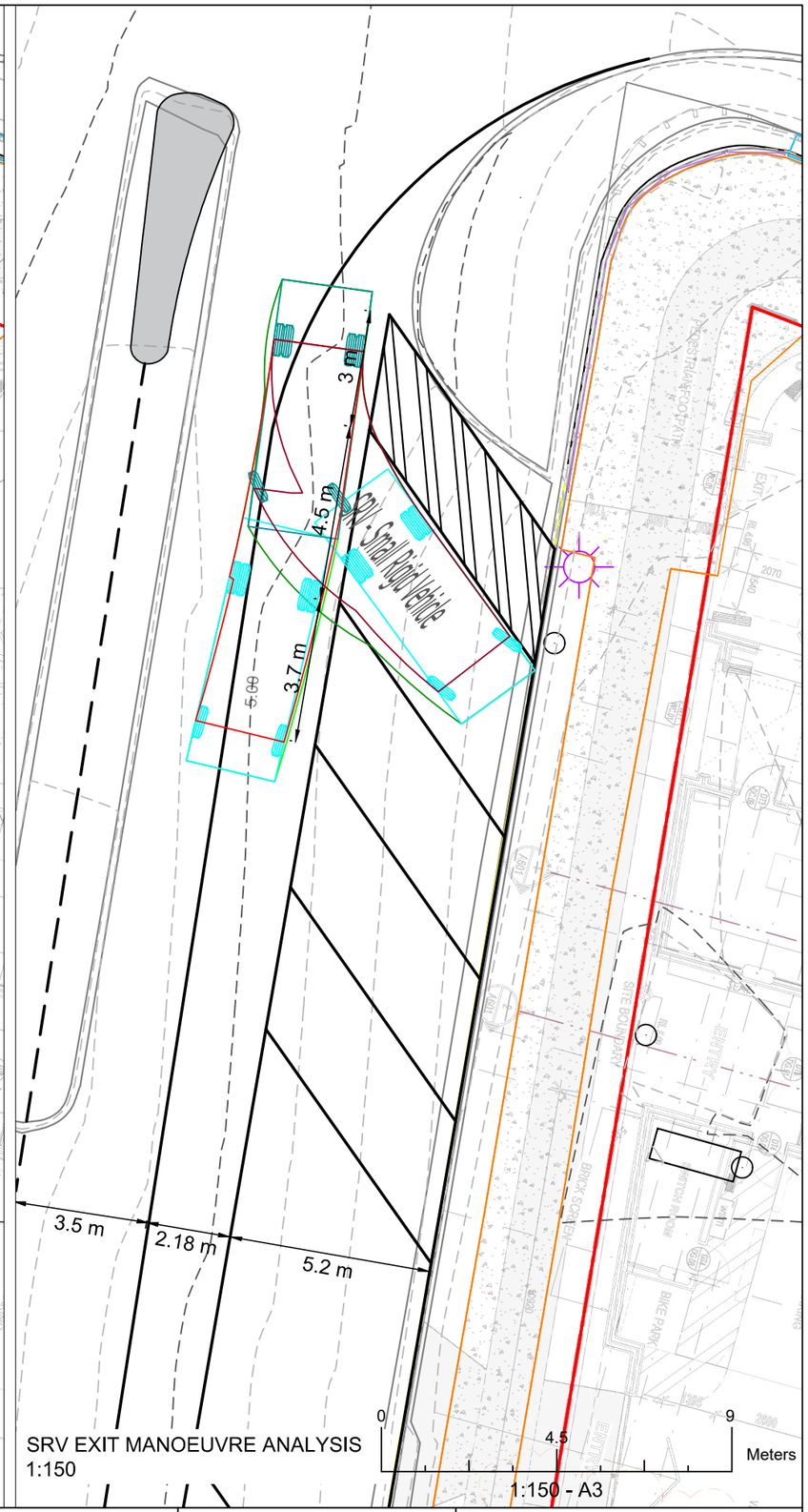
B-99 SWEPT PATH ANALYSIS
1:150



SRV ENTRY MANOEUVRE ANALYSIS
1:150



SRV EXIT MANOEUVRE ANALYSIS
1:150

1:150 - A3

REV:	DESCRIPTION:	DATE:	DRAWN:	REVIEWED:	APPROVED:
A	**Draft For Review**	**31/10/23**	**JN**	**MK**	**MK**

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PROJECT:
DA drawings for shop top mixed used development at 17 McDonald Place in Evans Head, NSW

DRAWING TITLE:
Swept-Path analysis

PROJECT NUMBER: **J1279**

ORIGINAL SIZE: **A3**

DRAWING NUMBER: **J1279_C302**

REVISION: **A**

Appendix C

Noise Impact Assessment

Ingen Consulting Pty Ltd

17 MCDONALD PLACE, EVANS HEAD

31ST OCTOBER 2023

NOISE IMPACT ASSESSMENT

INGEN CONSULTING

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DOCUMENT CONTROL

Revision number	Description	Prepared	Reviewed	Issued	Issue date
A	Draft client review	MK			20/9/23
B	Development Application	MK	MK	MK	31/10/23

Document title: 17 McDonald Place, Evans Head – Noise Impact Assessment

Document number: J1279_NIA

Author: Michiel Kamphorst, *MSc BSc RPEng RPEQ NER MAAS*

Client name: 17 The Evans Trust

Client's representative: Lewis Barakat

Approved for use by:

Name: Michiel Kamphorst **Signature:**  **Date:** 31st October 2023

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1. INTRODUCTION

Ingen Consulting P/L has been engaged by 17 The Evans Trust to prepare a Noise Impact Assessment (NIA) for a proposed mixed-use development at 17 McDonald Place in Evans Head, NSW.

1.1. Scope

This NIA is prepared for 17 McDonald Place in Evans Head, NSW. The NIA is to assess the proposed development for compliance with the 2017 NSW Government's Noise Policy for Industry (NPfI).

This NIA has been prepared in accordance with the following standards, guidelines and policies:

- NSW Environment Protection Authority *Noise Policy for Industry*, October 2017
- Australian Standard 1055 series (Acoustics – Description and measurement of environmental noise)
- Australian Standard 2659 series (Guide to the use of sound measuring equipment)
- 2021 Richmond Valley DCP Part I-7

In particular, Council's Environment & Health Coordinator requested the following items are addressed in detail:

1. The noise impact of the roof top area on neighbouring residents
2. The noise impact of residents at the subject site of RLS patrons leaving at night, primarily the closing of car doors and starting of cars in the car park
3. The noise impact of the use of the 'return and earn' on residents at the subject site.

1.2. Site description

The subject site is located at 17 McDonald Place in Evans Head, NSW. The land is formally identified as Lot 7 DP14089 and is located on the corner of McDonald Place and Elm Street. Figure 1 shows the location of the subject site.

The subject land is bounded by the RSL car park on its eastern and southern boundary. A 'return and earn' facility is located adjacent its southern boundary. At the 'return and earn' empty bottles and cans are collected. The 'Evans Head Village', is a temporary accommodation site for flood victims on the northern side of McDonald Place. To the west, on the opposite side of Elm Street, Adjacent Woodburn Street a 2-story residential development was under construction at the time of our site inspection. Then A low-density residential area is located west of Elm Street, but south of Cedar Street.

Figure 1 | Lot 7 DP14089 Location (proposed development site), *Source of the map: Richmond Valley Council 2023*

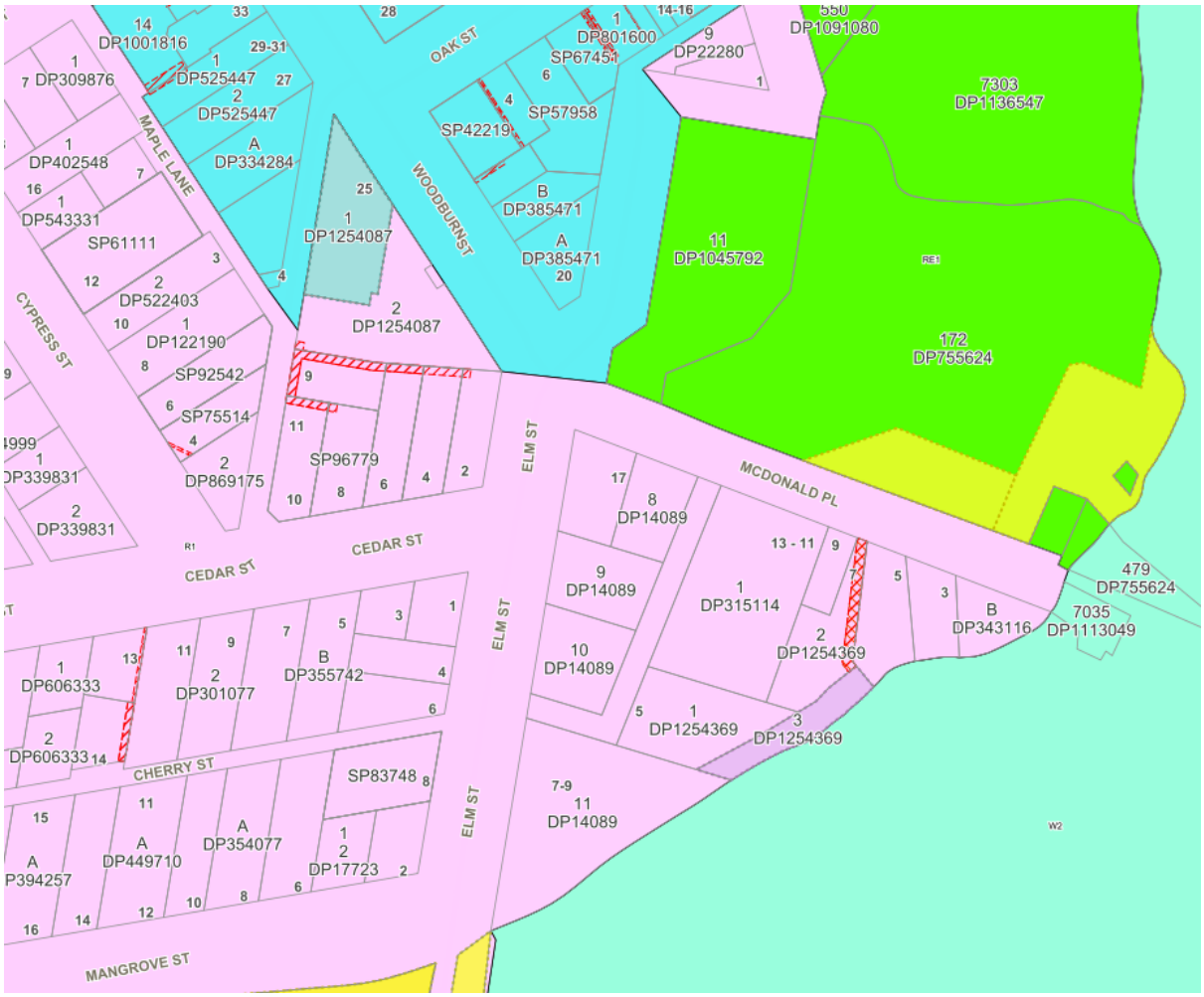


Figure 2 | Land Zoning Map, *Source: Richmond Valley Intramaps*

Council's zoning map (Figure 2) shows the land is located in an R1 – General Residential zone. Then to the northeast the land is zoned 'RE1 - Public Recreation' and to the northwest it is zoned 'B2 – Local Centre'.

The objectives of the R1 General Residential zone are defined in the 2012 LEP as follows:

- To provide for the housing needs of the community.
- To provide for a variety of housing types and densities.
- To enable other land uses that provide facilities or services to meet the day to day needs of residents.
- To ensure that housing densities are generally concentrated in locations accessible to public transport, employment, services and facilities.
- To minimise conflict between land uses within the zone and land uses within adjoining zones.

1.3. Proposed development

The proposed development is to demolish the existing abandoned building and construct a 3-storey mixed-use development which includes:

- Ground Floor: car parking and café
- First Floor: five residential apartments and two communal gardens
- Second Floor: five residential apartments with communal open space and roof garden
- Roof top: communal area and mechanical services

Figure 3 | Artist impression of proposed development, *Source: Barker Architects*

We understand that the residential apartments will be for long-term residential only, not for holiday letting.

The proposed times of operation for the cafe is 6am to 10pm daily.

1.4. Abbreviations and definitions

Commonly used terms and abbreviations throughout this report are:

Table 1 | Abbreviations and definitions

Term/abbreviation	Definition
A-weighting	Adjustment made to sound level measurements to approximate the response of the human ear.
Ambient noise	The all-encompassing noise associated with a given environment. It is the composite of sounds from many sources, both far and near.
Amenity noise level	A noise level intended to limit continuing and cumulative increases in noise level due to consecutive developments.
Annoyance	An emotional state connected to feelings of discomfort, anger, depression and helplessness. It is generally measured by means of the ISO15666 defined questionnaire (EEA, 2010).
Assessment period	The period in a day over which assessments are made: day, evening, or night.
Assessment background level	The single-figure background level representing each assessment period.
Background noise	The underlying level of noise present in ambient noise, generally excluding the noise source under investigation, when extraneous noise is removed. This is described using the L_{AF90} descriptor.
Best available technology achievable (BATEA)	Equipment, plant and machinery incorporating the most advanced and affordable technology available to minimise noise output.
Best management practice (BMP)	Adoption of particular operational procedures that minimise noise while retaining productive efficiency.
C-weighting	Adjustment made to sound level measurements that takes into account the low-frequency components of noise within the audibility range of humans.
Compliance	The process of checking that source noise levels meet with the noise limits in a statutory context.
Construction activities	Activities that are related to the establishment phase of a development and that will occur on a site for only a limited period of time.

Term/abbreviation	Definition
Day	The period from 7am to 6pm (Monday to Saturday) and 8am to 6pm (Sundays and public holidays)
Decibel (dB)	A measure of sound level. The decibel is a logarithmic way of describing a ratio. The ratio may be power, sound pressure, voltage, intensity or other. In the case of sound pressure, it is equivalent to ten times the logarithm (to base ten) of the ratio of a given sound pressure squared to a reference sound pressure squared.
EP&A Act	Environmental Planning and Assessment Act 1979.
Evening	The period from 6pm to 10pm.
Extraneous noise	Noise resulting from activities that are not typical to the area. Atypical activities may include construction and traffic generated by holiday periods and by special events such as concerts or sporting events. Normal day traffic is not considered to be extraneous.
Feasible and reasonable mitigation	Noise mitigation that can be engineered and is practical and the benefits of which outweigh adverse social, economic and environmental effects, including cost.
Greenfield site	Undeveloped land.
Impulsive noise	Noise with a high peak of short duration or a sequence of such peaks
Industrial noise source	Typically includes manufacturing, extractive industry, commercial use, warehouse, maintenance and repair, intensive agricultural and livestock, utility and reticulation services.
Intrusive noise	Refers to noise that intrudes above the background level by more than 5 decibels.
$L_{AF90, 15min}$	The A-weighted sound pressure level measured using fast time weighting that is exceeded for 90% of the time over a 15-minute assessment period. This is a measure of background noise.
$L_{Aeq, T}$	The time-averaged sound pressure level. The value of the A-weighted sound pressure level of a continuous steady sound, that with a measurement time interval T, has the same mean square sound pressure level as a sound under consideration with a level that varies with time.
Low frequency	Noise containing major components in the low-frequency range (10Hz to 160 Hz).
Median	The middle value in a number of values sorted in ascending or descending order. For an odd number of values this is the middle value. For an even number of values this is the arithmetic average of the two middle values.
Noise limits	Enforceable noise levels that appear in conditions on consents and licences.
Night	The period from 10pm to 7am (Monday to Saturday) and 10pm to 8am (Sundays and public holidays).

Term/abbreviation	Definition
Noise-sensitive land uses	Land uses that are sensitive to noise, such as residential areas, churches, schools and recreation areas.
Operator	Noise-source manager.
Project noise trigger levels (PNTL)	Target noise levels for a particular noise-generating facility. They are based on the most stringent of the project intrusiveness level and the project amenity noise level.
Proponent	The developer of the industrial noise source.
Rating background level (RBL)	The overall, single-figure background level representing each assessment period over the whole monitoring period. This is the level used for assessment purposes.
Receiver	The noise-sensitive land use at which noise from a development can be heard.
Tonality	Noise containing a prominent frequency and characterised by a definite pitch.

2. NOISE REGULATIONS

The 2021 Richmond Valley Development Control Plan, the 2017 Noise Policy for Industry and the 2013 Noise Guideline for Local Government address the control of noise emissions as outlined below.

2.1. 2021 Richmond Valley DCP I-7

Part I-7 of the 2021 Richmond Valley DCP addresses Noise Impact Assessment (NIA)requirements. Council's staff have required that the NIA for the subject development shall be a 'High degree NIA, which comprehensively addresses all potential noise impacts. As such, the scope for this report includes background noise testing and detailed SoundPLAN modelling of all noise sources, as well as a review of the potential for land use conflicts due to the 'return and earn' facility and the RSL.

2.2. 2023 Noise Guide for Local Government

The 2023 Noise Guide for Local Government (NGLG) will generally be used by council officers when assessing local noise problems under the legal framework of the Protection of the Environment Operations Act 1997 (POEO Act) and the Protection of the Environment Operations (Noise Control) Regulation 2008 (Noise Control Regulation), which generally addressed the issue of 'offensive noise'. It defines offensive noise as noise:

A. *That, by reason of its level, nature, character or quality, or the time at which it is made, or any other circumstances:*

(a) is harmful to (or is likely to be harmful to) a person who is outside the premises from which it is emitted, or

(b) interferes unreasonably with (or is likely to interfere unreasonably with) the comfort or repose of a person who is outside the premises from which it is emitted, or

B. *That is of a level, nature, character or quality prescribed by the regulations or that is made at a time, or in other circumstances, prescribed by the regulations"*

Section 4.2.1. of the NGLG explains that the definition of offensive noise is based on evaluating whether noise is (or is likely to be) harmful or interferes unreasonably with comfort or repose, where this is due to:

- The (noise) level, nature, character or quality, or
- Time of day (or night), or
- Any other circumstances.

Inherent characteristics that may be experienced as offensive generally are associated with impulsiveness, tonality and low frequency. An often-used test for audibility is the 'intrusive noise' test of measured L_{Aeq} at the background L_{A90} + 5dB as a limit.

Furthermore, the NGLG provides a list of factors to be considered for assessing offensive noise. These are:

Table 19 Factors to be considered for assessing offensive noise

Definition part	Non-exhaustive list of considerations
Offensive noise means noise that, by reason of its:	
• level, nature, character or quality, or	Does the noise level exceed noise level conditions on consents or approvals? or Is the noise level extremely loud in an absolute sense? Its volume alone may be annoying, such as music being played at a volume so high that it can be heard, for example, over construction work. or Is the noise level extremely loud in a relative sense – that is, very loud in comparison with the background noise? An example is loud activity occurring during the dead of night. Measurements can help to determine how loud the noise is relative to the background noise level in an area. or Does the noise occur for a long period of time? or Does the noise occur often? Noise can be more annoying when it occurs frequently. Examples might be a leaf blower used every morning or a band that practises frequently without regard to the impact on neighbours. or Is the nature of the – for example, is it screeching, squealing, high-pitched, whining, a low-frequency rumble or intermittent? The presence of tones, impulses or fluctuations in volume can make people more likely to react to the noise. These can be judged subjectively, but noise measurements will help to quantify the extent of these characteristics. Assessment against relevant government policies may assist (see section 9).
• time at which it is made, or	Is the noise present at night when people are trying to sleep? Noise that regularly disturbs sleep is likely to be considered offensive by complainants. or Is the noise present during the evenings or weekends when people expect to enjoy peace and quiet? Is the noise making it difficult to have a conversation, study, read or watch TV?

Definition part	Non-exhaustive list of considerations
• any other circumstances, or	Is the noise atypical for the area? Is the activity in alignment with the zoning of the area? Where noise from an activity that is causing nuisance is new or unusual for an area, people are more likely to react. Look at the typical uses of the area and determine whether the activity is consistent with the local environmental plan. An example might be a community event with amplified music affecting a residential area that has not traditionally been affected by such events. or Is the activity producing noise that is unnecessary • it could easily be mitigated (for example plant/equipment operated in a proper and efficient manner, conducted at a more appropriate time or conducted away from residents) • it is frivolous (for example, use of noisy tools for activities that can be accomplished without the use of tools, or making noise for the sake of making noise)?
• it is harmful to (or is likely to be harmful to) a person who is outside the premises from which it is emitted, or interferes unreasonably with (or is likely to interfere unreasonably with) the comfort or repose of a person who is outside the premises from which it is emitted.	Is there evidence of harm? **Note**: It is unlikely that environmental noise would result in direct physiological harm, for example hearing loss. However, harm may take the form of extreme annoyance, distress, frustration, fatigue, etc. In some cases, a complaint may have supporting evidence from a medical practitioner. However, it needs to be borne in mind that a clear and transparent link between the noise and any adverse health outcome may be difficult to establish with certainty. or If a noise study has been conducted, consider the findings of the study. or Is the complainant's response to the noise typical of the broader community and reasonable? Are there other residents who are subjected to the same noise levels but are not affected by the noise? Are there other complainants? Only one person needs to be harmed by the noise for it to be offensive. However, talking to other neighbours likely to be exposed to the same noise about how it affects them may assist in deciding whether it is likely to be harmful and whether the evidence from the individual can be corroborated. or Is the noise maker reasonable? Can the activity be easily accomplished in a much quieter manner or can the noise be easily mitigated?
Offensive noise is noise that is	

Definition part	Non-exhaustive list of considerations
• of a level, nature, character or quality prescribed by the regulations, or	Does the noise level comply with the POEO Noise Control Regulation? • cl 5 – Use on roads of motor vehicles capable of emitting noise in excess of the prescribed level. Is the noise's nature and character in contravention of the regulations? • cl 25 – Use of alarms that sound in excess of prescribed length of time • cl 26 – Design and construction of alarms that contravene the regulations • cl 27 – Attaching certain motor vehicle horns • cl 28 – Use of certain motor vehicle horns.
• made at a time, or in other circumstances, prescribed by the regulations.	Is the noise in contravention of the time-of-use provisions in the POEO Noise Control Regulation? • cl 8 – Use of motor vehicles on residential premises • cl 9 – Use of refrigeration units fitted to motor vehicles near residential premises • cl 51 – Use of power tools on residential premises • cl 52 – Use of pumps on residential premises • cl 53 – Use of heat-pump water heaters • cl 57 – Use of musical instruments • cl 58 – Use of electrically amplified sound equipment Is the noise due to other circumstances prescribed in the POEO Noise Control Regulation? • cl 11 – Driving or using vehicles with defective noise control equipment • cl 14 – Use of vehicles with unauthorised temporary noise reduction packing • cl 17 – Use of vehicles with unauthorised temporary noise reduction equipment • cl 24 – Use of alarms with panic or override switches • cl 62 – Use of a motor vehicle in breach of a defective vehicle notice • cl 63 – Use of a vessel in breach of a defective vessel notice • cl 64 – Use of a vessel in breach of a defective vessel label

Figure 4 | NGLG Table 19, *Source: 2023 NGLG*

2.3. 2017 Noise Policy for Industry (NPI)

The Noise Policy for Industry defines a project noise trigger level (PNTL), which provides a benchmark or objective for assessing a proposal or site. It is not intended for use as a mandatory requirement. The project trigger level is a level that, if exceeded, would indicate a potential noise impact on the community, and so 'trigger' a management response; for example, further investigation of mitigation measures.

The PNTL, feasible and reasonable mitigation, and consideration of residual noise impacts are used together to assess noise impacts and manage the noise from a proposal or site. It is the combination

of these elements that is designed to ensure that acceptable noise outcomes are determined by decision makers.

The PNTL is defined as the lower value of the project intrusiveness noise level and the project amenity noise level. The project intrusiveness noise level is calculated in chapter 3 and is defined as the Rating Background Level + 5 dB.

The 5dB(A) difference between the recommended and the project amenity noise level is provided ensure that when several industrial developments happen in the same area, all claiming an amenity noise level, that the combined effect of these developments does not result in an excessive noise amenity level.

The project amenity noise level is defined as the recommended amenity noise level minus 5 dB(A) plus 3dB to convert from a period level to a 15-minute level. The Recommended and Project amenity noise levels for residential and holiday accommodation receivers are provided in Table 2.

Table 2 | Amenity noise levels

Receiver	Noise amenity area	Time of day	Recommended amenity noise level L_{Aeq}, dB(A)	Project Amenity Noise Level, $L_{Aeq, 15min}$, dB(A)
Residential	Rural	Day	50	48
		Evening	45	43
		Night	40	38
	Suburban	Day	55	53
		Evening	45	43
		Night	40	38
	Urban	Day	60	58
		Evening	50	48
		Night	45	43
Commercial premises	All	When in use	65	63
Hotels, motels, caretaker's quarters, holiday accommodation,	Rural	Day	50	53
		Evening	45	48
		Night	40	43
	Suburban	Day	55	58
		Evening	45	48

Receiver	Noise amenity area	Time of day	Recommended amenity noise level L_{Aeq}, dB(A)	Project Amenity Noise Level, $L_{Aeq, 15min}$, dB(A)
permanent resident caravan parks		Night	40	43
	Urban	Day	60	63
		Evening	50	53
		Night	45	48

The PNTL will be determined in chapter 4 based on the background noise survey results.

2.4. Application

Based on the policies outlined in this chapter, the purpose of this report is to assess the proposed development for compliance with the following requirements:

- Venue operation in accordance with the 2017 Noise Policy for Industry
- The venue shall not generate offensive noise as defined in the Protection of the Environment Operations Act 1997.
- Ensure compliance with the Protection of the Environment Operations (Noise Control) Regulation 2008.
- Assess the risk of existing adjacent operations (Return & Earn and RSL) creating offensive noise at the subject property.

3. BACKGROUND NOISE

Background noise testing was carried out to determine applicable Rating Background Levels (RBL's) for the surrounding properties.

3.1. Testing methodology

The preferred method for determining RBL's is through a 7-day unattended background noise survey. However, when arriving on site to install the logger, it became evident that there is occasional illegal occupation of the premises and therefore there was no safe and secure location to leave the equipment for that duration.

Another option would have been to place the logger at a neighbouring site, however the nearest residential properties south of Cedar Street were either too far away from the site, or close to a construction site, too densely built up or no visual security from the street.

As a result, in consultation with Council staff it was decided to carry out attended noise testing to determine background levels. An added benefit of this is that it allowed us to carry out testing at multiple locations, thus enabling the determination of background levels for each receiver specifically. Attended background testing was carried out during the day on Monday the 11th of September 2023, and during the evening and at night on Thursday the 14th of September.

3.2. Equipment used

The following equipment was used for the background noise survey:

- 2 x Bruel and Kjaer 2250 Sound Level Meter, Serial No. 3006868 & 3028735, Calibration dates December 2021 and January 2022 (resp.)
- Bruel and Kjaer Acoustical Calibrator model 4231, Serial No. 2292735, Calibration date December 2021
- Bruel and Kjaer Integral windscreen UA-1679

The sound level meter (SLM) used during the noise survey conforms to Australian Standard 1259 "Acoustics – Sound Level Meters" (1990) as type 1 precision sound level meters and have an accuracy suitable for both field and laboratory use. The meter's calibrations were checked in the field before and after the measurement periods with a Bruel and Kjaer acoustical calibrator model 4231. No significant system drift occurred over the measurement periods.

The SLM and calibrator have been checked, adjusted and aligned to conform to the Bruel and Kjaer factory specifications and issued conformance certificates. The internal test equipment is traceable to the National Measurement Laboratory at CSIRO, Lindfield, NSW.

3.3. Survey locations

The attended survey locations are shown in Figure 5 below. Survey locations were selected on the sides of buildings facing the subject development to best represent the existing conditions of the worst affected façade.

Figure 5 | Attended test locations

Figure 6 | Attended test location photos (from top left to bottom right: D, E, B, D)

A description of each test location is provided in the table below.

Table 3 | Noise survey location summary

Location ID	Test result ID's	Description
A	230914 001 & 230914 002	On-site test location, providing continuous background reference results for the duration of the evening and night time testing, and recording impacts of night time RSL car park use on the subject site.
B	Project 004, Project 006 and Project 010	Survey location representing 5 Elm Street and 7 Elm Street.
C	Project 007 & Project 011	Survey location representing 1 Cedar Street and 4 Elm Street
D	Project 001, Project 008 & Project 012	Survey location representing 2 Cedar Street

E	Project 003	Survey location representing the Evans Head Village caravan park
F	Project 009 & Project 013	Survey location representing the Evans Head Village caravan park
G	Project 005	Survey location representing the Evans Head Village caravan park
H	Project 002	Test location on southern boundary to record noise levels from the use of the Return and Earn facility

3.4. Background survey results

The attended noise survey conditions are listed in Table 4 below. Test results are shown in Table 5. The 1/3 octave spectral data of each test is depicted in the figures below. It was observed on the 14th of September that due to the vicinity of the ocean and the dominance of the surf, background levels throughout the night were unlikely to drop below those recorded during the testing. It is therefore warranted to adopt the measured values as night time background levels. The surf was relatively quiet as there were no storms in the vicinity during the testing or during the days leading up to the testing. High tide on 14 September was 19:58, therefore the testing commenced shortly after high tide and was conducted during outgoing tide.

Table 4 | Attended survey conditions

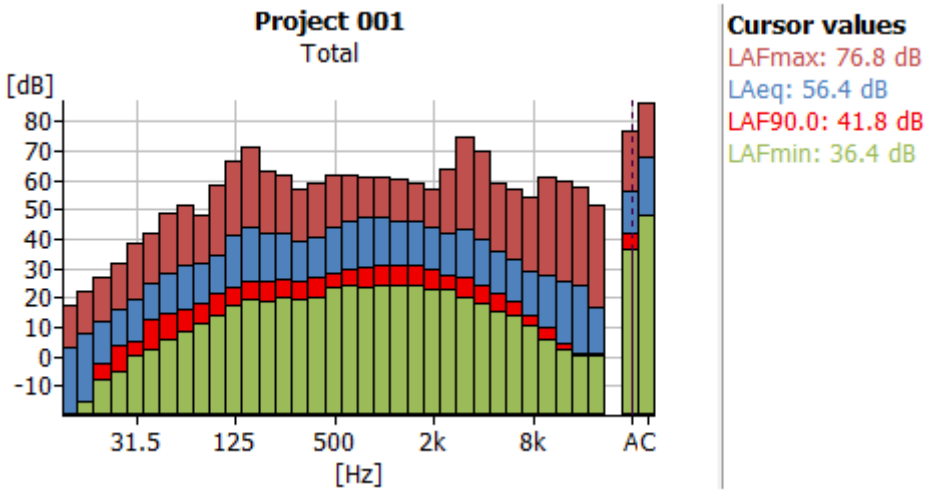
Parameter	Day-time testing	Evening/night time testing
Date	11th September 2023	14th September 2023
Temperature	19°C	8pm: 19°C, 10:30pm: 10°C
Humidity	61%	85%
Cloud cover	Partially overcast, some sun	Nil – clear sky
Wind	SW breeze	Easterly breeze from the ocean
Dominant noise sources	Traffic (non-continuous)	Ocean (continuous)
Other noise sources	Foliage, birds, RSL flag pole, return and earn facility	Traffic, RSL kitchen, RSL patrons leaving

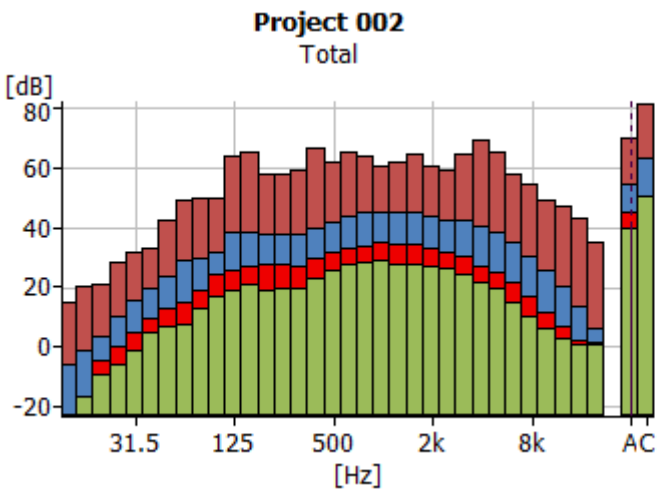
Table 5 | Test results

File name	Location	Start time	Finish time	L_{Amax}, dB	L_{Aeq}, dB	$L_{A,90}$ dB
Project 001	D	10:24:05	10:43:05	76.8	56.4	41.8
Project 002	H	10:44:53	10:59:53	70.3	54.7	45.0

Project 003	E	10:03:44	11:18:44	71.1	52.6	41.4
Project 004	B	11:24:52	11:40:02	65.9	49.4	41.1
Project 005	G	11:44:46	12:00:11	72.4	52.9	45.2
Project 006	B	20:17:15	20:32:30	65.4	43.7	39.6
Project 007	C	20:33:46	20:51:14	65.9	47.3	39.5
Project 008	D	20:53:51	21:09:51	67.6	49.6	39.1
Project 009	F	21:11:01	21:26:01	59.3	41.3	35.5
Project 010	B	21:34:37	21:49:51	59.4	42.8	37.7
Project 011	C	21:51:49	22:06:49	61.4	42.9	37.2
Project 012	D	22:08:10	22:23:17	64.2	43.4	36.3
Project 013	F	22:24:27	22:39:27	54.8	38.5	34.6
230914 001	A	20:11:10	21:31:35	*97.4**	53.1	35.6
230914 002	A	21:32:54	22:41:17	71.6	40.5	34.4

** due to microphone pole falling over at 21:00:44*





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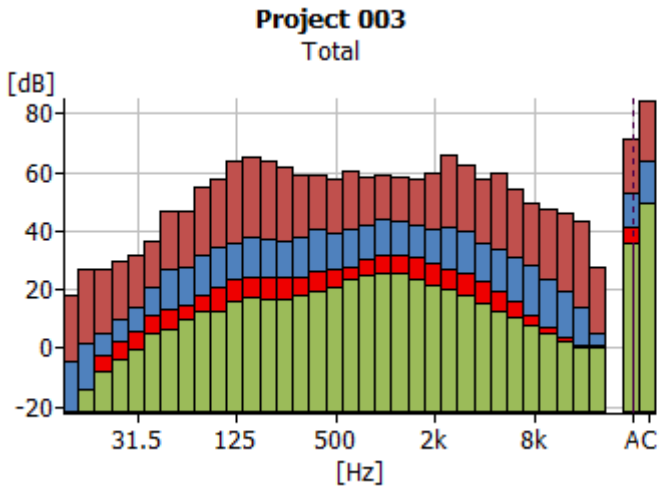
LAFmin: 39.9 dB



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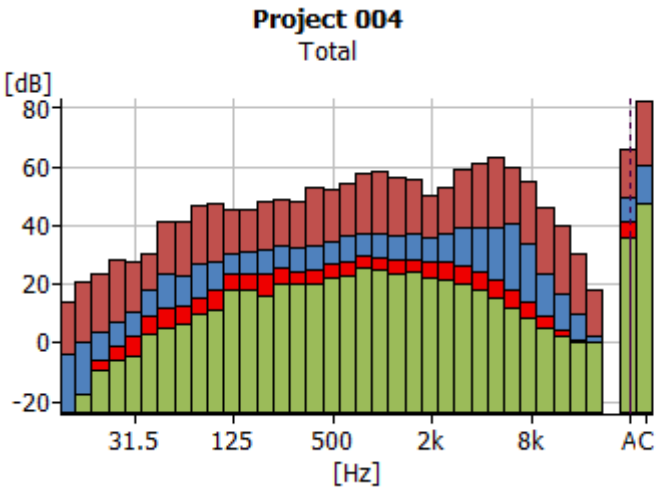
LAF90.0: 41.4 dB
LAFmin: 36.1 dB



Cursor values
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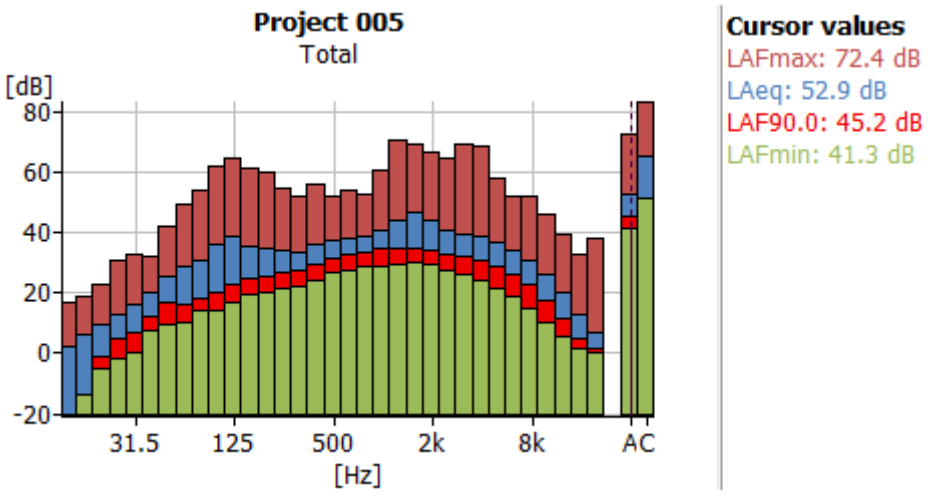
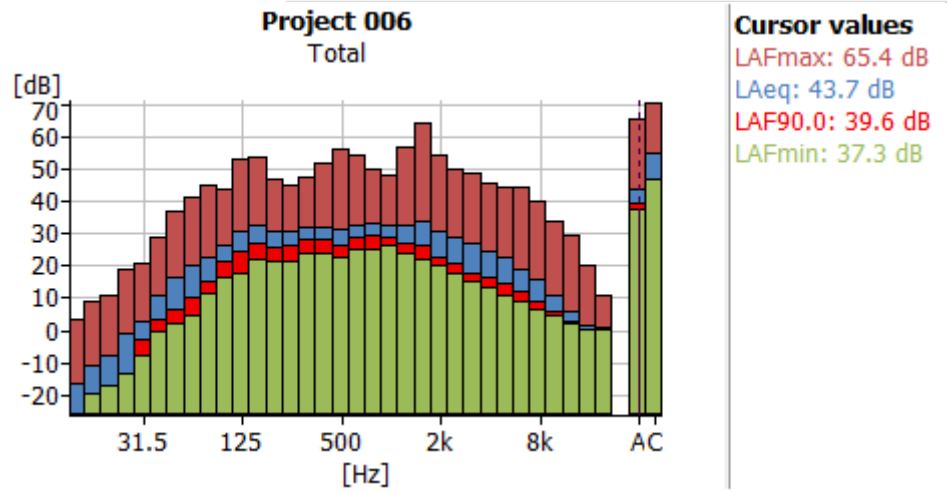
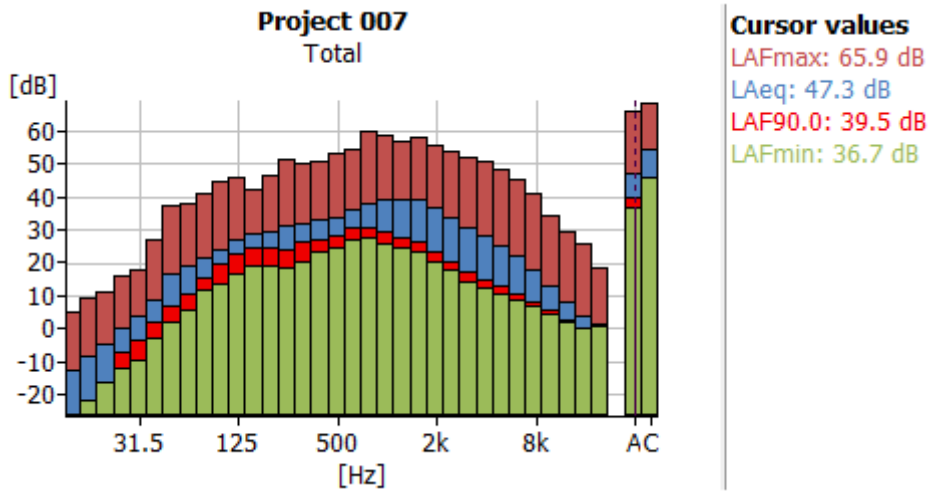
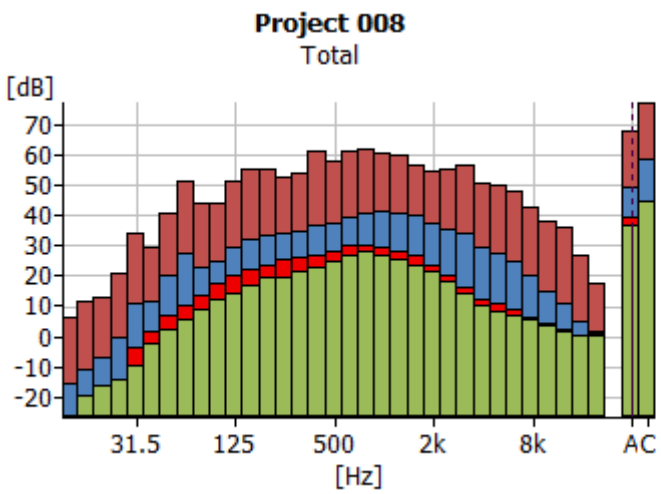
LAF90.0: 41.1 dB
LAFmin: 35.8 dB









Cursor values
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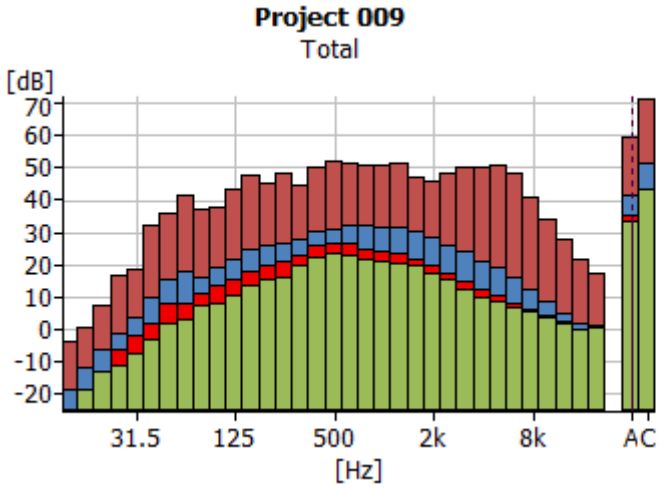
LAF90.0: 39.1 dB
LAFmin: 36.7 dB



Cursor values
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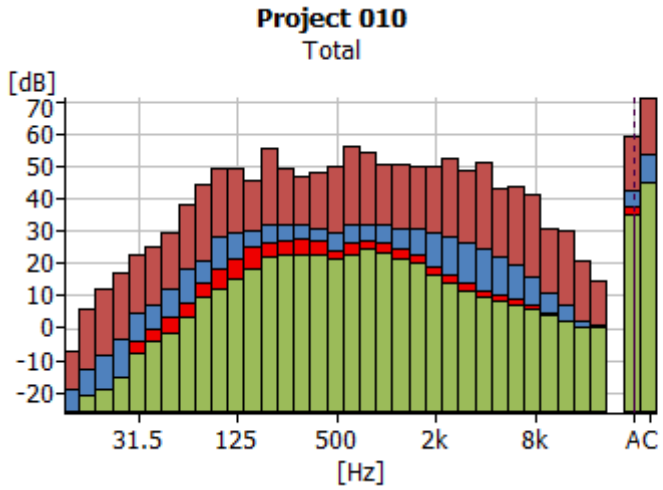
LAeq: 41.3 dB
LAF90.0: 35.5 dB
LAFmin: 33.6 dB



Cursor values
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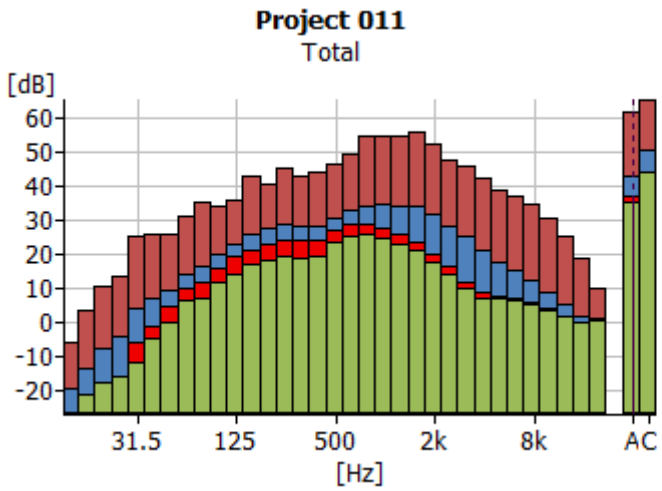
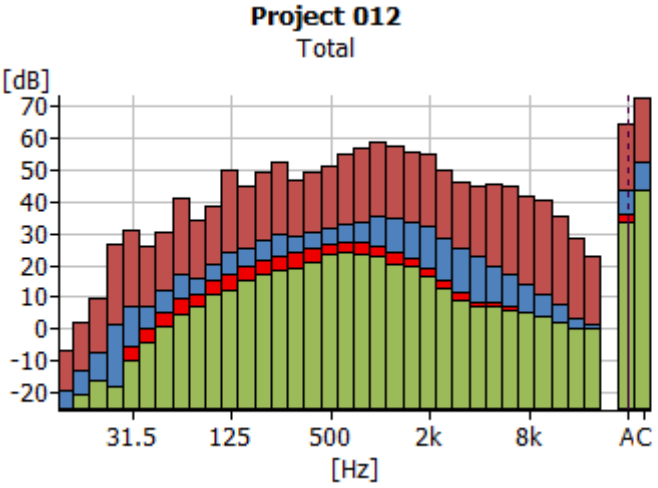
LAF90.0: 37.7 dB
LAFmin: 35.2 dB



Cursor values
LAFmax: 61.4 dB
LAeq: 42.9 dB
LAF90.0: 37.2 dB
LAFmin: 34.9 dB



Cursor values
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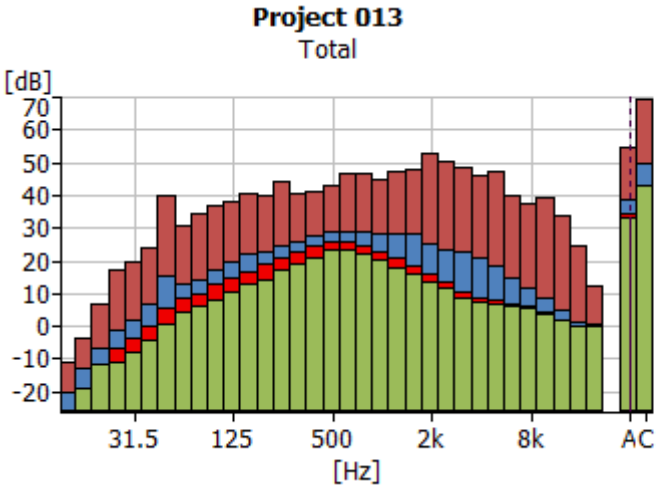
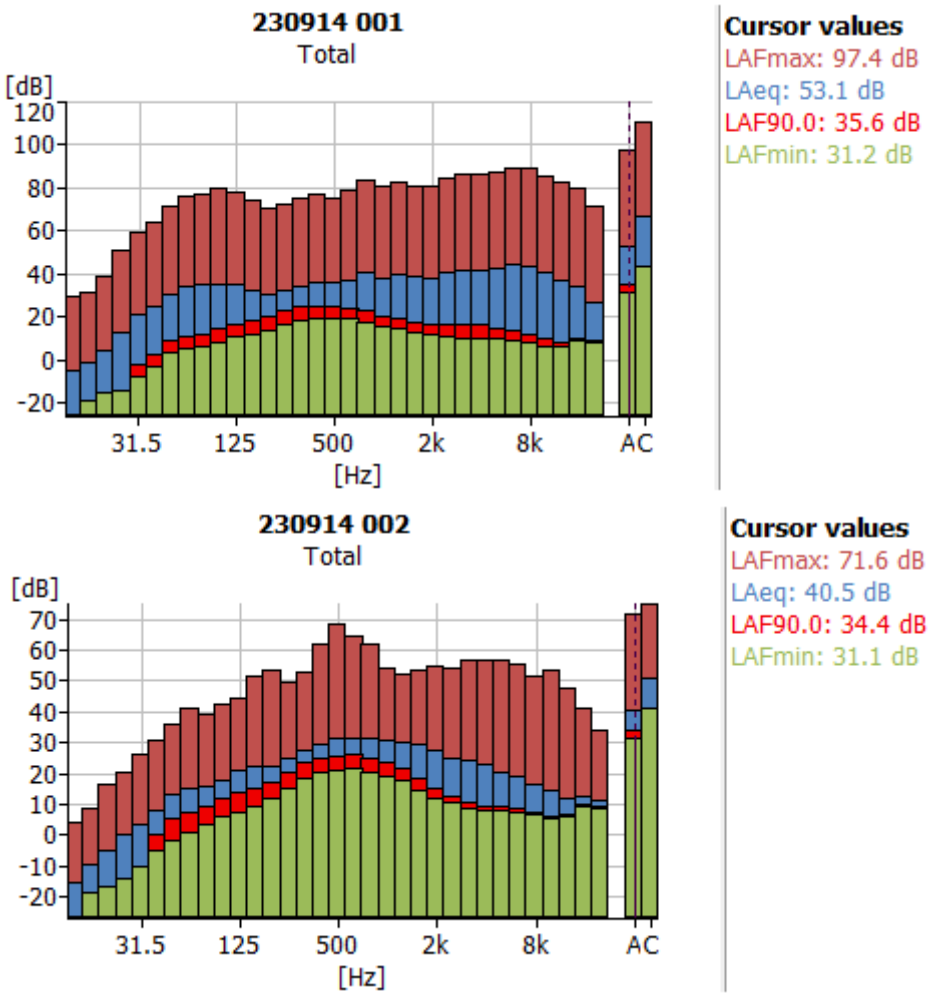
LAeq: 43.4 dB
LAF90.0: 36.3 dB
LAFmin: 33.6 dB



Cursor values
LAFmax: 54.8 dB
LAeq: 38.5 dB
LAF90.0: 34.6 dB
LAFmin: 33.0 dB



3.5. Rating Background Levels

The nearest receivers adopted for this proposal are listed in the table below, together with the adopted RBL based on the attended testing described above. Although the village at R1 was present at the time of testing, it is understood that this is a temporary village for local residents who can not return home due to flood damage. It is unknown to us at this time how long this village will be in place or what its future is. We have therefore included this village in our assessment but will assess it to 'permanent resident caravan park' requirements as per Table 2.

Table 6 | Rating Background Levels

Receiver ID	Address / description	Type / Use	Rating Background Level, dB(A)		
			Day	Evening	Night
R1	Evans Head Village	Caravan Park	41.4	35.5	34.6
R2	5 Elm Street	Residential	41.1	39.6	37.7

R3	7 Elm Street	Residential	41.1	39.6	37.7
R4	4 Elm Street	Residential	*41.8***	39.5	37.2
R5	1 Cedar Street	Residential	*41.8***	39.5	37.2
R6	2 Cedar Street	Residential	41.8	39.1	36.3

***Same adopted as R6 for day time*

3.6. Project Noise Trigger Levels

The Project Noise Trigger Levels (PNTL's) are determined as the lesser of the Project Intrusiveness Noise Level (PINL) (Table 7) and the Project Amenity Noise Level (PANL). The PTNL's are determined in Table 8.

Table 7 | Project Intrusiveness Noise Levels

Receiver ID	Rating Background Level, dB(A)			Project Intrusiveness Noise Level, dB(A)		
	Day	Evening	Night	Day	Evening	Night
R1	41.4	35.5	34.6	46.4	40.5	39.6
R2	41.1	39.6	37.7	46.1	44.6	42.7
R3	41.1	39.6	37.7	46.1	44.6	42.7
R4	*41.8***	39.5	37.2	46.8	44.5	42.2
R5	*41.8***	39.5	37.2	46.8	44.5	42.2
R6	41.8	39.1	36.3	46.8	44.1	41.3

Table 8 | Project Trigger Noise Levels

Receiver ID	Project Intrusiveness Noise Level, dB(A)			Project Amenity Noise Level, dB(A)			Project Noise Trigger Levels, dB(A)		
	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night
R1	46.4	40.5	39.6	58	48	43	**46.4**	**40.5**	**39.6**
R2	46.1	44.6	42.7	53	43	38	**46.1**	**43**	**38**
R3	46.1	44.6	42.7	53	43	38	**46.1**	**43**	**38**
R4	46.8	44.5	42.2	53	43	38	**46.8**	**43**	**38**
R5	46.8	44.5	42.2	53	43	38	**46.8**	**43**	**38**
R6	46.8	44.1	41.3	53	43	38	**46.8**	**43**	**38**

Figure 7 | Receiver locations

4. DEVELOPMENT IMPACT

This chapter addresses the noise impact of the proposed development on existing receivers. All noise emission modelling is carried out using SoundPLAN v 8.1

4.1. Topography

A Digital Ground Model (DGM) is created in SoundPLAN using LiDAR contours for the site and its surrounds. The resulting DGM is shown in Figure 8 below.

Figure 8 | Digital Ground Model

4.2. Meteorological conditions

Fact Sheet D of the 2017 Noise Policy for Industry addresses how to account for noise-enhancing weather conditions. Two types of meteorological conditions have been defined. For day-time these are:

- Standard meteorological conditions: stability categories A-D with wind speeds up to 0.5 m/s at 10m AGL
- Noise-enhancing meteorological conditions: stability categories A-D with light winds (up to 3 m/s at 10m AGL)

If the noise enhancing meteorological conditions occur for less than 30% of the time, then the standard meteorological conditions may be adopted for the assessment.

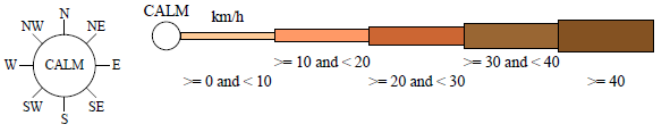
Using the methodology in Fact Sheet D2 of the Noise Policy for Industry for the eight-direction wind compass rose and data encapsulated in the annual wind roses for the Evans Head RAAF Bombing Range AWS as available for download on the website of the Bureau of Meteorology, for 9am (Figure 9) and 3pm (Figure 10)., it is determined that noise-enhancing meteorological conditions apply

For night time, several parameters need to be considered. Typically there is less wind at night than during the day in this region. In winter there can be temperature inversion at night time. Applying winter temperature inversion conditions for a summer use is not warranted. There generally is a higher humidity at night, but lower temperatures.

Based on the above, we adopt the following meteorological conditions. The Concawe meteorological model is used as it calibrates well with reality as found on other projects in the past.

Table 9 | Meteorological conditions

	Temperature, °C	Relative humidity, %	Wind speed, m/s	Wind direction	Pasquill Stability Coefficient
Day	25	60%	3	Omni-directional (worst case)	D
Evening	18	85%	2	Omni-directional (worst case)	F
Night	10	95%	0.5	Omni-directional (worst case)	G



9 am
9062 Total Observations

Calm 1%

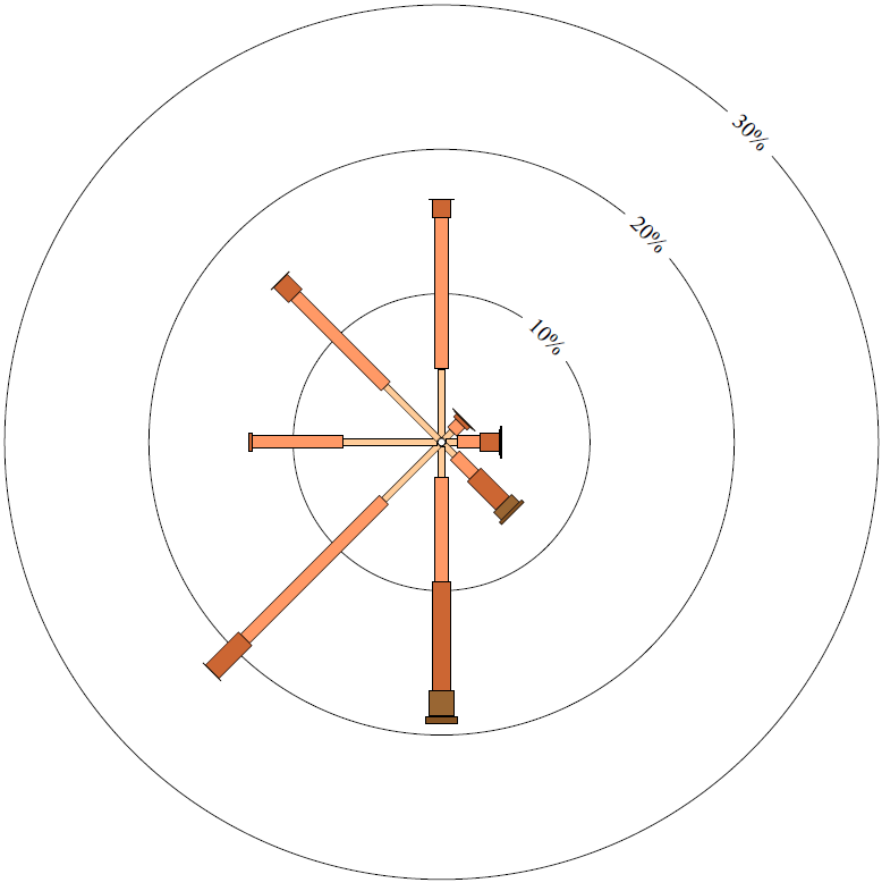


Figure 9 | Evans Head RAAF Bombing Range AWS 9am wind rose

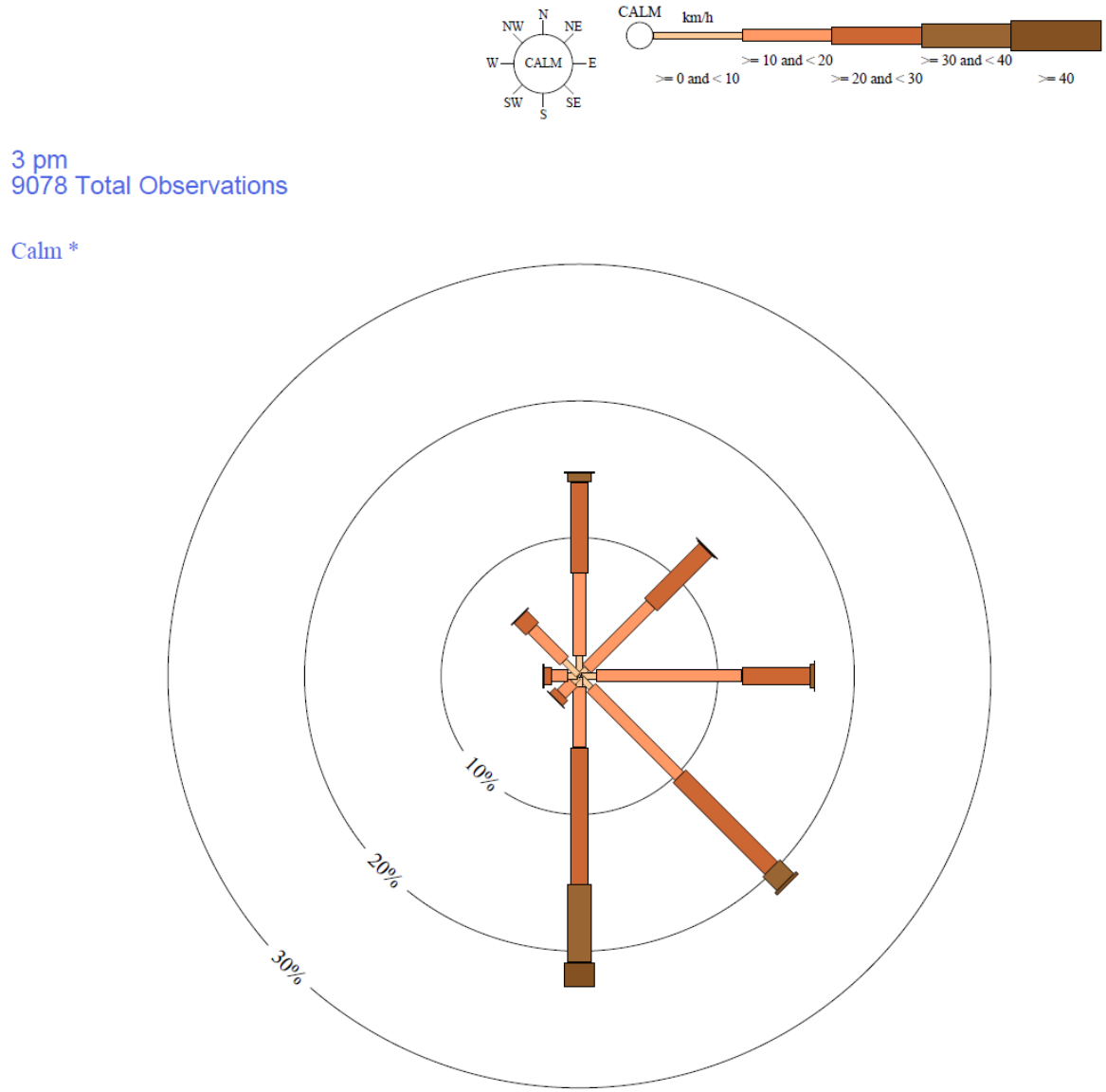


Figure 10 | Evans Head RAAF Bombing Range AWS 3pm wind rose

4.3. Noise sources

Based on the legislation referenced in chapter 2, this Noise Impact Assessment should address the following noise sources:

- Mechanical sources: air conditioning systems, and a kitchen extraction fan, all located in the rooftop services area. Adopted sound power levels: kitchen exhaust – 79.3 dB(A), A/C condensers: 69.6 dB(A) each based on equipment sound power data provided by Mitsubishi for the P450 YNW system. 2 of these systems assumed, subject to confirmation by mechanical consultant.
- Music: not required as it is not proposed to have amplified music or live music anywhere on site.

- Patron noise: groups of 4 people on all balconies and outdoor café seating area The rooftop viewing area will be modelled using a group of six people..
- Vehicle noise: all on-site vehicle noise will be within a covered and walled car parking area and is therefore not warranted to be included in the model.

Voices – patrons and residents

Modelling of people noise (the voices of patrons of the café and residents using the balconies of the apartments) is for well-behaved people with normal speech effort. People noise has been modelled based on the findings of the following publication:

Prediction of Noise from Small to Medium Sized Crowds, Hyane et al, 2011.

The authors of this publication have investigated factors such as Lombard effect, crowd size, orientation of individuals within the crowd, and their impact on the sound power level of crowds up to 100 people in outdoor spaces. With *N* being the number of people in the crowd, the paper provides the following approximations of sound power levels of crowds:

L_{WAeq} *= 15 x Log N + 64 dB(A)*

The result sound power levels per group size are implemented as follows:

Table 10 | Group size sound power levels

N	2	3	4	6	8	10	12	14	16
L_{wAeq}, dB	68.5	71.2	73.0	75.7	77.5	79.0	80.2	81.2	82.1

4.4. Results

The single point modelling results are provided below in Table 11.

Table 11 | Single point modelling results

Receiver	Day		Evening		Night	
	PTNL	$L_{Aeq,15min}$	PTNL	$L_{Aeq,15min}$	PTNL	$L_{Aeq,15min}$
R1	46.4	45.3	40.5	45.4	39.6	25.9
R2 – FF	46.1	41.1	43	41.1	38	16.0
R2 - GF	46.1	41.6	43	41.6	38	14.3
R3	46.1	27.7	43	27.1	38	11.0
R4	46.8	36.5	43	36.3	38	20.5

R5	46.8	35.5	43	35.5	38	21.7
R6 – FF	46.8	46.5	43	46.5	38	31.3
R6 - GF	46.8	46.5	43	46.5	38	27.4

The single point modelling results show compliance with the PTNL's, subject to the following provisions which were incorporated in the modelling:

1. No al-fresco dining in Elm Street

The exceedances recorded are primarily due to the use of the apartment balconies by their residents. The following should be considered when assessing these outcomes:

1. The model is a worst-case scenario, where all residents are using their balconies at the same time. This is a very unlikely situation to occur.
2. The impact of the use of balconies will only be heard by residents in other properties that are also outside and who are therefore creating the same type of noise that the development is emitting. The new Elm Street apartments also have balconies that would emit the same noise type to the subject site (see Figure 11).

On the basis of these factors we consider the exceedances caused by balcony use a non-issue for this development and should not inhibit approval of this development.

Figure 11 | New Elm Street development

It should also be noted that the al-fresco is proposed to be operated from 6am, which is prior to the day period which commences at 7am Monday-Saturday and at 8am on Sundays and public holidays. Thus, the operation of the al-fresco from 6am falls in the shoulder period. During this time the background levels will be elevated with respect to the night time RBL. Given the al-fresco would only face the temporary Evans Head Village, this is unlikely to create offensive noise.

The grid noise map results (1.5m height above ground level, 10m grid cell size) are shown in the figures below.

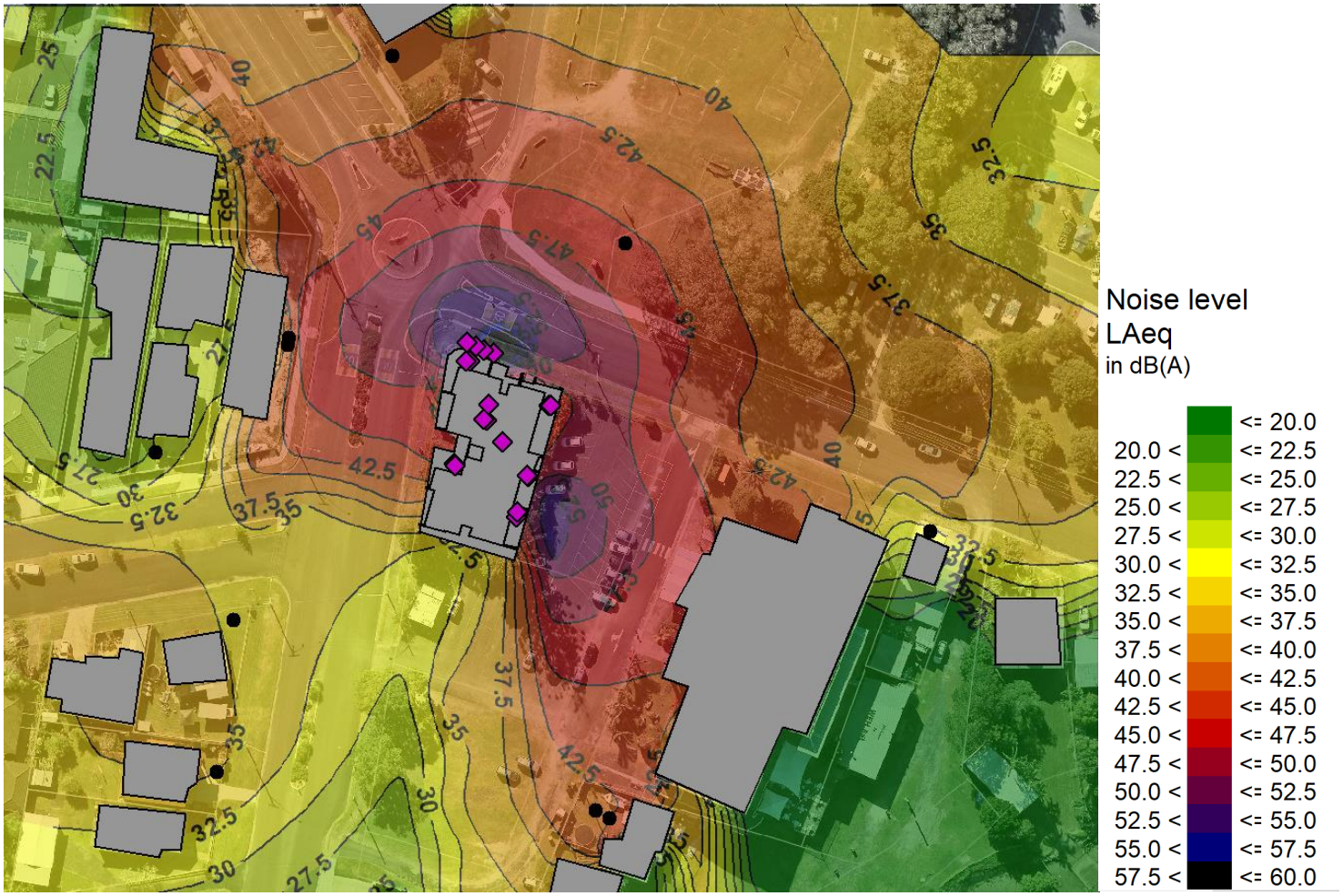


Figure 12 | Day time grid noise map

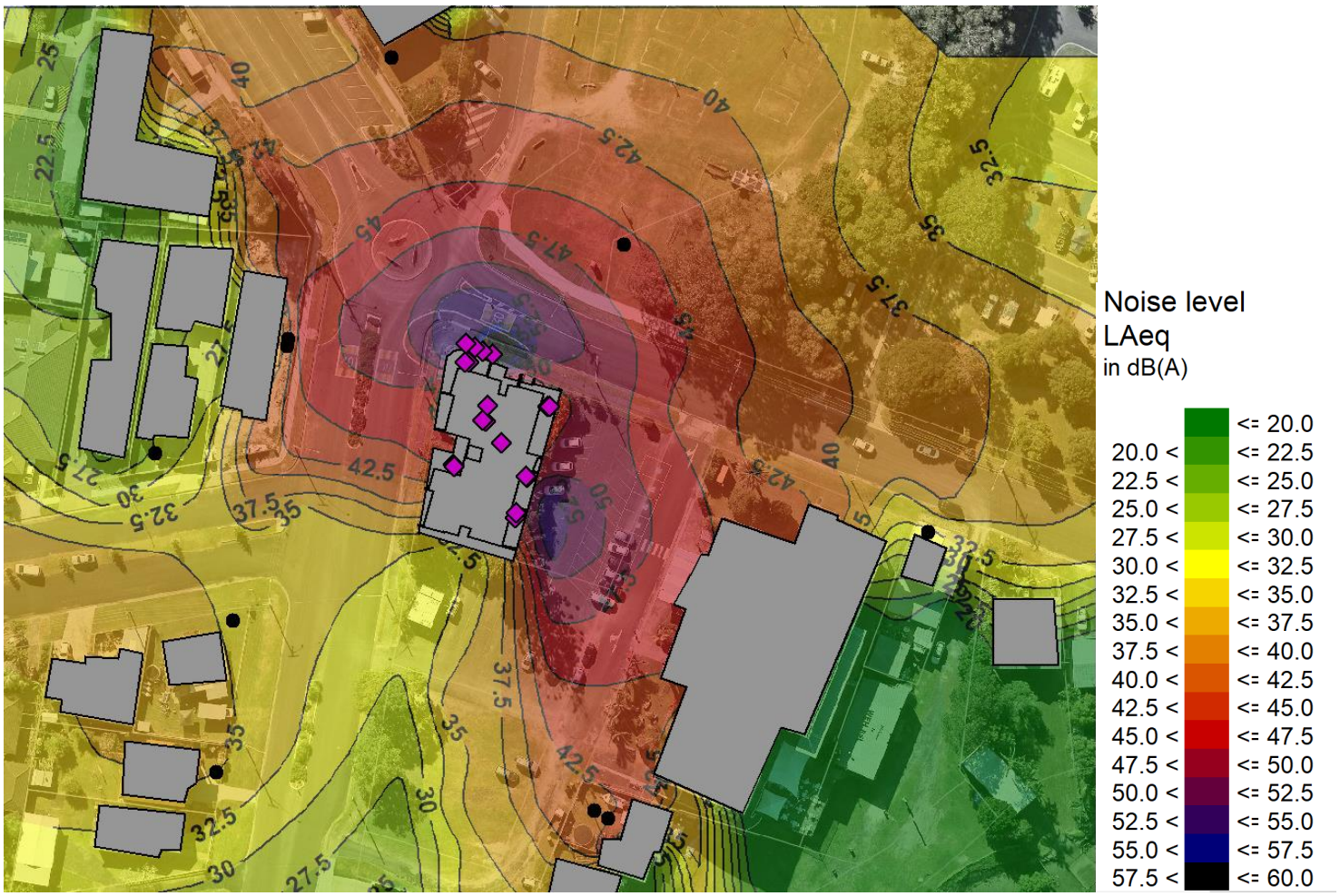


Figure 13 | Evening grid noise map

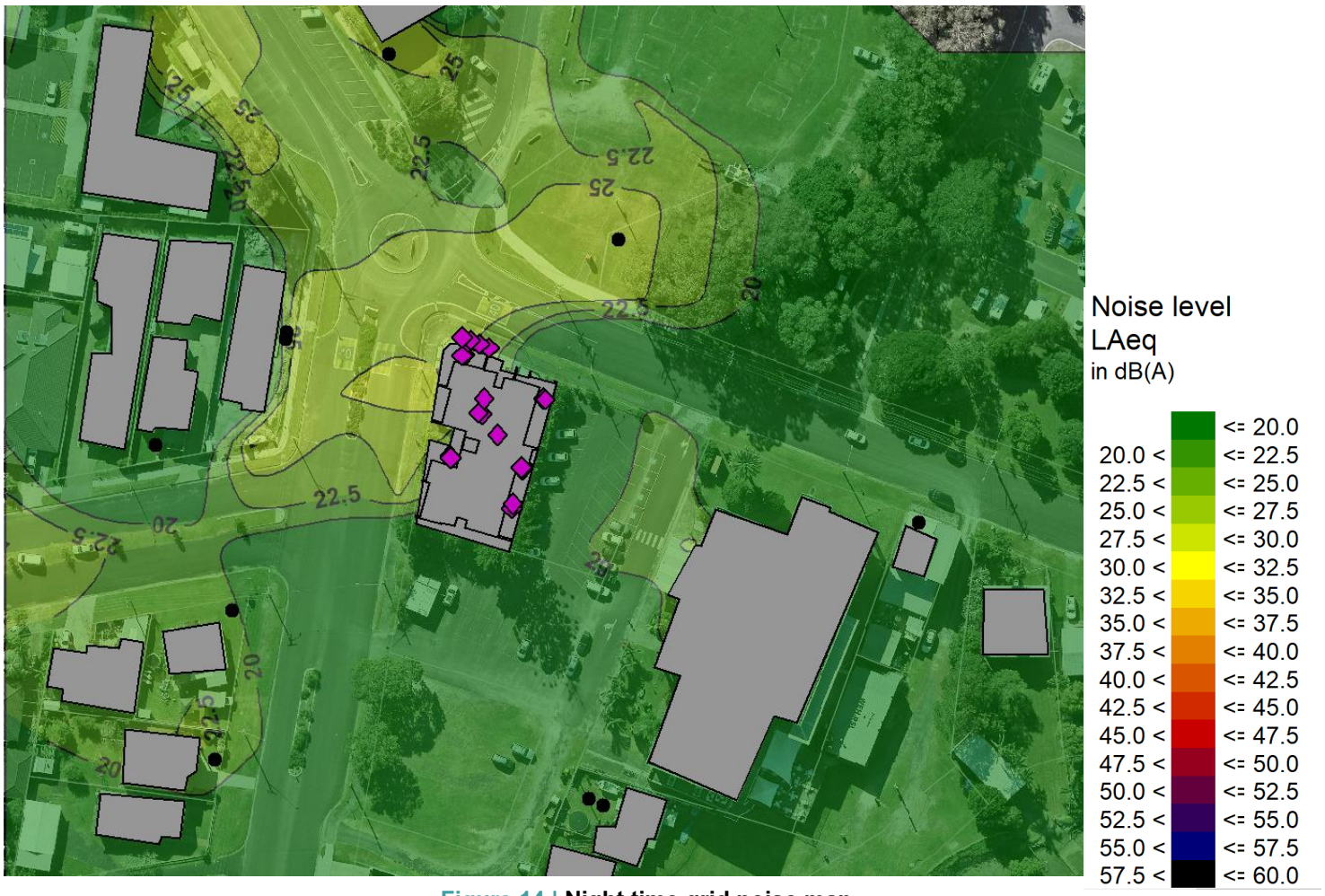


Figure 14 | Night time grid noise map

5. NOISE GENERATED BY OTHERS

Council staff requested that we assess the noise impact of the 'return and earn' facility and the RSL car park on future residents at the subject site. This is assessed in this chapter.

5.1. Assessment method

The impact of the RSL car park and 'return and earn' facility can be assessed by determining if it is likely that 'offensive noise' will be generated with respect to future residents at the subject site. As described in section 2.2 of this report, 'offensive noise' is defined by the POEO act and is considered using a number of parameters. To assist with this analysis, we carried out attended testing on site to assist with issues such as maximum sound levels, and frequency of occurrence.

5.2. Return & Earn

The attended noise test with file name 'Project 002' was carried out specifically to test the noise impacts of the return and earn facility. The return and earn was being used for roughly the first 10 minutes of this 15-minute noise test. Both cans and bottles were deposited in that facility during this time. The noise logger was set up close to the southern property boundary to accurately represent the location of a future worst-affected receiver.

The log graph for this noise test is shown in Figure 15. The light blue marker named 'Other' was used as marker representing the return and earn. These periods have a black diagonal hatch to highlight when this was relevant.

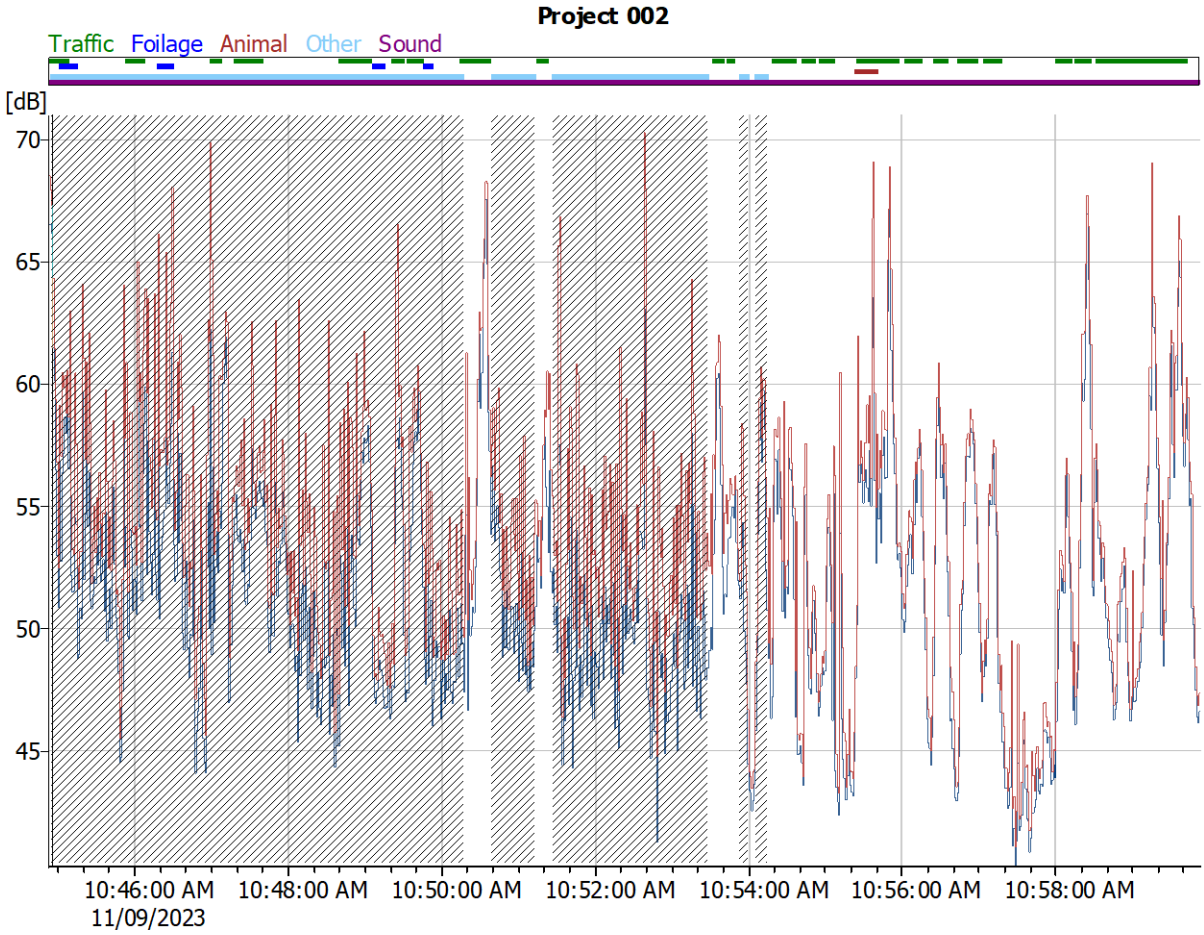


Figure 15 | Return and Earn noise

A first comparison can be made by calculating key testing values with and without the return and earn operating. This is done in Table 12. This analysis shows there is no notable increase in noise levels at the site due to the return and earn. The $L_{Aeq,T}$ value does not alter much with or without the return and earn and the L_{Amax} levels how the maximum noise levels due to bottles dropping in are of a similar order of magnitude as other maximum noise levels, such as birds, foliage and traffic at the site.

Table 12 | Testing summary

Parameter	Without Return and Earn	With Return and Earn
L_{A90}, dB	44.0	45.0
$L_{Aeq,T}$ dB	55.7	54.7
$L_{Amax,}$ dB	69.1	70.3

The offensive noise assessment factors from Table 19 of the 2023 NGLG are addressed below in tabular form.

Table 13 | Return and Earn offensive noise checklist

Parameter	Assessment
Level	Similar noise level as other existing ambient noise sources
Duration	The individual noises are of short duration, but a user is typically there for a duration between 1 and 10 minutes, depending on the number of bottles and cans they have to dispense
Timing	We have only seen the Return & Earn being used during the day. We did not observe any use during the evening or at night
Character and quality	The noise is likely seen as annoying by adjacent residents. It is however pre-existing and future tenants / home owners should be aware of this.
Mitigation	The building design is such that the ground floor level facing the Return & Earn is car parking only, residents live on the first and second floor. Apartment facades facing the southern boundary are set back from the boundary and edges of balconies, therefore indoor receivers will benefit from a partial barrier effect with respect to the Return and Earn.
Harmful	The noise emissions are not likely to be harmful. There would be no sleep disturbance from this facility based on our observations. There may be annoyance for short duration for a resident sitting on the balcony during the day, but this would be dependent on the personality of the receiver.

Based on this assessment we deem the Return and Earn noise **not offensive.**

5.3. RSL at night

Council have requested we assess the potential for the generation of offensive noise from the RSL at night. During our evening and night time inspections, we observed the following noises generated by the RSL:

- RSL kitchen (voices, dishes)
- Patrons and staff leaving
- Car doors closing, car engines starting and cars driving off.

We have quantified these noises as follows. We installed a noise logger at the subject site, close to the eastern property boundary facing the RSL for a continuous logging period from 20:11 to 22:41. We used another hand held sound level meter do carry out background survey at the other locations as described in section 3.3. During those surveys we marked every instance that a noise emanated from the RSL, which allows us to listen to the audio recording of the continuous logger at that time and record sound levels. The results are tabulated below.

Table 14 | RSL noise emissions

Event number	Start time	Finish time	Description	L_{AFmax}, dB	L_{Aeq}, dB	L_{AF90}, dB
1	20:18:07	20:19:02	2 x car door, car starting and leaving (dominant)	56.9	43.3 – 55.7	43.0 – 55.2
2	20:19:55	20:20:34	Voices of leaving patrons (audible but not dominant)			
3	20:24:12	20:24:15	Kitchen (audible but not dominant)			
4	20:24:27	20:24:32	Kitchen (audible but not dominant)			
5	20:24:47	20:24:48	Kitchen (audible but not dominant)			
6	20:29:25	20:29:31	Kitchen (audible but not dominant)			
7	20:33:46	20:35:44	Car door, patron voices, car unlock beep, car starting, car idling, car driving off. (dominant)	53.4	42.1 – 51.6	41.8 – 50.5
8	20:42:18	20:42:28	Car driving off (dominant)	51.3	40.6 – 50.2	40.3 – 49.7
9	20:47:35	20:47:57	Car driving off (dominant)	53.1	39.7 – 50.6	39.3 – 51.8
10	20:48:12	20:48:15	RSL kitchen (not dominant)			
11	20:55:08	20:55:11	RSL kitchen (not dominant)			
12	20:55:17	20:55:20	RSL kitchen (not dominant)			
13	21:03:22	21:03:28	RSL kitchen (not dominant)			
14	21:20:41	21:20:46	RSL door and some voices (not dominant)			

15	21:21:39	21:22:08	RSL door and some voices (not dominant)			
16	21:22:57	21:23:01	Voices from RSL (not dominant)			
17	21:23:11	21:23:13	Voices from RLS (dominant)			
18	21:25:24	21:25:26	Voices from RSL (not dominant)			
19	22:24:32	22:24:36	Voices from RSL (not dominant)			
20	22:24:52	22:24:56	RSL kitchen (not dominant)			
21	22:30:24	22:31:06	Cars starting and driving off (dominant)	56.2	43.2 – 55.5	42.4 – 55.0

In Table 14 we have provided noise level ranges for sound emissions where the RSL was the dominant noise source. When comparing these to the log graphs for the recording below (showing L_{AFmax} in red and L_{Aeq} in blue) it is evident that the emitted RSL noises are in a similar range as other existing ambient noises.

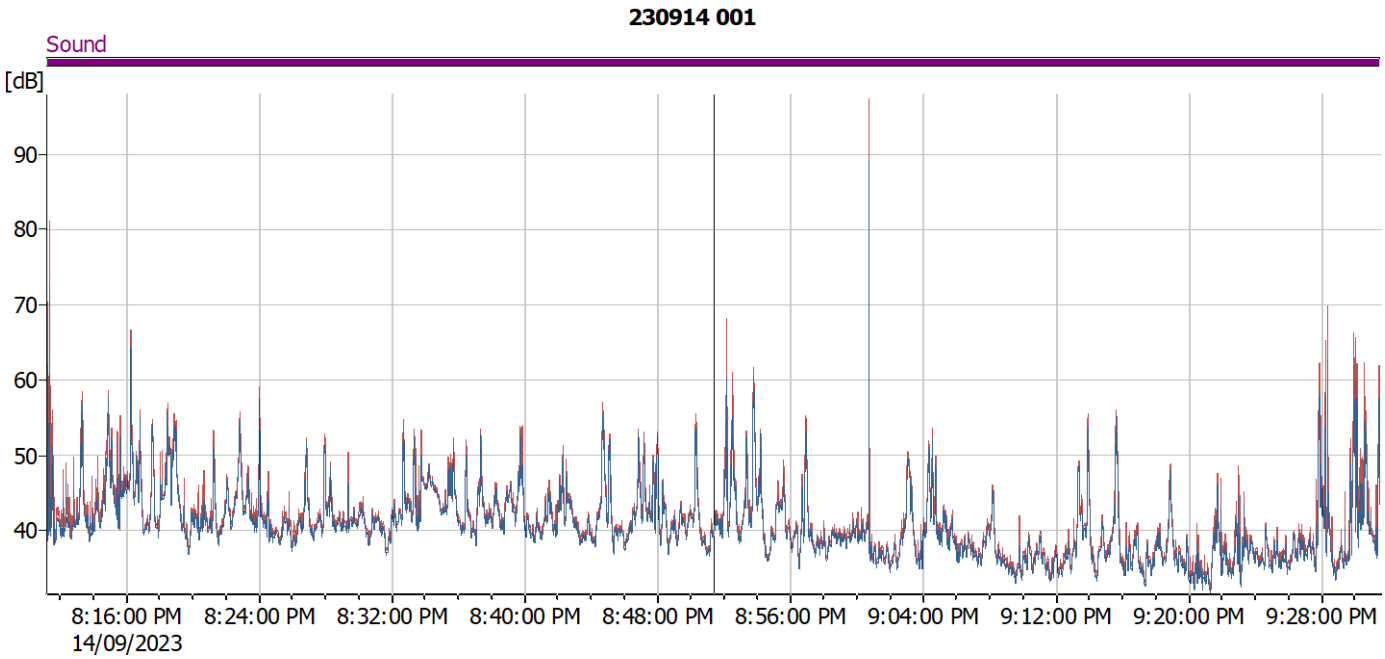


Figure 16 | Location A log graph (1/2)

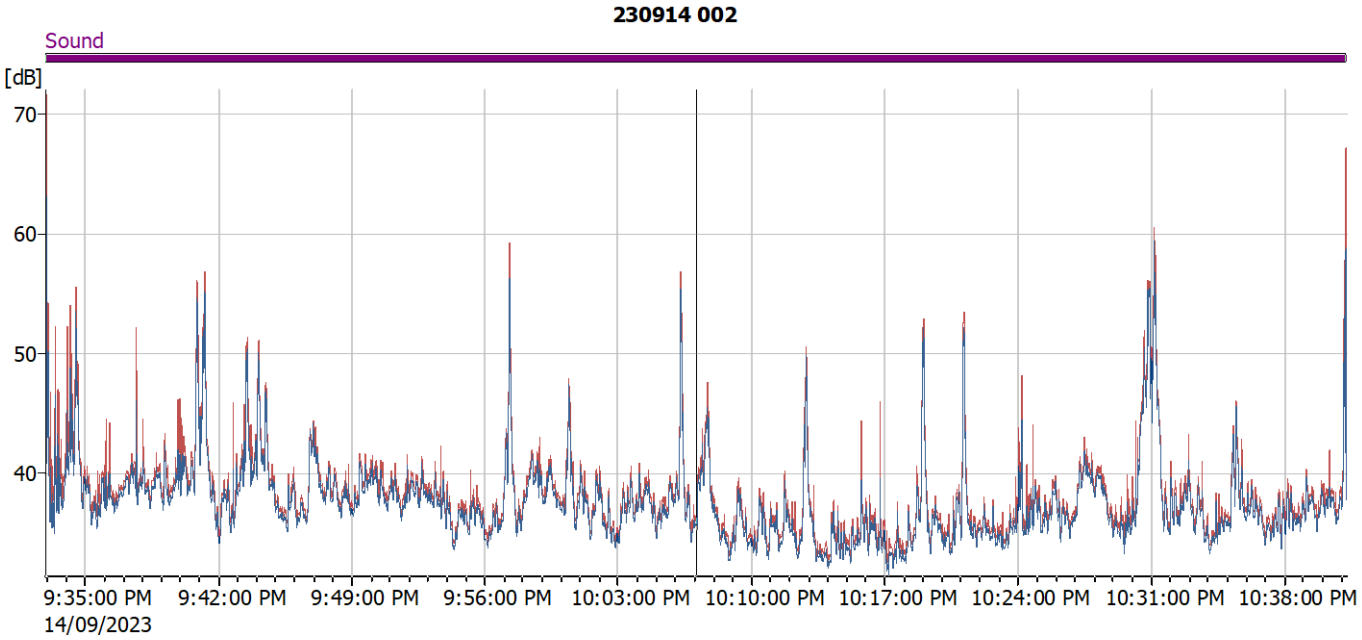


Figure 17 | Location A log graph (2/2)

We understand the RSL closing times vary between 9pm and 11pm, depending on the day of the week and which events are on.

The offensive noise assessment factors from Table 19 of the 2023 NGLG are addressed below in tabular form.

Table 15 | RSL offensive noise checklist

Parameter	Assessment
Level	Similar noise level as other existing ambient noise sources
Duration	The individual noises are of short duration
Timing	Until approximately 11pm
Character and quality	Car park noise and people noise is typical of the area since this residential zone is close to the commercial zone in Woodburn Street. The RSL is existing and future residents of this proposal will be aware of the potential for noises from the car park.
Mitigation	The building design is such that the ground floor level facing the Return & Earn is car parking only, residents live on the first and second floor. Apartment facades facing the southern boundary are set back from the boundary and edges of balconies, therefore indoor receivers will benefit from a partial barrier effect with

	respect to the RSL car park, in particular with respect to car spaces close to the property boundary.
Harmful	The noise emissions are not likely to be harmful.

Based on this assessment we deem the RSL noise emissions **not offensive.**

6. CONCLUSIONS AND RECOMMENDATIONS

The noise impact of the proposed development results in sound pressure levels at adjacent receivers that are compliant with the relevant Project Noise Trigger Level, provided conditions outlined in this report are followed. This includes that the Al-fresco should be limited to McDonald Place – no al-fresco on Elm Street footpath

The night time use of the adjacent RSL club and the use of the Return and Earn facility in the RSL car park are unlikely to generate offensive noise at the apartments included in this proposed development.

Based on our assessment, we recommend this proposal is approved from an acoustic perspective.

REFERENCES

Noise Policy for Industry, NSW Environment Protection Authority, Sydney, October 2017

Noise Guide for Local Government, NSW Environment Protection Authority, Sydney, May 2013

Australian/New Zealand Standard 2107:2016 Acoustics – Recommended design sound levels and reverberation times for building interiors, Standards Australia, October 2016

Australian Standard Acoustics 3671-1989 Road traffic noise intrusion – building siting and construction, Standards Australia, Homebush, NSW, 1989

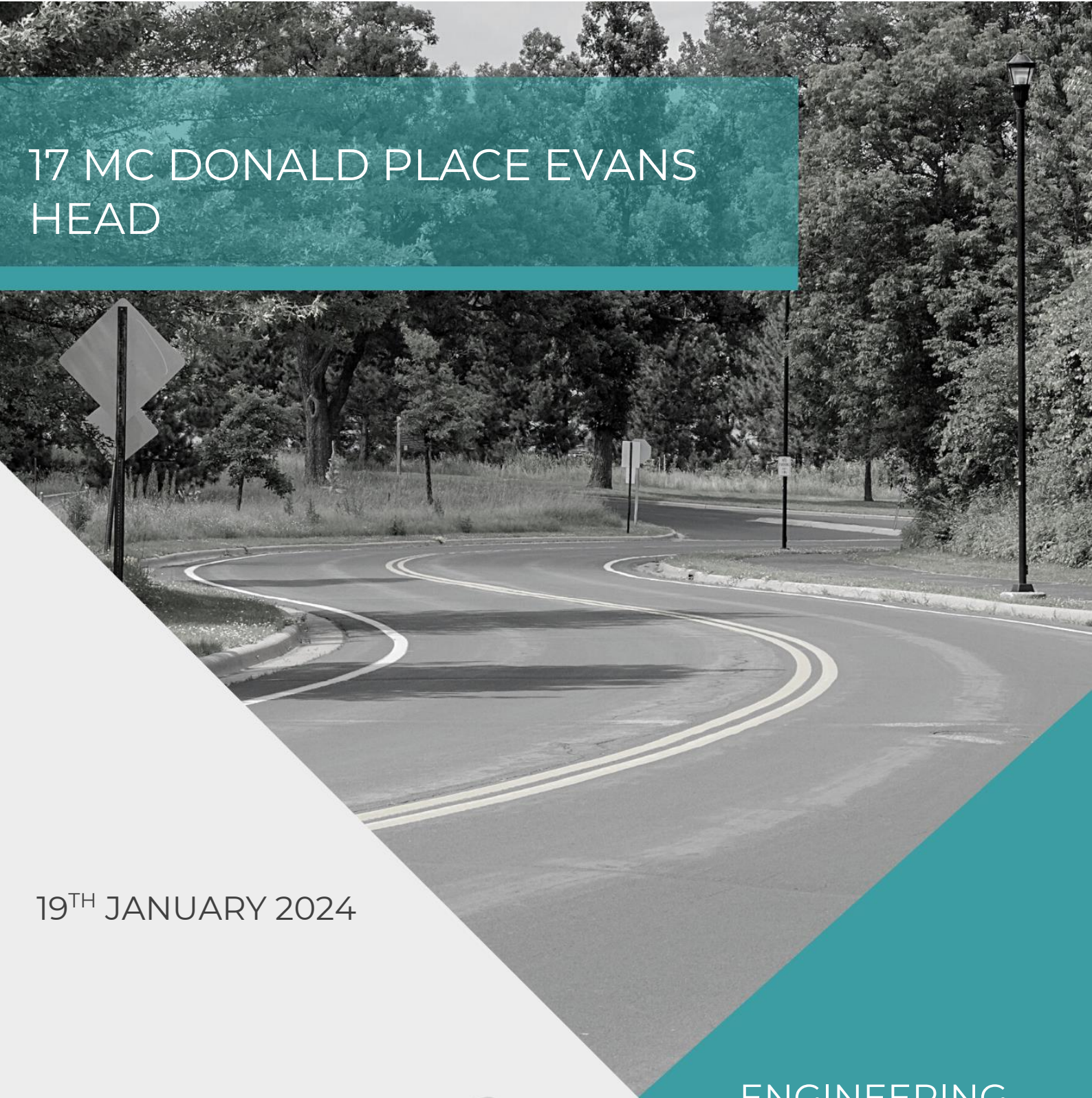
Prediction of Noise from Small to Medium Sized Crowds, M.J. Hyane, J.C. Taylor, R.H. Rumble and D.J. Mee, Paper Number 133, Proceedings of Acoustics 2011, 2-4 November 2011, Gold Coast, Australia.

Appendix D

Engineering Services Report & Civil Plans

Ingen Consulting Pty Ltd

17 MC DONALD PLACE EVANS HEAD



19TH JANUARY 2024

ENGINEERING SERVICES REPORT

INGEN CONSULTING

ENGINEERED WITH PURPOSE

DOCUMENT CONTROL

Revision number	Description	Prepared	Reviewed	Issued	Issue date
A	Draft for client review	AK	MK	MK	
B	Development Application	AK	MK	MK	14/11/2023
C	Revised tank layout	MK	MK	MK	19/01/2024

Document title: McDonald Place - Evans head, Engineering Services Report

Document number: J1279_ESR

Author: Akshay Y Shenoy, *MprojMgt BEng*

Client name: Barker Architects

Client's representative: Luke Barker

Approved for use by:

Name: Michiel Kamphorst **Signature:** **Date:** 19th January 2024

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1. INTRODUCTION

Ingen Consulting P/L has been engaged by 17 The Evans Trust Pty Ltd to prepare an Engineering Services Report for a proposed mixed-use development at 17 McDonald Place Evans Head, NSW; Lot 7 DP14089.

1.1. Scope

This Engineering service report has been compiled to detail the individual engineering aspects of the proposed development and their compliances with the relevant standards. This report should be read in conjunction with other documentation lodged with the Development Application and in particular the DA engineering drawings, Traffic Impact Assessment and Noise Impact Assessment prepared by this office.

This report will address the following:

- Earthworks
- Roadworks
- Stormwater Management plan including:
    - Lawful point of discharge
    - Stormwater treatment
    - On-site detention
- Water demand and reticulation
- Sewer demand and reticulation
- Electrical and communication supply.

1.2. Site description

The subject site is located at Lot 7 DP14089, whose address is 17 McDonald Place in Evans Head, NSW 2473, having an area of 822.02m^2 (courtesy of RVC GIS Map).

The subject site is located in Evans Head, on the intersection of McDonald Place and Elm Street. Land uses to the west and south are low- and medium-density residential, to the east is the RSL club and the Gunthorpe Reserve to the north currently contains the 'Evans Head Village', which is temporary flood victim accommodation. Further north is the Evans Head town centre and commercial zone. Figure 1 shows an aerial image of the site and its surrounds. Existing Council assets are shown in Figure 2**Error! Reference source not found.**. Existing site levels vary between RL 4.76 and RL 5.11m AHD and it drains towards the east.

Figure 1 | Lot 7 DP14089 Location (proposed development site), *Source of the map: Richmond Valley Council 2023*

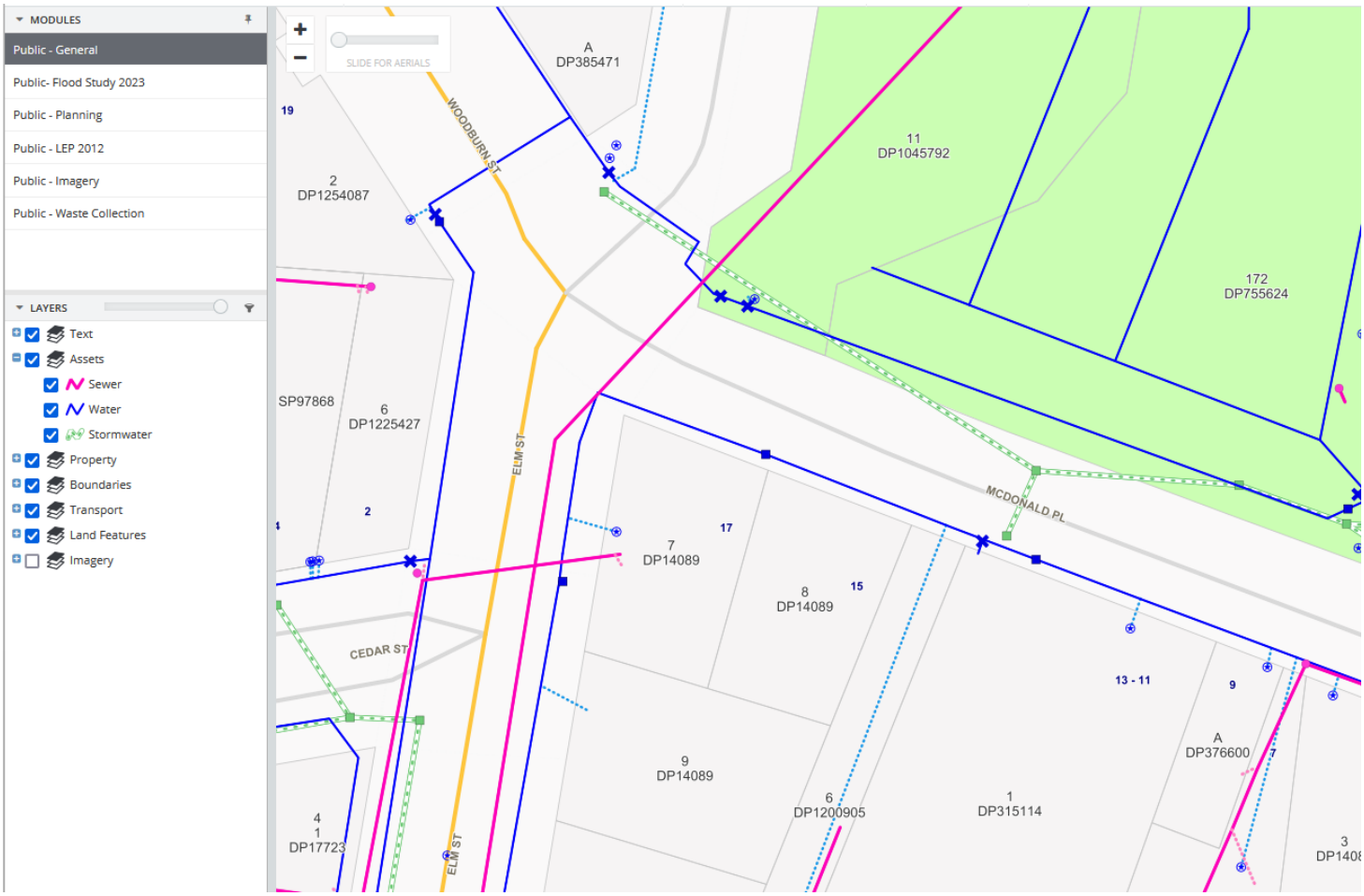

Figure 2 | Existing Council assets, *Source: Richmond Valley Council Intramaps.*

1.3. Proposed development

The intended project involves the removal of the existing house structure and the construction of a 3-storey mixed use development which includes:

- Ground Floor: car parking and café
- First Floor: five residential apartments and two communal gardens
- Second Floor: five residential apartments with communal open space and roof garden
- Roof top: communal area and mechanical services

The residential apartments will be for long-term residential use only and not for holiday letting.

The proposed operating time of the café is 6am – 10pm daily.

A ground level view of the proposed building is shown in Figure 3. Floor plans are provided in Figure 4, Figure 5 and Figure 6.

Figure 3 | Groundlevel view from the northwest, *Source: Barker Architects*

Figure 4 | Proposed layout, Ground floor, *Source: Barker Architects.*

Figure 5 | Proposed layout, First floor, Source: Barker Architects

Figure 6 | Proposed layout, Second floor, *Source: Barker Architects.*

2. FLOODING AND EARTHWORKS

2.1. Earthworks and Geotechnical

Richmond Valley Council DCP Chapter A-9 provides requirements for earthworks associated with shop top housing developments. The proposal involves no significant earthworks other than levelling and regrading to achieve a ground floor level of approximately RL5.00 and thus complies with the DCP requirements.

2.2. Acid Sulphate soil

Richmond Valley Council DCP provides a checklist to follow and work around to ensure effective management of areas that may be affected by Acid Sulphate soils.

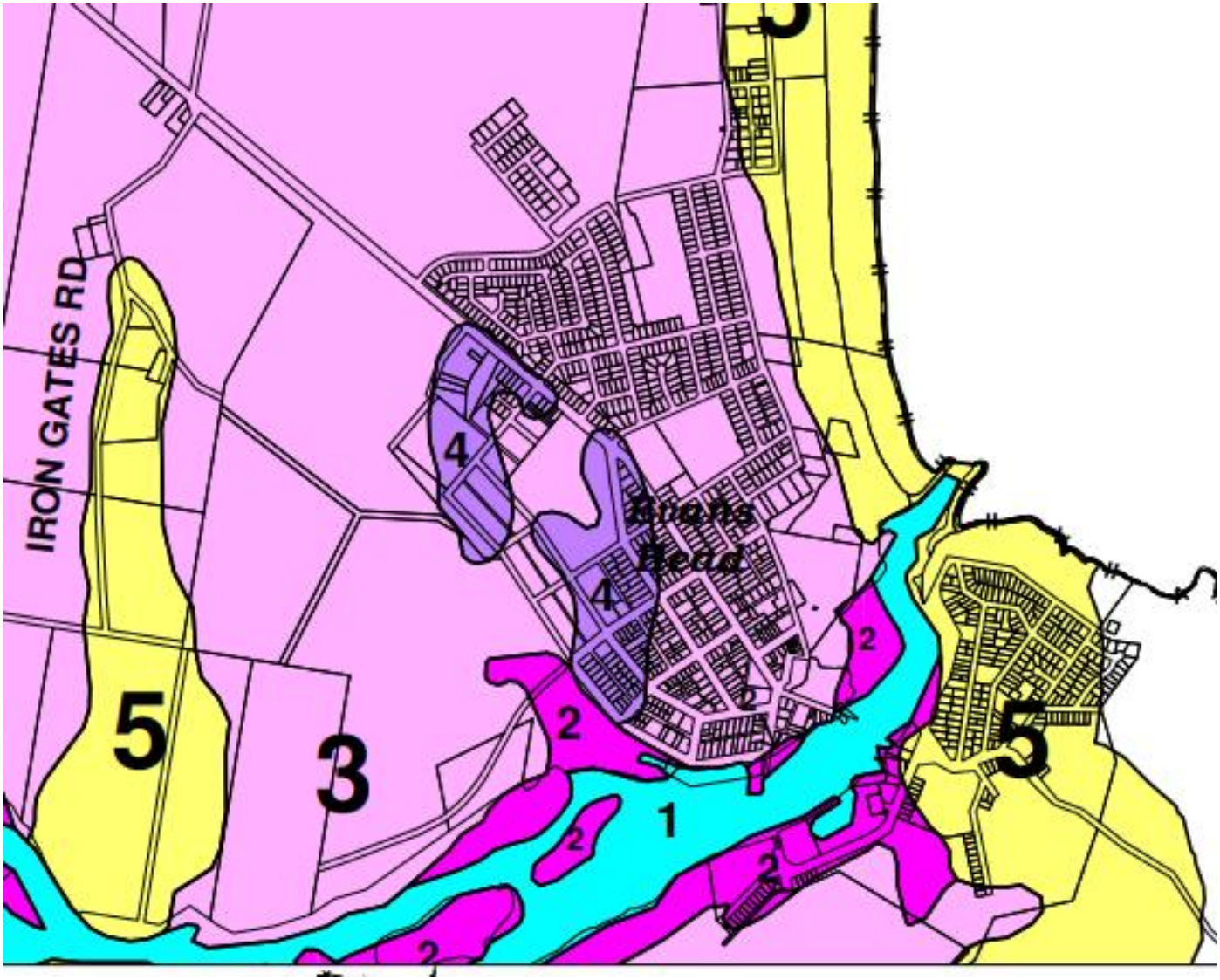

Figure 7 | Acid Sulphate Soils Planning Map, *Source Richmond River Local Environmental Plan 1992 (Amendment no. 22)*

As per the Richmond River Local Environmental Plan 1992 (Amendment 22), the proposed site is categorized as "Class 3." This classification encompasses two specific types of works: (Figure 7)

- Excavations or activities that extend more than 1 meter below the natural ground surface.
- Activities that have the potential to lower the water table beyond the 1-meter mark below the natural surface.

In simpler terms, any construction or actions falling within these categories are subject to the regulations and provisions outlined in the planning instrument and require obtaining development consent from the Council.

Richmond Valley Council DCP Chapter H-3.4 states Exceptions to requiring development consent: -

(3) Minor works

- Consent is not required to carry out works involving the disturbance of less than 1 tonne of soil (acid sulphate soil), or where the works are not likely to lower the water table.

If any excavations such as footing construction exceeds a depth of 1 metre, then an acid sulfate management plan should be prepared for these works.

2.3. Preliminary Flood Assessment

Richmond Valley Council DCP 2021 Chapter H-1.1 Flood Planning states that:

The general objectives of this chapter are to:

- Align flood planning with the NSW Government's Floodplain Policy.
- Explain the relevance of the adopted Flood Planning Level.
- Call up Flood Planning Development Controls from Council's Floodplain Risk Management Plans, which adopt a flood planning approach taking into account social and environmental considerations alongside economic benefits to reach the most objective balance.
- Explain the adopted floodplain risk hazard categories and encourage suitable development compatible with flood hazard.
- Make allowances for alterations to existing development, or on compassionate grounds such as when a building has been lost to fire or storm.

2.4. Flood Characteristics

As Council's 2023 flood modelling shows, the subject site is flood free for flood events up to and including the '1 in 500 year' event, see Figure 8 below. During a 'Probable Maximum Flood' (PMF) event the site can be subject to flooding in excess of 2 metres in depth (see Figure 9)

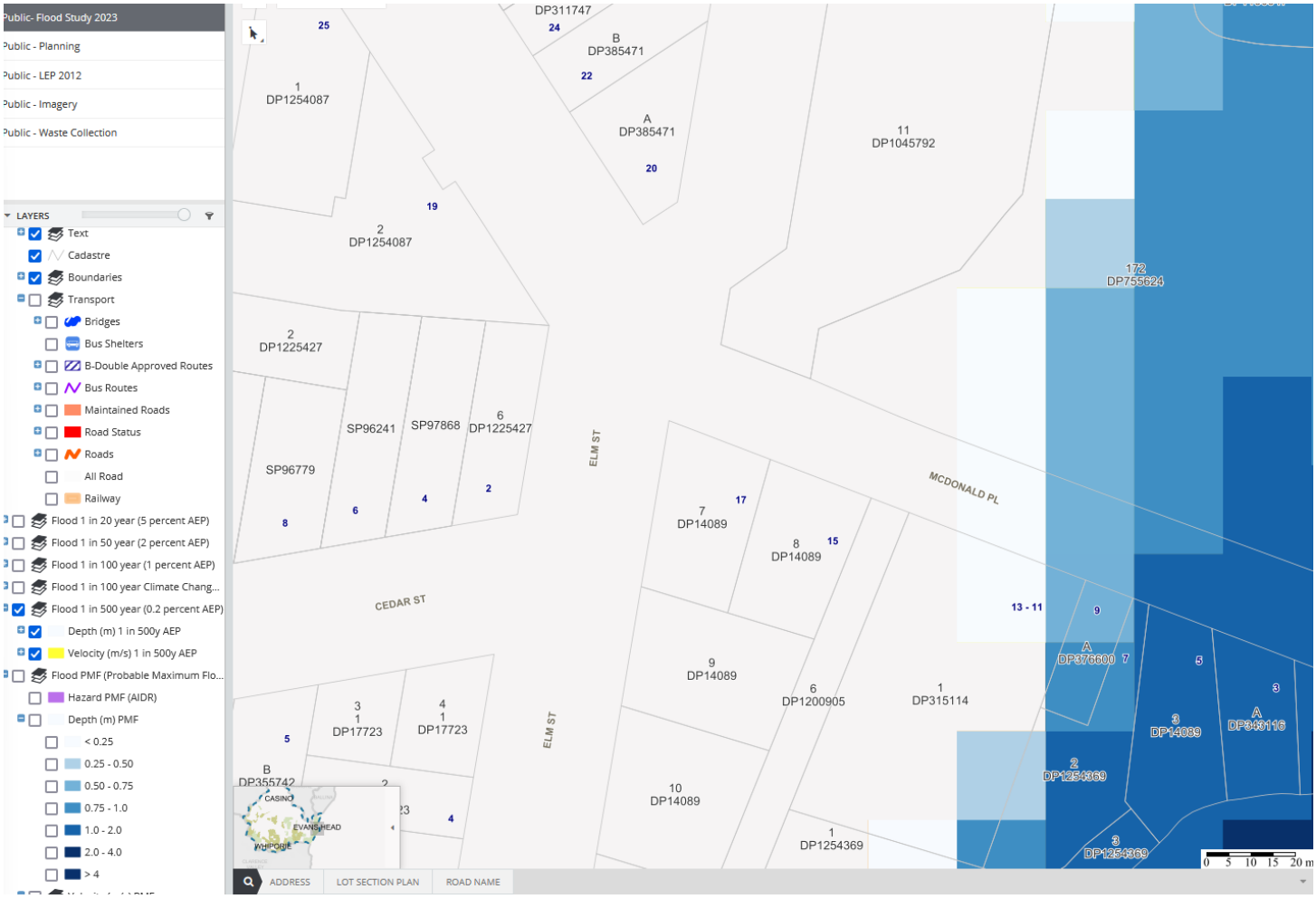

Figure 8 | 1:500yr ARI flood depths, *Source: Richmond Valley Council Intramaps*

Figure 9 | PMF inundation, *Source: Richmond Valley Council Intramaps*

2.5. Flood Planning Level

Richmond Valley Council have provided us with a Flood Information Enquiry. It should be noted that the results are based on 1999, 2010 and 2014 modelling and has not been updated using the results of the 2023 flood model.

The Flood Planning Level for this area is 3.4m AHD. Given the ground floor levels are around RL5m, significantly above the Flood Planning Level based on the older modelling, and given that the 2023 modelling shows the site to be flood free for events up to and including the 1 in 500yr event, we can conclude that the floor levels proposed in the architectural plans are adequate, above the Flood Planning Leve, and no further assessment on flooding needs to be undertaken.

3. TRAFFIC

Our office has provided a traffic impact assessment for the proposed development. The conclusions and recommendations from that report are as follows:

- All entry to be off Elm Street
- All exit to be onto McDonald Place
- The exit driveway to have a 6m wide garage door, but with bollards and linemarking forcing vehicles to exit whilst driving in the centre of this driveway, thus maximising sight lines to pedestrians on the McDonald Place footpath.
- Additional signage to be installed at the car park exit to make both pedestrians and exiting vehicles aware of each other
- On-street car parking proposed in Elm Street, using 45° parking
- It is proposed to linemark a loading bay in Elm Street
- It is recommended that the shortfall in off-street parking be addressed either by the additional car parking capacity created in the street using the angled car parking, or by ways of a Voluntary Planning Agreement

4. STORMWATER MANAGEMENT PLAN

Stormwater management on this site will need to demonstrate compliance with Chapter 1-9.4 of the Richmond Valley Council Developmental Control Plan.

4.1. Lawful point of discharge

A detailed survey of the site and its surrounding areas have been carried out by Newton Denny Chapelle.

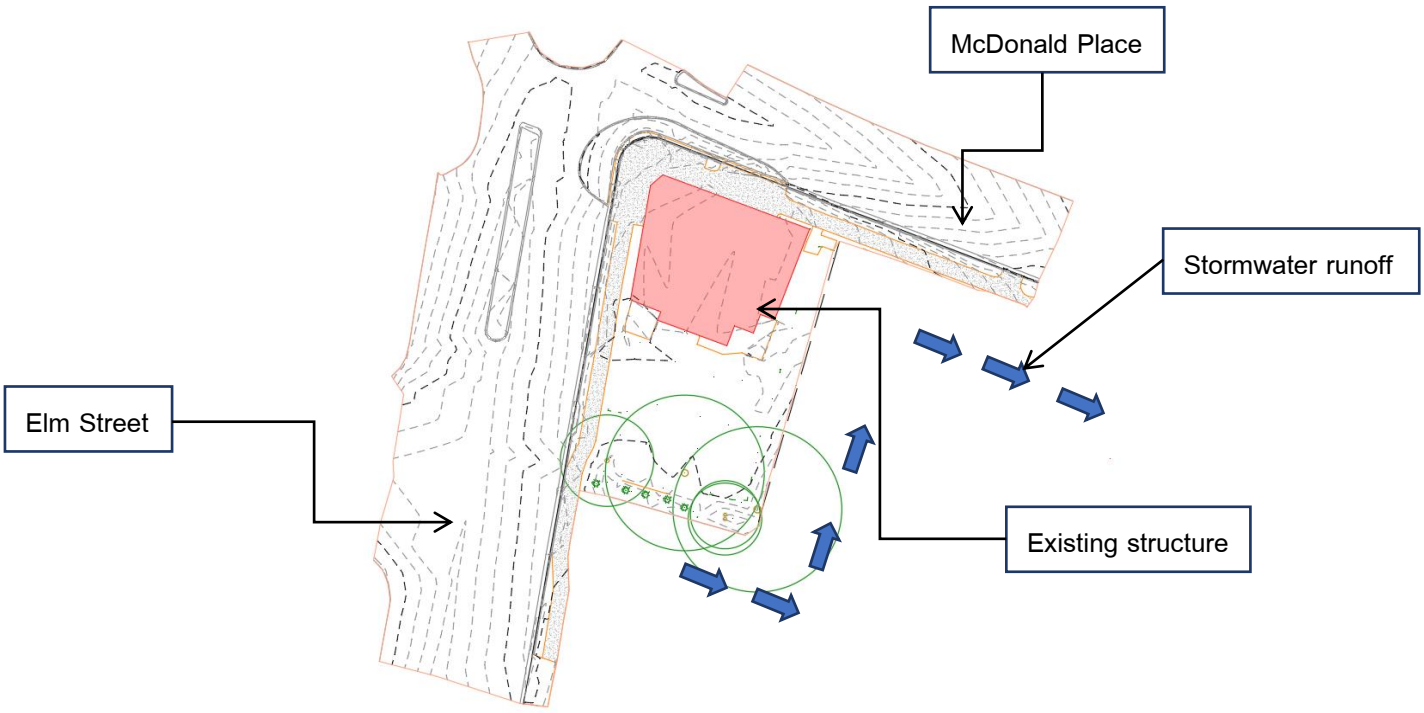

Figure 10 | Lot 7 DP14089 Location (proposed development site), *Source: Newton Denny Chapelle.*

In the absence of underground stormwater drainage, the available lawful point of discharge for this site is the kerb and gutter in Elm Street and McDonald Place. During our site inspection we found 4 existing kerb adaptors in the kerb along the site frontage, which can be reused for stormwater discharge.

Because no underground stormwater infrastructure exists along the site frontage, it is recommended that any stormwater detention and treatment is carried out above ground, so that gravity flow towards the kerbs can be achieved.

4.2. Catchments

The existing and proposed catchments have been determined using the survey plans provided by Newton Denny Chapelle Surveyors and Barker Architects respectively.

Figure 11 | Existing Catchment areas, *Source: Newton Denny Chapelle Surveyors.*

Table 1 | Existing catchment

ID	Area, sqm	Description	% of the total area	Type
A	315.159	Shed roof	38.3%	Impermeable
B	507.631	Landscape grassed	61.7%	Permeable
Total	**822.79**		**100.0 %**	

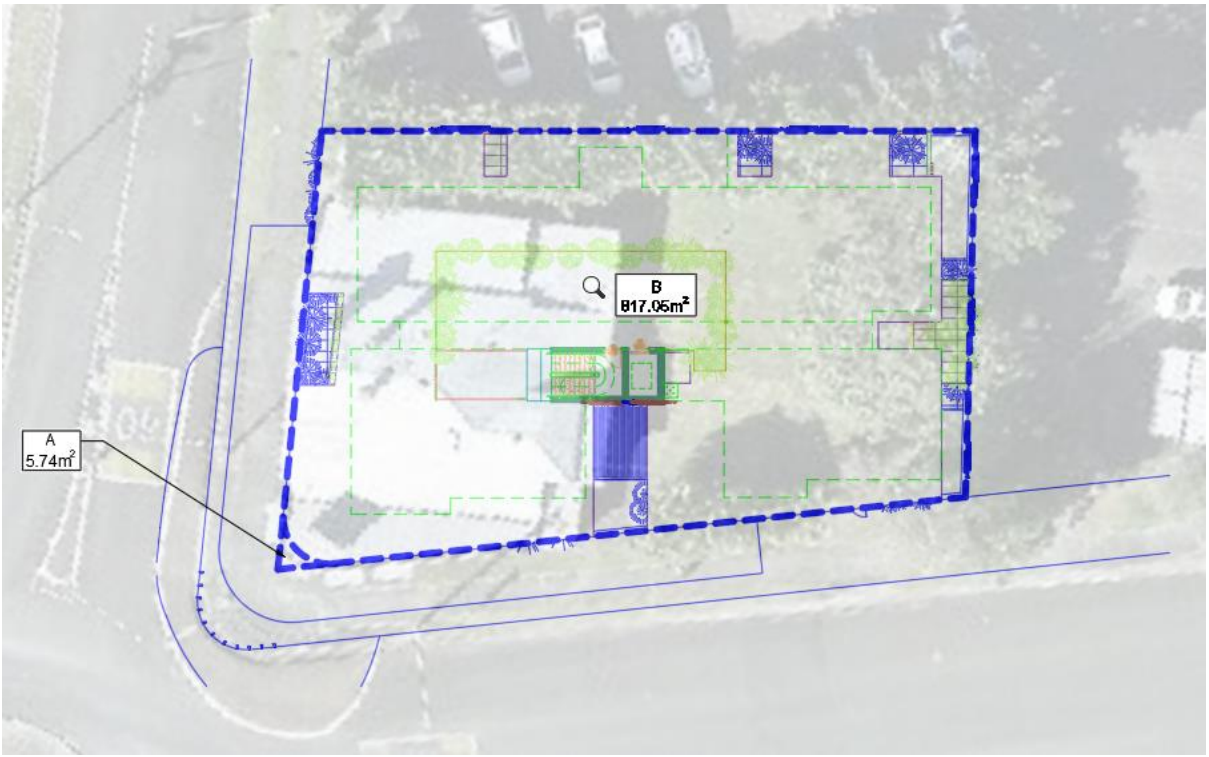

Figure 12 | Proposed site roofing area, *Source: Barkers Architects*

Table 2 | Proposed catchment

ID	Area, sqm	Description	% of the total area	Type
A	5.74	Existing footpath	0.69%	Impermeable
B	817.05	Shed roof	99.31%	Impermeable
Total	**822.79**		**100.0 %**	

4.3. Water Quality Controls

Richmond Valley Council's water quality control targets are provided in Figure 13.

Contaminant	Target
Coarse Sediment (0.1 to 0.5 mm)	80% mean annual reduction from baseline
Fine particles (<0.1 mm)	50% mean annual reduction from baseline.
Total Phosphorus	45 % mean annual reduction from baseline
Total Nitrogen	45% mean annual reduction from baseline
Litter	70 % mean annual reduction from baseline
Hydrocarbons, motor fuels, oils and greases	90% mean annual reduction from baseline

Figure 13 | Stormwater Quality Targets, *Source: Richmond Valley Council DCP*

All stormwater runoff will be from roofs only. There is no runoff from the off-street parking area as it is undercover and car washing is not permitted in the car park.

4.4. Stormwater Quality Results

We have prepared a concept treatment train design using MUSIC (see Figure 14). Several options are possible, but the preferred treatment train for this development includes a rainwater tank with 7kL. Using an assumed 1kL per day reuse volume and inclusion of a SPEL Stormsack in the tank, Council's WSUD targets can be met.

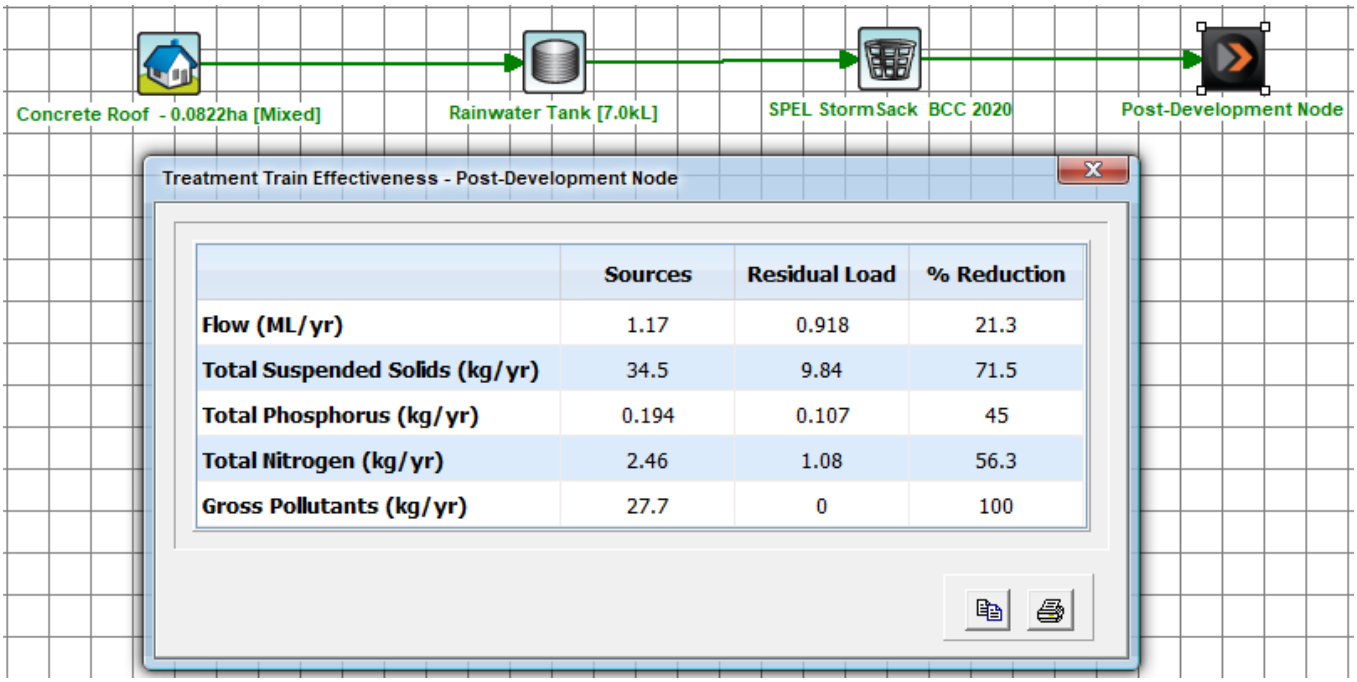

Figure 14 | Treatment train design, *Source: MUSIC*

The results are summarised in Table 3..

Table 3 | Post-development stormwater quality treatment train effectiveness

Pollutant Parameter	Sources	Residual Load (kg/yr)	% Reduction	Required Reduction	Compliant
Total Suspended Solids (Sediment) (kg/yr)	34.8	9.79	71.5	50%	✓
Total Phosphorus (kg/yr)	0.194	0.106	45.0	45%	✓
Total Nitrogen (kg/yr)	2.43	1.05	56.3	45%	✓
Gross Pollutants (kg/yr)	27.7	0	100	70	✓
Obs: There will be no hydrocarbon runoff as there is not road pavement combined with surface runoff					

4.5. On-site detention

Reasons why OSD is required for this project: -

- The planned construction will fully cover the site's footprint, leaving no room for permeable surfaces, and as a result, infiltration cannot be utilized as a means of stormwater discharge for the site.
- Stormwater detention is proposed to limit post development peak runoff to McDonald Place to match predevelopment volume.
- According to Richmond Valley DCP table I.9.3 Stormwater targets, flowrates at any point are not to increase during storms for the 2- and 5-year ARI events

The first step in determining the need for OSD is to calculate the runoff peaks from each individual catchment pre- and post-development and the impact OSD would have on the timing of runoff peaks. The catchment plan for this site is provided in Figure 11 and Figure 12, the catchment areas are summarised in Table 1 and Table 2 respectively.

Table 4 | Peak run off comparison

Storm event (ARR 2016 definitions)	Pre-development combined peak site runoff flow rate (m^3/s)	Post-combined peak site runoff flow rate (m^3/s) (unmitigated)	Post-combined peak site runoff flow rate (m^3/s) (mitigated)
0.5EY ('2-year ARI")	0.015	0.027	0.014

0.2EY (‘5-year ARI”)	0.022	0.034	0.016

This will be achieved by using on-site detention tanks collecting the roof water from the proposed dwellings, and gradually releasing the collected stormwater through orifice pipe.

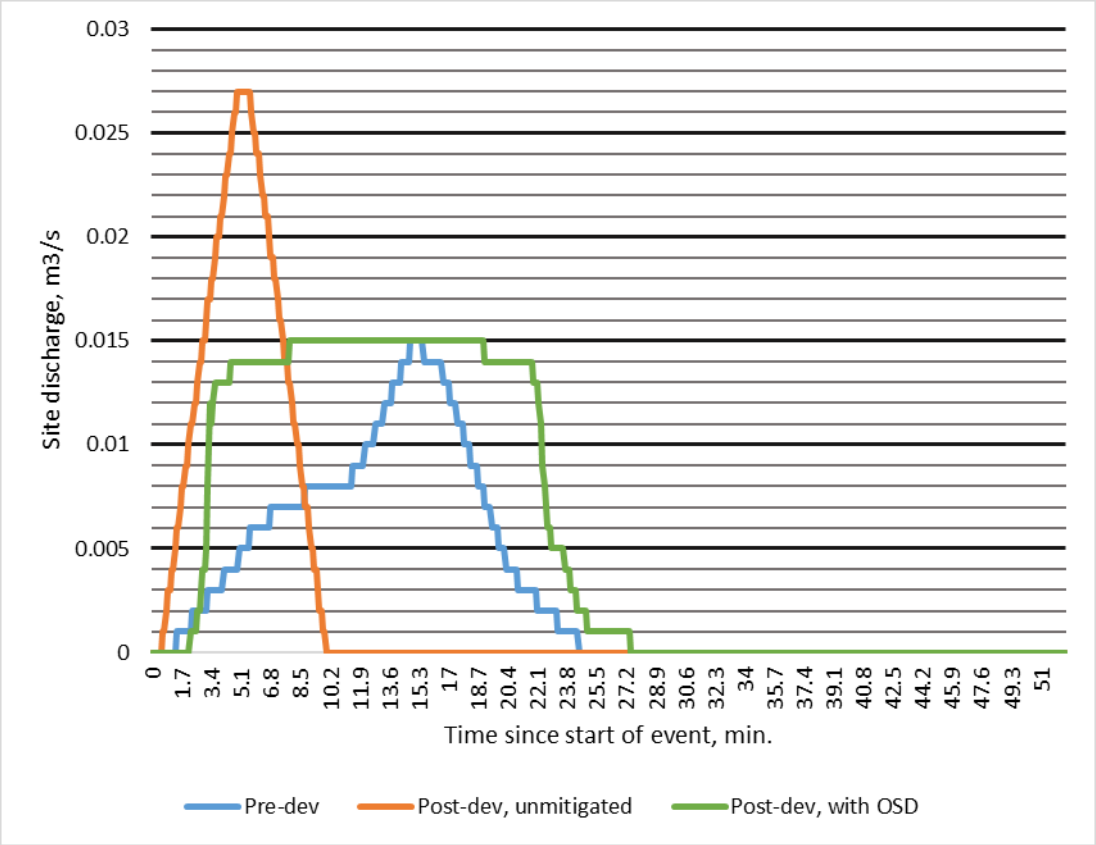

Figure 15 | Minor storm (0.5EY) discharge hydrograph

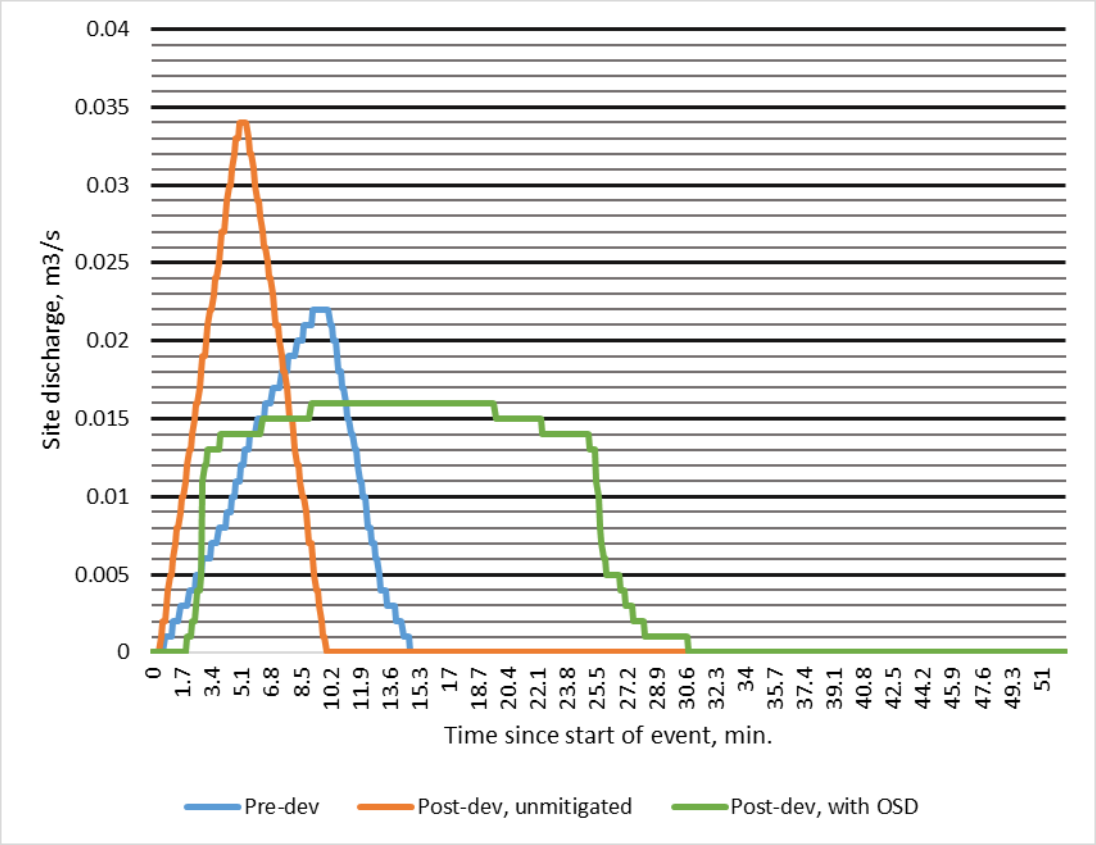

Figure 16 | Major storm (0.2EY) site discharge hydrograph

We carried out hydrology and detention calculations in DRAINS, resulting in the following rainwater tank volumes.

Table 5 | OSD details

ID	Description	Volume(L)	Outlet configuration (mm)	Catchment
OSD A	17kL custom designed and built rainwater tank, including Stormsack, capturing all roofwater Height = 2.2m, Length = 3.7m, Width = 2.3m.	17,000	1 x Ø150mm low level orifice pipe with an invert of 1.175m above tank invert. 1 x Ø100mm high level overflow pipe with an invert at 2.0m above the tank invert.	Roof catchment 822.09 m^2

This rainwater tank is modelled to support up to 5% AEP storm event. The DRAINS modelling results for the entire site are depicted in Table 4 for the 2 and 5-year ARI events. The durations of these

storm events are 5min to 3 hours. These results demonstrate that the stormwater detention targets as outlined in the Richmond Valley DCP table I.9.3 will be met since the post development peak runoff volume is equal to or less than the pre-development peak runoff volume.

This tank contains 7kL of reuse capacity in the bottom below the low level orifice pipe, and 10kL of on-site detention storage above the low level orifice pipe.

5. UTILITIES

5.1. Water supply demand and reticulation

Council's ET calculations as provided in the 25/10/2022 pre-lodgement meeting minutes are copied below.

Table 6 | ET calculations

No. of Bedrooms per apartment	No. of apartments	ET per unit	Total ET
1	4	0.4	1.6
2	4	0.6	2.4
3	2	0.8	1.6
Total	**10**	**1.8**	**5.6**

There is an existing water meter along the Elm Street frontage. This water meter and associated property connection with the main will be upgraded to a 50mm connection.

Council carried out a pressure and flow test at a McDonald Place hydrant on the 22nd of June 2022. The results are provided below. Given the Elm Street water connection is on the same main as the McDonald Place hydrant (see Figure 18), it is reasonable to assume that the pressure and flow characteristics at the current connection point are very similar to those printed below.

We understand from the hydraulic engineer that a booster assembly is not required for this proposal.

Project ID	Flood Relief Housing	Flow Rate (L/s)	Pressure (kPa)
Test Details	Two Hydrant Test		
	8.00am	0	400
Location	Evans Head	5	300
Street Address	McDonald Place	10	200
Requested By	David Peatfield	15	70
Tested by	Isaac Anderson	17	0
Date	22/06/2022		
Maximum Flow Rate	17.00 Litres Per Second		

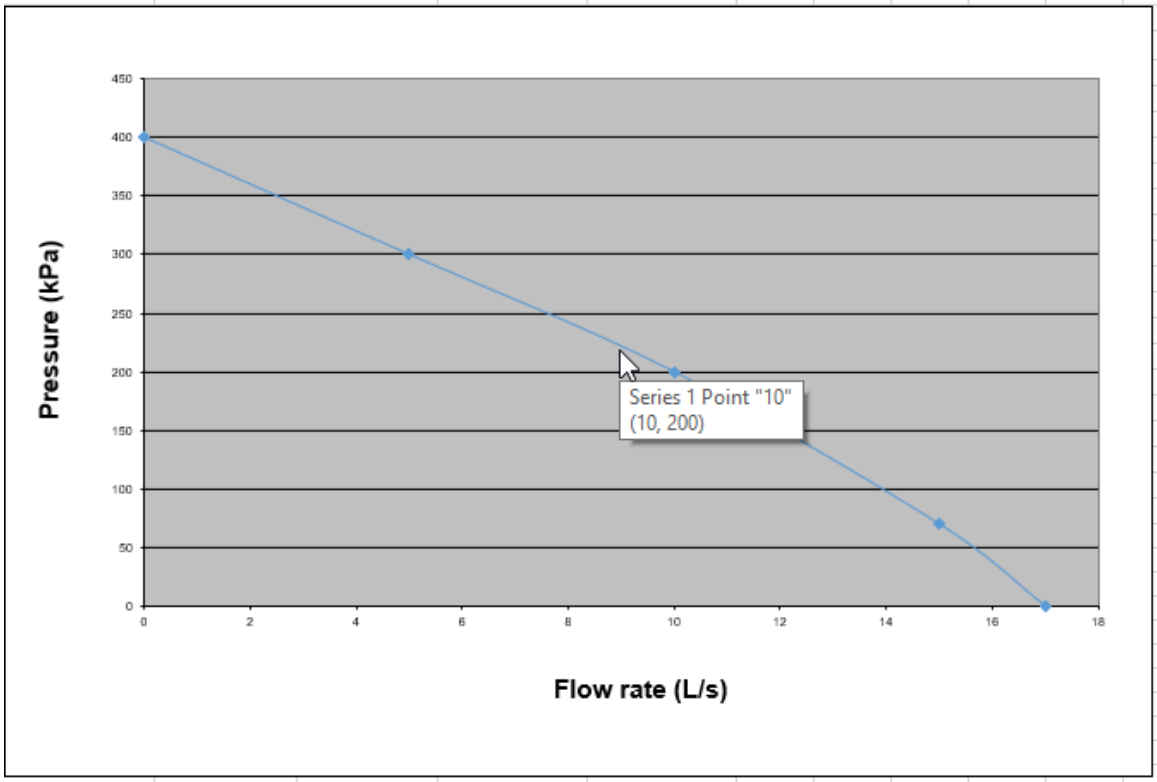

Figure 17 | McDonald Place pressure and flow test

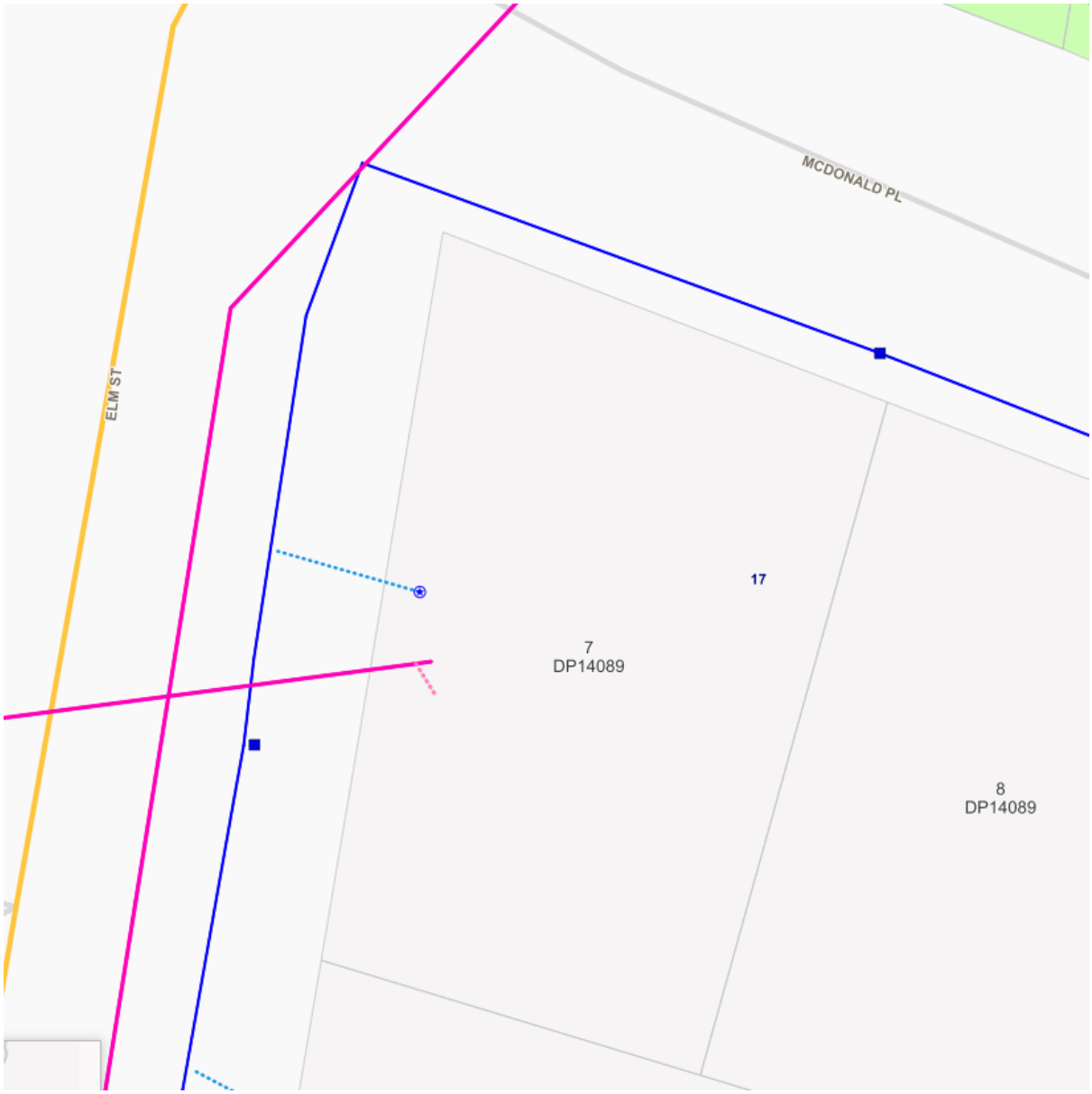

Figure 18 | Water infrastructure at site frontage, *Source: Richmond Valley Council Intramaps*

5.2. Sewer demand and reticulation

Council's ET calculations as provided in the 25/10/2022 pre-lodgement meeting minutes are copied below.

Table 7 | ET calculations

No. of Bedrooms per apartment	No. of apartments	ET per unit	Total ET
1	4	0.4	1.6
2	4	0.6	2.4
3	2	0.8	1.6

Total	**10**	**1.8**	**5.6**

The existing sewer connection is on Elm Street. There is an existing grease trap and private connection to the sewer main, as picked up on the survey (Figure 19) and observed on site (Figure 20). It is proposed to retain the same sewer connection location. If during detailed design stage any changes are required, then these will be applied for through a S68 application process.

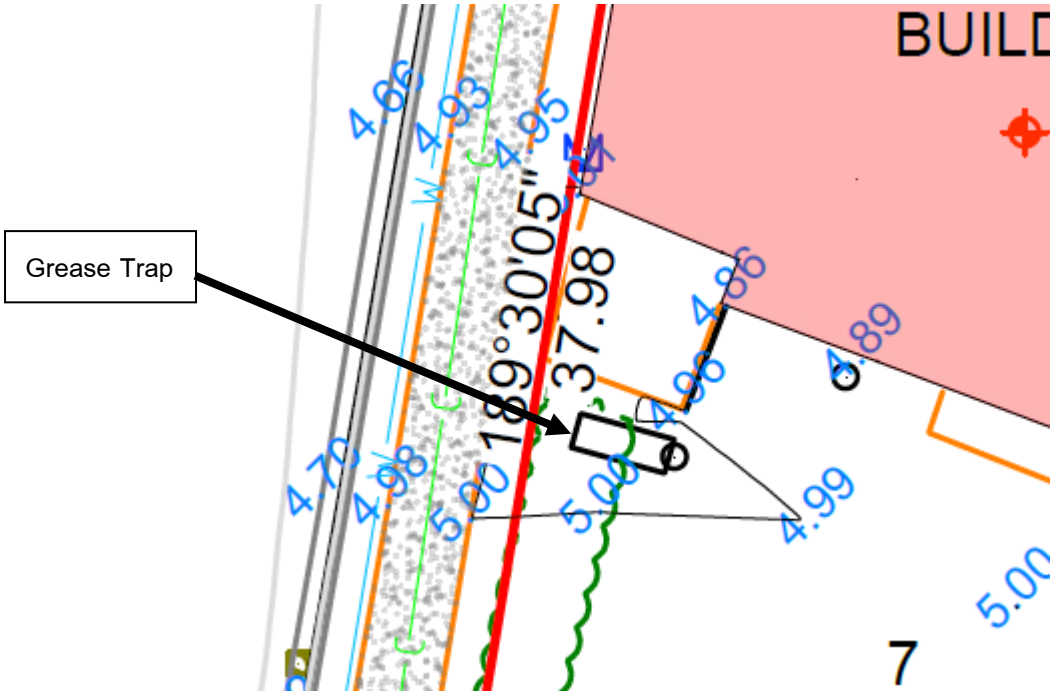

Figure 19 | **Grease trap location**

Figure 20 | Grease trap

5.3. Electrical Supply

Existing electricity supply is through an above ground cable from the opposite side of McDonald Place, as shown in Figure 21 below. The electrical design will be determined once an Essential Energy application has been submitted, which would happen after approval of the Development Application. There are two options for supply. Option one is to trench an underground cable across McDonald Place from the power pole opposite the site, to feed to a pillar box adjacent the northeastern corner of the site. This would then provide underground supply of electricity. Option 2 is an overhead supply wire, similar to what is there currently.

Figure 21 | Existing electricity supply

5.4. Communications supply

As per the DBYD (see Figure 22), there is already existing NBN network connection to the site. We assume this will be adjusted to suit, and a Notice of Arrangement would likely be required as part of a set of consent conditions accompanying a Development Application approval.

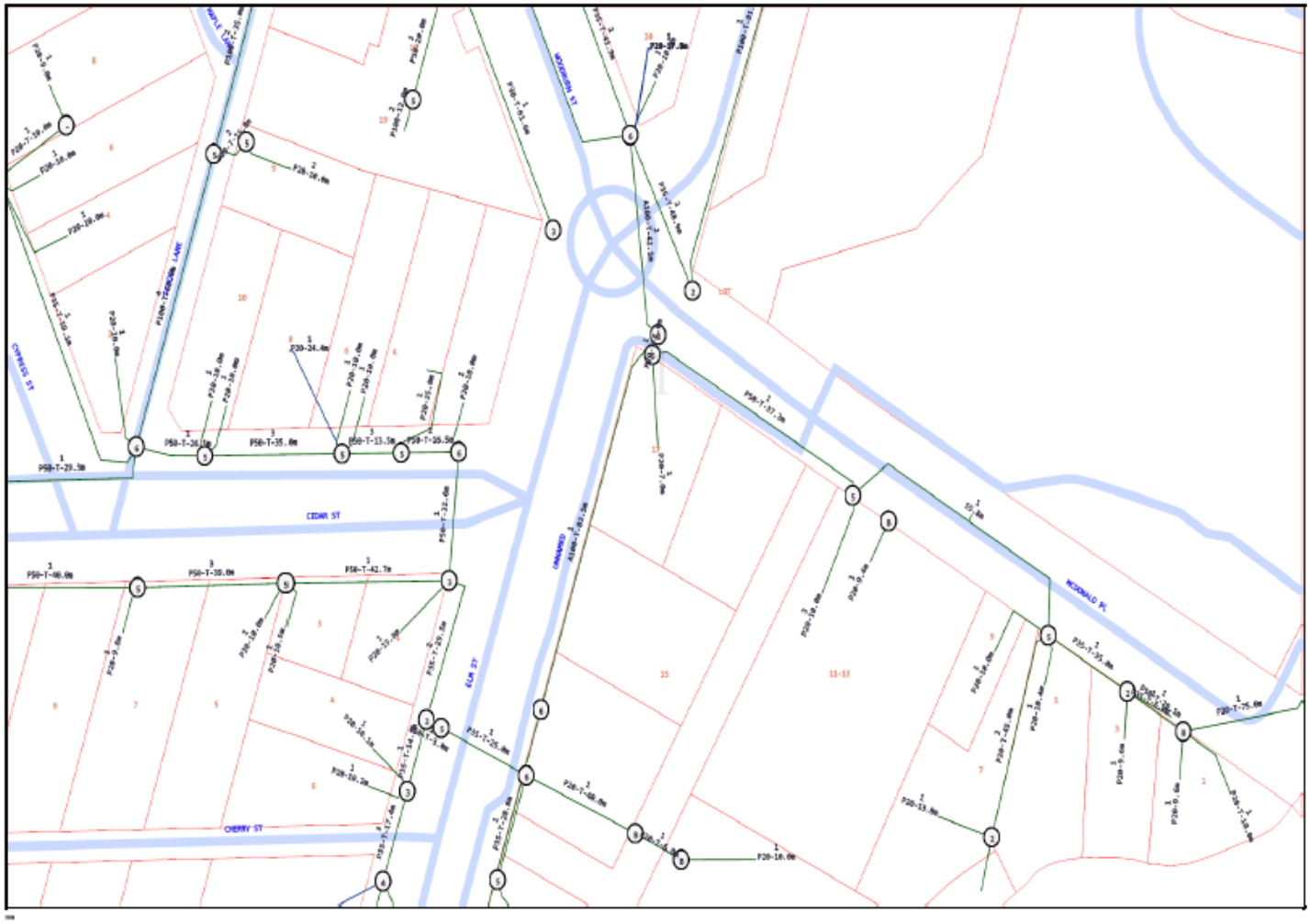

Figure 22 | Telstra NBN communication line, *Source: NBN DBYD.*

6. CONCLUSIONS AND RECOMMENDATIONS

All engineering aspects, including site constraints, geotechnical requirements, traffic impacts, stormwater drainage, water supply, and sewer demand have been considered in this report.

The Engineering Services Report demonstrates that the proposed mixed-use development Lot 7 DP14089, known as 17 McDonald Place, would include:

Traffic:

- safe and efficient vehicular access is provided to all lots.
- There is sufficient space for future 45 degree on-street parking.
- Pedestrian safety can be achieved with appropriate signage.
- Enough sign distance is available for the proposed vehicle access.
- Due to its existing conditions, the road network surrounding the subject site can handle a significant volume of traffic.
- For more information on roadworks please refer to Traffic Impact Assessment.

Earthworks:

- Since there will be no excavation of earth more than 1 metre of depth, there is no possibility of exposing any Acid sulphate soils.

Stormwater management:

- Lawful point of discharge: we propose to use the exiting kerb adaptors for discharge to the kerb.
- Runoff water quality: 7kL of reuse volume, assumed 1kL/day reuse rate
- 10kL or on-site detention
- Minimum combined tank volume: 17kL, custom built to suit the space available.

Utilities:

- Water demand: 5.6 ET
- Sewer demand: 5.6 ET
- Electrical supply: available on site: either continue use of overhead cable, or trench a new underground cable under the road
- Communications infrastructure: existing NBN connection available

On the basis of this assessment we recommend this development for approval from an engineering services perspective.

REFERENCES

Development Control Plan, Richmond Valley Council, Casino NSW, 2021

Development Servicing Plan Sewerage Services, Richmond Valley Council, Casino NSW, February 2013

Appendix E

Waste Management Plan

HMC Environmental Consulting Pty Ltd

ENVIRONMENTAL CONSULTING Pty Ltd

WASTE MANAGEMENT PLAN

PROPOSED SHOP-TOP DEVELOPMENT

November 2023

Prepared for: 17 The Evans Trust

Lot 7 DP 14089
17 McDonald Place
Evans Head NSW

HMC2023.531.03

RE: Lot 7 DP 14089, 17 McDonald Place, Evans Head NSW.

HMC Environmental Consulting Pty Ltd is pleased to present our Waste Management Plan for the abovementioned development. We trust this report meets with your requirements. If you require further information, please contact HMC Environmental Consulting directly on the numbers provided.

HMC Environmental Consulting		PH:	0755368863
Suite 29, Level 2, 75-77 Wharf Street		Email:	admin@hmcenvironment.com.au
PO Box 311		Web:	www.hmcenvironment.com.au
Tweed Heads NSW 2485		ABN:	60 108 085 614
Title:	Waste Management Plan		
Job No:	2023.531.03		
Client:	17 The Evans Trust		

Document Record:				
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Final Issue A	3.11.2023	MF	SV	SV

Distribution List	Date	Version	Comments
L. Barakat, NDC	6.10.2023	Draft Issue A	For Review
L. Barakat, NDC	27.10.2023	Draft Issue B	Updated plans
L. Barakat, NDC	3.11.2023	Final Issue A	Final

This report should be cited as '*HMC Environmental Consulting (2023). Waste Management Plan, Proposed Shop-Top Development, Lot 7 DP 14089, 17 McDonald Place, Evans Head NSW. Report No. HMC2023.531.03.*'

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KEY CONTACTS

Company/Name	Contact Details	Phone Number/contacts	Available:
HMC Environmental Consulting	Mark Tunks	0408 279212	Business Hours
Richmond Valley Council	Evans Head Service Centre	02 6660 0365 After hours emergency 02 6660 0300	Mon- Fri 8.30am - 4.30pm Sat 9am – 12pm
Evans Head Transfer Station	Weighbridge Broadwater-Evans Head Road Evans Head NSW	02 6660 0309	8.30am-4.30pm Wed, Fri-Sun (excluding PH)
Nammoona Waste and Resource Recovery Facility	Weighbridge Dargaville Drive Casino	02 6662 6580	8.30am – 4.30pm Mon-Sun (excluding PH)
Richmond Waste	Tony Martin	(02) 6621 7431	Mon-Fri 9am-5pm
Project Manager	TBA	TBA	TBA
Maintenance Manager	TBA	TBA	TBA

ENVIRONMENTAL EMERGENCY RESPONSE CONTACTS

Organisation	Incident	Contact
Ambulance	Injury/Illness	000 land line 112 mobile
Fire Brigade – Emergencies	Fire Chemical/hazardous waste spill	000
NSW Environment Protection Agency	Pollution	1300 130 372
Richmond Valley Council	Pollution (Environmental Health)	02 6660 0365 After hours emergency 02 6660 0300

Abbreviations

ACM	Asbestos containing material
EPA	NSW Environmental Protection Authority
HMC	HMC Environmental Consulting Pty Ltd
MGB	Mobile Garbage Bin
OEH	NSW Office of Environment & Heritage
RVDCP	Richmond Valley Development Control Plan 2021
RVC	Richmond Valley Council
Site	Lot 7 DP 14089, 17 McDonald Place, Evans Head NSW
SMF	Synthetic Mineral Fibres
TBA	To be advised
WMP	Waste Management Plan
Proponent	17 The Evans Trust
Guidelines:	
NSW EPA, 2012	*Better Practice Guidelines for Waste Management in Commercial and Industrial Facilities*

1 INTRODUCTION

HMC Environmental Consulting (HMC) has been engaged by Newton Denny Chappelle on behalf of 17 The Evans Trust (proponent), to provide a Waste Management Plan (WMP) for a three-storey mixed use development on commercial land located Lot 7 DP 14089, 17 McDonald Place, Evans Head NSW. The proposed development would include the construction of a three-storey Shop-Top development including a ground floor cafe and two levels of residential units. There is currently a dilapidated vacant commercial structure which would be required to be demolished.

The WMP is to be used to assist in the management of waste storage and collection for the purpose of maximising reuse/recycling, improving the services and safety of the contractors, improving the amenity of the area, and to reduce costs of waste management.

1.1 PROJECT DESCRIPTION

Table 1 Project Summary

Address	17 McDonald Place, Evans Head NSW
Property Description	Lot 7 DP 14089
Existing buildings and other structures currently on the site	Single storey timber-framed commercial structure with timber floor and metal roof sheeting
Description of proposed development	Proposed Shop-Top development – three-storey development including a ground floor cafe and two levels of residential apartments (10 units). Waste would be generated during the demolition, construction, and occupation stages of the development. The location of the site, its topographic features and relationship with adjoining development is shown on the map and aerial photograph in Appendix 1.
This development achieves the waste objectives set out in Richmond Valley DCP 2021. The details on this form are the provisions and intentions for minimising waste relating to this project. All records demonstrating lawful disposal of waste will be retained and kept readily accessible for inspection by regulatory authorities such as RVC, NSW EPA or Safework NSW.	

1.2 AIM

The principal aim of managing this activity is to maximise resource recovery and minimise residual waste from demolition, construction and operation activities associated with the proposed mixed use development and facilitate effective ongoing waste management practices consistent with the principles of Ecologically Sustainable Development (ESD).

1.3 OBJECTIVES

1. To maximise resource recovery and minimise residual waste
2. To optimise adaptive reuse opportunities of existing structures during demolition
3. To maximise reuse and recycling of materials
4. To minimise waste generation
5. To ensure appropriate storage and collection of waste
6. To minimise the environmental impacts associated with waste management
7. To avoid illegal dumping
8. To promote improved project management.

2 STATUTES AND POLICY

2.1 RELEVANT LEGISLATION & GUIDELINES

Table 2 Environmental Legislation and Policy Specific to Waste Management

Legislation	Details	Approvals/Permits Required
Waste Avoidance and Resource Recovery Act 2001	Repeals the Waste Minimisation and Management Act and replaces a target of 60% reduction in waste to landfill with a process for the preparation of waste strategies which identify more specific targets and objectives for waste reduction.	Compliance must be achieved in relation to waste management during construction. Permits may be required for offsite disposal of hazardous or contaminated material.
Contaminated Land Management Act 1997	Provides for the investigation and remediation of contaminated land.	Specific approvals are not required however, construction works must comply.
Environmentally Hazardous Chemicals Act 1985	Provides for the control of the effect on the environment of chemicals and chemical waste. Scheduled chemicals would not be used in the proposed development.	
Protection of the Environment Operations Act 1997	This Act is the primary NSW environment protection legislation that covers air, noise, water, land, and waste management. It provides a framework to regulate and enforce pollution control in NSW. The Act identifies mechanisms for preventing environmental degradation including, pollution prevention, cleaner production, reduction in discharge levels likely to cause harm to the environment, recycling, and progressive environmental improvement. The proposed development would adhere to the requirements of this legislation.	
Protection of the Environment Operations (Waste) Regulation 2014	The Waste Regulation 2014 provides for contributions to be paid by occupiers of scheduled waste facilities for each tonne of waste received at the facility or generated in a particular area; exempts certain occupiers or types of waste from these contributions; and allows deductions to be claimed in relation to certain types of waste. It sets out provisions covering: ● record-keeping requirements, measurement of waste and monitoring for waste facilities ● tracking of certain waste ● reporting ● transportation of waste	

	• transportation and management of asbestos waste • recycling of consumer packaging • classification of waste containing immobilised contaminants • miscellaneous topics.
Richmond Valley Council – Policy 15.3 – Construction Site Waste Minimisation and Management – July 2015	Identifies requirement for Waste Management Plan and the information to be provided within the WMP regarding waste storage and collection facilities and controls. Appendix I within the policy describes waste generation rates. This WMP has been prepared to meet the objectives of this Policy.
NSW Environment Protection Authority *Better Practice Guide for Waste Management and Recycling in Commercial and Industrial Facilities 2012*	Identifies installation and maintenance practices for services and infrastructure for waste handling and collection systems. The systems are aiming to achieve the best possible waste minimisation and resource recovery outcome. The waste management systems identified include effective, efficient, and safe systems for both their ease of use by residents and their ability to be serviced by collection crews.
Construction and Demolition Waste Guide – Recycling and Reuse Across the Supply Chain Department of Sustainability, Environment, Water Population and Communities 2011	The aim of this guide is to help develop effective markets for materials diverted or derived from the construction and demolition waste stream.

3 HAZARDOUS MATERIALS

The proposed demolition would include a single storey fibrous cement clad and weatherboard structure with metal roof sheeting. No detailed hazardous waste investigations have been completed on the development site, however, bonded asbestos containing material (ACM) has been identified in some of the external cladding during the Preliminary Site Investigation conducted by HMC (HMC.531.02), which would require removal by a Safework NSW Class B licensed contractor, along with an inspection of the remainder of the structure.

Management of hazardous material is to occur prior to general demolition, and is to be in accordance with Safework NSW requirements, as detailed in Table 3. Demolition contractors generally have Safework NSW licensed personnel trained for the identification and removal of hazardous waste in demolition projects.

No opportunities for recycling and reuse are available for hazardous materials. Co-mingling of hazardous material is to be prevented. Separate receptacles to be provided and managed in accordance with Safework NSW and Safe Work Australia requirements.

The closest approved asbestos disposal facilities are the Nammoona Waste and Resource Recovery Facility.

Table 3 Management of Hazardous Materials

Type of Waste	Disposal at approved landfill facility Measures to include, but not limited to:
Hazardous Material: **Asbestos** containing material (ACM) including fibro sheeting & vinyl tiles.	• Identified or suspected (ACM) is to be removed, prepared & disposed of by licensed asbestos handling contractor approved by Safework NSW. • Asbestos material may be disposed at the Nammoona Waste and Resource Recovery Facility at Dargaville Drive, Casino. • A minimum of 24 hours' notice must be given on 02 6662 6580, prior to the disposal of asbestos to allow Council's Landfill staff to manage the disposal of the asbestos at the facility.
Hazardous Material: **Lead** including lead paint residue, and flashing.	• Use personal respirators according to AS/NZS 1715 and as per Synthetic Mineral Fibre removal in this table. • Structures covered with lead-based paint should be removed intact, as far as possible. • The safe work methods used in removal or demolition will determine how elaborate the containment system should be. • Avoid power tools and any actions which create dust. However, if power tools need to be used, a higher level of containment must be used as opposed to when manual methods, such as scraping is used. • All waste and debris collection and disposal procedures must be clearly stated in the Safe Work Methods Statement. • Disposable suits and any vacuum bags/wet cloths to be appropriately bagged and disposed of as Hazardous Waste.
Hazardous Material: **Mercury** i.e. fluorescent lights	• Remove fluorescent lights intact prior to mechanical demolition. • Any removed lights to be appropriately bagged and disposed of as general waste in domestic quantities only. • Personal Protective Equipment to be worn to minimise dust inhalation and eye/skin irritation. • More information, including how and where fluorescent lights can be recycled, can be found at http://www.fluorocycle.org.au/ or http://www.environment.gov.au/settlements/waste/lamp-mercury.html. FluoroCycle is a voluntary program established by the Commonwealth Government and the Australian Lighting Council to help reduce the number of fluorescent lights going to landfill. • SUEZ Environment provide a national fluorescent light collection and recycling service to dispose of used fluorescent tubes, HID and CFL light globes. • Local Councils often have segregated areas available at their resource recovery centres for hazardous waste collection.
Hazardous Material: **Synthetic Mineral Fibre** (SMF) e.g. fibrewool insulation	• Filter mask, goggles, gloves, and disposable coveralls. • Dust control measure such as use of plastic screen &/or exhaust fan to be used if significant contamination present. • Disposable suits and any removed insulation to be appropriately bagged and disposed of as general waste.

Hazardous Material: Refrigerants e.g. CFCs HFCs	• All refrigerants should be recovered and either recycled, reclaimed, or returned to supplier, prior to disposal of unit.

4 WASTE GENERATION

4.1 DEMOLITION STAGE

The existing single-storey fibrous cement clad dwelling (approx. 320m^2) is the major structure that would require demolition.

Any services would be disconnected including power, gas and town water supply, and the connection point to the Council sewer would be cut and sealed to prevent groundwater, debris or other material entering Council sewer system.

Initially the Safework NSW licensed demolition contractor would inspect the structure for the presence of asbestos containing materials and other hazardous wastes. It appears a significant area of ACM is located on external cladding, and perhaps, internal linings/floor coverings. These would be removed prior to further demolition occurring.

Demolition would occur over a short period of time (1 week) to allow subsequent installation of erosion and sediment control prior to site stripping and earthworks for the proposed development.
Waste generation and management activities during the demolition stage would comprise:

- An initial inspection of the structures subject to demolition by a suitably qualified Occupational Hygienist, Safework NSW licenced contractor, or similar to assess hazardous materials including asbestos containing material, lead flashing and paint, synthetic mineral fibres, and refrigerants.
- Any identified hazardous materials to be removed by a Safework NSW licensed contractor prior to demolition to avoid co-mingling with general waste.
- Removal of existing commercial building and other structures following removal of any hazardous material.

Note: Discussions with resource recovery facilities indicate that a minimum 80% resource recovery is provided and may be up to 95% with significant heavy concrete and bricks. Nammoona Waste and Resource Recovery Facility also accepts co-mingled demolition waste with significant resource recovery and recycling rates achieved.

Separation of masonry, brick, concrete from other recyclables is encouraged, with significant savings on resource recovery costs.

Metal, including copper pipe, is also a profitable waste stream with recyclers providing significant returns. The following waste generation volumes have been estimated based on approximate calculations using floor areas and similar demolition sites.

Table 4 Demolition Stage – Waste Generation/Recycling Potential

Material Description	Estimated Volume/Area [1]	Potential Method of Recycling / Reuse
Asbestos Containing Material (bonded fibro)	To be determined on site by Safework NSW licensed contractor	Nil (Nammoona Waste and Resource Recovery Facility)
Electrical Lighting	<5m^3	Preliminary discussions have confirmed that various resource recovery and recycling facilities are available from contractors operating in the RVC area including. ● Nammoona Waste and Resource Recovery Facility ● Evans Heads Transfer Station ● Proskips ● A1 Skips ● Red Neds ● SUEZ Environmental. Other demolition contractors would also have preferred resource recovery and recycling options.
Electrical Cable		
Distribution Boards		
Switchboards		
Pipework PVC HPDE Pipe	<100 lineal m	
Tap ware	<2m^3	
Gutters	Approx. 150 lineal m	
Roof metal sheeting	<200m^2	
Timber Trusses & Roof Timber	<50m^3	
Timber Walls	<200m^2	
Concrete Slab Flooring	<50m^2	
Plasterboard/ Other	<40m^3	
Windows/ Doors	Doors 10-20 Windows 20-30	
Copper	<100 lineal m	
Floor coverings (carpet and tiles)	<200m^2 (Assumes vinyl/ceramic tiles across building footprint)	
Fittings/fixtures/PC items	2 WC pans 2 basins 2 kitchen sinks 1 shower	

[1] Note: Volumes/areas are indicative only and are subject to change

4.2 CONSTRUCTION STAGE

The proposed development would include the construction of a three-storey Shop-Top development.

- Site stripping including removal of vegetative material and topsoil (topsoil stockpiled for use in landscaping).
- Earthworks including excavation for footings, services and lift well.
- Construction of the three-storey development including building shells, fitouts, additional carparking and landscaping.

The following typical waste generation figures have been provided based on similar construction sites. As discussed in the previous section, resource recovery centres indicate that 80-90% by volume (95% by weight) of construction waste is able to be recycled (see Table 3).

Table 5 Estimated Waste Generation – Construction

Type of Waste	Reuse	Recycling	Disposal	Method of Reuse/Recycling or Waste Depot
	Estimated Volume or Weight	*Estimated Volume or Weight*	*Estimated Volume or Weight*	
Excavated Material	TBC	-	TBC	Topsoil to be stripped and stockpiled for use in landscaping Waste classification of excavated material in accordance with the NSW EPA Waste Classification Guidelines would be required prior to removal off-site.
Timber Concrete Bricks/pavers Tiles Metal Glass Furniture Fixtures/fittings Floor coverings	Limited on construction sites.	80-90% construction and demolition waste recycled by resource recovery centres	10-20% Including site office general waste and packaging & debris/offcuts that cannot be recycled	• Nammoona Waste and Resource Recovery Facility • Evans Head Transfer Station
Packaging Green waste organics Containers (cans/glass/plastic) Paper/cardboard Residual waste		<100m^3	<40m^3	80-90% recycled/reused: • Nammoona Waste and Resource Recovery Facility • Evans Head Transfer Station

4.3 OCCUPATION STAGE

Waste generating activities during operation would comprise:

- Occupation of residential units (10 units).
- Occupation of ground floor cafe.

For the purposes of the proposed development, the waste will be sorted into general waste, recyclables, and organic waste. The generation rate is based on a conservative ultimate capacity including full occupation of all residential units and use of the café seven days a week, which in reality may not be the case.

Table 6 Estimated Waste Generation – Occupation

Location	Waste Generation Rates		Waste Generation Volume	
Residential Units (10 Units)	General (L/Unit/Week)	Recycling (L/Unit/Week)	General (L/Week)	Recycling (L/Week)
	80	40	800	400
Restaurant (131.8m² Floor Area)	General (L/100m²/Day)	Recycling (L/100m²/Day)	General (L/Week)	Recycling (L/Week)
	100	120	923	1107

While organics is not a requirement under the current council DCP, there are opportunities to capture the organics/green waste stream. The provision of organic waste collection reduces the general waste to landfill. It is noted the State Government is currently implementing a future zero organic waste to landfill policy. Given the proposed inclusion of food and beverage tenancies, it is prudent that the organic waste stream is separated from the landfill waste and serviced appropriately.

5 WASTE STORAGE REQUIREMENTS

The following design storage volume recommendations have been based on the waste generation rates as detailed in the previous section and are provided to establish site suitability.

Adequate space is available within the site for the storage of waste during the construction, and operation stages. Refer to site plans in Appendices 3, 4 & 5.

5.1 DEMOLITION STAGE

Adequate space is available onsite to provide temporary waste storage and recyclable building waste storage during demolition stage of the development. Refer to site plans in Appendix 3.

During demolition, the site would be secured with safety fencing and demolition waste would be initially placed in waste streams in designated skip bins for transport to the resource recovery centre. Skip bins would be provided for:

- Hazardous waste
- Co-mingled waste
- General waste

Discussions with demolition contractors indicates that direct loading into transport vehicles does occur for both co-mingled demolition waste and waste is also sorted on site.

Direct loading of co-mingled building waste into transport trucks for delivery to the approved resource recovery and recycling centre would reduce the site waste storage and servicing requirements during demolition.

Hazardous waste to be separated and managed in accordance with Safework NSW requirements (e.g., no co-mingling, wetting, wrapping ACM).

Table 7 Recommended Waste Storage Receptacles –Demolition Stage

Waste Type	Required Service	Proposed Industrial Bin Size at Collection Point (1)
Recycling & General Waste Service	● 1 x 6m^3 skip bin for general waste (includes site office) ● 1 x 6m^3 skip bin for co-mingled building waste to be sorted at facility ● 1 x 6m^3 skip bin hazardous waste	● 1 x 6m^3 skip bin serviced on demand for general waste ● 1 x 6m^3 skip bin serviced on demand for co-mingled building waste ● 1 x 6m^3 serviced on demand for hazardous waste

(1) Direct loading into transport vehicles for transport to landfill/resource recovery facility/recyclers would reduce required waste storage receptacles and servicing arrangements.

5.2 CONSTRUCTION STAGE

Adequate space is available onsite to provide temporary waste storage and recyclable building waste storage during construction stage of the development. Refer to site plan in Appendix 3.

Table 8 Recommended Waste Storage Bins - Construction

Waste Type	Required Service	Proposed Industrial Bin Size at Collection Point
Recycling & General Waste Service	● 1 x 6m^3 skip bin for general waste (includes site office) ● 1 x 6m^3 skip bin for co-mingled building waste to be sorted at facility	● 1 x 6m^3 skip bin serviced on demand for general waste. ● 1 x 6m^3 skip bin serviced on demand for co-mingled building waste

5.3 OCCUPATION STAGE

Waste would be sorted within units, and the cafe. All waste will be transported and deposited into the appropriately signed bins in the waste storage area located in the ground floor carpark by the residents and tenants.

It is recommended that the waste management system be monitored in the initial stages to ensure that sufficient bins and servicing have been provided to handle the waste generated. The estimated waste storage is based on ultimate capacity. As per Richmond Valley Council's requirements, the residential and commercial waste streams have been separated.

The proposed arrangement will satisfy the waste requirements for the proposed development based on the waste generation rates as outlined in *RVC policy 15.3 – Construction Site Waste Minimisation and Management 2015* and within the NSW EPA. It is noted the State Government is currently implementing a future zero organic waste to landfill policy. The provision of organic waste collection would reduce the general waste to landfill.

Table 9 Recommended Waste Storage Bins - Occupation

Waste Type	Estimated Waste Generation	Proposed Receptacle Size at Collection Point*
General Waste	1700 L/Week	1 x 1.5m^3 bulk bin serviced weekly 1 x 240L MGB serviced weekly
Co-Mingled Recycled Waste	1500 L/Week	1 x 1.5m^3 bulk bin serviced weekly
Organic Waste	OPTIONAL (A café would generate food waste that requires additional servicing (or refrigeration) to minimise vermin and odour issues)	

Construction of the waste storage area would be generally in accordance with *RVC policy 15.3 – Construction Site Waste Minimisation and Management 2015.* A shared waste storage area has been proposed for the occupation waste due to the small development and property size. A single café has been proposed for commercial use, and with the limited amount of waste generated, can be incorporated into the servicing with the residential waste. The waste servicing would be closely monitored by a nominated maintenance person with feedback from all residents and staff. The waste storage area is located on the southwestern corner of the property and would be wheeled to the Elm Street frontage on the western boundary for servicing.

The storage area has been designed to ensure that all floor wastewater is collected and discharged into the sewer, with cold water supply provided for cleaning purposes.

Appendix 4 details the location of the waste storage areas.

6 BIN IDENTIFICATION AND SIGNAGE

6.1 SIGNAGE

All bins, collection facilities will be clearly marked with labels, colour coding, symbols, and words. Signs will be highly visible.

Signage should be consistent with those used at garbage storage areas. Signage should be clear in such that the residents and commercial tenants only use the correct designated receptacles.

7 EDUCATION & EVALUATION

7.1 INFORMATION & AWARENESS

It is good practice for all sub-contractors, project staff, residents, patrons, and visitors to be made aware of the aims and benefits of the waste minimisation program to encourage maximum participation.

During construction, the induction would include information on waste streams, waste storage receptacles and recycling.

Several strategies can be used to avoid mistakes when separating waste and recyclables and make sure bins and equipment are used correctly. These include:

- using clear signage with consistent design and colours in waste storage rooms and on bins (standard signage)
- ensuring the appointment of a waste supervisor responsible for the proper separation of waste, waste storage area and collection. The waste supervisor is to be also responsible for having the receptacles out for collection at the nominated collection point.

8 REVIEW & MONITORING

8.1 MONITORING OF WASTE MANAGEMENT

Waste monitoring is necessary to assess whether the strategies implemented have been effective in achieving the WMP's aims.

8.1.1 Demolition and Construction

Monitoring would be carried out on a weekly basis by the project Site Manager during demolition and construction.

The monitoring process would include:

- Site Manager to oversee waste collection activities to assess compliance with WMP.
- Waste volume monitoring carried out by the waste contractor during collection and servicing procedures.

8.1.2 Occupation

Ongoing regular monitoring would be undertaken by the body corporate, residents, tenants and waste contractors.

8.2 REVIEW OF WMP

This WMP will be reviewed and updated, if necessary, using the results of monitoring of the waste volume and type being generated during the development stages.

The review will also address and reflect:

- changes in the development management process.
- changes in design or sequence of development staging.
- changes in access to the Project Site.
- changes or requests directed by local or state authorities i.e., Richmond Valley Council, State Government Departments;
- changes in the environment.
- changes in generally accepted environmental management practices.
- changes in legislation,
- new risks to the environment or public health.
- any pollution or contamination events.

9 RECOMMENDATIONS

The waste storage and servicing recommendations, as detailed in this report, are summarised below:

Table 10 Summary of Waste Management Recommendations

Project Stage	Activity	Waste Storage/Servicing
Demolition	Stripping recycling building products Skip bins for: ● General waste ● Co-mingled demolition waste ● Hazardous Waste Recycling of building materials where possible	Site fenced & skip bins located for collection. ● 1 x 6m^3 skip bin serviced on demand for general waste. ● 1 x 6m^3 skip bin serviced on demand for co-mingled building waste. ● 1 x 6m^3 serviced on demand for hazardous waste
Construction	Building Servicing/trenching Waste offcuts, packaging, excess materials, Site office	● 1 x 6m^3 skip bin serviced on demand for general waste. ● 1 x 6m^3 skip bin serviced on demand for co-mingled building waste.
Occupation	Shop-Top Development: Residential Units (10 Units) Ground Floor Cafe	Waste sorting & storage areas in each unit and the café. ● **General Waste** – 1 x 1.5m3 bulk bin and 1 x 240L MGB serviced weekly. ● **Recyclable Waste** – 1 x 1.5m^3 bulk bin serviced weekly. ● **Organics** – 2 x 240L MGBs for food waste from Café.

10 CONCLUSION

A review of the plans shows there is adequate area available on the site to provide suitable storage facilities for waste generated during the demolition, construction, and occupation stages of the proposed Shop-Top development.

Tables 3-7 in Section 5 of this report demonstrate that the expected waste storage and collection service is generally compliant with the waste storage volumes estimates within the *Policy 15.3 – Construction Site Waste Minimisation and Management (RVC 2015).*

The proposed waste management arrangements within this report are considered adequate for the purposes of the demolition, construction and occupation associated with the proposed Shop-Top development of the existing commercial land located Lot 7 DP 14089, 17 McDonald Place, Evans Head NSW.

11 LIMITATIONS

The information within this document is and shall remain the property of HMC Environmental Consulting Pty Ltd.

This document was prepared for the sole use of client and the regulatory agencies that are directly involved in this project, the only intended beneficiaries of our work. No other party should rely on the information contained herein without the prior written consent of HMC Environmental Pty Ltd and client.

Your report is based on the assumption that the site conditions as revealed are indicative of actual conditions throughout an area. This assumption cannot be substantiated until project implementation has commenced and therefore your report recommendations can only be regarded as preliminary.

12 SIGNATURE

This report has been prepared by Mark Tunks, Principal of HMC Environmental Consulting Pty. Ltd. Note that HMC Environmental Consulting holds current Professional Indemnity Insurance to 4th August 2024.

Mark Tunks
Principal

3 November 2023
Completion Date

13 APPENDICES

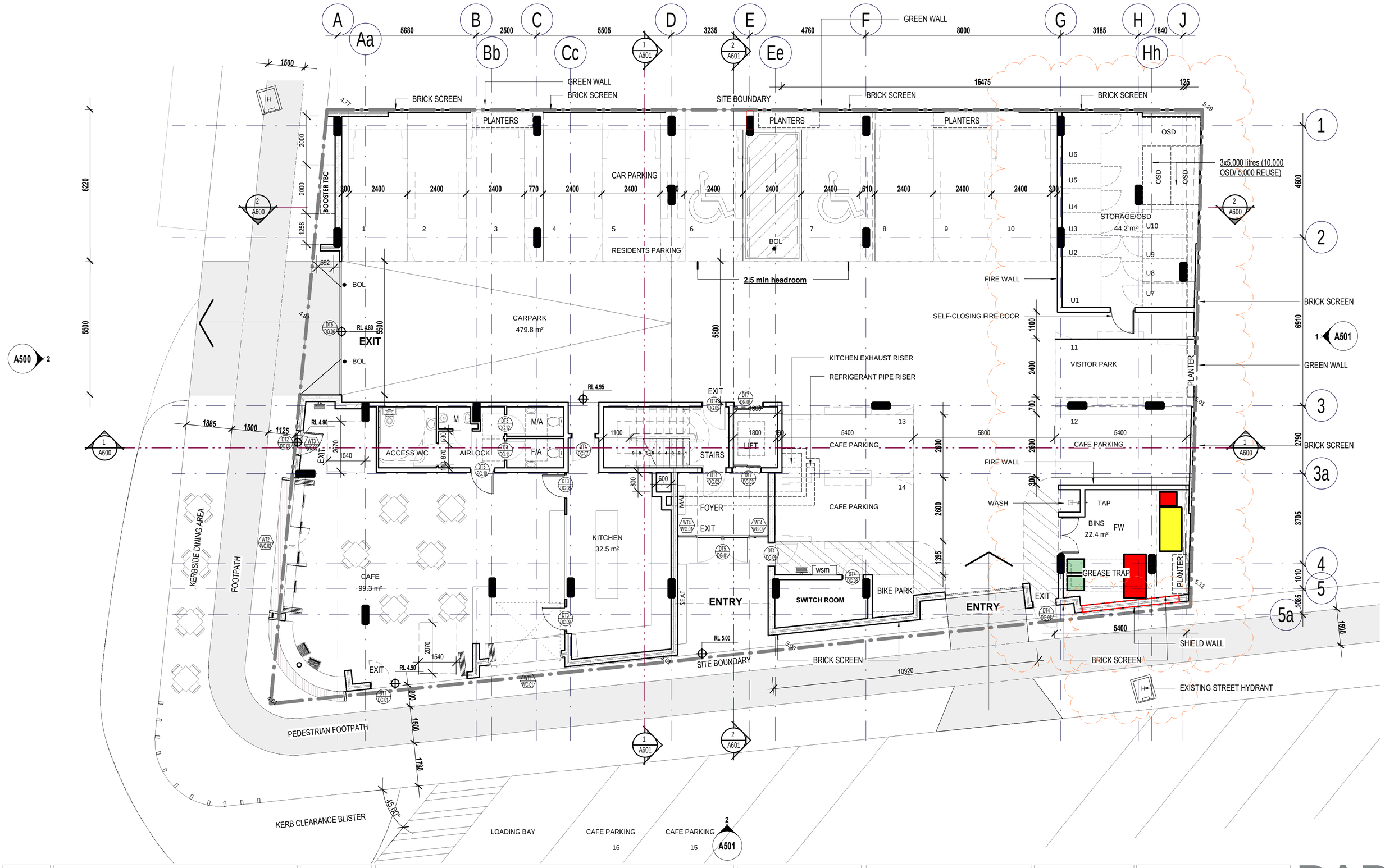
See following pages.

APPENDIX 1 - LOCATION MAPS

Figure 1 - Surrounding Area (Source: Nearmap 2023)

Figure 2 - Site Boundary (Source: Nearmap 2023)

APPENDIX 2 - SITE PLAN PROPOSED DEVELOPMENT



No.	DESCRIPTION	DATE	NOTES
I	RLs	13.09.23	
J	Update	22.09.23	
K	Update	5.10.23	
L	Update	16.10.23	

GROUND FLOOR

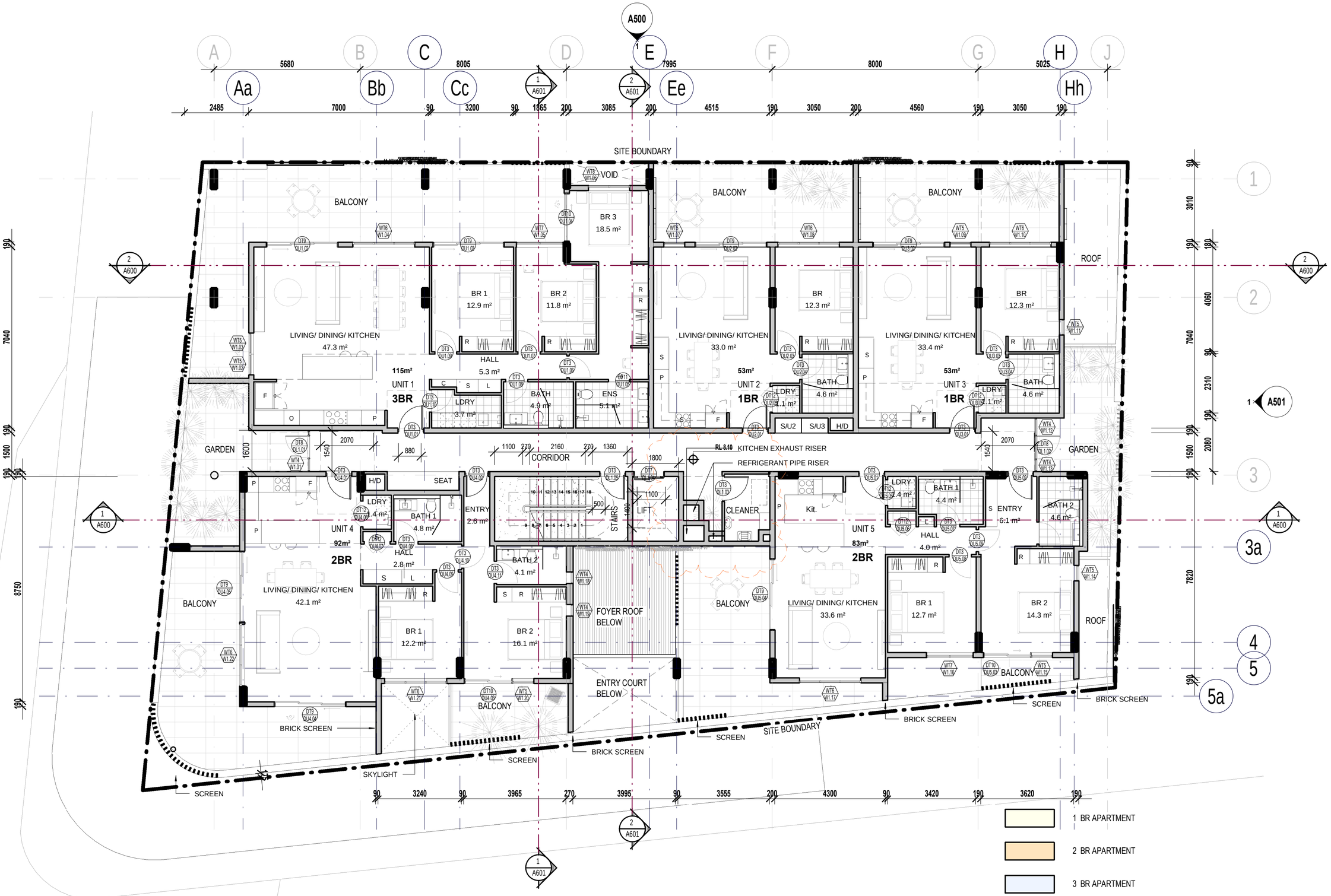
2205 Multi Use Development

17 McDonald Place Evans Head

sheet no.	A200
scale @A2:	1 : 100
date:	
drawn:	HS
revision	L

Barker Architects
02 6682 602
contact@barkerarchitects.com.au
www.barkerarchitects.com.au

BARKER ARCHITECTS



No.	DESCRIPTION	DATE
G	Update	28.08.23
H	RLs	13.09.23
I	Update	22.09.23
J	Update	5.10.23

NOTES

LEVEL ONE

2205 Multi Use Development

17 McDonald Place Evans Head

sheet no.	A201
scale @A2:	As indicated
date:	
drawn:	HS
revision	J

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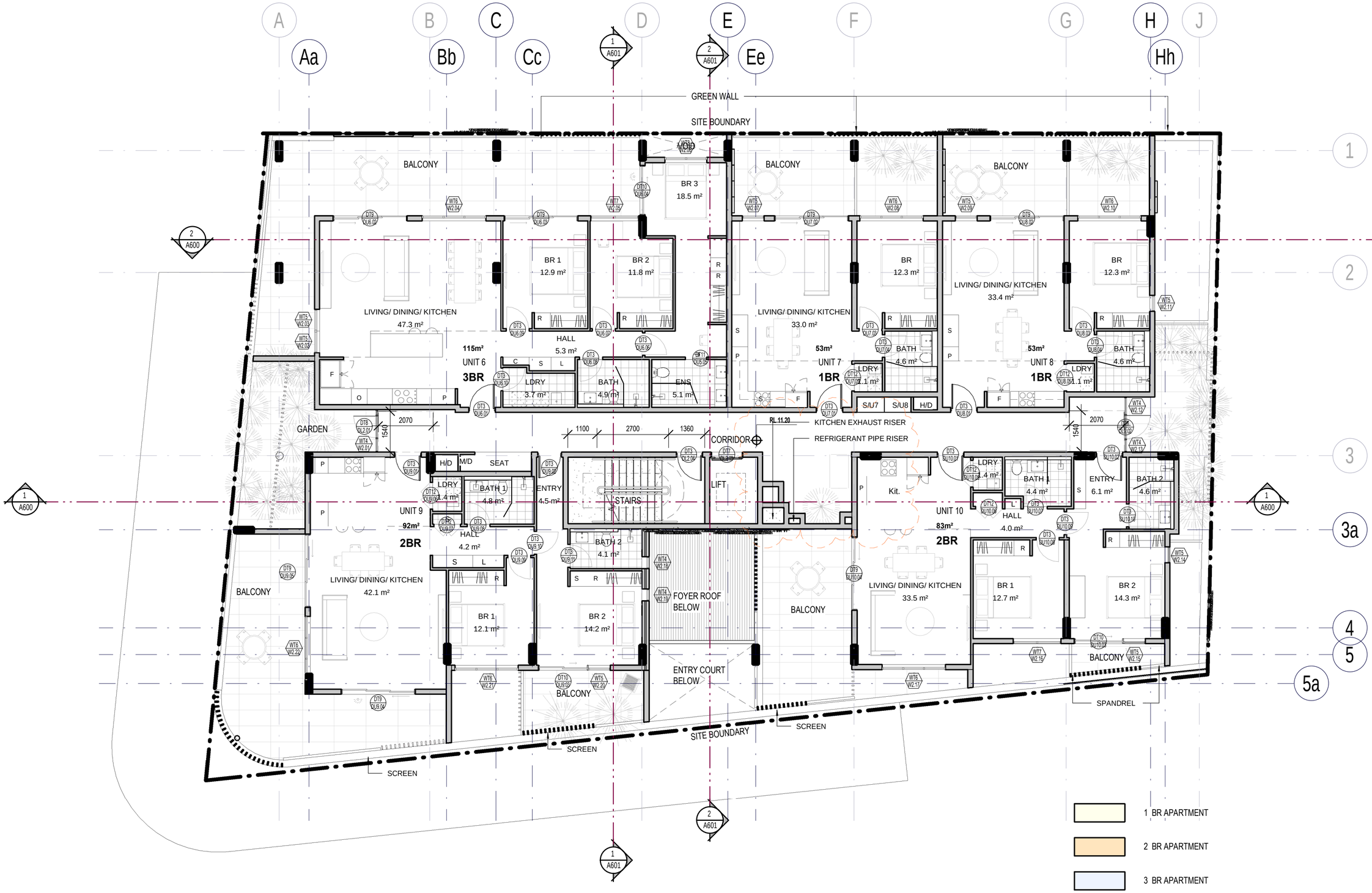
www.barkerarchitects.com.au

BARKER ARCHITECTS

Document Set ID: 1923967
Version: 1, Version Date: 07/05/2024



No.	DESCRIPTION	DATE
F	RLs	13.09.23
G	Update	22.09.23
H	Update	5.10.23
I	Update	16.10.23

NOTES

LEVEL TWO

2205 Multi Use Development

17 McDonald Place Evans Head

sheet no.	A202
scale @A2:	As indicated
date:	
drawn:	LB
revision	I

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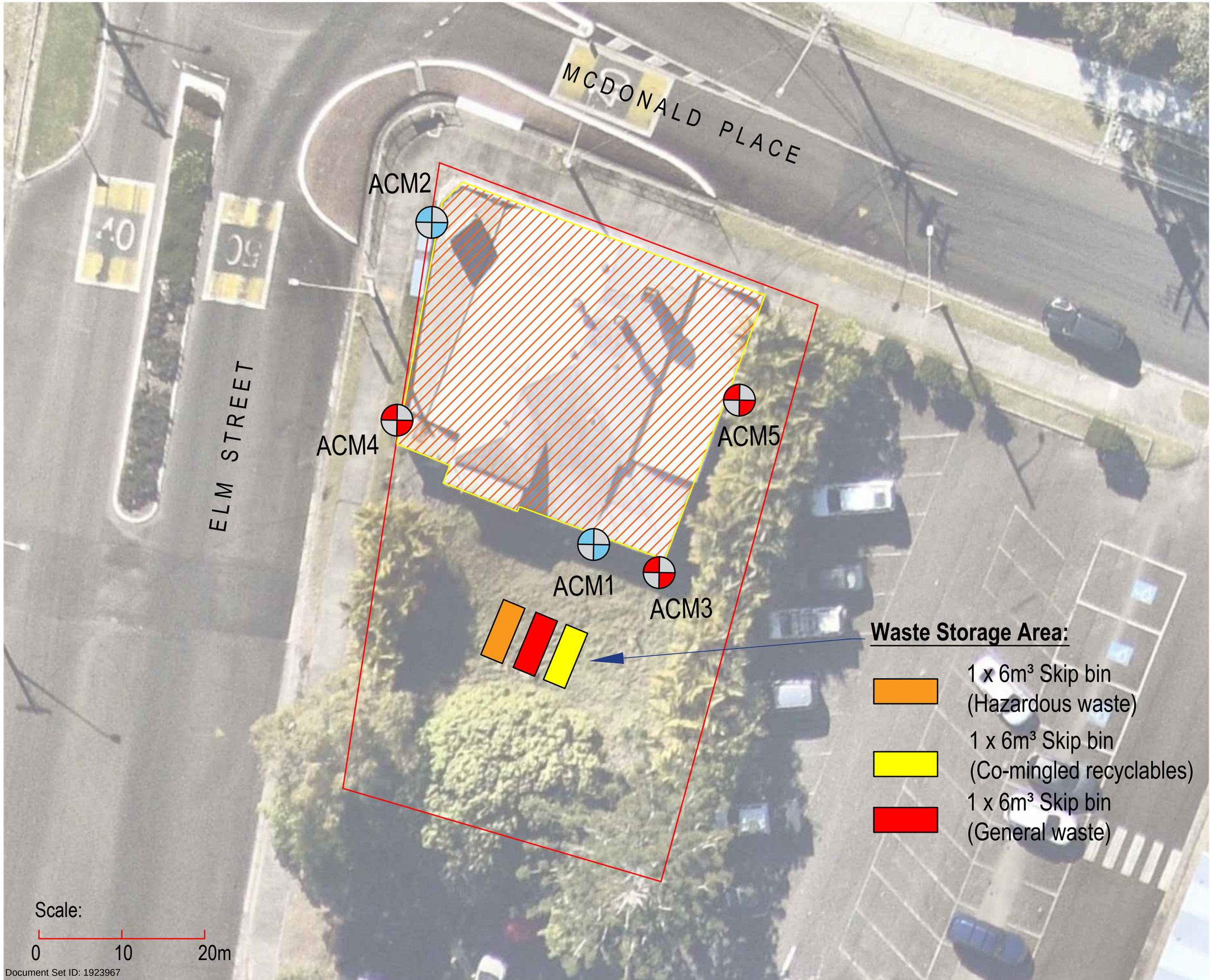
BARKER ARCHITECTS

APPENDIX 3 - TEMPORARY WASTE STORAGE AREA - DEMOLITION

WASTE MANAGEMENT PLAN

TEMPORARY WASTE STORAGE AREA DURING DEMOLITION



Proposed Demolition Area

HMC Sampling Locations with Identified ACM

HMC Sampling Locations with ACM not detected

Lot 7 DP 14089
17 McDonald Place
Evans Head NSW

HMC2023.531.03
Date: September 2023
VERSION: 05/09/2023
DRAWN: MF
BASE: Nearmap 2023

PROPOSED LAYOUT OF WASTE STORAGE AREA IS GENERAL ONLY AND IS TO BE CONFIRMED ON SITE BY SITE MANAGER

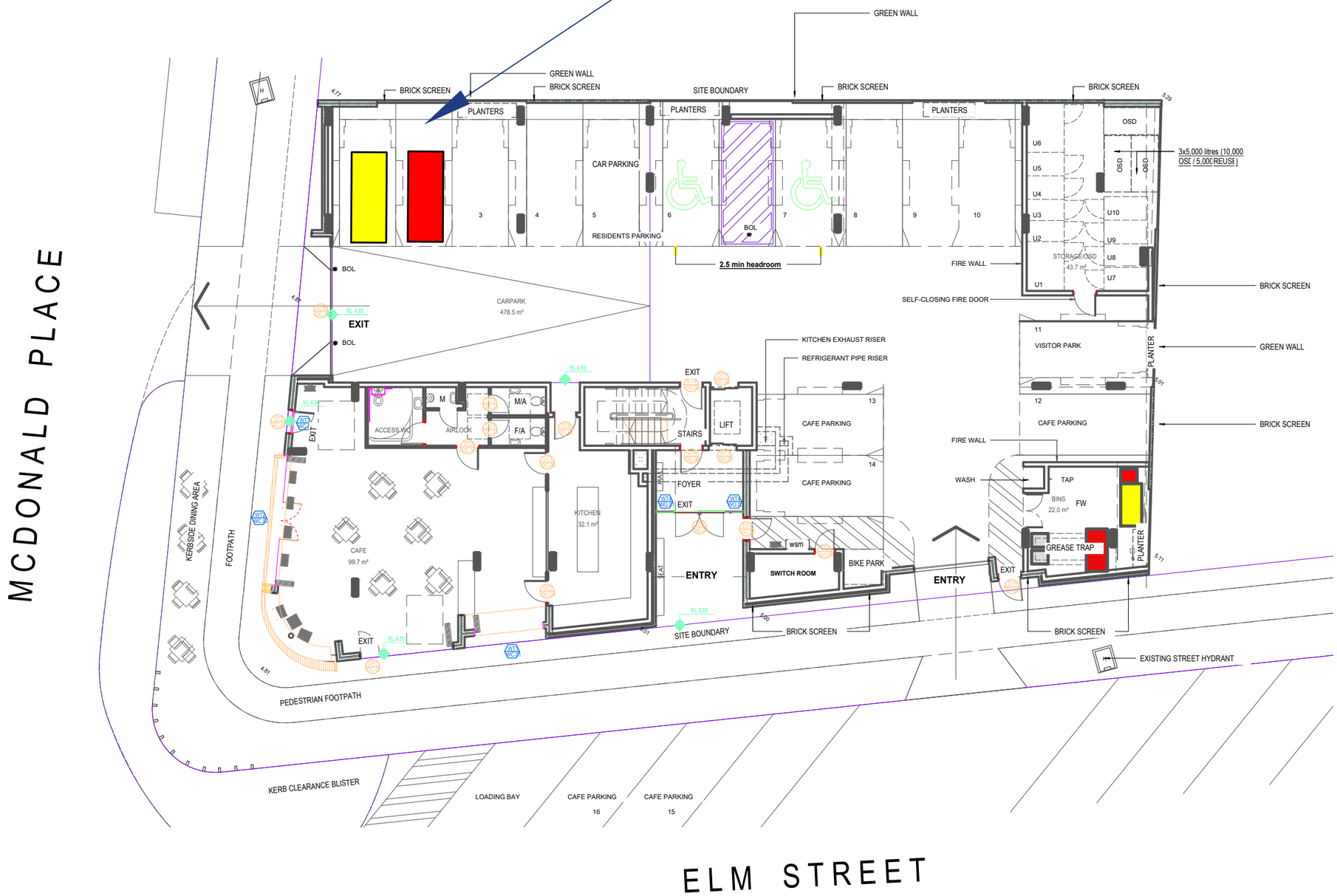
ENVIRONMENTAL CONSULTING Pty Ltd
HMC Environmental Consulting Pty Ltd
Tweed Heads NSW
0755368863
www.hmcenvironment.com.au
admin@hmcenvironment.com.au

APPENDIX 4 - TEMPORARY WASTE STORAGE AREA - CONSTRUCTION

Waste Storage Area:

1 x 6m³ Skip bin
(Co-mingled recyclables)

1 x 6m³ Skip bin
(General waste)



WASTE MANAGEMENT PLAN

TEMPORARY WASTE STORAGE AREA DURING CONSTRUCTION

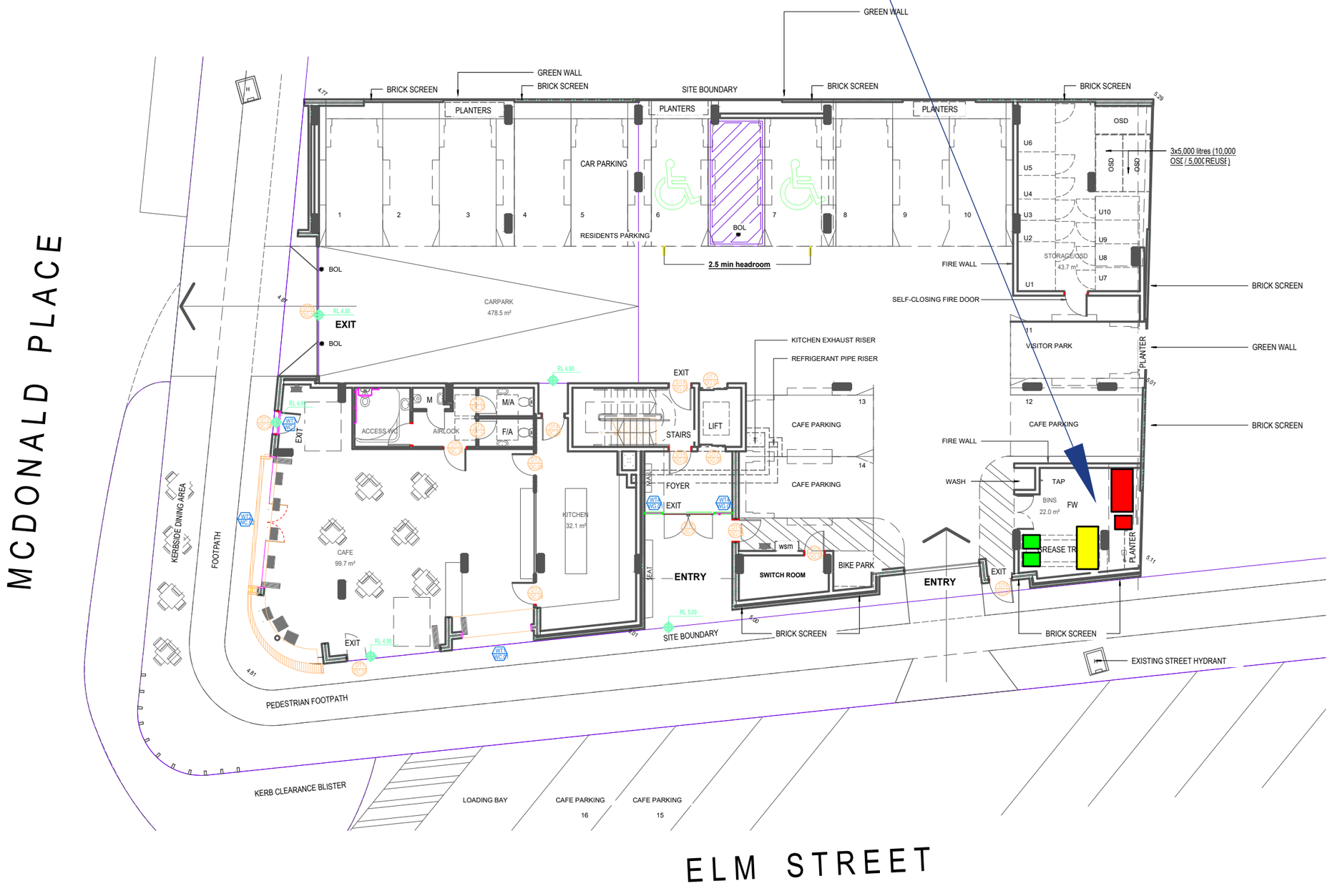
Lot 7 DP 14089
17 McDonald Place
Evans Head NSW

HMC2023.531.03
Date: October 2023
VERSION: 24/10/2023
DRAWN: MF
BASE: Barker Architects
- Ground Floor Plan

PROPOSED LAYOUT OF WASTE STORAGE AREA IS GENERAL ONLY AND IS TO BE CONFIRMED ON SITE BY SITE MANAGER

ENVIRONMENTAL CONSULTING Pty Ltd
HMC Environmental Consulting Pty Ltd
Tweed Heads NSW
0755368863
www.hmcenvironment.com.au
admin@hmcenvironment.com.au

APPENDIX 5 - WASTE STORAGE AREA - OCCUPATION



WASTE MANAGEMENT PLAN

WASTE STORAGE AREA DURING OCCUPATION

Construction of the waste storage area would be generally in accordance with the Richmond Valley DCP. The waste storage area is to be of weatherproof construction and easy to clean, with provision of cold water supply and wastewater discharged to sewer.

Lot 7 DP 14089
17 McDonald Place
Evans Head NSW

HMC2023.531.03
Date: October 2023
VERSION: 24/10/2023
DRAWN: MF
BASE: Barker Architects
- Ground Floor Plan

PROPOSED LAYOUT OF WASTE STORAGE AREA IS GENERAL ONLY AND IS TO BE CONFIRMED ON SITE BY SITE MANAGER

ENVIRONMENTAL CONSULTING Pty Ltd
HMC Environmental Consulting Pty Ltd
Tweed Heads NSW
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APPENDIX 5 - TYPICAL BIN SIZES (PROSKIPS)

CONTAINER SPECIFICATIONS

Plastic (polyethelene)

Capacity	120L	240L	660L	1100L
Height	0.92m	1.075m	1.235m	1.485m
Width	0.54m	0.58m	1.36m	1.36m
Length	0.62m	0.715m	0.765m	1.07m
Weight	9.5kg	13.5kg	45kg	65kg

**Availability of the complete suite of bin sizes varies across states. Sizes are approximate measurements and may vary by location.*

Figure 3 Typical Rear Lift Collection Receptacle Sizes (SUEZ Environment)

BIN SIZES

2m3 Skip Bin

Height: 0.86m
Length: 1.8m
Width: 1.4m

Safe working load: 2 tonne

4m3 Skip Bin

Height: 1m
Length: 3.1m
Width: 1.75m

Safe working load: 4 tonne

7m3 Skip Bin

Height: 1.2m
Length: 4.1m
Width: 1.85m

Safe working load: 7 tonne

10m3 Skip Bin

Height: 1.6m
Length: 4.5m
Width: 1.85m

Safe working load: 10 tonne

16m Hook Lift

Height: 1.2m
Length: 6m
Width: 2m

Safe working load: 13 tonne

*16m bins have an opening at one end of the skip for easy access e.g. wheelbarrows, labourers etc.

Figure 4 Typical Skip Bin Sizes (ProSkips)

APPENDIX 6 - PROSKIPS CONSTRUCTION RESOURCE RECOVERY

PRO SKIPS
The Professionals in Waste Management
Recycling Specialists

PO Box 957
Nerang
Qld 4211

Phone:
(07) 5533 2547

Fax:
(07) 5533 2537

Email:
info@proskips.com.au

ABN:
89 114 580 308

Environmental Policy

Proskips is one of the Gold Coasts leading waste management and recycling companies. We specialise in construction and demolition waste. The company is locally owned and operates it's own waste transfer station. As a responsible corporate citizen we have chosen to work closely with the Environmental protection agency to adopt it's best business practice methods of dealing with all our C&D waste.

The EPA classify all waste transfer stations with a capacity of 20,000t or more a year to be an ERA-82 (environmentally relevant activity) and as such are required to be licensed by the EPA. Proskips engaged a national environmental planning agency "Planit Consulting" to lodge both the development application to the Gold Coast City Council and the ERA-82 (waste transfer station) to the EPA

The reason we have chosen to go to the expense and time of operating our own waste transfer station is one of economics, which at the same time is good for the environment. We have taken what we believe are the best methods from both European and Australia companies to develop our methods of dealing with C&D waste.

Our goal is to recycle 95% of all waste that comes into the transfer station, with only 5% going to landfill. The break up of our waste is as follows-:

20%	Concrete and Hardcore
20%	Wood
20%	Soil
10%	Green waste
10%	Metal
10%	Plastic
4%	Cardboard & Paper
3%	Gyprock
3%	Other

Recycling Methods

Concrete: All concrete and hardcore is crushed through an impact crusher and screened to several small aggregates and roadbase and is sold back to the building industry for drainage, walls, under slabs etc.

Wood/Green waste: The wood is transported to Rocky Point power station which is then used to generate power for the sugar mill with the excess power being sold to the national grid.

Soil: The soil is screen through a 10mm trommel and sold to landscape gardeners and builders.

PRO SKIPS
The Professionals in Waste Management
Recycling Specialists

PO Box 957
Nerang
Qld 4211

Phone:
(07) 5533 2547

Fax:
(07) 5533 2537

Email:
info@proskips.com.au

ABN:
89 114 580 308

Metal: The metal is separated into copper, aluminium, heavy gauge steel and pig metal then sold to One Steel to be melted down.
Cardboard: All cardboard is transported to Amcor recycling at Molendinar.
Gyprock: The gyprock is transported to Marlyn Compost at Jacobs Well where it is grinded down and added to garden soil and mulches.
Plastic: Landfill
Other: Landfill

This has been a brief outline of our recycling practices, as you can see when using the services of Pro Skips you can be confident of an environmentally conscious business.

These methods of collecting and recycling C&D waste will be adopted for all Constructions jobs on the Gold Coast. I have read through all the criteria for the Green Star rating system, where they are looking for 80% recycling by weight. We can easily achieve this for you as we currently recycle 80-90% by volume – in real terms this would amount to 95% recycling by weight as the only waste we send to landfill is very light after we have taken sand, soil, metal & concrete out of the equation.

To comply with the green star rating system we can give you a monthly environmental report to show the breakdown of waste generated from each job and percentage of waste recycled.

I trust this meets with your approval and assuring you of our best attention at all times

Yours sincerely

John Sheerin
Director

APPENDIX 7 - PHOTOGRPAHIC LOG

Photo No. 1	Date 23/08/2023
Description: View south-east towards existing dilapidated building.	

Photo No. 2	Date 23/08/2023
Description: View north towards existing dilapidated building.	

Photo No. 3	Date 23/08/2023
Description: Sample of external cladding confirmed as asbestos (ACM4).	

Photo No. 4	Date 23/08/2023
Description: Sample of ACM near southern verandah confirmed by laboratory as asbestos (ACM3)	

Photo No. 5	Date 23/08/2023	
Description: Sample of ACM near eastern side of building confirmed by laboratory as asbestos (ACM5).		

APPENDIX 8 - LABORATORY CERTIFICATES

CERTIFICATE OF ANALYSIS

Work Order	: **EB2326214**	Page	: 1 of 5
Client	: **HMC ENVIRONMENTAL**	Laboratory	: Environmental Division Brisbane
Contact	: MARK TUNKS	Contact	: Customer Services EB
Address	: SUITE 29, LEVEL 2 75-77 WHARF STREET TWEED HEADS 2485	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: 07 5536 8863	Telephone	: +61-7-3243 7222
Project	: McDonald Place EVANS HEAD	Date Samples Received	: 25-Aug-2023 11:20
Order number	: 2023.531	Date Analysis Commenced	: 25-Aug-2023
C-O-C number	: ----	Issue Date	: 04-Sep-2023 15:21
Sampler	: MARK TUNKS		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 11		
No. of samples analysed	: 11		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Beatriz Llarinas	Senior Chemist - Inorganics	Brisbane Inorganics, Stafford, QLD
Beatriz Llarinas	Senior Chemist - Inorganics	Brisbane Soil Preparation, Stafford, QLD
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Tim Kuo	Approved Asbestos Identifier	Melbourne Asbestos, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- **EA200B conducted by ALS Melbourne, NATA accreditation no. 825, site no 13778**
- **EA200 Legend**
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: Analysis of asbestos from swabs and tapes is not covered under the current scope of NATA accreditation.
- EA200: N/A - Not Applicable

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	EHL1	EHL2	EHL3	EHL4	EHDUP
			Sampling date / time	23-Aug-2023 00:00	23-Aug-2023 00:00	23-Aug-2023 00:00	23-Aug-2023 00:00	23-Aug-2023 00:00
Compound	CAS Number	LOR	Unit	EB2326214-001	EB2326214-002	EB2326214-003	EB2326214-004	EB2326214-005
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	6.9	4.8	3.0	8.0	6.8
EG020T: Total Metals by ICP-MS								
Lead	7439-92-1	0.1	mg/kg	332	99.5	552	266	284

Analytical Results

Sub-Matrix: SOLID (Matrix: SOLID)			Sample ID	ACM1	ACM2	ACM3	ACM4	ACM5
			Sampling date / time	23-Aug-2023 00:00	23-Aug-2023 00:00	23-Aug-2023 00:00	23-Aug-2023 00:00	23-Aug-2023 00:00
Compound	CAS Number	LOR	Unit	EB2326214-007	EB2326214-008	EB2326214-009	EB2326214-010	EB2326214-011
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	**Yes**	**Yes**	**Yes**
Asbestos Type	1332-21-4	-	--	**-**	**-**	**Ch + Am**	**Ch + Am**	**Ch + Am + Cr**
Asbestos (Trace)	1332-21-4	-	-	**No**	**No**	**N/A**	**N/A**	**N/A**
Sample weight (dry)	----	0.01	g	**28.9**	**80.1**	**66.2**	**56.3**	**120**
Synthetic Mineral Fibre	----	-	-	**No**	**No**	**No**	**No**	**No**
Organic Fibre	----	-	-	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
APPROVED IDENTIFIER:	----	-	--	**T. KUO**	**T. KUO**	**T. KUO**	**T. KUO**	**T. KUO**

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2326214**	Page	: 1 of 4
Client	: **HMC ENVIRONMENTAL**	Laboratory	: Environmental Division Brisbane
Contact	: MARK TUNKS	Telephone	: +61-7-3243 7222
Project	: McDonald Place EVANS HEAD	Date Samples Received	: 25-Aug-2023
Site	: ----	Issue Date	: 04-Sep-2023
Sampler	: MARK TUNKS	No. of samples received	: 11
Order number	: 2023.531	No. of samples analysed	: 11

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Document Set ID: 1923967
Version: 1, Version Date: 07/05/2024

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
Total Metals by ICP-MS - Suite A	1	16	6.25	10.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
EHL1, EHL2, EHL3, EHL4, EHDUP	**23-Aug-2023**	**----**	----	**----**	**25-Aug-2023**	06-Sep-2023	✓
EG020T: Total Metals by ICP-MS							
Soil Glass Jar - Unpreserved (EG020X-T)							
EHL1, EHL2, EHL3, EHL4, EHDUP	**23-Aug-2023**	**26-Aug-2023**	19-Feb-2024	✓	**31-Aug-2023**	19-Feb-2024	✓

Matrix: **SOLID**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples							
Snap Lock Bag - ACM/Asbestos Grab Bag (EA200)							
ACM1, ACM2, ACM3, ACM4, ACM5	**23-Aug-2023**	**----**	----	**----**	**30-Aug-2023**	19-Feb-2024	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
EHRS1	**23-Aug-2023**	**26-Aug-2023**	19-Feb-2024	✓	**29-Aug-2023**	19-Feb-2024	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	15	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite X	EG020X-T	1	5	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Total Metals by ICP-MS - Suite X	EG020X-T	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Total Metals by ICP-MS - Suite X	EG020X-T	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Total Metals by ICP-MS - Suite X	EG020X-T	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Total Metals by ICP-MS - Suite A	EG020A-T	1	16	**6.25**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Total Metals by ICP-MS - Suite A	EG020A-T	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Total Metals by ICP-MS - Suite A	EG020A-T	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Total Metals by ICP-MS - Suite A	EG020A-T	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Total Metals by ICP-MS - Suite X	EG020X-T	SOIL	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Asbestos Identification in Bulk Solids	EA200	SOLID	In house: Referenced to AS 4964 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	EHRS1	----	----	----	----
				Sampling date / time	23-Aug-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2326214-006	--------	--------	--------	--------
					Result	----	----	----	----
EG020T: Total Metals by ICP-MS									
Lead	7439-92-1	0.001	mg/L		<0.001	**----**	**----**	**----**	**----**

Analytical Results

Descriptive Results

Sub-Matrix: **SOLID**

Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples		
EA200: Description	ACM1 - 23-Aug-2023 00:00	Grey fragment with attached organic matter and paint approx 85 x 65 x 5mm.
EA200: Description	ACM2 - 23-Aug-2023 00:00	Organic sheeting fragment with attached paint approx 120 x 110 x 5mm.
EA200: Description	ACM3 - 23-Aug-2023 00:00	Asbestos sheeting fragment with attached organic matter approx 140 x 130 x 5mm.
EA200: Description	ACM4 - 23-Aug-2023 00:00	Grey fragment with asbestos fibres, attached organic matter and paint approx 100 x 80 x 5mm.
EA200: Description	ACM5 - 23-Aug-2023 00:00	Brown fragments with asbestos fibres, attached organic and soil matter approx 50 x 40 x 5mm.

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(SOLID) EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples

QUALITY CONTROL REPORT

Work Order	: **EB2326214**	Page	: 1 of 3
Client	: **HMC ENVIRONMENTAL**	Laboratory	: Environmental Division Brisbane
Contact	: MARK TUNKS	Contact	: Customer Services EB
Address	: SUITE 29, LEVEL 2 75-77 WHARF STREET TWEED HEADS 2485	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: 07 5536 8863	Telephone	: +61-7-3243 7222
Project	: McDonald Place EVANS HEAD	Date Samples Received	: 25-Aug-2023
Order number	: 2023.531	Date Analysis Commenced	: 25-Aug-2023
C-O-C number	: ----	Issue Date	: 04-Sep-2023
Sampler	: MARK TUNKS		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 11		
No. of samples analysed	: 11		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Beatriz Llarinas	Senior Chemist - Inorganics	Brisbane Inorganics, Stafford, QLD
Beatriz Llarinas	Senior Chemist - Inorganics	Brisbane Soil Preparation, Stafford, QLD
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Tim Kuo	Approved Asbestos Identifier	Melbourne Asbestos, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5258844)									
EB2325965-001	Anonymous	EA055: Moisture Content	----	0.1	%	0.3	0.4	0.0	No Limit
EB2326214-001	EHL1	EA055: Moisture Content	----	0.1	%	6.9	7.0	0.0	0% - 20%
EG020T: Total Metals by ICP-MS (QC Lot: 5258842)									
EB2326214-001	EHL1	EG020X-T: Lead	7439-92-1	0.1	mg/kg	332	314	5.5	0% - 20%

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG020T: Total Metals by ICP-MS (QC Lot: 5260393)									
EB2325963-001	Anonymous	EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 5258842)								
EG020X-T: Lead	7439-92-1	0.1	mg/kg	<0.1	47.89 mg/kg	107	85.0	117

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 5260393)								
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	102	89.0	112

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 5258842)							
EB2326214-002	EHL2	EG020X-T: Lead	7439-92-1	250 mg/kg	95.9	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 5260393)							
EB2326237-001	Anonymous	EG020A-T: Lead	7439-92-1	1 mg/L	106	70.0	130