Statement of Advice

The Maltings, Mittagong

Section 4.55 Modification Application – Traffic and Transport Impacts

CLIENT: Colliers Project Leaders	**DATE:** 29 February 2024
SLR PROJECT No: 610.31093.00001	**REVISION:** v1.5
AUTHOR: Charlie Seventekin	**REVIEWER:** Brett McClurg

1.0 Introduction

1.1 Background

SLR Consulting Australia Pty Ltd (SLR) have been engaged by Colliers Project Leaders (Colliers) to undertake an assessment of the traffic matters in respect of a Section 4.55 modification application (MOD) to the already approved The Maltings, Mittagong development (Council Ref: DA20/1400).

On 13 May 2022, development consent was granted by the Land and Environment Court of New South Wales for a staged development application (DA) relating to 2 Colo Street, Mittagong, commonly known as "The Maltings" (the site).

The approved proposal comprised the following:

- A development concept for adaptive re-use of the site.
- A detailed design for alterations and additions to the former malthouses (M1, M2, Southern Sheds and M3).
- A detailed design for the redevelopment of Maltster's Cottage and construction of a new Northern Shed to accommodate a range of uses in multi-purpose spaces for art, exhibitions, functions, recreation activities and performances, as well as the construction of a new hotel with ancillary uses (M4).
- The detailed design scheme encompasses site works, including rehabilitation of the riparian corridor along the Nattai River. The approved proposal also includes a development concept for potential residential and/or visitor accommodation (M5/M6).

The site address is 2 Colo Street, Mittagong, and the site is more formally described as Lot 21 of Deposited Plan (DP) 1029384.

1.2 Application

Plans for the proposed development have been prepared by Snohetta. A copy of the revised (final, Rev E, dated 12 Feb 2024) development plans is included in **Appendix A**.

The existing development consent (Council Ref: DA20/1400) for adaptive re-use of the site is proposed to be amended via two separate but related applications that are prepared concurrently.

These two separate applications are as follows:

- A DA to undertake alterations, additions, and adaptive re-use of Maltings M3, and amendment to the façades and interiors of the M4 hotel.
- A Section 4.55 MOD to revise the design of the alterations, additions and adaptive re-use of Maltings M1, M2 and the Southern Sheds; and the design of the new Northern Shed and the redevelopment of Maltster's Cottage.

SLR has reviewed the proposed architectural detailing and revisions to the plans, which include, from a traffic engineering perspective, the following:

- Increase the total car parking provisions to satisfy the court orders.
- Further detailing of the proposed parking arrangements in three car parks.
- Further detailing of the access arrangements from Colo Street, Southey Street and Ferguson Crescent.
- Further detailing of the addition of a new internal pedestrian bridge connecting M1+M2 to M3+M4.
- Modifications to the underground car parking and drop-off area near M3+M4.
- Addition of one Guest Suite in M3.

1.3 Assessment Scope

This Statement of Advice assesses the consistency of the revised architectural drawings with Council and State planning and the Conditions of Consent issued by the Land and Environment Court of New South Wales. This Statement of Advice also evaluates the impacts of the proposed development on the surrounding transport network in comparison with the traffic generation of the approved development.

This Statement of Advice also identifies the need for any additional/ changed transport infrastructure required to support the development (compared with the approved development) and provides an assessment of the change to traffic- and transport-specific aspects of the development against the requirements of the following relevant authorities:

- Wingecarribbee Shire Council.
- Transport for New South Wales (TfNSW).
- The Land and Environment Court of New South Wales.

It is critical to note that this Statement of Advice should be read in conjunction with the following documents, which are listed in chronological order:

- Approved Plans: 867048333_1_TAB 6 - Architectural Plans prepared by Snohetta dated 05 May 2020. See **Appendix B**.
- Previous Traffic Analysis-1: 865395563_1_80020031_Maltings TIA_v02_w App dated 12 May 2020. See **Appendix C**.

- Previous Traffic Analysis-2: 865395593_1_80020032_Maltings RFI 1 Traffic_v02_w App dated 22 December 2020. See **Appendix D**.
- TfNSW Response: 865395543_1_20210401 TfNSW response_A-11383 dated 01 April 2021. See **Appendix E**.
- Previous Traffic Analysis-3: 865395543_1_20210401 TfNSW response_A-11383 dated 08 June 2021. See **Appendix F**.
- Conditions of Consent: 949895373_1_Notice of Orders, Annexures A and B dated 13 May 2022. See **Appendix G**.

2.0 Approved Development

On 13 May 2022, development consent was granted by the Land and Environment Court of New South Wales for a staged development application (DA) relating to the subject site.

Based on a review of the plans, it is understood that the approved development comprised the following land uses, yields and/ or room numbers:

- M1+M2 Building: 4,869 sqm of gallery space.
- M3+M4 Building: 40 hotel rooms and 1 suite for the owner at M4 (total 41 rooms) and gallery space of 912 sqm at M3.
- The Maltster's House: 217 sqm of gallery space.

The Conditions of Consent issued by the Land and Environment Court of New South Wales required the following from a traffic engineering perspective:

- 139 off-street car parking spaces.
- Sufficient number of People with Disability parking spaces.
- Limitation on the guest numbers at M1+M2, being a maximum of 200 for events that finish between 3pm and 6pm on a weekday (excluding public holidays).

3.0 Modification Application

3.1 Proposed Modifications (General)

There is a variety of architectural modifications proposed with this application, including the following:

- Architectural revisions to M1+M2, mainly in relation to internal operations specific to the Galleries. It is proposed that the gross floor area will be reduced (by 2.3%) to 4,754 sqm from the already approved 4,869 sqm.
- Consistent with Clause 142, Attachment 1, Sub-Clause 4 of the Conditions of Consent issued by the Land and Environment Court of New South Wales, no changes are proposed to the maximum guest numbers at M1+M2. Guest numbers will be capped at 200 for events that finish between 3pm and 6pm on a weekday (excluding public holidays).
- Architectural revisions to M3+M4, including a reduction in gallery space at M3 from the approved 912 sqm to the proposed 869 sqm (4.7%). It is important to note that no changes are proposed to the number of rooms in the hotel (M4); however, one new Guest Suite is proposed at M3.

- Architectural revisions to the Maltster's House, including a reduction in gallery space from the approved 217 sqm of GFA to 184 sqm of GFA.

3.2 Site Access

It is proposed that the approved site access arrangements will be retained. The approved site access locations are as follows:

- Colo Street access crossover for the guests of M1+M2 and M3+M4 (light vehicles and minibuses). The existing Conditions of Consent allow all turn movements at this access driveway.
- Southey Street access crossover for the guests of M3+M4 and service vehicles for M3+M4 (up to 10.2m long rear loading refuse collection vehicle). In the initial development application, this access was proposed to be used for outbound vehicles only. With this s4.55 application, it is proposed that this access will be an all-movements driveway, including left-turn in and right-turn in movements. The existing Conditions of Consent allow all turn movements at this access driveway.
- Ferguson Street access crossover for staff and service vehicles only (up to 12.5m long heavy rigid vehicles and fire trucks). The existing Conditions of Consent allow all turn movements at this access driveway, limited to staff and service vehicles only.

3.3 Emergency Vehicle Access

No changes are proposed to the approved emergency vehicle access arrangements.

3.4 Car Parking

The previous Traffic Impact Assessment (TIA) reports prepared for the initial development application proposed the provision of 139 off-street parking spaces within the boundaries of the site. This quantum of supply is consistent with the orders of the Land and Environment Court of New South Wales (a minimum of 139 car parking spaces be provided).

The s4.55 modification application proposes the provision of 140 car parking spaces with the following composition:

- M1+M2 (Guests): 72 car parking spaces, including two parking spaces for people with a disability.
- M1+M2 (Staff): 13 car parking spaces, including one parking space for people with a disability.
- M3+M4 (Guests): 51 car parking spaces, including four parking spaces in the basement, one of which is a parking space for people with a disability.
- M3+M4 (Hotel Operator): 4 garage spaces that are not shown in the plans.

3.5 Servicing

The approved servicing arrangements will generally be retained. The proposed servicing arrangements in the initial development application were as follows:

- *Colo Street driveway would facilitate majority of all visitors to M1/ M2 and hotel guest of M3/ M4.*

- *Southey Street would be for outbound hotel guests of M3/ M4 and staff. Future access from the M5/ M6 car park would be via Southey Street and would be subject to a detailed assessment at the DA stage.*
- *Ferguson Crescent would be staff and BOH deliveries only. No visitor access would be granted from this location.*

With this s4.55 application, the following modifications are proposed (consistent with the existing Conditions of Consent):

- Colo Street driveway will still facilitate all guests of M1/ M2; however, it will share the traffic load with Southey Street access for guests of M3/ M4 through the utilisation of the approved vehicular bridge.
- Southey Street will be for both inbound and outbound hotel guests of M3/ M4. Future access from the M5/ M6 car park will also be via Southey Street.
- No changes are proposed to the approved access arrangements (for staff and service vehicles only) at the Ferguson Crescent access.

4.0 Design Considerations

4.1 Overview

A review of the internal traffic arrangements, as shown in the development plans included in **Appendix A**, was undertaken for the modified items against the following relevant documents:

- Conditions of Consent issued by the Land and Environment Court of New South Wales.
- Australian Standards for Parking Facilities Part 1: Off-Street Car Parking (AS2890.1:2004).
- Australian Standards for Parking Facilities Part 2: Off-Street Commercial Vehicle Facilities (AS2890.2:2018).
- Australian Standards for Parking Facilities Part 6: Off-Street Parking for People with Disabilities (AS2890.6:2022).

4.2 Statutory Requirements

4.2.1 Internal Traffic Arrangements

The traffic engineering design has been assessed against the requirements within AS2890.1 and AS2890.6.

This assessment is summarised in **Table 1**.

Table 1 Car Park and Circulation Compliance Review

Component	AS2890 Requirements	Proposed Provision	Complies
Parking Spaces	2.5m wide x 5.4m long with a 5.8m wide aisle (User Class 2)	2.5m wide x 5.4m long with 5.8m+ wide aisle	✓
PWD Parking Spaces	2.4m x 5.4m space plus 2.4m x 5.4m adjacent area	2.4m+ x 5.4m space + 2.4m x 5.4m adjacent area	✓

Component	AS2890 Requirements	Proposed Provision	Complies
Blind Aisle End Space	Aisle length extended by 1m	No blind aisles.	NA
Parking Spaces Next to Walls	300mm parking space extension	No parking spaces next to walls.	NA
Loading Bays	3.5m wide	More than 3.5m wide.	✓
Parking Module Gradients	1:40 (2.5%) maximum – any direction.	Not shown but must comply in the detailed design drawings.	NA
Driveway Transitions	1 in 8 for a minimum 2.0m	Not shown but must comply in the detailed design drawings.	NA

The proposed development plans satisfy the requirements of the items listed in **Table 1** above.

All driveways will have a width larger than the minimum dimensions specified as per AS2890.1 following the development of the detailed design drawings. At a concept level, swept path assessments have been provided in **Appendix H** to illustrate that sufficient widths can be achieved. Appropriate internal directional signage will also be designed and implemented at the access locations to provide guidance for guests to the relevant facilities as part of the detailed design.

In the absence of the Council's standard engineering drawings for the driveway crossovers, reference should be made to the Australian Standards in the detailed design stage. The largest vehicle that will frequent the site is anticipated to be the 10.2m long rear-loading refuse collection vehicle (RCV). The Ferguson Crescent access will also be able to accommodate the infrequent emergency vehicles, such as a 12.5m long heavy rigid truck (fire truck). Consistent with AS2890.2, the infrequent emergency vehicles can occupy the full width of the driveway (and the opposing trafficable lane) at Ferguson Crescent in emergency situations.

4.2.2 Site Access

No modifications are proposed to the approved site accesses. It is understood that the detailed geometric attributes of the site accesses will be provided following the completion of the detailed design. However, at a concept level, swept path assessments have been provided in **Appendix H**.

On this basis, the proposed site access arrangements are considered consistent with the relevant requirements.

4.2.3 Car Parking Provisions

The minimum car parking provisions required by the Conditions of Consent by the order of the Land and Environment Court of New South Wales is 139 car parking spaces. Plans provided by the architect for this s4.55 application propose a total of 140 car parking spaces (an increase of one parking space) to accommodate the proposed new "Guest Suite" at M3.

For a conservative parking assessment, the reduction in gallery space for M1+M2 (reduced by 2.3%) and M3+M4 (reduced by 4.7%) was not taken into account (refer to **Section 3.1**).

On this basis, the proposed car parking provisions are considered satisfactory and consistent with the Conditions of Consent.

4.2.4 Queuing Provisions

No modifications are proposed to the approved car parking locations or the distance between the parking areas and public street frontages. Also, due to the nature of the land use, it is anticipated that the guests will not arrive at the site in a very short period.

4.2.5 PWD Car Parking Provisions

Clause 37 of the Conditions of Consent issued by the Land and Environment Court of New South Wales requires the following to be met:

- *Sufficient parking for disabled persons must be provided to ensure compliance with any applicable legislation. These spaces shall be constructed and identified in accordance with Volume 1 of the National Construction Code (NCC) and AS/NZS 2890.6 - Parking Facilities; Off-street parking for people with disabilities. Details to demonstrate compliance shall be submitted to and approved by the Certifying Authority prior to the issue of the Construction Certificate.*

The Building Code of Australia (BCC – formerly known as NCC) stipulates the parking requirements for "People with a Disability" based on the building classification. The buildings proposed as part of the development are categorised as "Class 3" and "Class 6" buildings by the BCA, and as such, require one "People with a Disability" parking space for every 50 car parking spaces or part thereof (for up to 1,000 parking spaces).

The site plan for the proposed development indicates four (4) accessible car parking spaces for a total of 140 car parking spaces in the wider development, which is consistent with the BCA requirements.

4.2.6 Bicycle Parking Provisions

The Conditions of Consent issued by the Land and Environment Court of New South Wales does not require the provision of bicycle parking spaces, and therefore, plans provided in **Appendix A** are considered compliant in this regard.

Following a review of the Council's Development Control Plan (DCP), no requirements were identified in this document for the provision of bicycle parking spaces.

However, it is recommended that a number of bicycle parking spaces be provided for staff in consultation with the Council as part of the detailed design development.

4.2.7 Servicing Considerations

Clause 38 of the Conditions of Consent ordered by the Land and Environment Court of New South Wales requires the following in relation to the site servicing:

The Construction Certificate plans must demonstrate that the car park is designed to accommodate the turning movements of the largest vehicle servicing the development. The car park design shall incorporate the following:

(a) The site shall accommodate the turning movements of applicable service vehicles.

(b) Service vehicles shall manoeuvre into and out of the site in a forward direction.

(c) The front overhang, and swept path made by the service vehicle shall not obstruct car park traffic or encroach onto parking spaces.

(d) The vehicle swept path shall be reflected on the engineering design plans.

(e) Loading and unloading of service vehicles shall be undertaken onsite with no intrusion onto the road system.

(f) The footpath crossing shall be splayed from the property boundary to the kerb line to accommodate the swept path made by the service vehicle.

At a concept level, the swept path assessments that are provided in **Appendix H** illustrate that the plans accompanying this s4.55 application satisfy the requirements of the Conditions of Consent issued by the Land and Environment Court of New South Wales.

It is understood that the detailed access crossover drawings will be provided as part of the detailed design development at a later stage.

5.0 Operational Assessment

Based on SLR's review of the already approved and the modified plans accompanying this s4.55 application, it has been identified that no modifications are proposed that could result in any discernible increase in parking requirements or the traffic generation potential of the development (compared to the current approval).

Clause 142, Attachment 1, Sub-Clause 4 of the Conditions of Consent issued by the Land and Environment Court of New South Wales requires the following:

For the life of the development:

- *No events are to finish between 3pm and 6pm on a weekday (excluding public holidays) where the total attendance numbers associated with the use of the M1 and M2 buildings combined are greater than 200 persons.*
- *The owner/ operator shall keep records of the maximum number of patrons within the M1 and M2 building for each day the buildings are operating/ open for business. This information must be provided to either Council or TfNSW upon request.*
- *The requirements of the approved TMP shall be implemented.*
- *Directional signage required by these conditions (both within the site and external to the site) shall be maintained by the site owner/operator for the life of the development.*

Based on the discussions undertaken by the applicant, it is understood that there is no intention to organise events that accommodate more than 200 persons in M1+M2, which will finish between 3pm and 6pm on a weekday.

It is also understood that the operator will keep records of the maximum number of patrons within M1+M2 for each day the buildings are operating/ open for business.

Consistent with Clause 112 of the Conditions of Consent issued by the Land and Environment Court of New South Wales, a traffic management plan (TMP) will be prepared by the applicant prior to the issue of an Occupation Certificate if the applicant has intentions to organise an event with more than 200 persons that could finish between 3pm and 6pm on a weekday.

The GFA for M1+M2 will be reduced by 2.3% from the approved 4,869 sqm to the proposed 4,754 sqm.

The GFA for the Maltster's House will be reduced to 184 sqm from the approved 217 sqm.

The gallery space at M3+M4 will be reduced by 4.7% from the approved GFA of 912 sqm to the proposed GFA of 869 sqm. It is important to note that the proposed new "Guest Suite" at M3 will generate minimal traffic. According to the RTA Guide (2002), the anticipated traffic generation of a hotel room is approximately 0.4 vehicles in the afternoon peak hour.

Given the reduction in GFA for M1+M2, The Maltster's House and M3+M4, it is not considered necessary to undertake a revised Traffic Impact Assessment.

As discussed in **Section 4.2.1** of this letter, appropriate internal directional signage will also be designed and implemented at the access locations to provide guidance for guests to the relevant facilities as part of the detailed design.

Based on the above, this s4.55 modification application is considered compliant and consistent with the relevant requirements of the Conditions of Consent issued by the Land and Environment Court of New South Wales.

6.0 Conclusions and Summary

SLR Consulting Australia Pty Ltd (SLR) has been engaged by Colliers to undertake an assessment of the traffic and parking matters in respect of a Section 4.55 modification application and a new DA for the already approved The Maltings, Mittagong development.

The existing development consent (Council Ref: DA20/1400) for adaptive re-use of the site is proposed to be amended via two separate but related applications that are prepared concurrently.

These two separate applications are as follows:

- A DA to undertake alterations, additions, and adaptive re-use of Maltings M3, and amendment to the façades and interiors of the M4 hotel.
- A Section 4.55 MOD to revise the design of the alterations, additions and adaptive re-use of Maltings M1, M2 and the Southern Sheds; and the design of the new Northern Shed and the redevelopment of Maltster's Cottage.

The approvals for the development were obtained by the Land and Environment Court of New South Wales on 13 May 2022. Development plans have been prepared by Snohetta. A copy of the revised (final) development plans is included in **Appendix A**.

Based on the analysis and discussion documented herein, the following is concluded:

- There are no modifications proposed to the already approved vehicular access arrangements, and therefore, the modified plans are considered consistent with the relevant clauses of the Conditions of Consent issued by the Court.
- The trafficable design, including access, circulation, car parking and servicing are appropriate and consistent with the applicable provisions of the AS2890 suite of Australian Standards.
- No events will finish between 3pm and 6pm on a weekday (excluding public holidays) where the total attendance numbers associated with the use of the M1+M2 buildings combined are greater than 200 persons, consistent with Clause 142 Attachment 1 Subclause 4a of the Conditions of Consent.
- The GFA for M1+M2 will be reduced by 2.3% from the approved GFA of 4,869 sqm to the proposed GFA of 4,754 sqm.
- The gallery space at M3+M4 will be reduced by 4.7% from the approved GFA of 912 sqm to the proposed GFA of 869 sqm. It is important to note that the proposed new "Guest Suite" at M3 will generate minimal traffic. According to the RTA Guide (2002), the anticipated traffic generation of a hotel room is approximately 0.4 vehicles in the afternoon peak hour.
- The minimum car parking provisions required by the Conditions of Consent by the order of the Land and Environment Court of New South Wales is 139 car parking

spaces. Plans provided by the architect for this s4.55 application propose a total of 140 car parking spaces (an increase of one parking space) to accommodate the proposed new "Guest Suite" at M3.

- Given the reduction in GFA for M1+M2 and M3+M4, it is not considered necessary to undertake a revised Traffic Impact Assessment.
- The proposed development includes sufficient parking for persons with a disability and complies with the BCA.
- The proposed development includes provision for several loading bays that can accommodate the frequent 10.2m long refuse collection vehicle and the infrequent 12.5m long heavy rigid vehicle (for fire trucks). Maintenance and deliveries will be undertaken by smaller vehicles. All vehicles can be accommodated by the proposed design and can enter and exit the site in forward gear.
- The proposed modifications will not increase the already approved traffic generation potential of the development, in particular the events at M1+M2 buildings that will finish between 3pm and 6pm on a weekday.

Based on the above, in SLR's professional traffic engineering view, this s4.55 modification application and the new development application are consistent with the Conditions of Consent issued by the Land and Environment Court of New South Wales dated 12 May 2022.

Appendix A Development Plans

Cover Sheet + Drawing Index

The Maltings

Mittagong, NSW

M1, M2, MALTSTER'S HOUSE

SHEET LIST S.4.55 SERIES

No.	Title	Current Revision	Sheet Sequence SNØ	Sheet Series SNØ	Current Revision Date
M1/2 000	Cover Sheet + Drawing Index	E	0000 - Preliminaries	Cover	12.02.2024
M1/2 002	GFA Schedules	E	0000 - Preliminaries	Legends	12.02.2024
M1/2 0100	M1/M2 Site plan	E	0100 - Overview Precinct	Site	12.02.2024
M1/2 0300	M1/2 Demolition Plan - Ground (L00) - L01	E	0300 - Demolition	1-300	12.02.2024
M1/2 0301	M1/2 Demolition Plan - L02 - L03	E	0300 - Demolition	1-300	12.02.2024
M1/2 0302	M1/2 Demolition Plan - Roof	E	0300 - Demolition	1-300	12.02.2024
M1/2 1100	M1/2 Plan Ground (L00)-01	E	1100 - General Arrangement - Floor Plans	1-300	12.02.2024
M1/2 1101	M1/2 Plan L02-03	E	1100 - General Arrangement - Floor Plans	1-300	12.02.2024
M1/2 1102	M1/2 Plan Roof	E	1100 - General Arrangement - Floor Plans	1-300	12.02.2024
M1/2 1801	M1/2 GFA Plans	E	1800 - Other Project Required Plans	1-300	12.02.2024
M1/2 2000	M1/2 Elevations (Exterior)	E	2000 - Elevations (Exterior)	1-100	12.02.2024
M1/2 3000	M1/2 Sections	E	3000 - Sections	1-100	12.02.2024
M1/2 + MH 6000	M1/2 + MH Materials Schedule	E	6000 - Schedules & Diagrams	Schedules	12.02.2024
M1/2 + MH 8000	M1/2 + MH Shadow Study - June 21	E	8000 - Shadows	Shadows	12.02.2024
M1/2 + MH 8001	M1/2 + MH Shadow Study Comparison - June 21	E	8000 - Shadows	Shadows	12.02.2024

MH 0300	Maltster's House Demolition Plan - Ground (L00)	E	0300 - Demolition	1-100	12.02.2024
MH 1100	Maltster's House Plan - Ground (L00)	E	1100 - General Arrangement - Floor Plans	1-100	12.02.2024
MH 1101	Maltster's House Plan Roof	E	1100 - General Arrangement - Floor Plans	1-100	12.02.2024
MH 1801	Maltster's House Area Plans	E	1800 - Other Project Required Plans	1-200	12.02.2024
MH 2000	Maltster's House Elevations (Exterior)	E	2000 - Elevations (Exterior)	1-100	12.02.2024
MH 3000	Maltster's House Sections	E	3000 - Sections	1-300	12.02.2024

Reference Map

0 1 2 5 10 m

Scale 1:100

Notes

Figured dimensions take precedence to scaled readings.| All dimensions are in millimetres unless noted otherwise. | Dimensions are to be verified on Site prior to Project Commencement. | Any discrepancies are to be reported to Snøhetta in writing for decision before proceeding with work. | Drawing is to be read in conjunction with all relevant and associated material, Contracts, Specifications and Drawings. | This drawing is an uncontrolled copy, unless noted otherwise.

Revision	Description	Date
E	For S.4.55 Application	12.02.2024
D	Final Draft	20.12.2023

Consultant

Consultant

Consultant

Project

THE MALTINGS

MITTAGONG NSW 2575

Client

MEDICH FAMILY OFFICE

Consultant

Snøhetta

Snøhetta Australasia Pty Ltd ABN 74 612 295 735
178 Sturt Street,
Adelaide SA 5000 Australia

Status

For S.4.55 Application

Title

0000 - Preliminaries

Cover Sheet + Drawing Index

Scale @ A1	Drawn	Reviewed	Approved
	SNO	SM	KK

Project Number	Sheet Number	Rev
18-17	M1/2 000	E

Original Sheet Format A1 | 841 x 594mm

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GFA Schedules

M1 / M2

Area Schedule (AREA_GFA)		
Name	Level	Area
M1/2 Ground		
M1 + M2	M1/2 Ground	2385 m²
M1 + M2 Sheds	M1/2 Ground	698 m²
		3083 m²
M1/2 L01		
M1 + M2	M1/2 L01	651 m²
		651 m²
M1/2 L02		
M1 + M2	M1/2 L02	913 m²
		913 m²
M1/2 L03		
M1 + M2	M1/2 L03	107 m²
		107 m²
Grand total		4754 m²

Maltster's house

Area Schedule (AREA_GFA)		
Name	Level	Area
MH Ground	MH - L00 (Ground)	122 m²
MH Ground	MH - L00 (Ground)	62 m²
Grand total: 2		184 m²

Reference Map

0 1 2 5 10 m

Scale 1:100

Notes

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Revision	Description	Date
E	For S.4.55 Application	12.02.2024
D	Final Draft	20.12.2023

Consultant

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Project
THE MALTINGS
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Status
For S.4.55 Application

Title
0000 - Preliminaries
GFA Schedules

Scale @ A1	Drawn	Reviewed	Approved
	SNO	SM	KK

Project Number	Sheet Number	Rev
18-17	M1/2 002	E

Original Sheet Format A1 | 841 x 594mm

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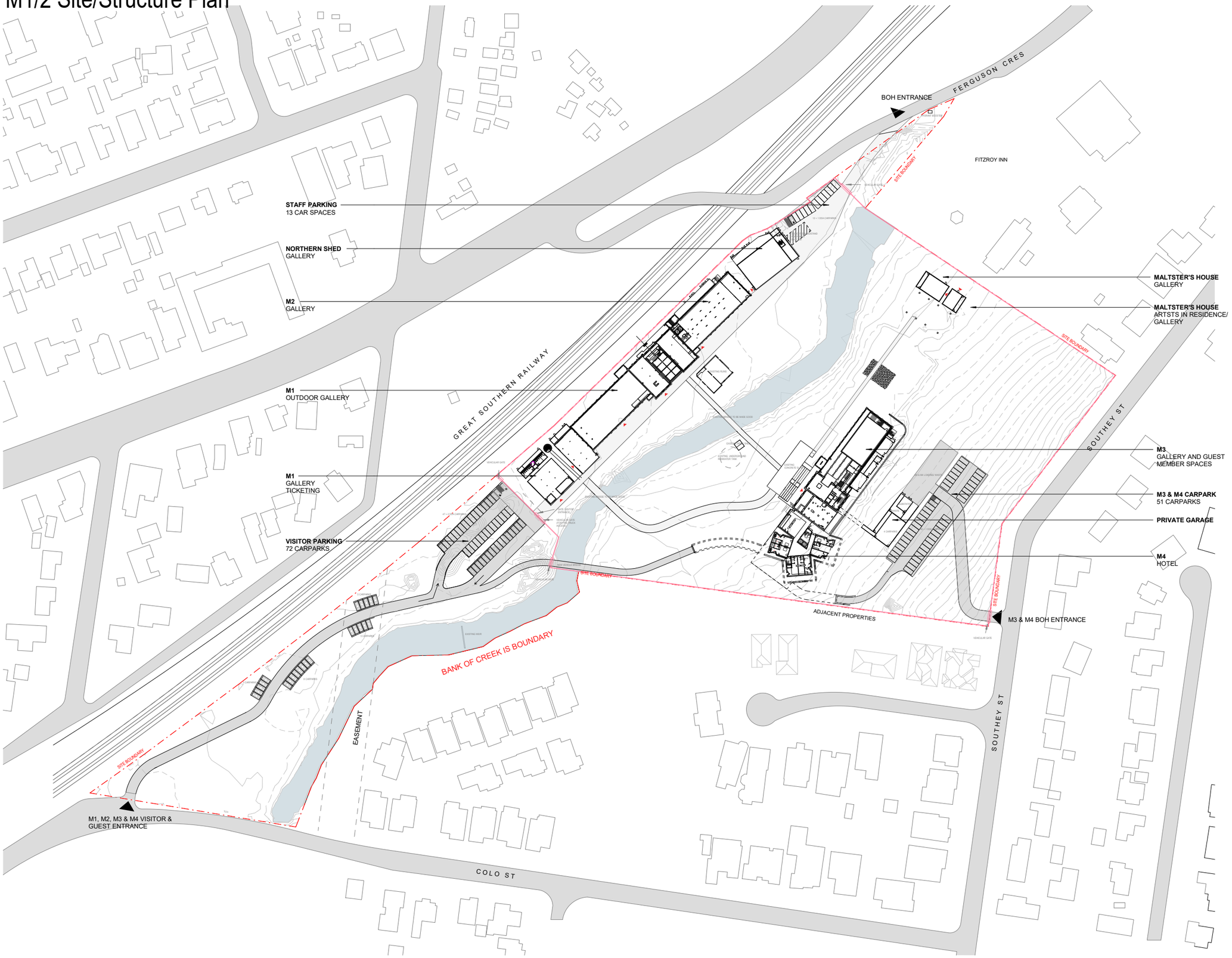
M1/2 Site/Structure Plan



Reference Map

North

0 10 20 50 100 m

Scale 1:1000

Notes

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LEGEND

- SITE BOUNDARY
- VEHICLE ENTRANCE
- PUBLIC ENTRANCE
- CREEK
- PATH
- VEHICLE ROAD
- NEW SECURITY FENCE

Revision	Description	Date
E	For S.4.55 Application	12.02.2023
D	Final Draft	20.12.2023

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The Maltings
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Adelaide SA 5000 Australia

Status
For S.4.55 Application

Title
0100 - Overview Precinct
M1/2 Site/Structure Plan

Scale @ A1	Drawn	Reviewed	Approved
1 : 1000	MC	SM	KK

Project Number	Sheet Number	Rev
18-17	0100	E

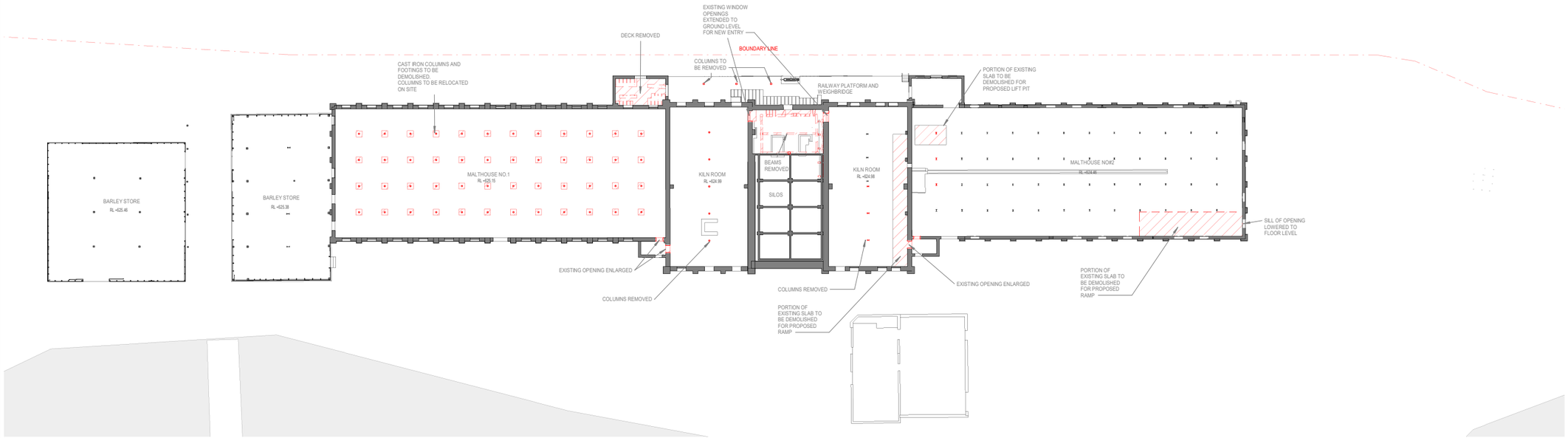
Original Sheet Format A1 | 841 x 594mm

BIM 360://The Maltings/MLTGS_SNØ_AR_MOD_SITE_0001.rvt
13/02/2024 5:28:59 PM

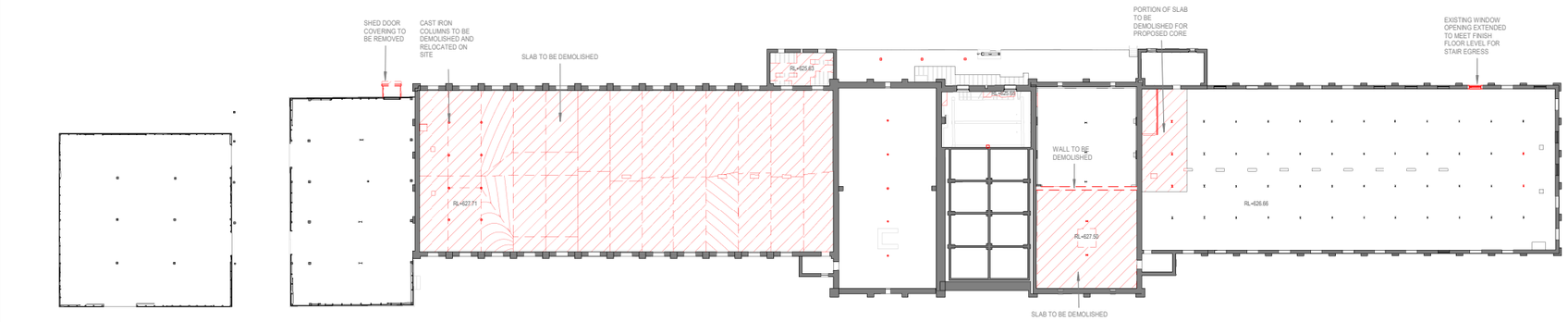
M1/2 Demolition Plan - Ground (L00) - L01

To be demolished

Portion of slab/roof to be demolished



1 M1/2 Demolition Plan - Ground L00
1 : 300



2 M1/2 Demolition Plan - L01
1 : 300

Reference Map

North

0 3 6 15 30 m

Scale 1:300

Notes

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Revision	Description	Date
E	For S.4.55 Application	12.02.2024
D	Final Draft	20.12.2023
C	For Coordination	08.12.2023
B	For Coordination	29.11.2023
A	For Coordination	03.11.2023

Consultant

Consultant

Consultant

Project
THE MALTINGS
MITTAGONG NSW 2575

Client
MEDICH FAMILY OFFICE

Consultant
Snøhetta
Snøhetta Australasia Pty Ltd ABN 74 612 295 735
178 Sturt Street,
Adelaide SA 5000 Australia

Status
For S.4.55 Application

Title
0300 - Demolition
M1/2 Demolition Plan - Ground (L00) - L01

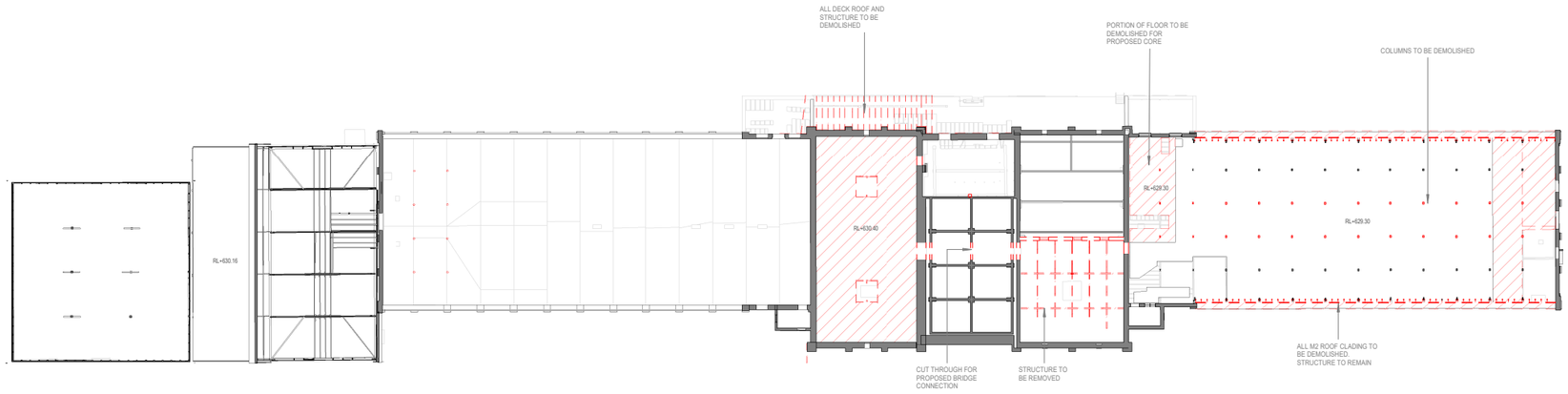
Scale @ A1	Drawn	Reviewed	Approved
As indicated	SNO	SM	KK

Project Number	Sheet Number	Rev
18-17	M1/2 0300	E

Original Sheet Format A1 | 841 x 594mm

BIM 360://The Maltings/MLTGS_SN0_AR_MOD_M1+2_0001.rvt
13/02/2024 5:33:10 PM

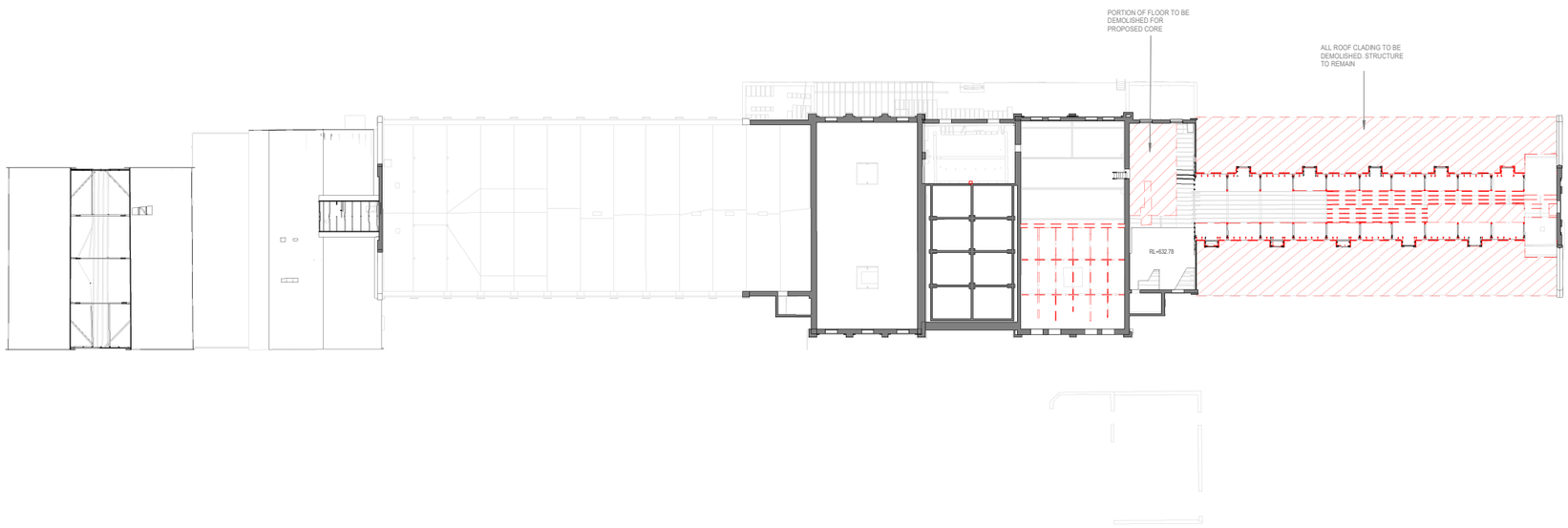
M1/2 Demolition Plan - L02 - L03



To be demolished

Portion of slab/roof to be demolished

1 M1/2 Demolition Plan - L02
1 : 300



2 M1/2 Demolition Plan - L03
1 : 300

Reference Map

North

0 3 6 15 30 m

Scale 1:300

Notes

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Status
For S.4.55 Application

Title
0300 - Demolition
M1/2 Demolition Plan - L02 - L03

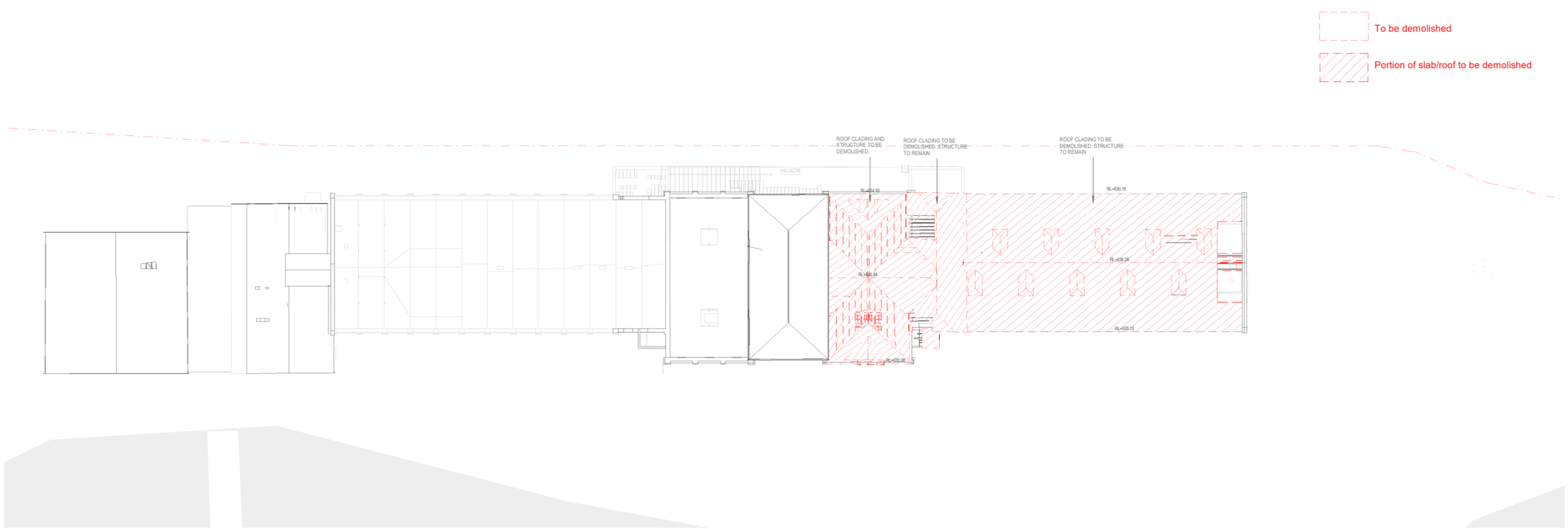
Scale @ A1	Drawn	Reviewed	Approved
As indicated	SNO	SM	KK

Project Number	Sheet Number	Rev
18-17	M1/2 0301	E

Original Sheet Format A1 | 841 x 594mm

BIM 360://The Maltings/MLTGS_SNO_AR_MOD_M1+2_0001.rvt
13/02/2024 5:33:12 PM

M1/2 Demolition Plan - Roof



1 M1/2 Demolition Plan - Roof
1 : 300

Reference Map

North

0 3 6 15 30 m

Scale 1:300

Notes

Figured dimensions take precedence to scaled readings.| All dimensions are in millimetres unless noted otherwise. | Dimensions are to be verified on Site prior to Project Commencement. | Any discrepancies are to be reported to Snøhetta in writing for decision before proceeding with work. | Drawing is to be read in conjunction with all relevant and associated material, Contracts, Specifications and Drawings. | This drawing is an uncontrolled copy, unless noted otherwise.

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Adelaide SA 5000 Australia

Status
For S.4.55 Application

Title
0300 - Demolition
M1/2 Demolition Plan - Roof

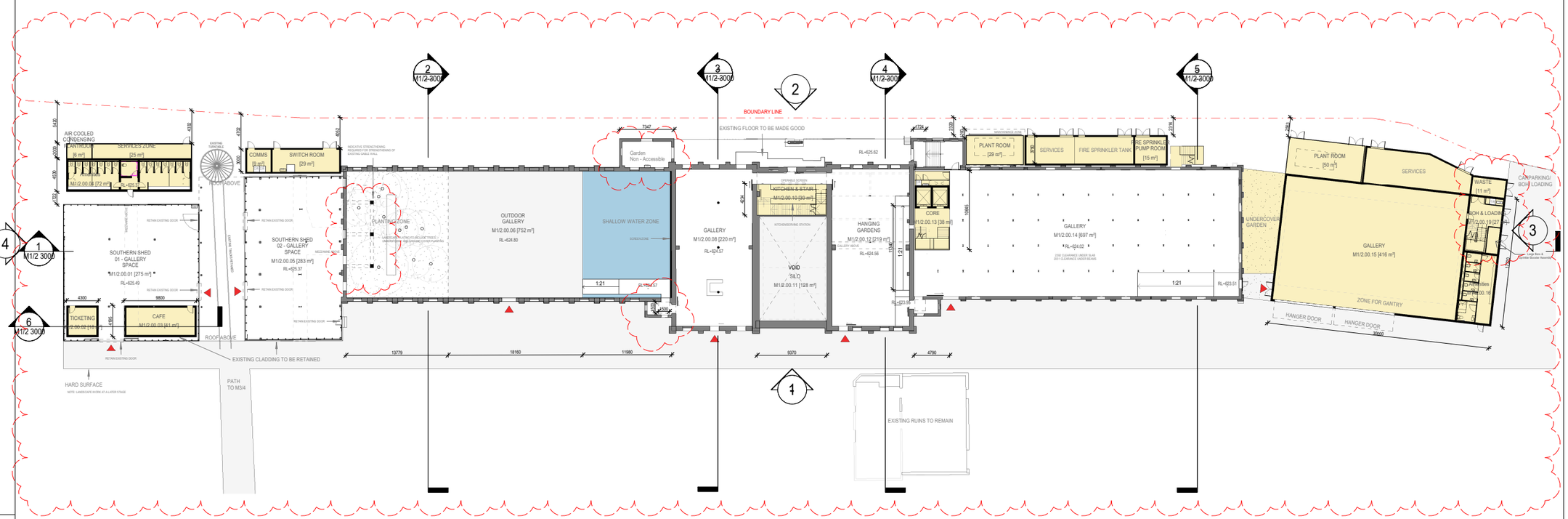
Scale @ A1	Drawn	Reviewed	Approved
As indicated	SNO	SM	KK

Project Number	Sheet Number	Rev
18-17	M1/2 0302	E

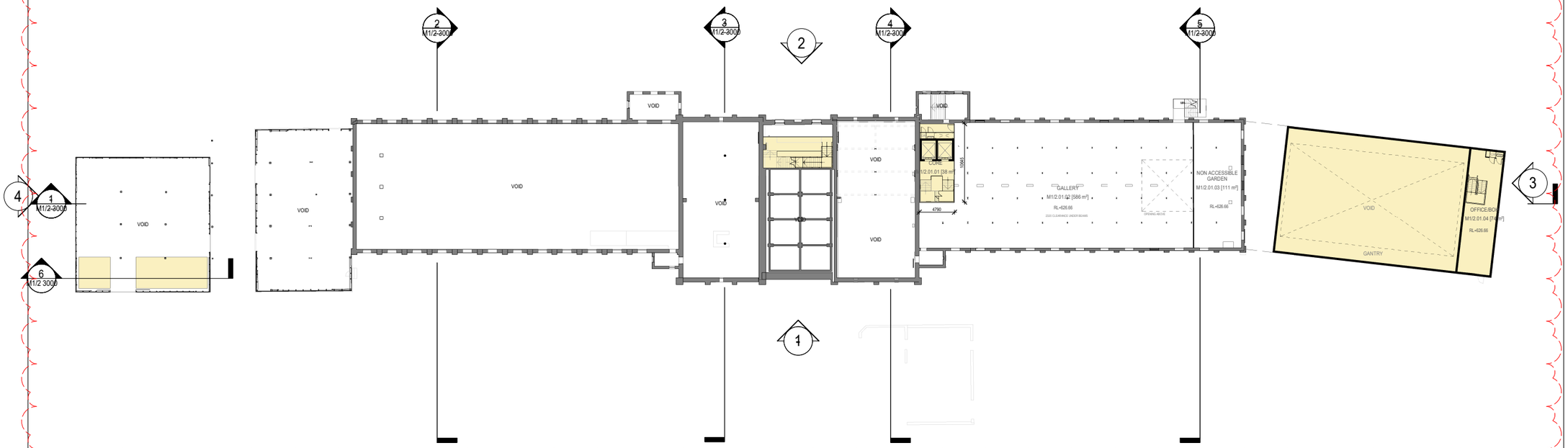
Original Sheet Format A1 | 841 x 594mm

BIM 360://The Maltings/MLTGS_SNØ_AR_MOD_M1+2_0001.rvt
13/02/2024 5:33:15 PM

M1/2 Plan Ground (L00)-01



1 M1/2 Ground
1 : 300



2 M1/2 L01
1 : 300

Reference Map

North

0 3 6 15 30 m

Scale 1:300

Notes

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BUILDING ENTRY

NEW BUILT - YELLOW HATCH

EXISTING - GREYWALL

NEW - BLACKWALL

SOFT LANDSCAPE

Revision	Description	Date
E	For S.4.55 Application	12.02.2024
D	Final Draft	20.12.2023
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A	For Coordination	03.11.2023

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Status
For S.4.55 Application

Title
1100 - General Arrangement - Floor Plans
M1/2 Plan Ground (L00)-01

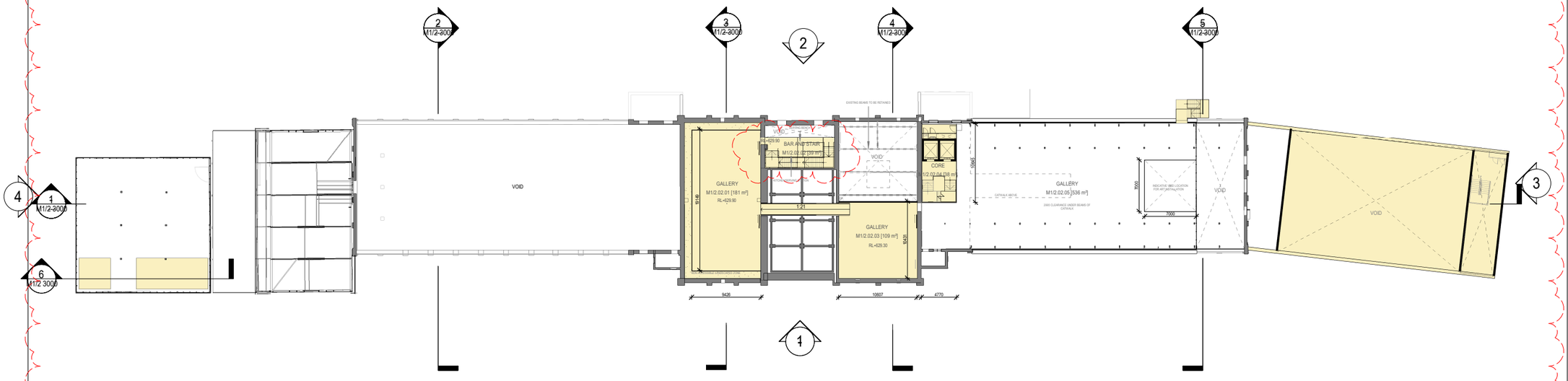
Scale @ A1	Drawn	Reviewed	Approved
As indicated	SNO	SM	KK

Project Number	Sheet Number	Rev
18-17	M1/2 1100	E

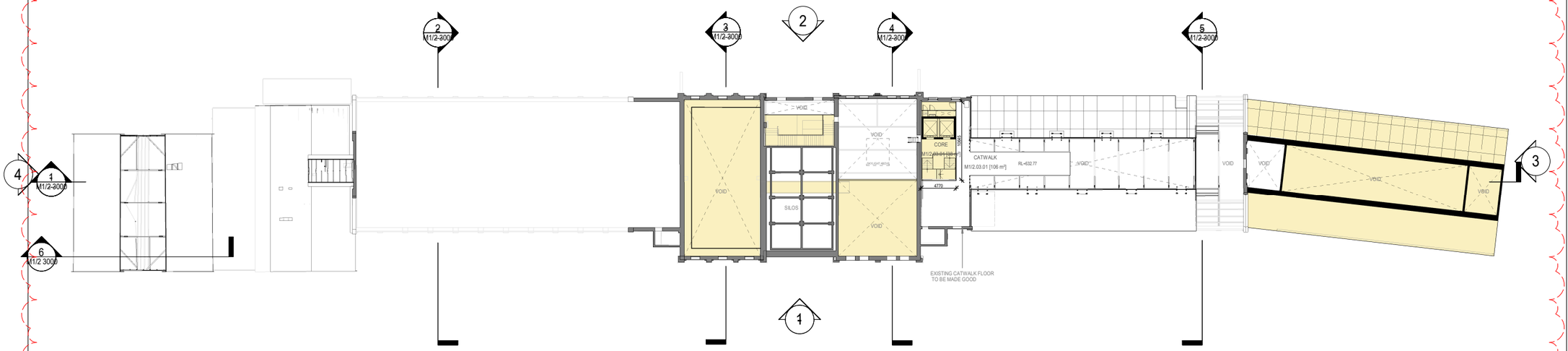
Original Sheet Format A1 | 841 x 594mm

BIM 360://The Maltings/MLTGS_SNØ_AR_MOD_M1+2_0001.rvt
13/02/2024 5:33:18 PM

M1/2 Plan L02-03



1 M1/2 L02
1 : 300



2 M1/2 L03
1 : 300

Reference Map

North

0 3 6 15 30 m

Scale 1:300

Notes

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- BUILDING ENTRY
- NEW BUILT - YELLOW HATCH
- EXISTING - GREYWALL
- NEW - BLACKWALL
- SOFT LANDSCAPE

Revision	Description	Date
E	For S.4.55 Application	12.02.2024
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Status
For S.4.55 Application

Title
1100 - General Arrangement - Floor Plans
M1/2 Plan L02-03

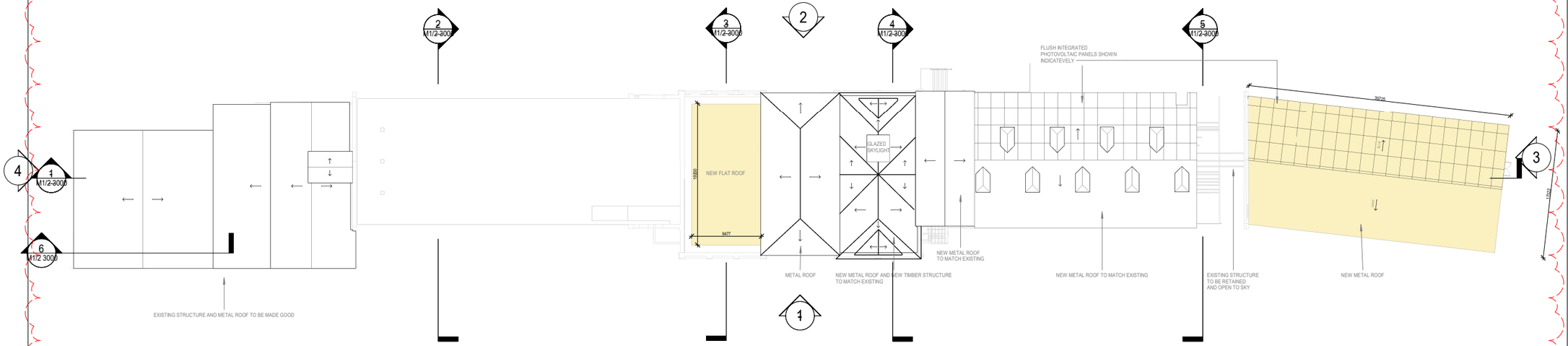
Scale @ A1	Drawn	Reviewed	Approved
As indicated	SNO	SM	KK

Project Number	Sheet Number	Rev
18-17	M1/2 1101	E

Original Sheet Format A1 | 841 x 594mm

BIM 360://The Maltings/MLTGS_SNO_AR_MOD_M1+2_0001.rvt
13/02/2024 5:33:20 PM

M1/2 Plan Roof



1 / --- M1/2 Roof
1 : 300

Reference Map

North

0 3 6 15 30 m

Scale 1:300

Notes

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- BUILDING ENTRY
- NEW BUILT - YELLOW HATCH
- EXISTING - GREYWALL
- NEW - BLACKWALL
- SOFT LANDSCAPE

Revision	Description	Date
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178 Sturt Street,
Adelaide SA 5000 Australia

Status
For S.4.55 Application

Title
1100 - General Arrangement - Floor Plans
M1/2 Plan Roof

Scale @ A1	Drawn	Reviewed	Approved
As indicated	SNO	SM	KK

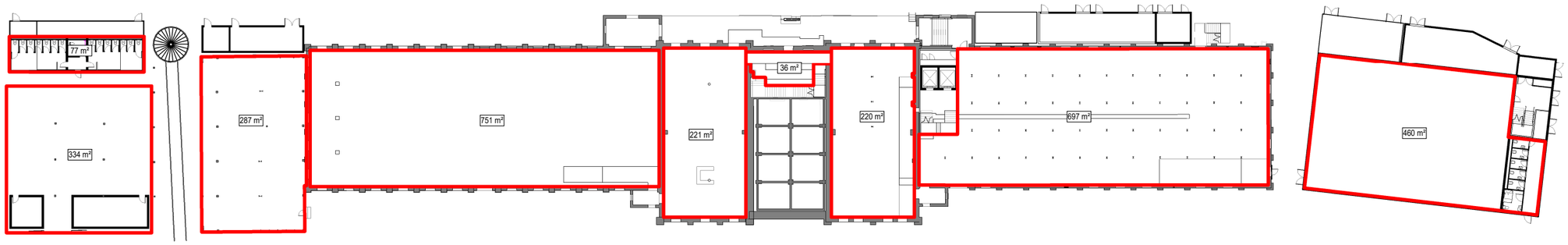
Project Number	Sheet Number	Rev
18-17	M1/2 1102	E

Original Sheet Format A1 | 841 x 594mm

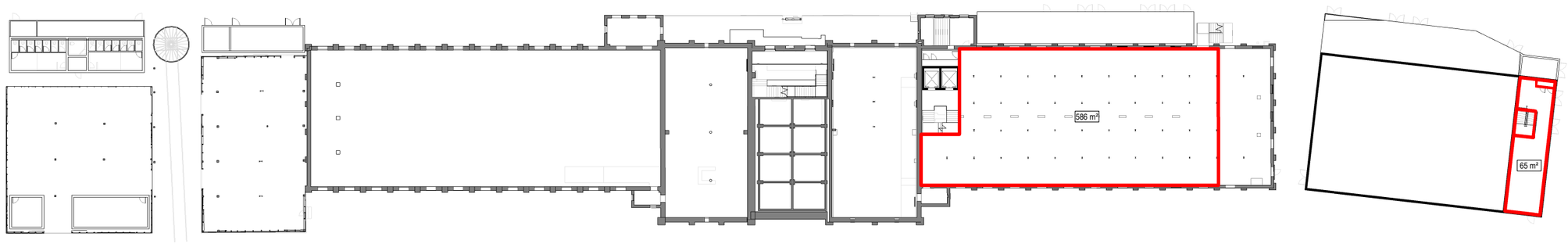
BIM 360://The Maltings/MLTGS_SNØ_AR_MOD_M1+2_0001.rvt

13/02/2024 5:33:22 PM

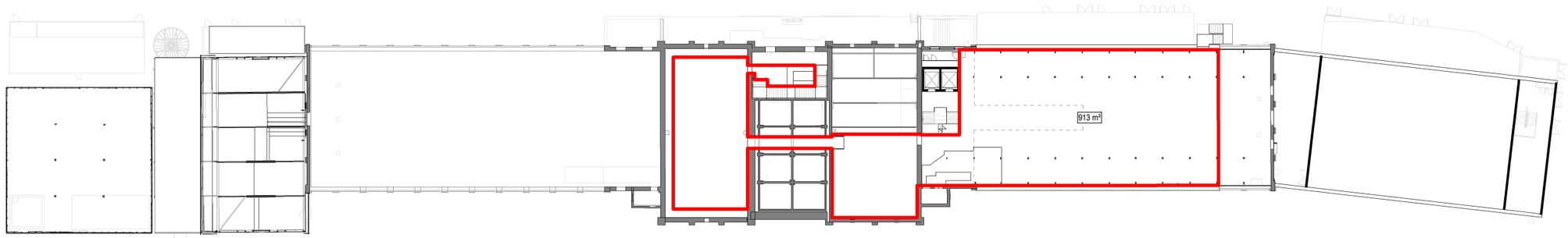
M1/2 GFA Plans



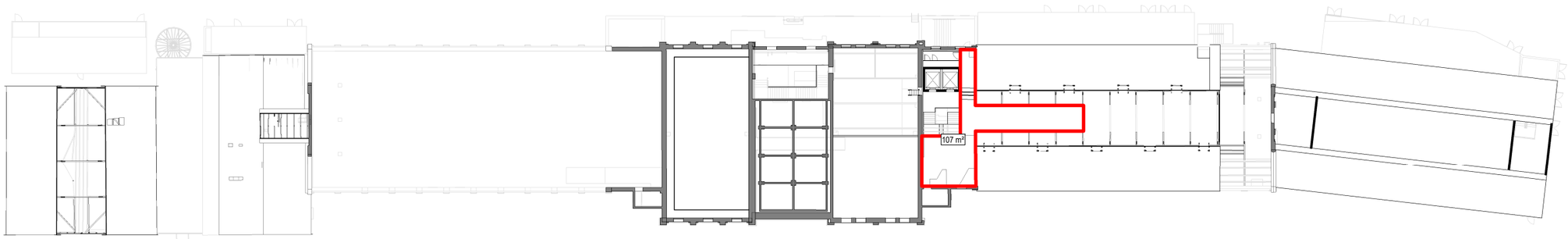
1 M1/2 Ground
1 : 300



2 M1/2 L01
1 : 300



3 M1/2 L02
1 : 300



4 M1/2 L03
1 : 300

Reference Map

North

0 3 6 15 30 m

Scale 1:300

Notes

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Previous GFA

Area Schedule (AREA_GFA)

Name	Level	Area
M1+M2 Sheds	A-00	402 m²
M1+M2	A-00	2524 m²
M1+M2	A-01	286 m²
M1+M2	A-01	599 m²
M1+M2	A-01	667 m²
M1+M2	A-02_MEZ	392 m²
Grand total: 6		4869 m²

Current GFA

Area Schedule (AREA_GFA)

Name	Level	Area
M1/2 Ground		
M1 + M2	M1/2 Ground	2385 m²
M1 + M2 Sheds	M1/2 Ground	698 m²
		3083 m²
M1/2 L01		
M1 + M2	M1/2 L01	651 m²
		651 m²
M1/2 L02		
M1 + M2	M1/2 L02	913 m²
		913 m²
M1/2 L03		
M1 + M2	M1/2 L03	107 m²
		107 m²
Grand total		4754 m²

Revision	Description	Date
E	For S.4.55 Application	12.02.2024
D	Final Draft	20.12.2023

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Project
THE MALTINGS
MITTAGONG NSW 2575

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MEDICH FAMILY OFFICE

Consultant
Snøhetta
Snøhetta Australasia Pty Ltd ABN 74 612 295 735
178 Sturt Street,
Adelaide SA 5000 Australia

Status
For S.4.55 Application

Title
1800 - Other Project Required Plans
M1/2 GFA Plans

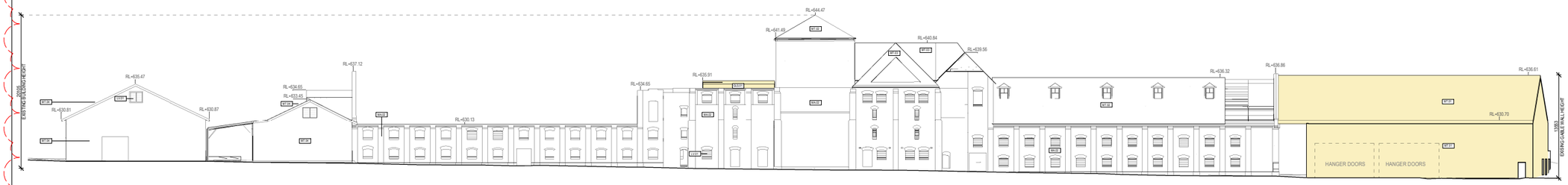
Scale @ A1	Drawn	Reviewed	Approved
1 : 300	SNO	SM	KK

Project Number	Sheet Number	Rev
18-17	M1/2 1801	E

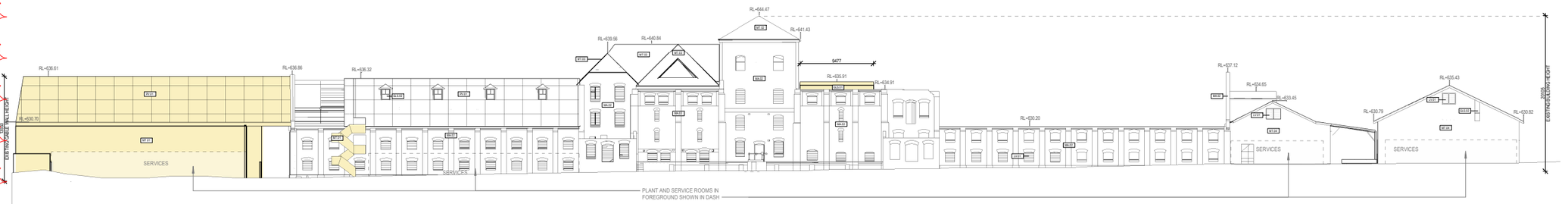
Original Sheet Format A1 | 841 x 594mm

BIM 360://The Maltings/MLTGS_SNØ_AR_MOD_M1+2_0001.rvt
15/02/2024 12:22:27 PM

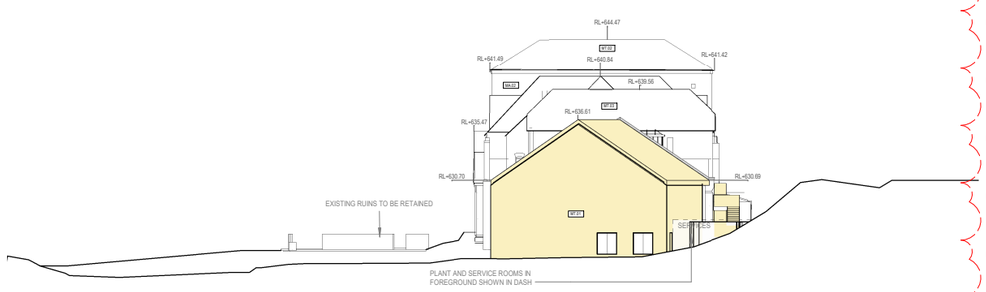
M1/2 Elevations (Exterior)



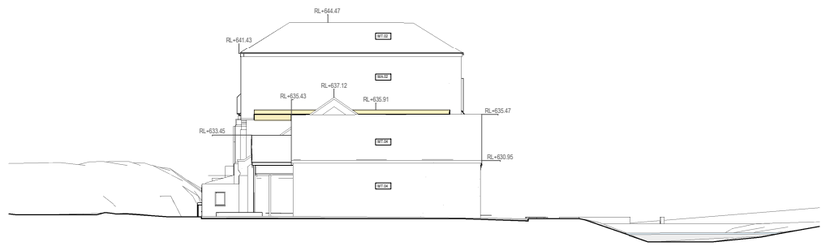
1 / --- M1/2 Elevation - East
1 : 300



2 / --- M1/2 Elevation - West
1 : 300



3 / --- M1/2 Elevation - North
1 : 300



4 / --- M1/2 Elevation - South
1 : 300

Reference Map

0 3 6 15 30 m

Scale 1:300

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Keynote Legend	
Key Value	Keynote Text
GLS.01	Glass (Clear double galzing for new fenestration)
GLS.02	Glass (Glazing for restored fenetration as per heritage consultant's specification)
LV.01	Louvres (Metal Louvres / bespoke Metal louvres to match the existing timber louvres)
MA.02	Brick (Existing and restored brick facade)
MT.01	Metal (Solid Metal Panel with applied finish / Axolotl steel metal - Dark tones)
MT.02	Metal (Corrugated metal roofing / Colour tone to match existing)
MT.03	Metal (Corrugated metal roofing + new Timber structure / Colour tone to match existing)
MT.04	Metal (Existing and restored corrugated metal)
PV.01	Photo Voltaic Panels (Photovoltaic panels / Flush integrated photovolatic panels)

Revision	Description	Date
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D	Final Draft	20.12.2023

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178 Sturt Street,
Adelaide SA 5000 Australia

Status
For S.4.55 Application

Title
2000 - Elevations (Exterior)
M1/2 Elevations (Exterior)

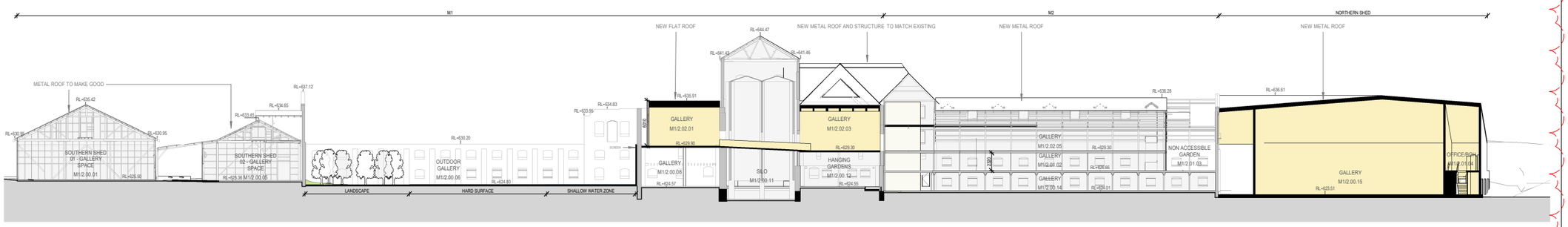
Scale @ A1	Drawn	Reviewed	Approved
1 : 300	SNO	SM	KK

Project Number	Sheet Number	Rev
18-17	M1/2 2000	E

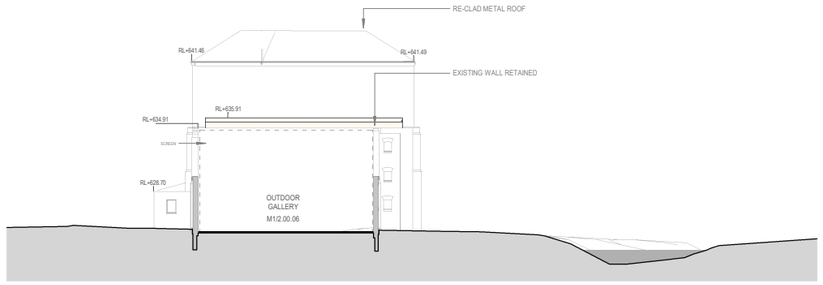
Original Sheet Format A1 | 841 x 594mm

BIM 360://The Maltings/MLTGS_SN0_AR_MOD_M1+2_0001.rvt
13/02/2024 5:33:32 PM

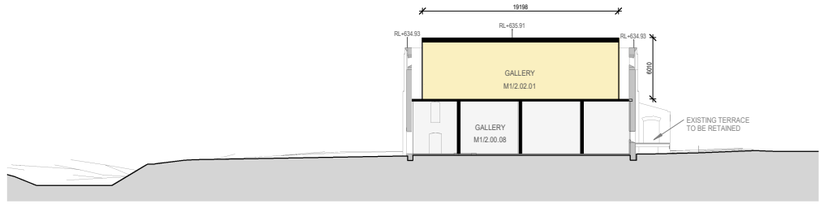
M1/2 Sections



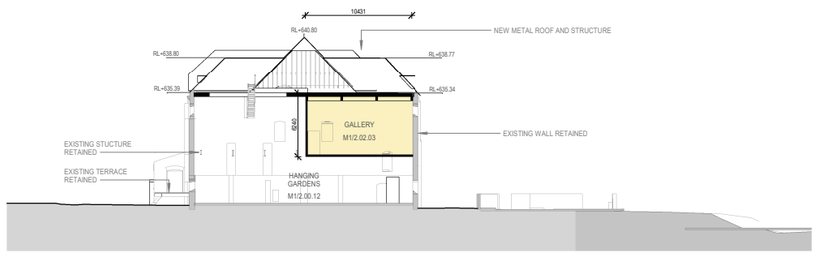
1 M1/2 SECTION 01
1 : 300



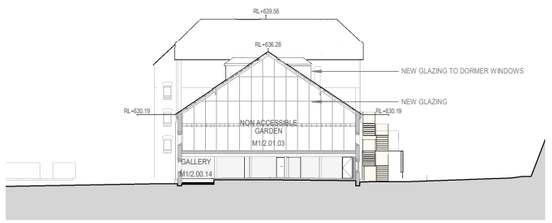
2 M1/2 SECTION 02
1 : 300



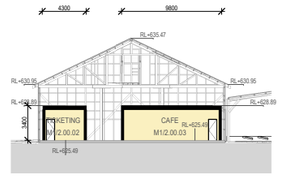
3 M1/2 SECTION 03
1 : 300



4 M1/2 SECTION 04
1 : 300



5 M1/2 SECTION 05
1 : 300



6 M1/2 SECTION 06
1 : 300

Reference Map

0 3 6 15 30 m

Scale 1:300

Notes

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Adelaide SA 5000 Australia

Status
For S.4.55 Application

Title
3000 - Sections
M1/2 Sections

Scale @ A1	Drawn	Reviewed	Approved
1 : 300	SNO	SM	KK

Project Number	Sheet Number	Rev
18-17	M1/2 3000	E

Original Sheet Format A1 | 841 x 594mm

BIM 360://The Maltings/MLTGS_SNØ_AR_MOD_M1+2_0001.rvt
13/02/2024 5:33:36 PM

M1/2 + MH Materials Schedule

GLS.01
Clear Double glazing

GLS.02
Glazing for restored fenetration as
per heritage consultant's specification

LV.01
Timber louvers/ Bespoke timber
louvres to match the existing louvres

CON.01
Concrete - Sustainable concrete or equivalent,
opportunity to use Ashcrete

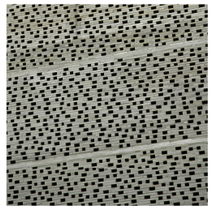
MT.01
Metal - Solid Metal Panel with applied
finish/ Axolotl steel metal - Dark tones

MT.02/ MT.03
Corrugated Metal roofing/ Colour tone to match
existing
Corrugated Metal roofing + New timber structure/
Colour tone to match existing

MT.04
Existing and restored corrugated metal

MA.01
New Brick

MA.02
Brick - Existing and restored brick facade



MA.03
Brick - New Brick, Uniform textured
appearance, hit and miss open to minimum
16%, recessed and extruded bricks pattern

MA.04
Masonry
- to be confirmed at detailed design
stage

PV.01
Photo Voltaic Panels (Photovaltaic
panels/ flush integrated photovolatic
panels

TIM.03
Lightweight construction
- to be confirmed at detailed design
stage

Reference Map

Notes

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Revision	Description	Date
E	For S.4.55 Application	12.02.2024

Consultant

Consultant

Consultant

Project
THE MALTINGS
MITTAGONG NSW 2575

Client
MEDICH FAMILY OFFICE

Consultant
Snøhetta
Snøhetta Australasia Pty Ltd ABN 74 612 295 735
178 Sturt Street,
Adelaide SA 5000 Australia

Status
For S.4.55 Application

Title
6000 - Schedules & Diagrams
M1/2 + MH Materials Schedule

Scale @ A1	Drawn	Reviewed	Approved
1 : 50	SNO	SM	KK

Project Number	Sheet Number	Rev
18-17	M1/2 + MH 6000	E

Original Sheet Format A1 | 841 x 594mm

BIM 360://The Maltings/MLTGS_SNG_AR_MOD_M1+2_0001.rvt
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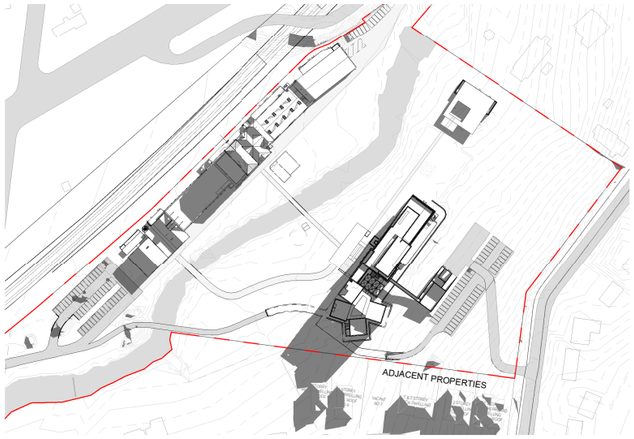
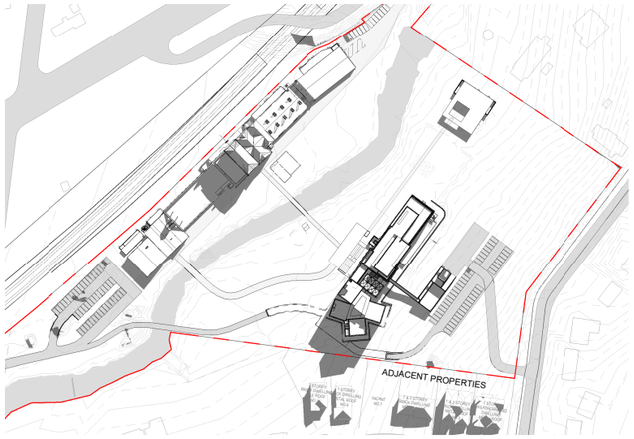
M1/2 Shadow Study - June 21

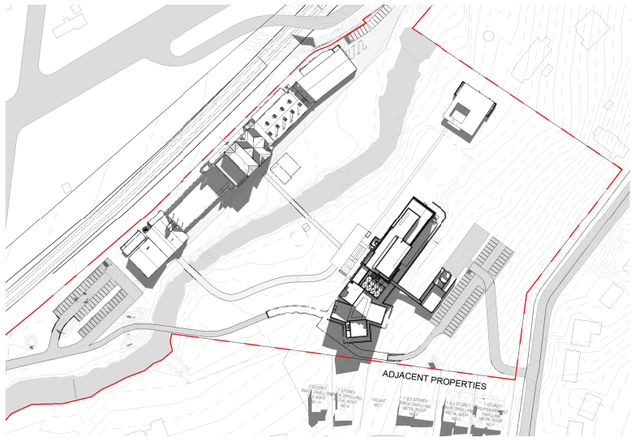
1 --- 9AM - JUNE 21
1 : 2000



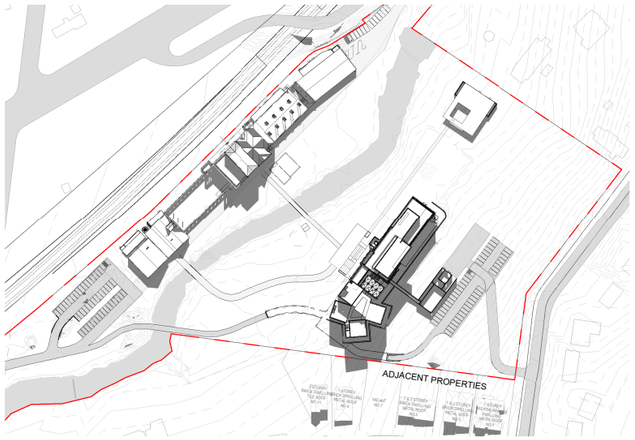
2 --- 10AM - JUNE 21
1 : 2000



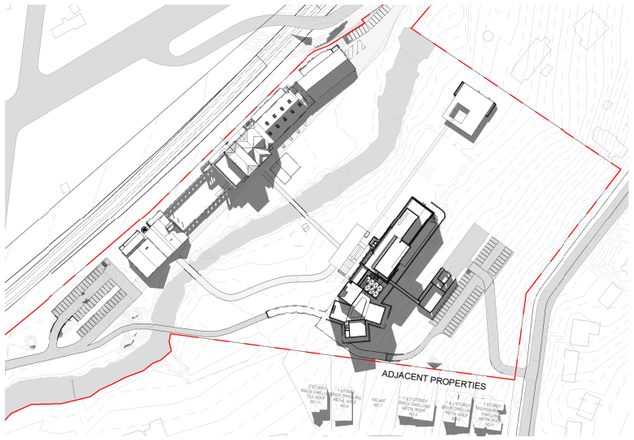
3 --- 11AM - JUNE 21
1 : 2000



4 --- 12PM - JUNE 21
1 : 2000



5 --- 1PM - JUNE 21
1 : 2000



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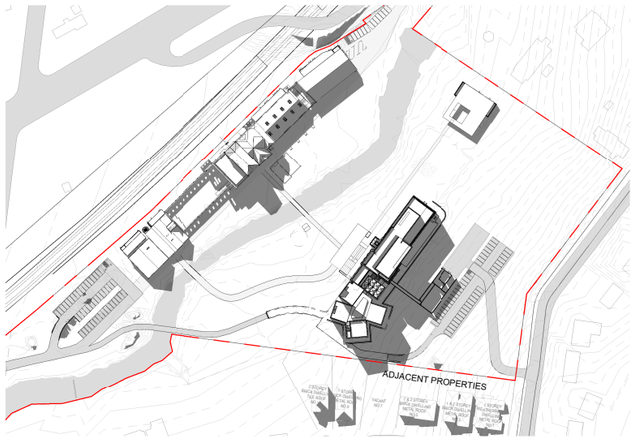
1 : 2000



7 --- 3PM - JUNE 21
1 : 2000

Reference Map

North

0 1 2 5 10 m

Scale 1:100

Notes

Figured dimensions take precedence to scaled readings.| All dimensions are in millimetres unless noted otherwise. | Dimensions are to be verified on Site prior to Project Commencement. | Any discrepancies are to be reported to Snøhetta in writing for decision before proceeding with work. | Drawing is to be read in conjunction with all relevant and associated material, Contracts, Specifications and Drawings. | This drawing is an uncontrolled copy, unless noted otherwise.

Revision	Description	Date
E	For S.4.55 Application	12.02.2023

Consultant

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Consultant

Project
The Maltings
MITTAGONG NSW 2575

Client
MEDICH FAMILY OFFICE

Consultant
Snøhetta
Snøhetta Australasia Pty Ltd ABN 74 612 295 735
178 Sturt Street,
Adelaide SA 5000 Australia

Status
For S.4.55 Application

Title
8000 - Shadows
M1/2 Shadow Study - June 21

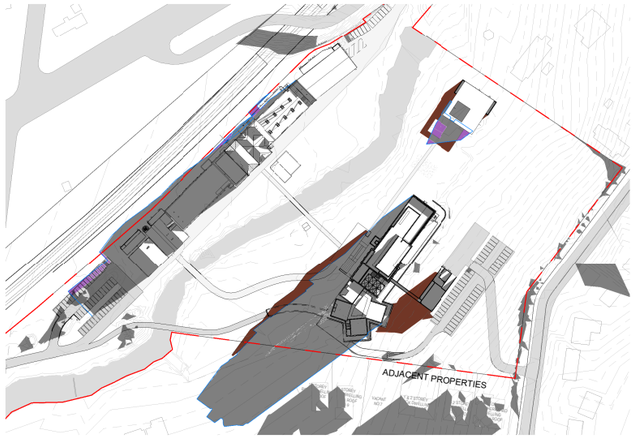
Scale @ A1	Drawn	Reviewed	Approved
1 : 2000	DC	SM	KK

Project Number	Sheet Number	Rev
18-17	M3/4 8000	E

Original Sheet Format A1 | 841 x 594mm

BIM 360://The Maltings/MLTGS_SN0_AR_MOD_SITE_0001.rvt
21/02/2024 1:29:11 PM

M1/2 Shadow Study Comparison - June 21



1 — 9AM - JUNE 21 COMPARISON
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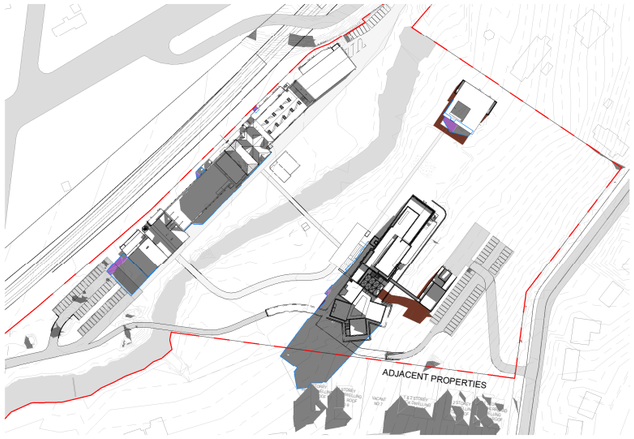

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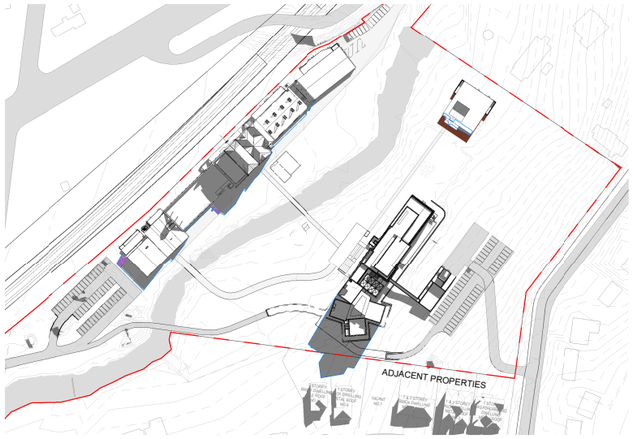
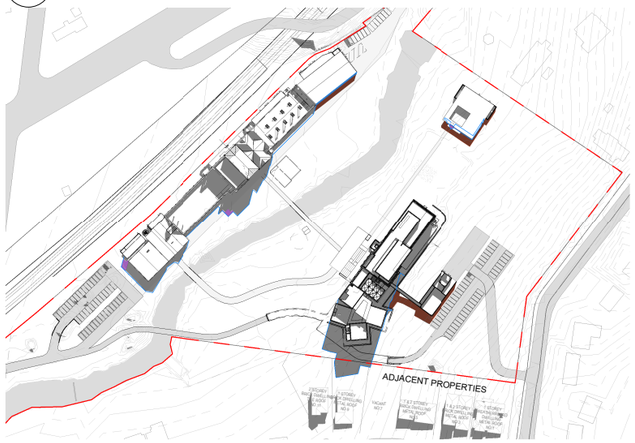
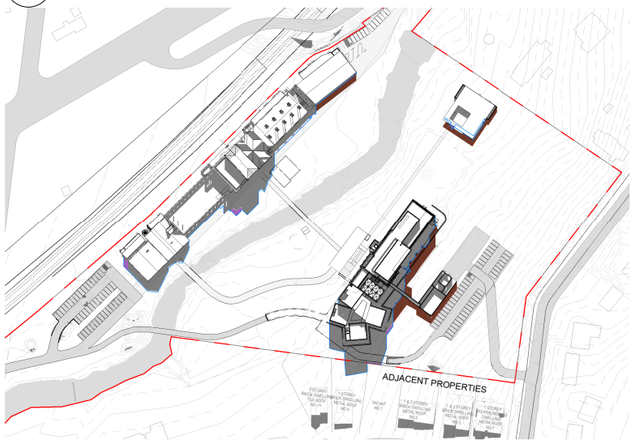


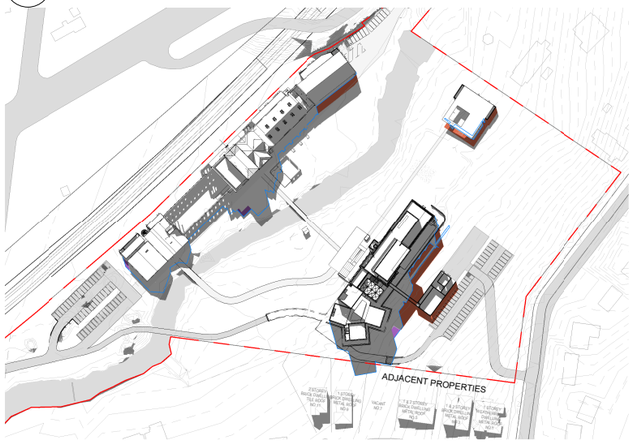
3 — 11AM - JUNE 21 COMPARISON
1 : 2000



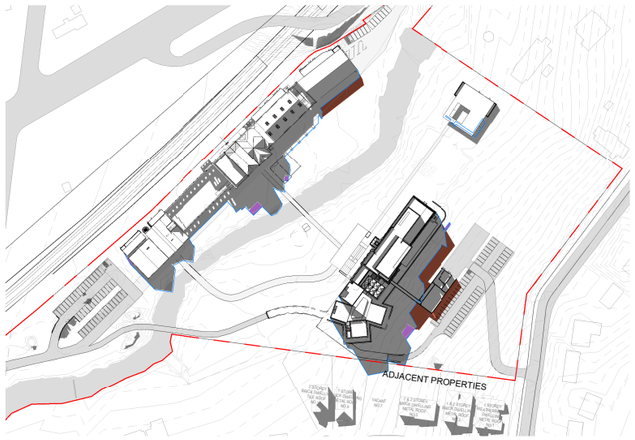
4 — 12PM - JUNE 21 COMPARISON
1 : 2000



5 — 1PM - JUNE 21 COMPARISON
1 : 2000



6 — 2PM - JUNE 21 COMPARISON
1 : 2000



7 — 3PM - JUNE 21 COMPARISON
1 : 2000

Reference Map

North

0 1 2 5 10 m

Scale 1:100

Notes

Figured dimensions take precedence to scaled readings.| All dimensions are in millimetres unless noted otherwise. | Dimensions are to be verified on Site prior to Project Commencement. | Any discrepancies are to be reported to Snøhetta in writing for decision before proceeding with work. | Drawing is to be read in conjunction with all relevant and associated material, Contracts, Specifications and Drawings. | This drawing is an uncontrolled copy, unless noted otherwise.

SHADOW OUTLINE PREVIOUS APPROVED
SHADOW EXTENT CURRENT PROPOSAL
REDUCED SHADOW FROM PREVIOUS APPROVED
ADDITIONAL SHADOW FROM CURRENT PROPSAL

Revision	Description	Date
E	For S.4.55 Application	12.02.2023

Consultant

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Consultant

Project
The Maltings
MITTAGONG NSW 2575

Client
MEDICH FAMILY OFFICE

Consultant
Snøhetta
Snøhetta Australasia Pty Ltd ABN 74 612 295 735
178 Sturt Street,
Adelaide SA 5000 Australia

Status
For S.4.55 Application

Title
8000 - Shadows
M1/2 Shadow Study Comparison - June 21

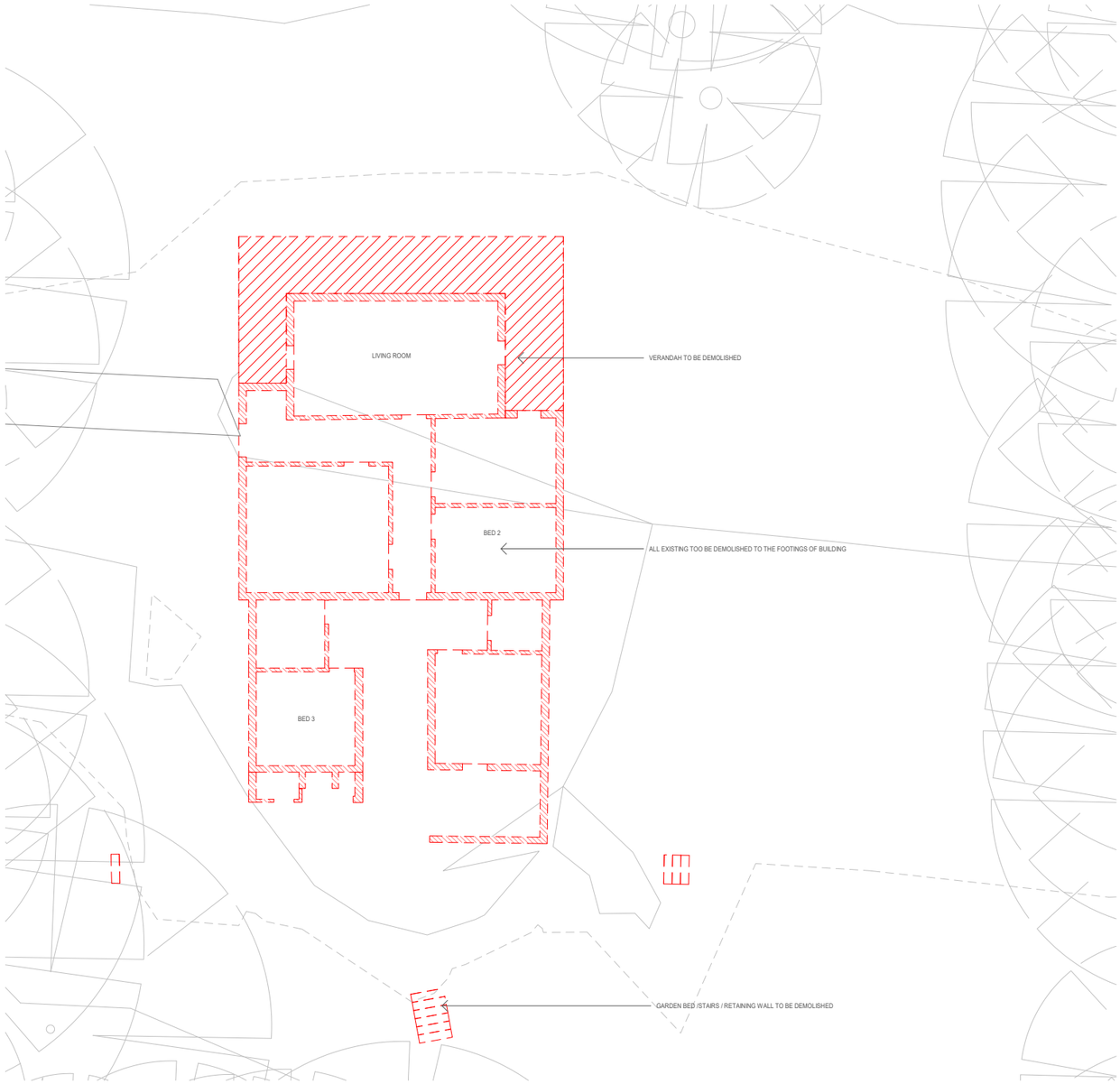
Scale @ A1	Drawn	Reviewed	Approved
As indicated	Author	SM	KK

Project Number	Sheet Number	Rev
18-17	M3/4 8001	E

Original Sheet Format A1 | 841 x 594mm

BIM 360://The Maltings/MLTGS_SN0_AR_MOD_SITE_0001.rvt
21/02/2024 1:26:28 PM

Maltster's House Demolition Plan - Ground (L00)



To be demolished

Portion of slab/roof to be demolished

1 / --- MH GROUND FLOOR (L00) DEMOLITION
1 : 100

Reference Map

North

0 1 2 5 10 m

Scale 1:100

Notes

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Revision	Description	Date
E	For S.4.55 Application	12.02.2024
D	Final draft	20.12.2023
C	For Coordination	08.12.2023
B	For Coordination	29.11.2023
A	For Coordination	31.08.2022

Consultant

Consultant

Consultant

Project
The Maltings
MITTAGONG NSW 2575

Client
MEDICH FAMILY OFFICE

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Adelaide SA 5000 Australia

Status
For S.4.55 Application

Title
0300 - Demolition
Maltster's House Demolition Plan - Ground (L00)

Scale @ A1	Drawn	Reviewed	Approved
1 : 100	SNØ	SM	KK

Project Number	Sheet Number	Rev
18-17	MH 0300	E

Original Sheet Format A1 | 841 x 594mm

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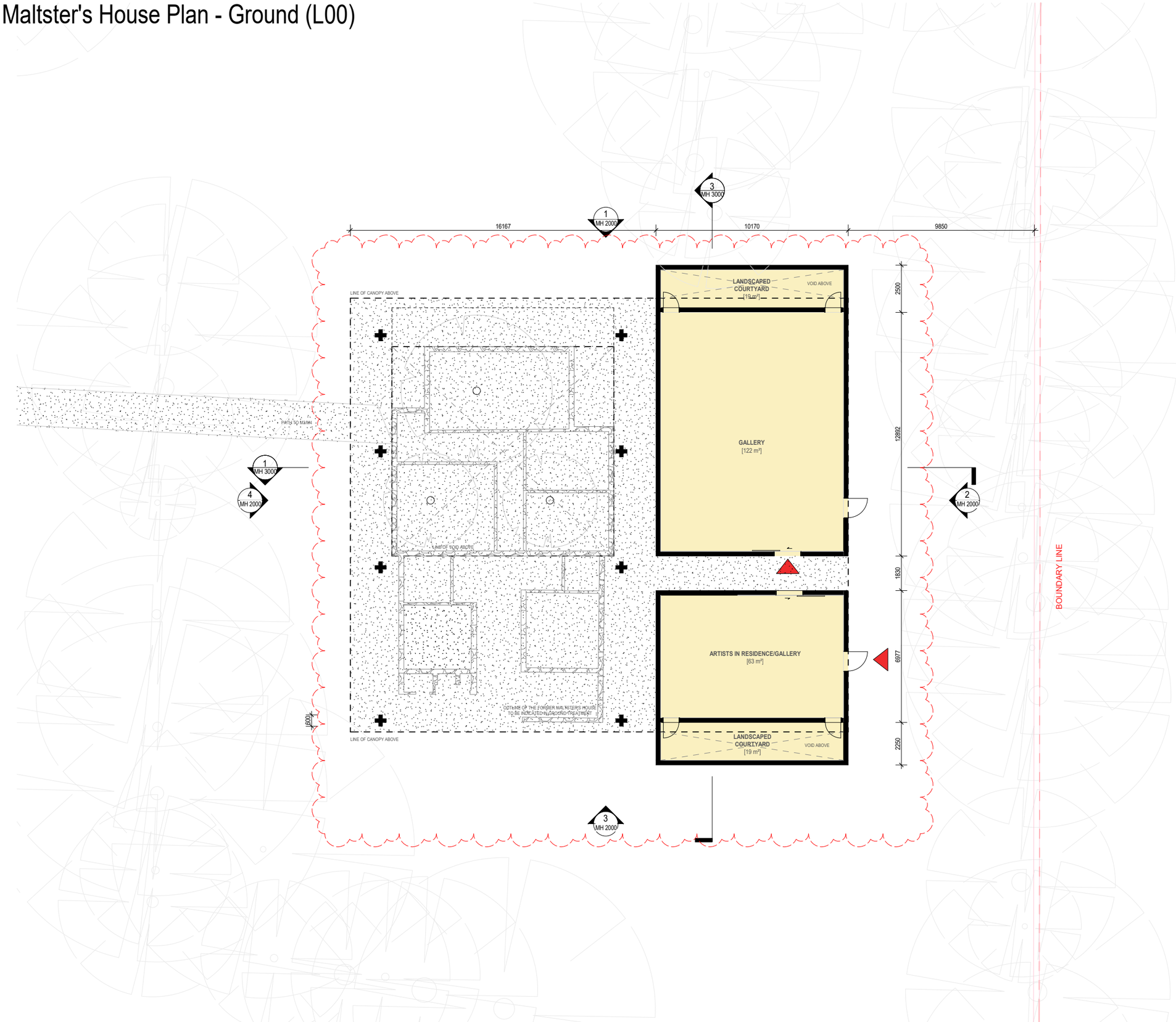
13/02/2024 5:18:14 PM

Maltster's House Plan - Ground (L00)



Reference Map

North

0 1 2 5 10 m

Scale 1:100

Notes

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- BUILDING ENTRY
- NEW BUILT - YELLOW HATCH
- EXISTING - GREYWALL
- NEW - BLACKWALL
- SOFT LANDSCAPE

Revision	Description	Date
E	For S.4.55 Application	12.02.2024
D	Final draft	20.12.2023
C	For Coordination	08.12.2023
B	For Coordination	29.11.2023
A	For Coordination	31.08.2022

Consultant

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Project
The Maltings
MITTAGONG NSW 2575

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MEDICH FAMILY OFFICE

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Snøhetta Australasia Pty Ltd ABN 74 612 295 735
178 Sturt Street,
Adelaide SA 5000 Australia

Status
For S.4.55 Application

Title
1100 - General Arrangement - Floor Plans
Maltster's House Plan - Ground (L00)

Scale @ A1	Drawn	Reviewed	Approved
1 : 100	SNØ	SM	KK

Project Number	Sheet Number	Rev
18-17	MH 1100	E

Original Sheet Format A1 | 841 x 594mm

13/02/2024 5:18:15 PM

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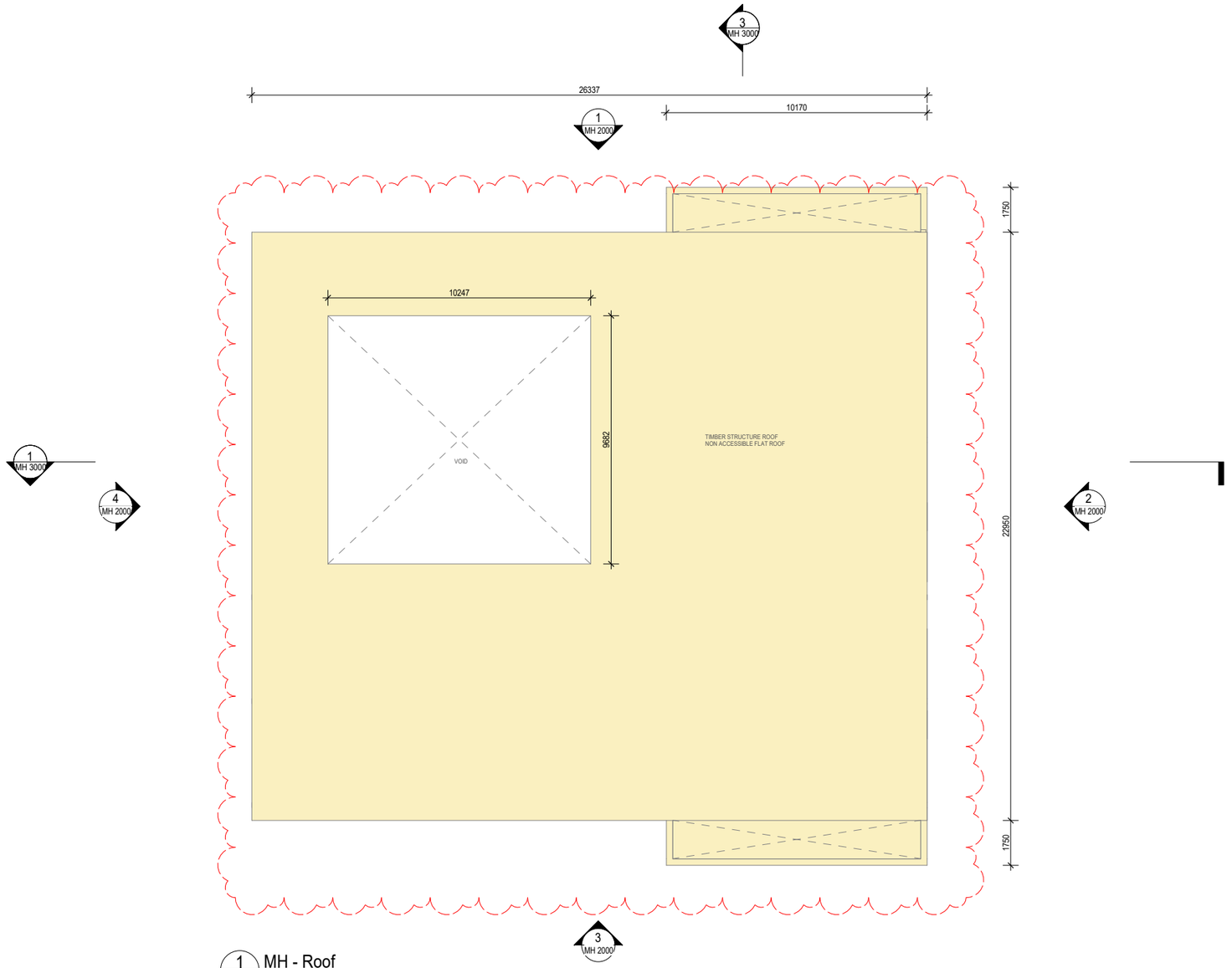
Maltster's House Plan Roof



1 / --- MH - Roof
1 : 100

Reference Map

North

0 1 2 5 10 m

Scale 1:100

Notes

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- BUILDING ENTRY
- NEW BUILT - YELLOW HATCH
- EXISTING - GREYWALL
- NEW - BLACKWALL
- SOFT LANDSCAPE

Revision	Description	Date
E	For S.4.55 Application	12.02.2024
D	Final draft	20.12.2023
C	For Coordination	08.12.2023
B	For Coordination	29.11.2023
A	For Coordination	31.08.2022

Consultant

Consultant

Consultant

Project
The Maltings
MITTAGONG NSW 2575

Client
MEDICH FAMILY OFFICE

Consultant
Snøhetta
Snøhetta Australasia Pty Ltd ABN 74 612 295 735
178 Sturt Street,
Adelaide SA 5000 Australia

Status
For S.4.55 Application

Title
1100 - General Arrangement - Floor Plans
Maltster's House Plan Roof

Scale @ A1	Drawn	Reviewed	Approved
1 : 100	SNØ	SM	KK

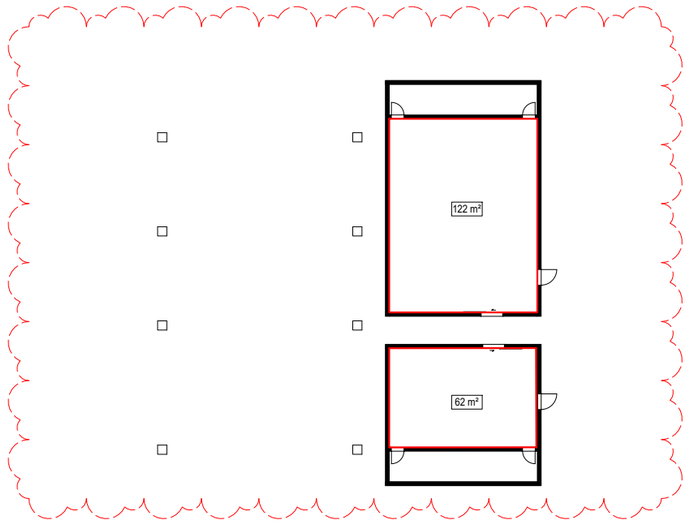
Project Number	Sheet Number	Rev
18-17	MH 1101	E

Original Sheet Format A1 | 841 x 594mm

BIM 360://The Maltings/MLTGS_SNØ_AR_MOD_MALTSTERS_0001.rvt

13/02/2024 5:18:15 PM

Maltster's House Area Plans



1 MH - L00 (Ground)
1 : 200

Previous GFA

Area Schedule (AREA_GFA)

bb	Level	Area
MH Ground	A-00	189 m²
MH L01	A-01	28 m²
Grand total: 2		217 m²

Current GFA

Area Schedule (AREA_GFA)

Name	Level	Area
MH Ground	MH - L00 (Ground)	122 m²
MH Ground	MH - L00 (Ground)	62 m²
Grand total: 2		184 m²

Reference Map

North

0 2 4 10 20 m

Scale 1:200

Notes

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Revision	Description	Date
E	For S.4.55 Application	12.02.2024
D	Final draft	20.12.2023
C	For Coordination	08.12.2023
B	For Coordination	29.11.2023
A	For Coordination	31.08.2022

Consultant

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Consultant

Project
The Maltings
MITTAGONG NSW 2575

Client
MEDICH FAMILY OFFICE

Consultant
Snøhetta
Snøhetta Australasia Pty Ltd ABN 74 612 295 735
178 Sturt Street,
Adelaide SA 5000 Australia

Status
For S.4.55 Application

Title
1800 - Other Project Required Plans
Maltster's House Area Plans

Scale @ A1	Drawn	Reviewed	Approved
1 : 200	SNO	KK	SM

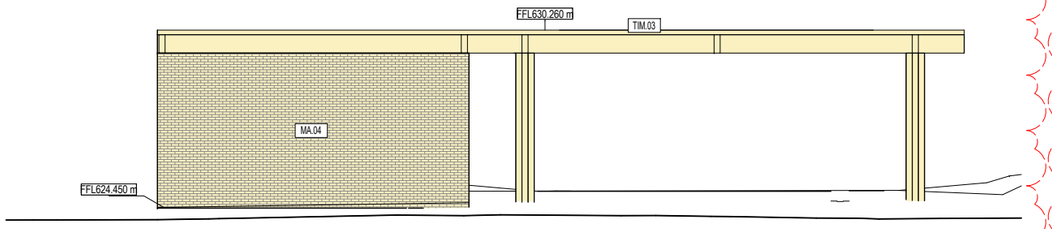
Project Number	Sheet Number	Rev
18-17	MH 1801	E

Original Sheet Format A1 | 841 x 594mm

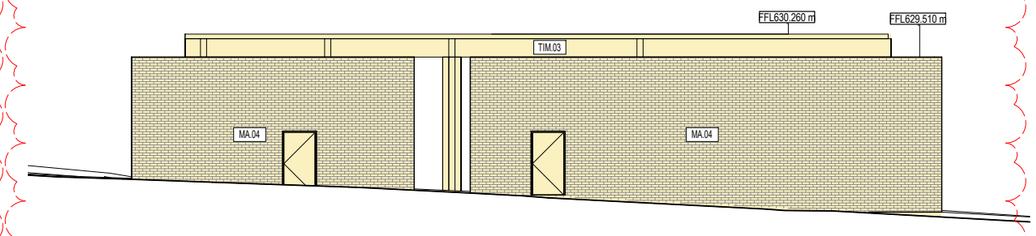
BIM 360://The Maltings/MLTGS_SNØ_AR_MOD_MALTSTERS_0001.rvt
13/02/2024 5:18:17 PM

Maltster's House Elevations (Exterior)

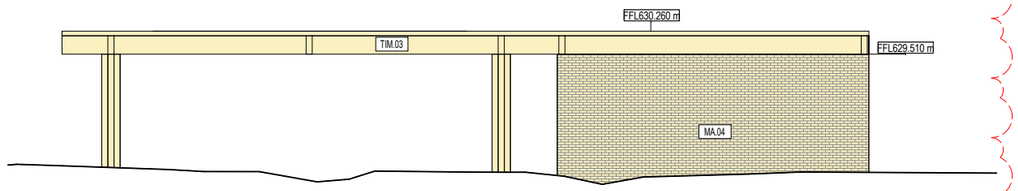
Keynote Legend	
Key Value	Keynote Text
MA.02	Brick (Existing and restored brick facade)
MA.04	Masonry
TIM.03	Lightweight construction



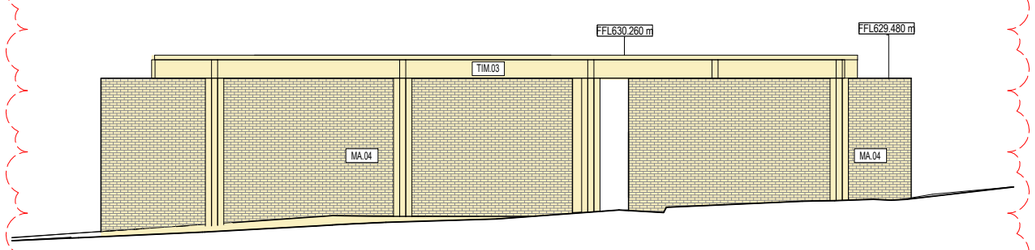
1 MH - West Elevation
1 : 100



2 MH - North Elevation
1 : 100



3 MH - East Elevation
1 : 100



4 MH - South Elevation
1 : 100

Reference Map

0 1 2 5 10 m

Scale 1:100

Notes

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Revision	Description	Date
E	For S.4.55 Application	12.02.2024
D	Final draft	20.12.2023
C	For Coordination	08.12.2023
B	For Coordination	29.11.2023
A	For Coordination	31.08.2022

Consultant

Consultant

Consultant

Project
The Maltings
MITTAGONG NSW 2575

Client
MEDICH FAMILY OFFICE

Consultant
Snøhetta
Snøhetta Australasia Pty Ltd ABN 74 612 295 735
178 Sturt Street,
Adelaide SA 5000 Australia

Status
For S.4.55 Application

Title
2000 - Elevations (Exterior)
Maltster's House Elevations (Exterior)

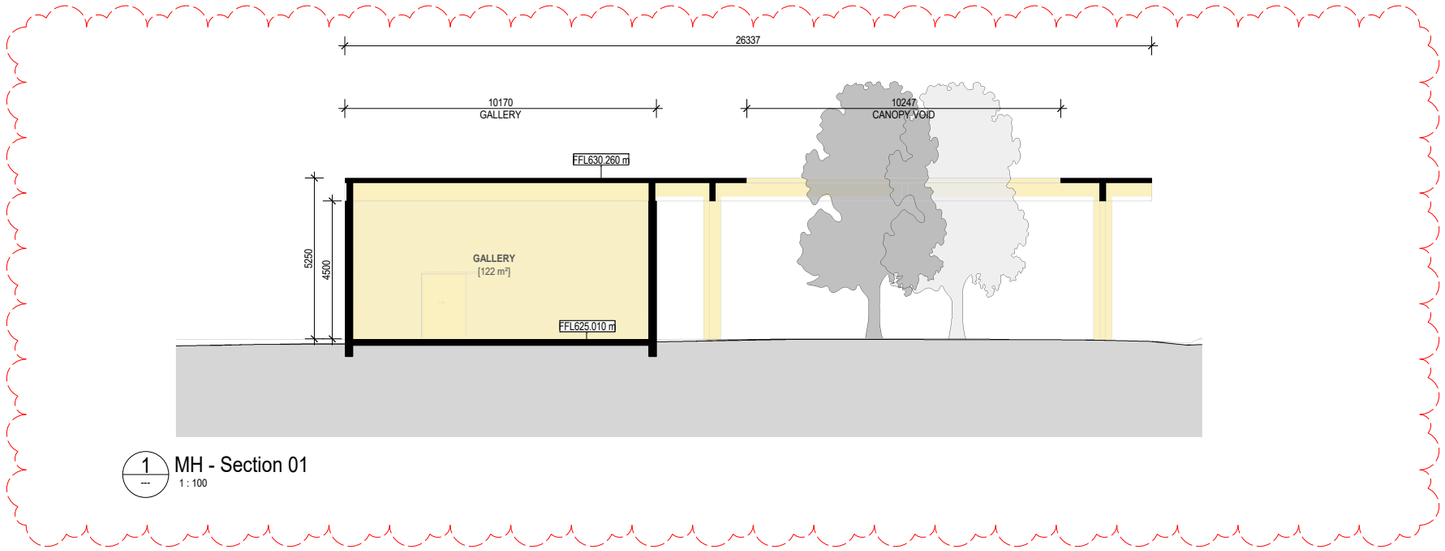
Scale @ A1	Drawn	Reviewed	Approved
1 : 100	SNØ	SM	KK

Project Number	Sheet Number	Rev
18-17	MH 2000	E

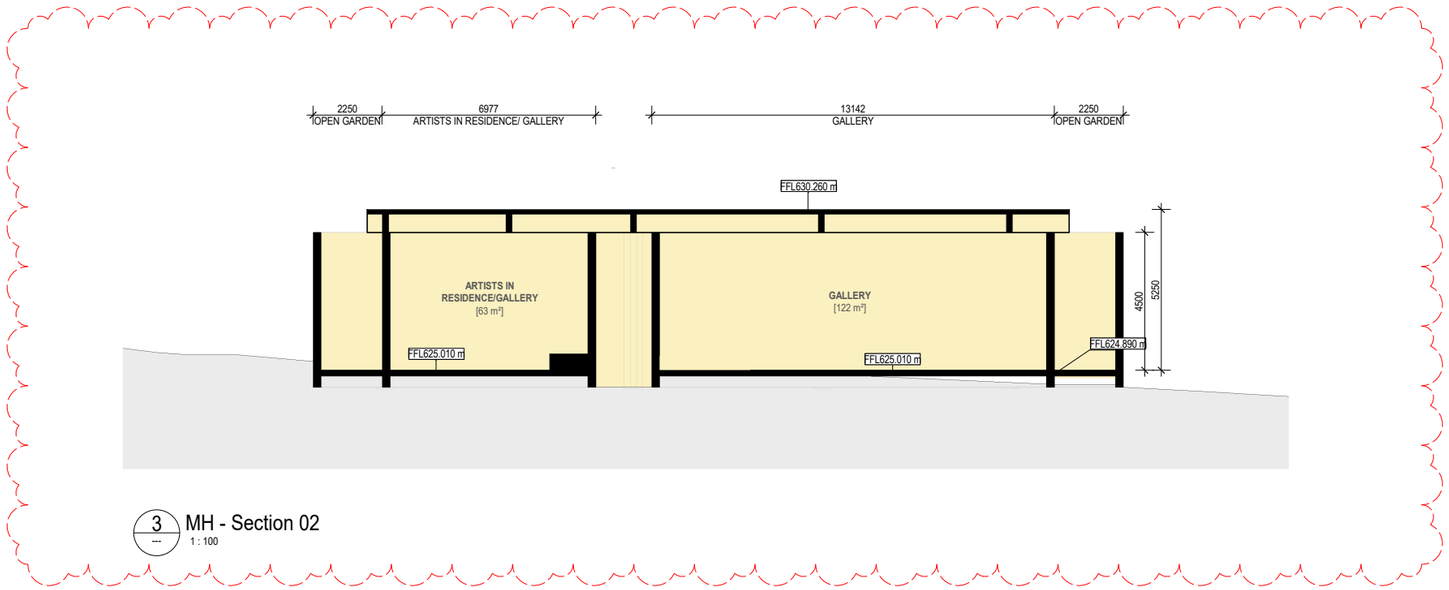
Original Sheet Format A1 | 841 x 594mm

BIM 360://The Maltings/MLTGS_SNØ_AR_MOD_MALTSTERS_0001.rvt
13/02/2024 5:18:17 PM

Maltster's House Sections



1 / --- MH - Section 01
1 : 100



3 / --- MH - Section 02
1 : 100

Reference Map

0 1 2 5 10 m

Scale 1:100

Notes

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Revision	Description	Date
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D	Final draft	20.12.2023
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B	For Coordination	29.11.2023
A	For Coordination	31.08.2022

Consultant

Consultant

Consultant

Project
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MITTAGONG NSW 2575

Client
MEDICH FAMILY OFFICE

Consultant
Snøhetta
Snøhetta Australasia Pty Ltd ABN 74 612 295 735
178 Sturt Street,
Adelaide SA 5000 Australia

Status
For S.4.55 Application

Title
3000 - Sections
Maltster's House Sections

Scale @ A1	Drawn	Reviewed	Approved
1 : 100	SNØ	SM	KK

Project Number	Sheet Number	Rev
18-17	MH 3000	E

Original Sheet Format A1 | 841 x 594mm

BIM 360://The Maltings/MLTGS_SNØ_AR_MOD_MALTSTERS_0001.rvt
13/02/2024 5:18:19 PM

Cover Sheet + Drawing Index

The Maltings

Mittagong, NSW

M3, M4

SHEET LIST DA SERIES

No.	Title	Current Revision	Sheet Sequence SNØ	Sheet Series SNØ	Current Revision Date
M3/4 000	Cover Sheet + Drawing Index	E	0000 - Preliminaries	Schedules	12.02.2024
M3/4 003	M3/4 GFA Schedules	E	0000 - Preliminaries	Schedules	12.02.2024
M3/4 0100	M3/4 Site Plan	E	0100 - Overview Precinct	1000	12.02.2024
M3/4 300	M3/4 Demolition Plan - Basement,Ground (L00)	E	0300 - Demolition	1-250	12.02.2024
M3/4 301	M3/4 Demolition Plan - L01, L02	E	0300 - Demolition	1-250	12.02.2024
M3/4 302	M3/4 Demolition Plan - L03, Roof	E	0300 - Demolition	1-250	12.02.2024
M3/4 1100	M3/4 Plan Basement	E	1100 - General Arrangement - Floor Plans	1-250	12.02.2024
M3/4 1101	M3/4 Plan L00 - L01	E	1100 - General Arrangement - Floor Plans	1-250	12.02.2024
M3/4 1102	M3/4 PLAN L02	E	1100 - General Arrangement - Floor Plans	1-250	12.02.2024
M3/4 1103	M3/4 Plan L03 - L04	E	1100 - General Arrangement - Floor Plans	1-250	12.02.2024
M3/4 1104	M3/4 Plan L05 - Roof	E	1100 - General Arrangement - Floor Plans	1-250	12.02.2024
M3/4 1801	M3/4 GFA Plans	E	1800 - Other Project Required Plans	1-250	12.02.2024
M3/4 2000	M3/4 Elevations - North, East, South, West	E	2000 - Elevations (Exterior)	1-250	12.02.2024
M3/4 3000	M3/4 Sections	E	3000 - Sections	1-250	12.02.2024
M3/4 6000	M3/4 Materials Schedule	E	6000 - Schedules & Diagrams	Schedules	12.02.2024

Reference Map

Notes

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Revision	Description	Date
E	For Development Application	12.02.2024
D	Final draft	20.12.2023

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The Maltings

MITTAGONG NSW 2575

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Snøhetta

Snøhetta Australasia Pty Ltd ABN 74 612 295 735
178 Sturt Street,
Adelaide SA 5000 Australia

Status

For Development Application

Title

0000 - Preliminaries

Cover Sheet + Drawing Index

Scale @ A1	Drawn	Reviewed	Approved
	SNO	SM	KK

Project Number	Sheet Number	Rev
18-17	M3/4 000	E

Original Sheet Format A1 | 841 x 594mm

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M3/4 GFA Schedules

Area Schedule (AREA_GFA)		
Name	Area	Level
M3+M4 Basement		
M4 Basement	165 m²	M3+M4 Basement
	165 m²	
M3+M4 Ground		
M3	1149 m²	M3+M4 Ground
	1149 m²	
M3+M4 L01		
M4	532 m²	M3+M4 L01
	532 m²	
M3+M4 L02		
M3+M4	399 m²	M3+M4 L02
M4	532 m²	M3+M4 L02
	931 m²	
M3+M4 L03		
M4	547 m²	M3+M4 L03
M3	562 m²	M3+M4 L03
	1109 m²	

Area Schedule (AREA_GFA)		
Name	Area	Level
M3+M4 L04		
M3	518 m²	M3+M4 L04
M4	429 m²	M3+M4 L04
	948 m²	
M3+M4 L05		
M4	275 m²	M3+M4 L05
M3	232 m²	M3+M4 L05
	507 m²	
Grand total	5342 m²	

Reference Map

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E	For Development Application	12.02.2024
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C	For Coordination	08.12.2023

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Title
0000 - Preliminaries
M3/4 GFA Schedules

Scale @ A1	Drawn	Reviewed	Approved
	SNO	SM	KK

Project Number	Sheet Number	Rev
18-17	M3/4 003	E

Original Sheet Format A1 | 841 x 594mm

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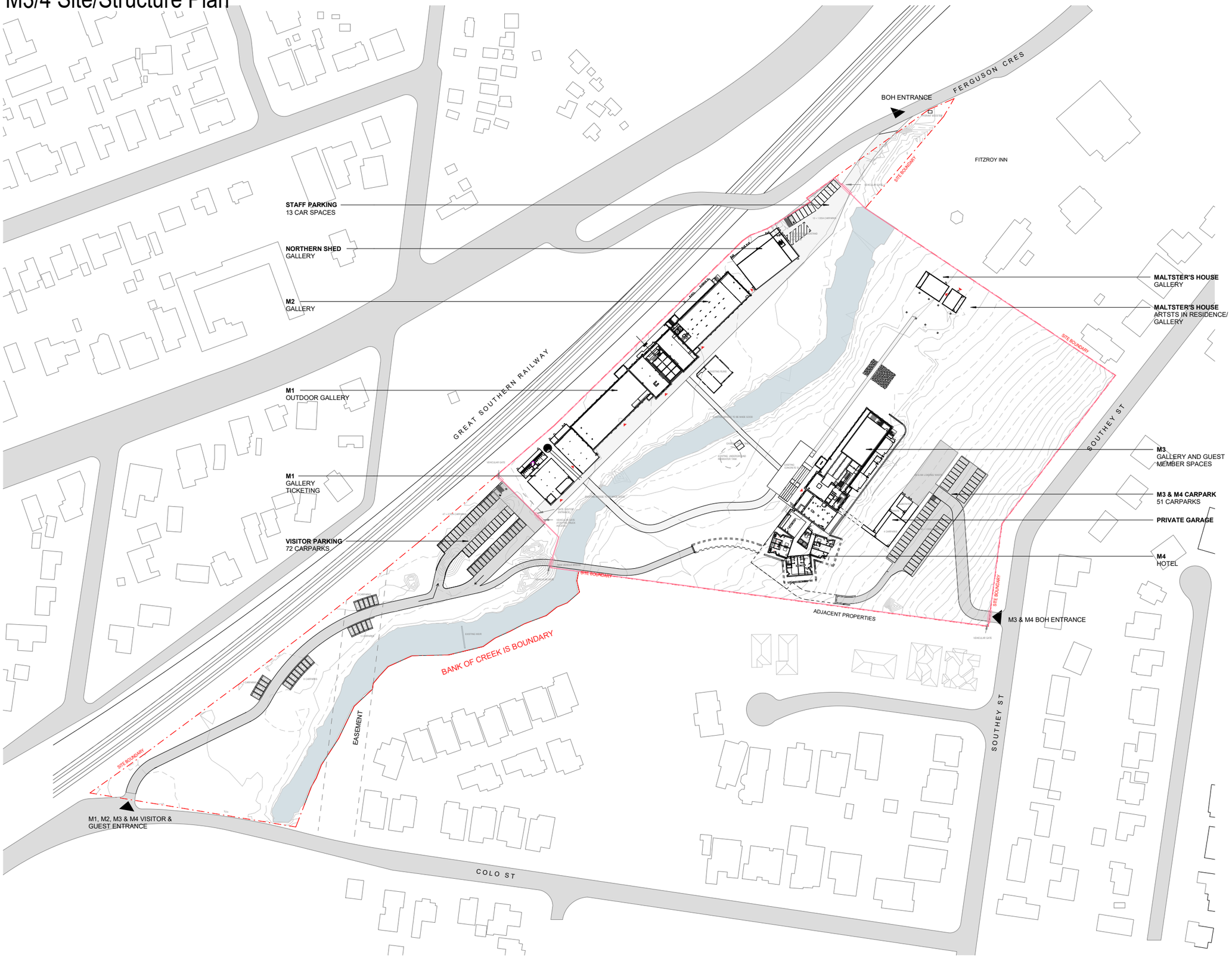
13/02/2024 5:12:47 PM

M3/4 Site/Structure Plan



Reference Map

North

0 10 20 50 100 m

Scale 1:1000

Notes

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LEGEND

- SITE BOUNDARY
- VEHICLE ENTRANCE
- PUBLIC ENTRANCE
- CREEK
- PATH
- VEHICLE ROAD
- NEW SECURITY FENCE

Revision	Description	Date
E	For Development Application	12.02.2023
D	Final Draft	20.12.2023

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Status
For Development Application

Title
0100 - Overview Precinct
M3/4 Site/Structure Plan

Scale @ A1	Drawn	Reviewed	Approved
1 : 1000	MC	SM	KK

Project Number	Sheet Number	Rev
18-17	0100	E

Original Sheet Format A1 | 841 x 594mm

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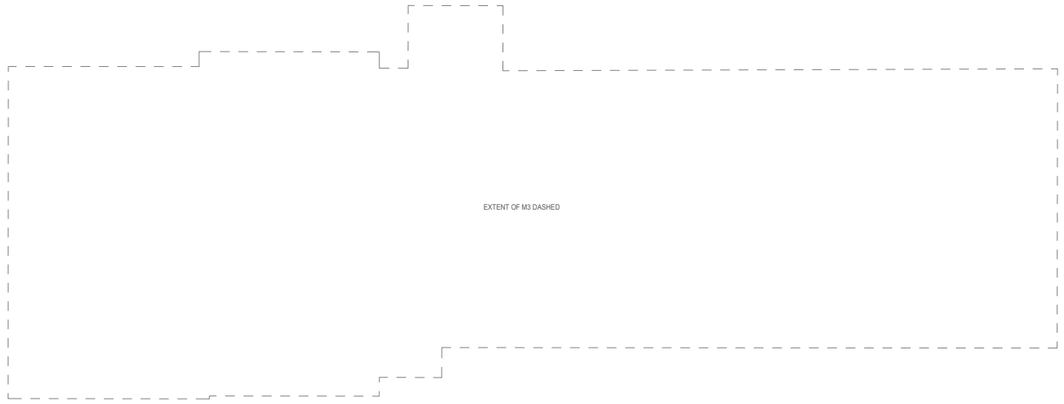
13/02/2024 5:31:09 PM

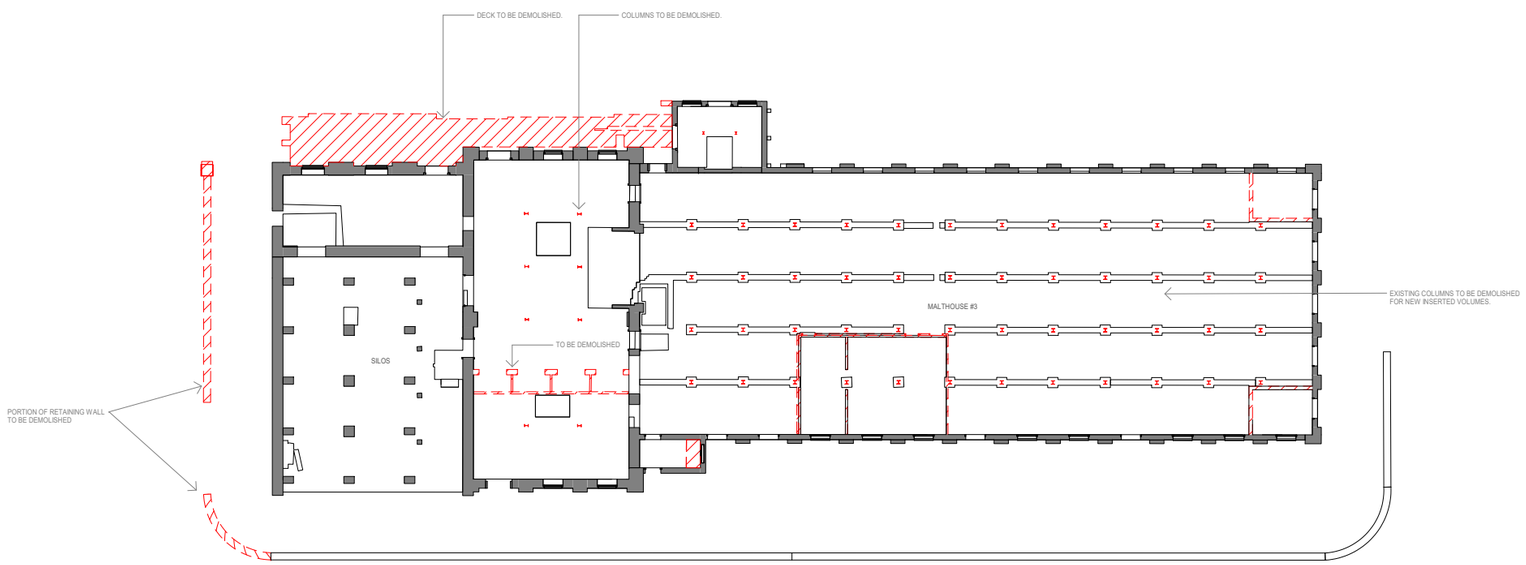
M3/4 Demolition Plan - Basement,Ground (L00)

To be demolished

Portion of slab/roof to be demolished



2 M3/4 Demolition Plan - Basement
1 : 200



1 M3/4 Demolition Plan - Ground Floor(L00)
1 : 200

Reference Map

North

0 2 4 10 20 m

Scale 1:200

Notes

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A	For Coordination	03.11.2023

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Status
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Title
0300 - Demolition
M3/4 Demolition Plan - Basement,Ground (L00)

Scale @ A1	Drawn	Reviewed	Approved
As indicated	SNO	SM	KK

Project Number	Sheet Number	Rev
18-17	M3/4 300	E

Original Sheet Format A1 | 841 x 594mm

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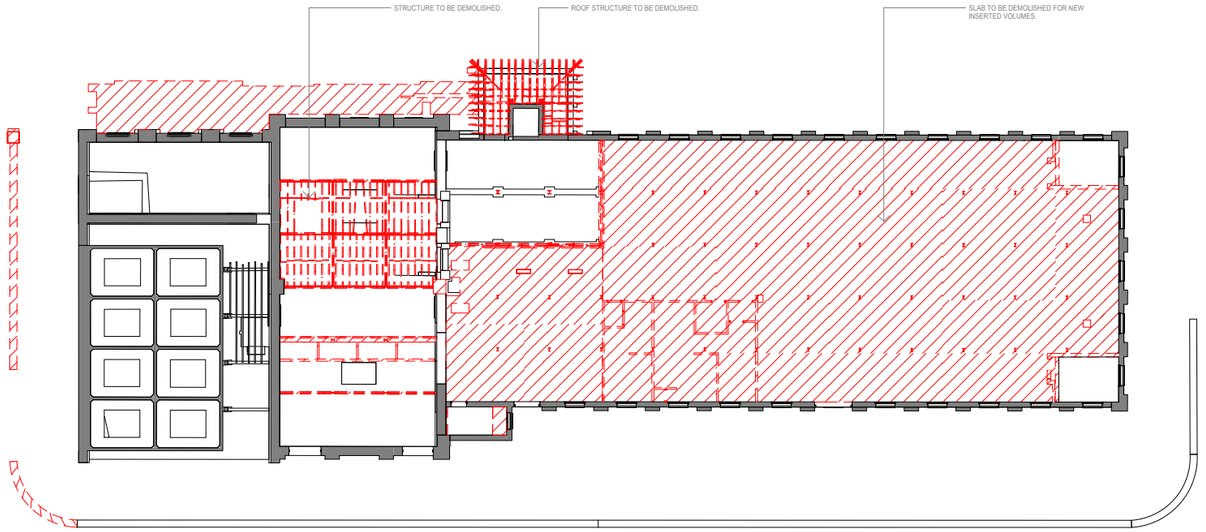
13/02/2024 5:13:12 PM

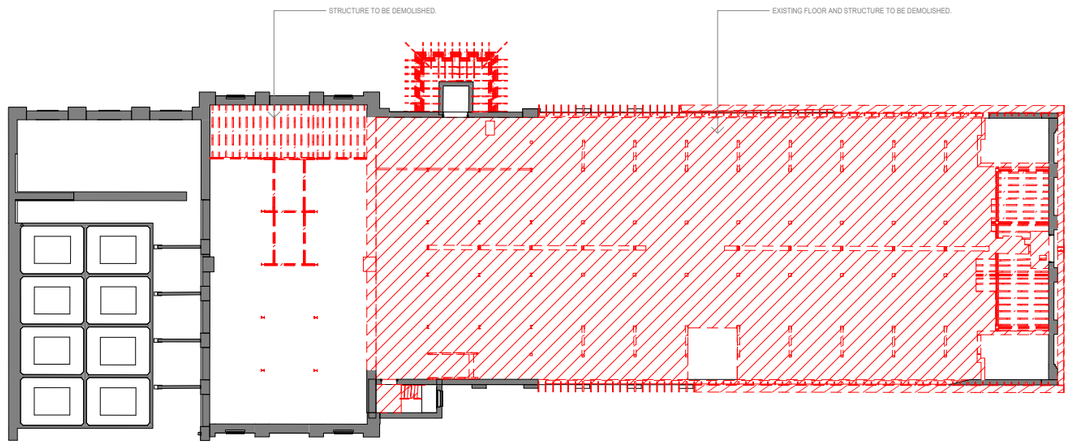
M3/4 Demolition Plan - L01, L02

To be demolished

Portion of slab/roof to be demolished



2 M3/4 Demolition Plan - L01
1 : 200



1 M3/4 Demolition Plan - L02
1 : 200

Reference Map

North

0 2 4 10 20 m

Scale 1:200

Notes

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Status
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Title
0300 - Demolition
M3/4 Demolition Plan - L01, L02

Scale @ A1	Drawn	Reviewed	Approved
As indicated	SNO	SM	KK

Project Number	Sheet Number	Rev
18-17	M3/4 301	E

Original Sheet Format A1 | 841 x 594mm

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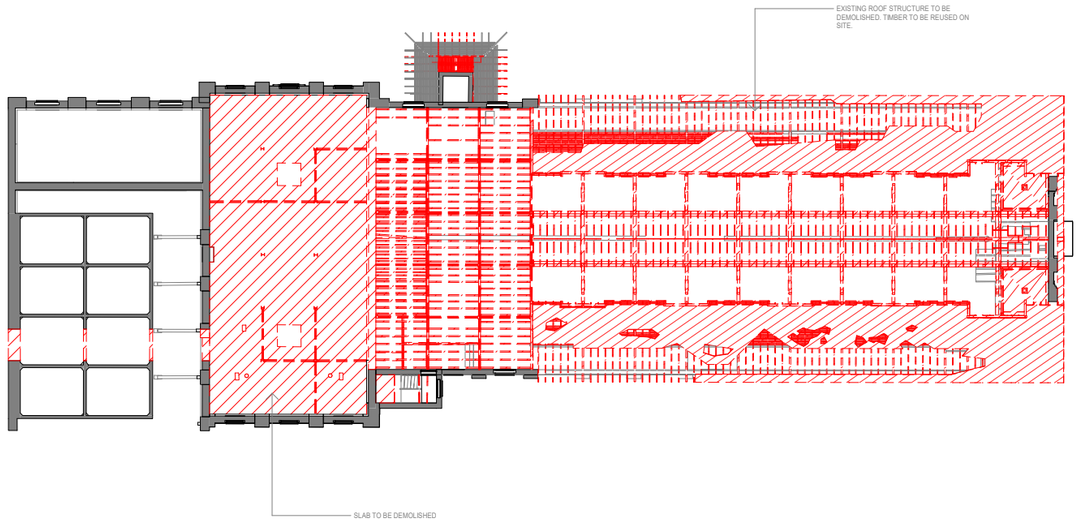
13/02/2024 5:13:14 PM

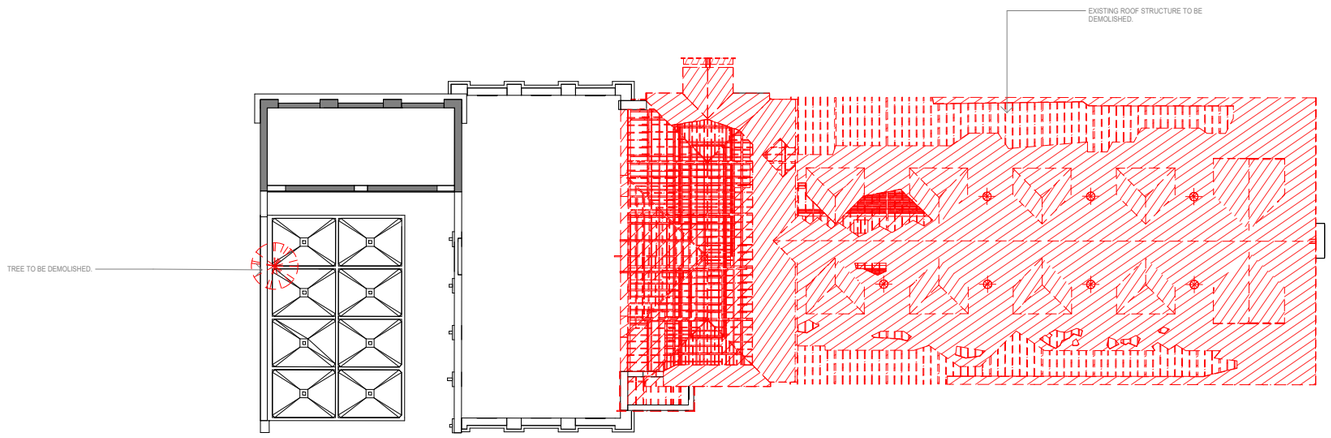
M3/4 Demolition Plan - L03, Roof

To be demolished

Portion of slab/roof to be demolished



1 M3/4 Demolition Plan - L03
1 : 200



2 M3/4 Demolition Plan - Roof
1 : 200

Reference Map

North

0 2 4 10 20 m

Scale 1:200

Notes

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Status
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Title
0300 - Demolition
M3/4 Demolition Plan - L03, Roof

Scale @ A1	Drawn	Reviewed	Approved
As indicated	SNO	SM	KK

Project Number	Sheet Number	Rev
18-17	M3/4 302	E

Original Sheet Format A1 | 841 x 594mm

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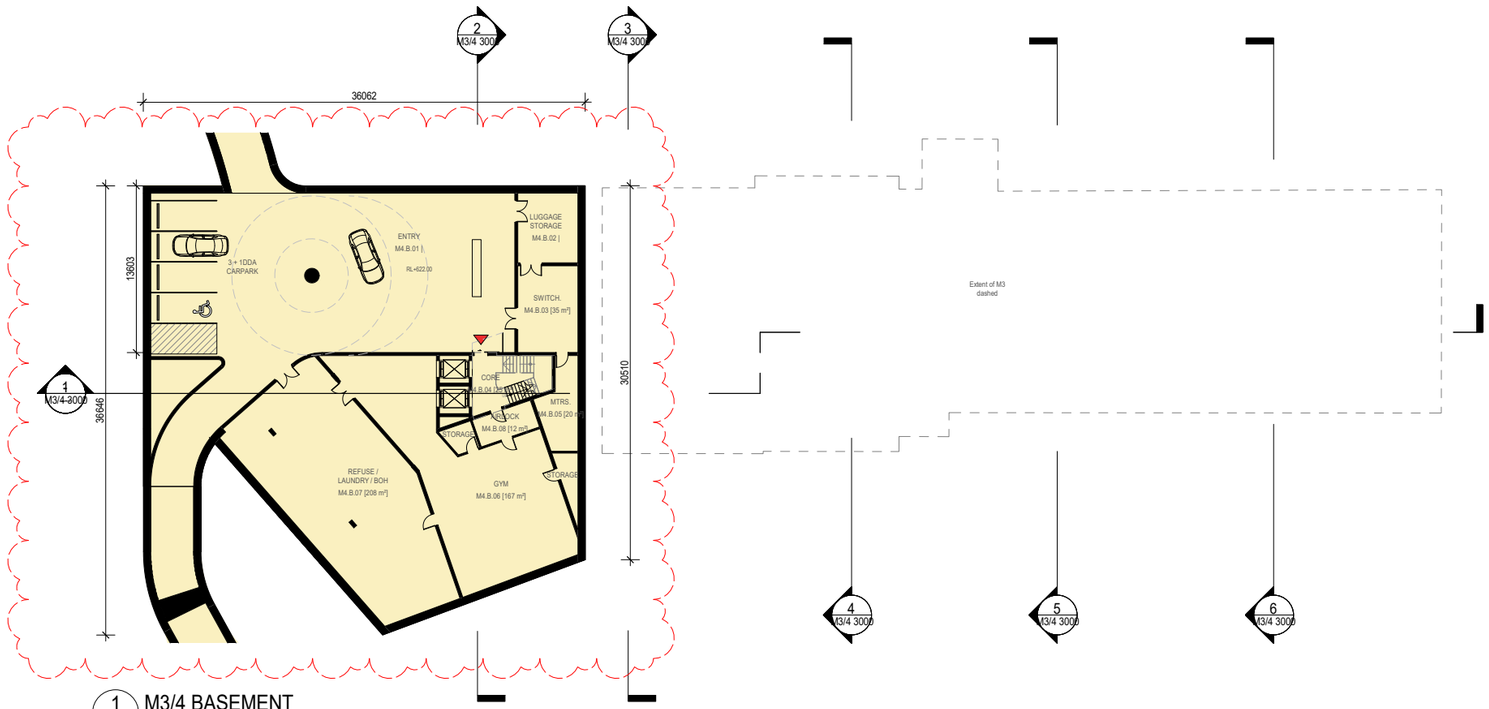
M3/4 Plan Basement



1 M3/4 BASEMENT
1 : 250

Reference Map

North

0 2.5 5 12.5 25 m

Scale 1:250

Notes

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- BUILDING ENTRY
- NEW BUILT - YELLOW HATCH
- EXISTING - GREYWALL
- NEW - BLACKWALL
- SOFT LANDSCAPE

Revision	Description	Date
E	For Development Application	12.02.2024
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Status
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Title
1100 - General Arrangement - Floor Plans
M3/4 Plan Basement

Scale @ A1	Drawn	Reviewed	Approved
As indicated	SNO	SM	KK

Project Number	Sheet Number	Rev
18-17	M3/4 1100	E

Original Sheet Format A1 | 841 x 594mm

BIM 360://The Maltings/MLTGS_SNØ_AR_MOD_M3_0001.rvt
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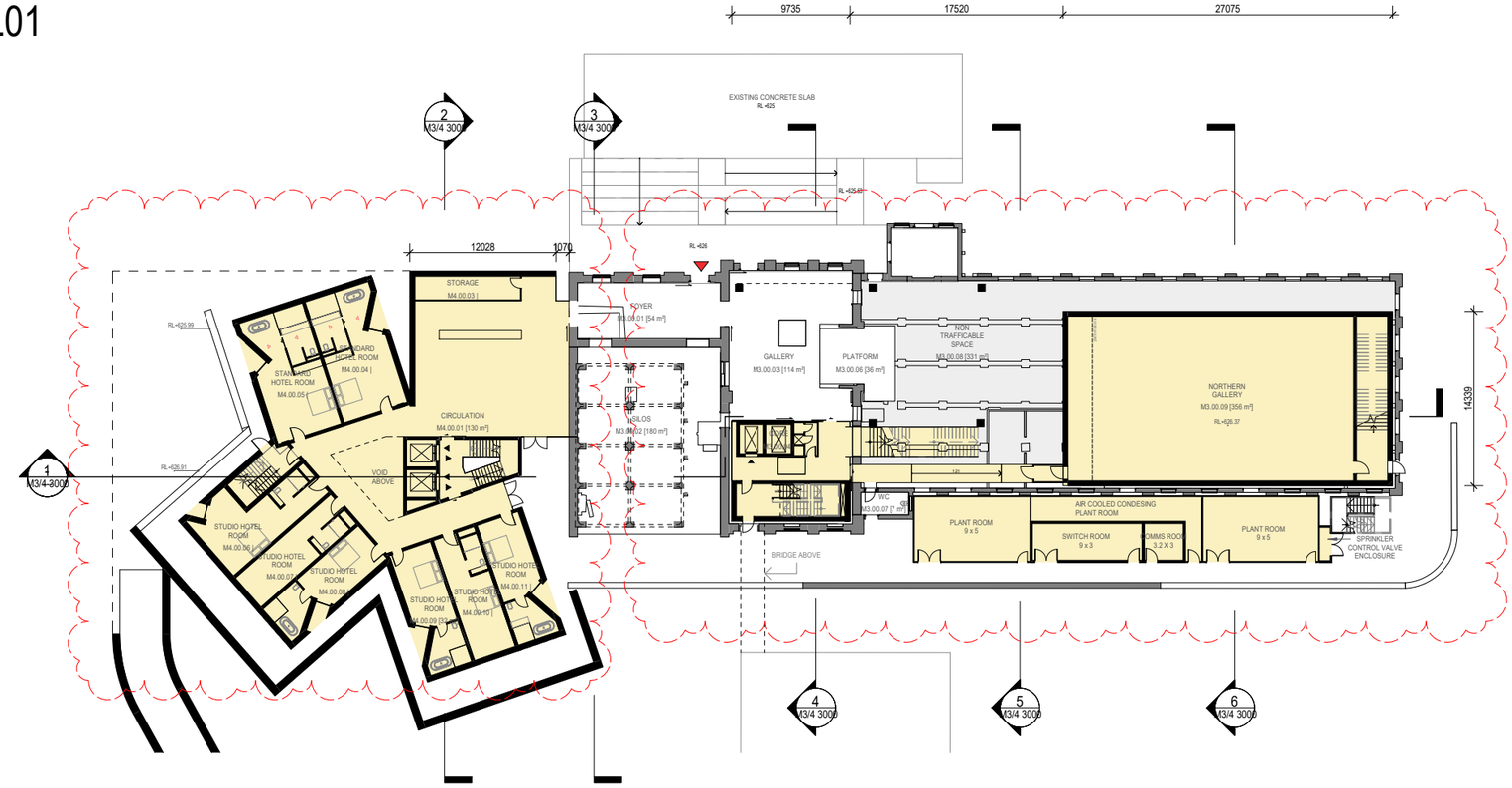
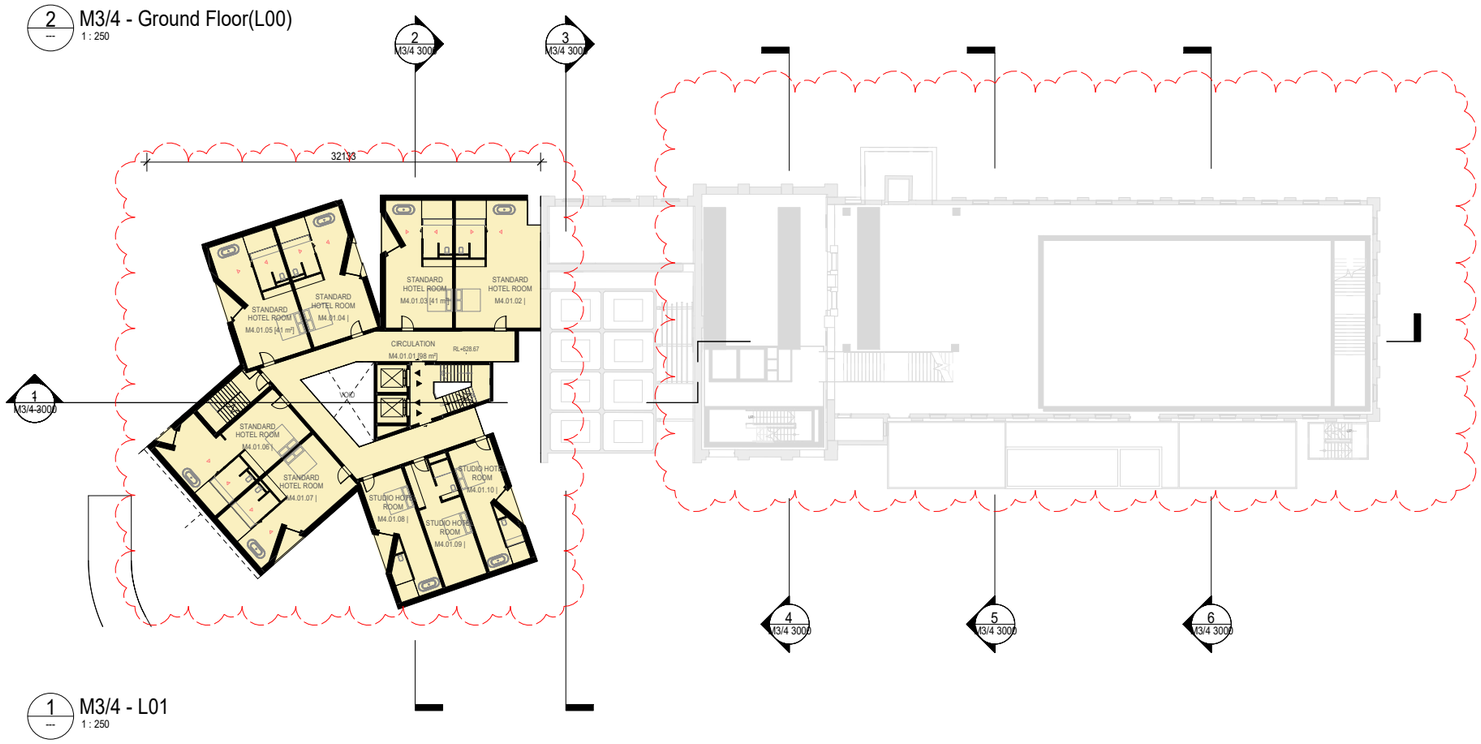
M3/4 Plan L00 - L01



2 M3/4 - Ground Floor(L00)
1 : 250



1 M3/4 - L01
1 : 250

Reference Map

North

0 2,5 5 12,5 25 m

Scale 1:250

Notes

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- BUILDING ENTRY
- NEW BUILT - YELLOW HATCH
- EXISTING - GREYWALL
- NEW - BLACKWALL
- SOFT LANDSCAPE

Revision	Description	Date
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Status
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Title
1100 - General Arrangement - Floor Plans
M3/4 Plan L00 - L01

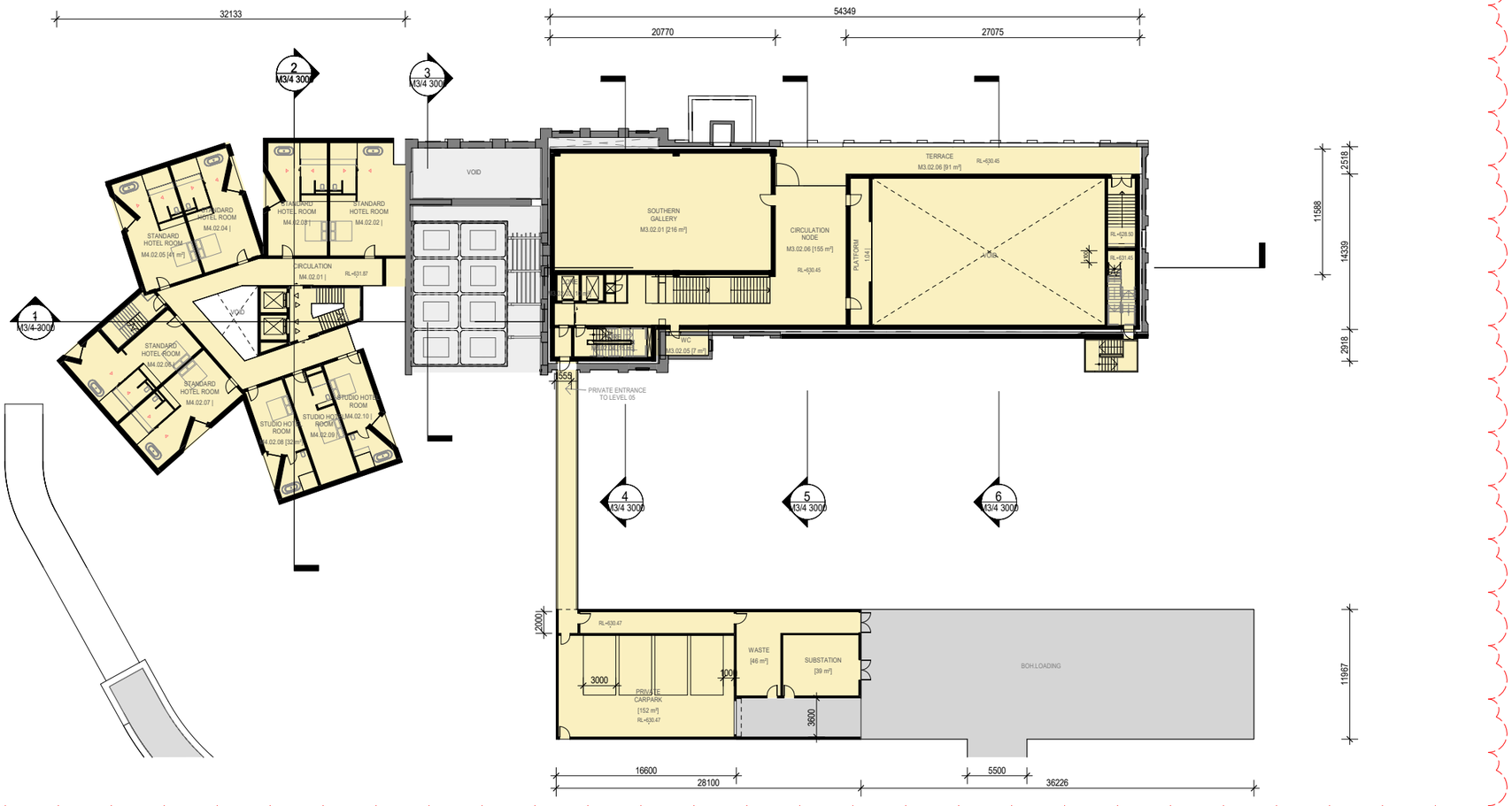
Scale @ A1	Drawn	Reviewed	Approved
As indicated	SNO	SM	KK

Project Number	Sheet Number	Rev
18-17	M3/4 1101	E

Original Sheet Format A1 | 841 x 594mm

BIM 360://The Maltings/MLTGS_SNØ_AR_MOD_M3_0001.rvt
13/02/2024 5:13:20 PM

M3/4 PLAN L02



1 M3/4 - L02
1 : 250

Reference Map

North

0 1 2 5 10 m

Scale 1:100

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BUILDING ENTRY

NEW BUILT - YELLOW HATCH

EXISTING - GREYWALL

NEW - BLACKWALL

SOFT LANDSCAPE

Revision	Description	Date
E	For Development Application	12.02.2024

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Status
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Title
1100 - General Arrangement - Floor Plans
M3/4 PLAN L02

Scale @ A1	Drawn	Reviewed	Approved
As indicated	SNO	SM	KK

Project Number	Sheet Number	Rev
18-17	M3/4 1102	E

Original Sheet Format A1 | 841 x 594mm

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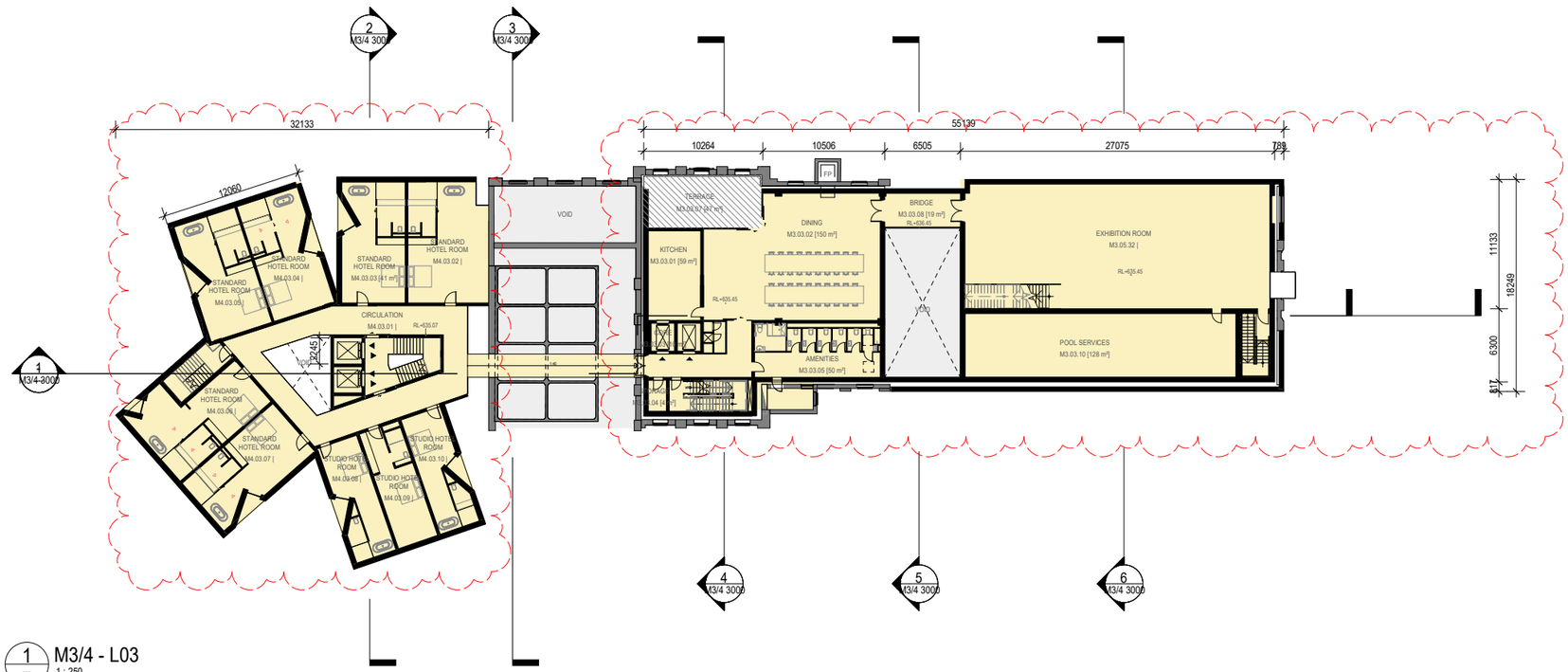
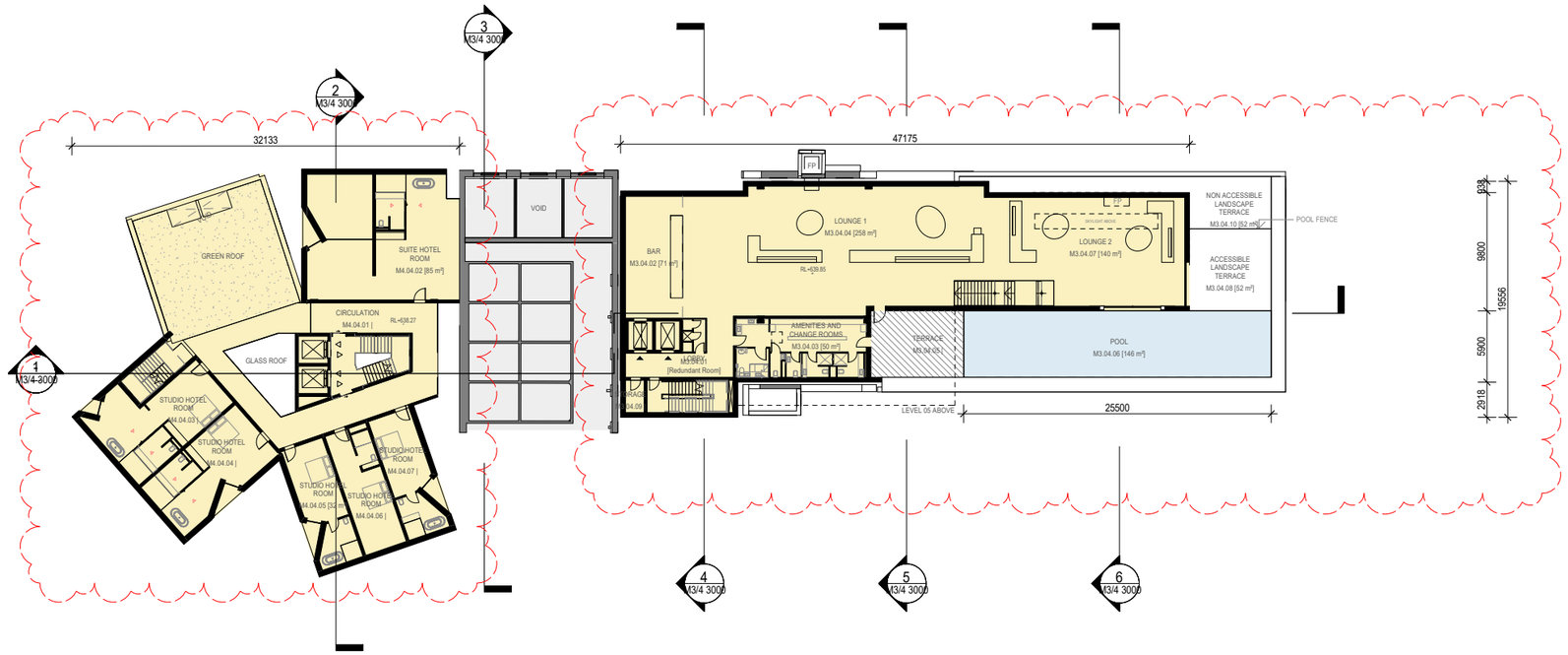
M3/4 Plan L03 - L04



1 M3/4 - L03
1 : 250



2 M3/4 - L04
1 : 250

Reference Map

North

0 2.5 5 12.5 25 m

Scale 1:250

Notes

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BUILDING ENTRY

NEW BUILT - YELLOW HATCH

EXISTING - GREYWALL

NEW - BLACKWALL

SOFT LANDSCAPE

Revision	Description	Date
E	For Development Application	12.02.2024
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Status
For Development Application

Title
1100 - General Arrangement - Floor Plans
M3/4 Plan L03 - L04

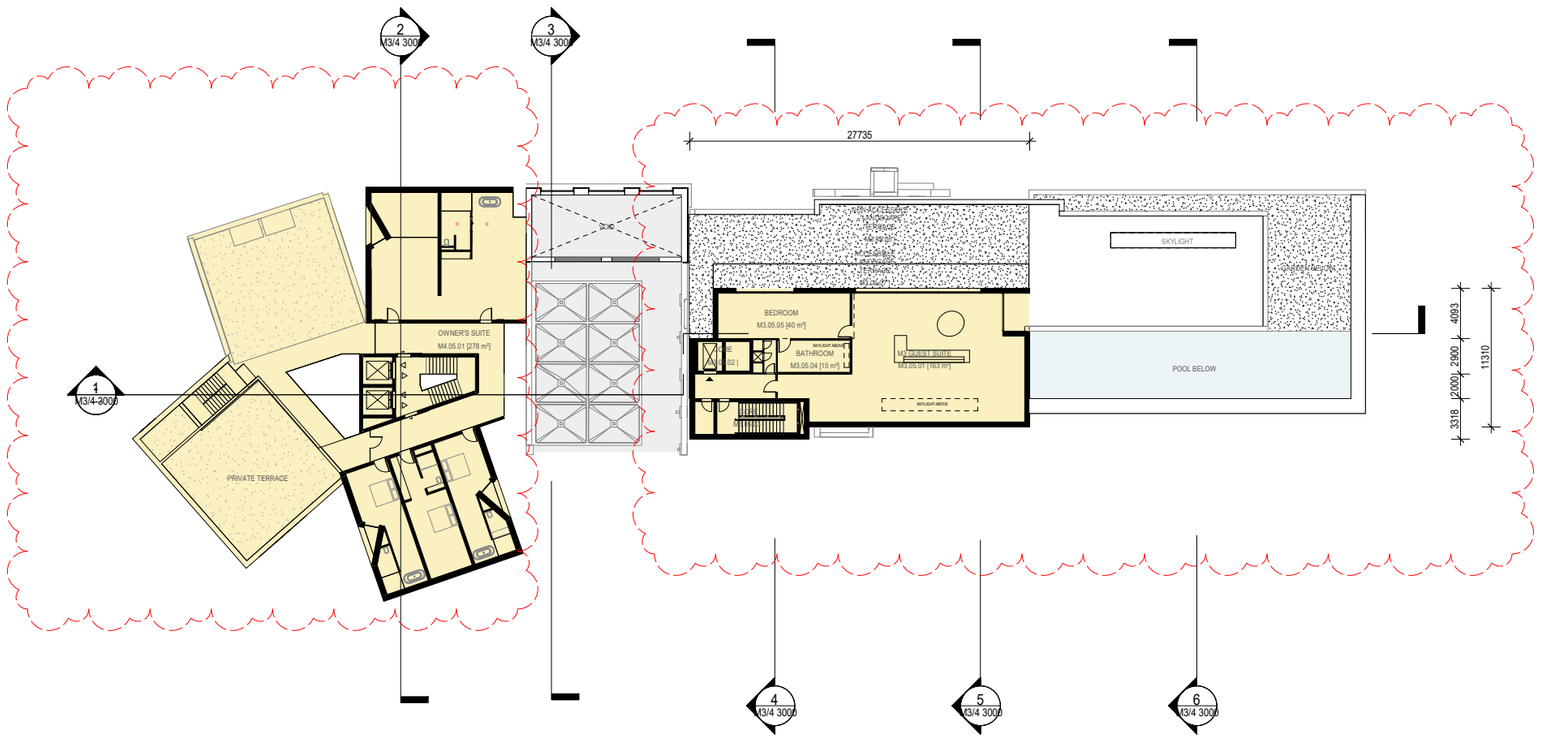
Scale @ A1	Drawn	Reviewed	Approved
As indicated	SNO	SM	KK

Project Number	Sheet Number	Rev
18-17	M3/4 1103	E

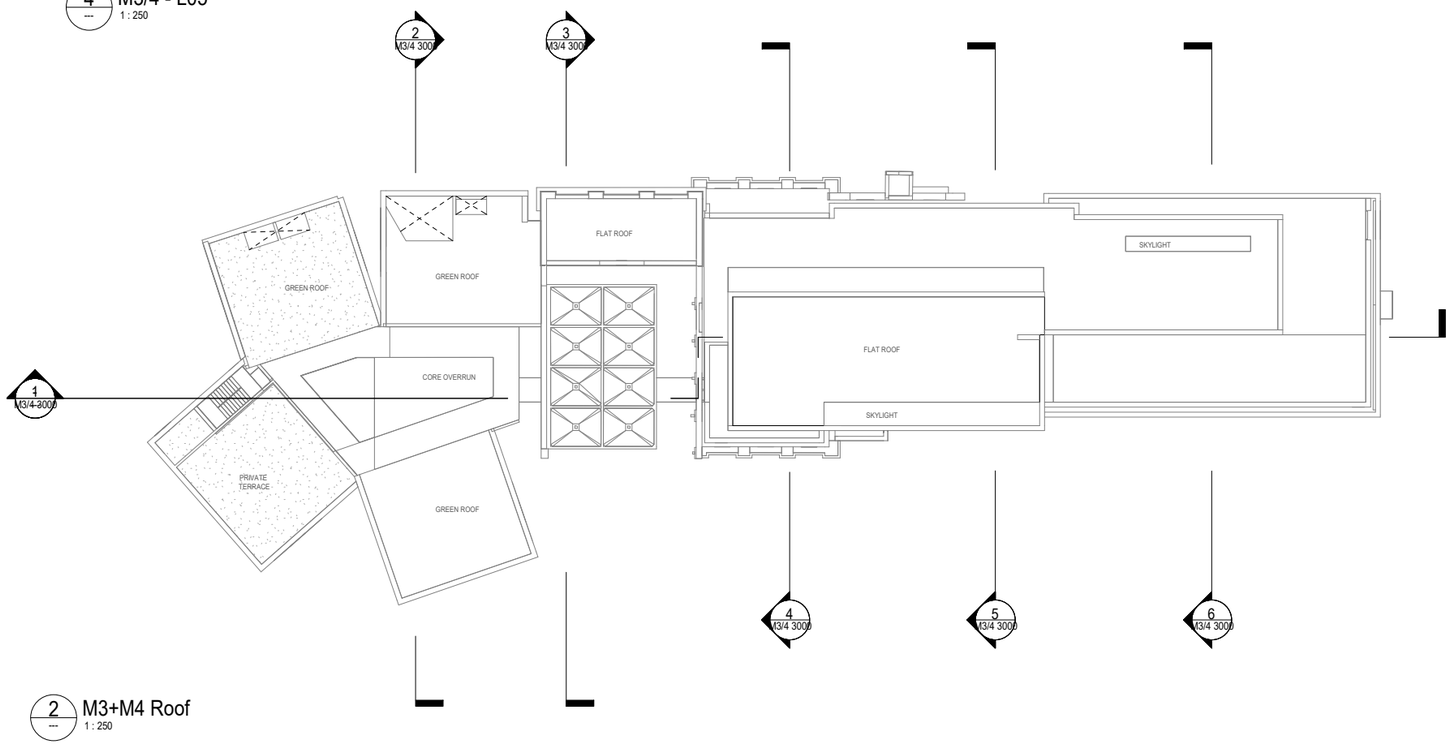
Original Sheet Format A1 | 841 x 594mm

BIM 360://The Maltings/MLTGS_SNØ_AR_MOD_M3_0001.rvt
13/02/2024 5:13:31 PM

M3/4 Plan L05 - Roof



4 M3/4 - L05
1 : 250



2 M3+M4 Roof
1 : 250

Reference Map

North

0 2,5 5 12,5 25 m

Scale 1:250

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BUILDING ENTRY

NEW BUILT - YELLOW HATCH

EXISTING - GREYWALL

NEW - BLACKWALL

SOFT LANDSCAPE

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Status
For Development Application

Title
1100 - General Arrangement - Floor Plans
M3/4 Plan L05 - Roof

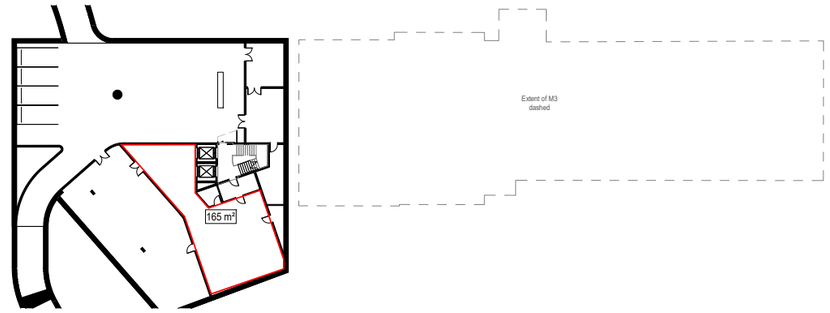
Scale @ A1	Drawn	Reviewed	Approved
As indicated	SNO	SM	KK

Project Number	Sheet Number	Rev
18-17	M3/4 1104	E

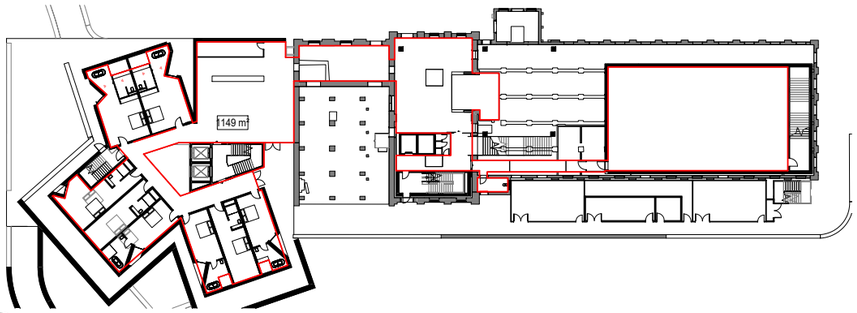
Original Sheet Format A1 | 841 x 594mm

BIM 360://The Maltings/MLTGS_SNØ_AR_MOD_M3_0001.rvt
13/02/2024 5:13:32 PM

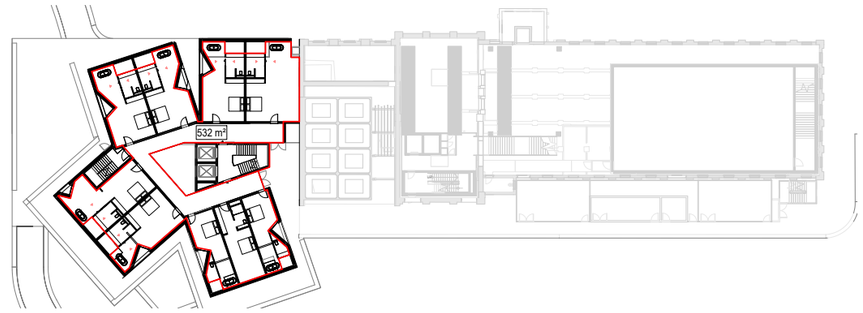
M3/4 GFA Plans



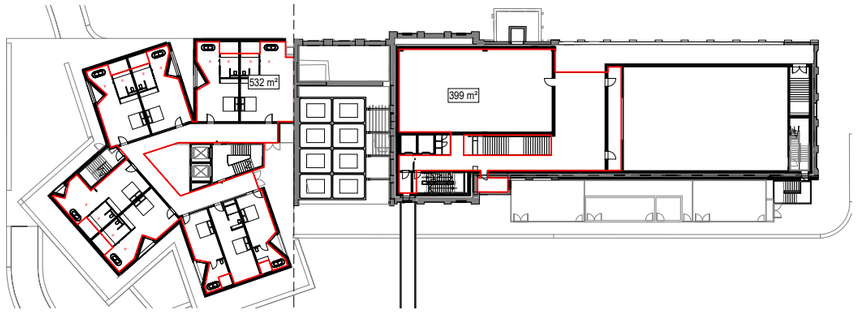
1 --- M3/4 - Basement
1 : 400



2 --- M3/4 - Ground Floor (L00)
1 : 400



3 --- M3/4 - L01
1 : 400



4 --- M3/4 - L02
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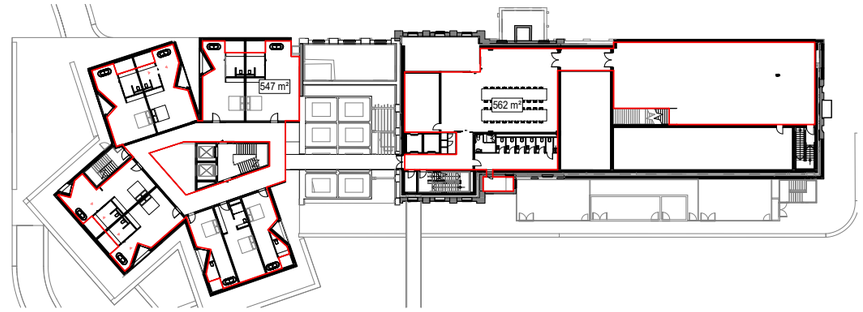
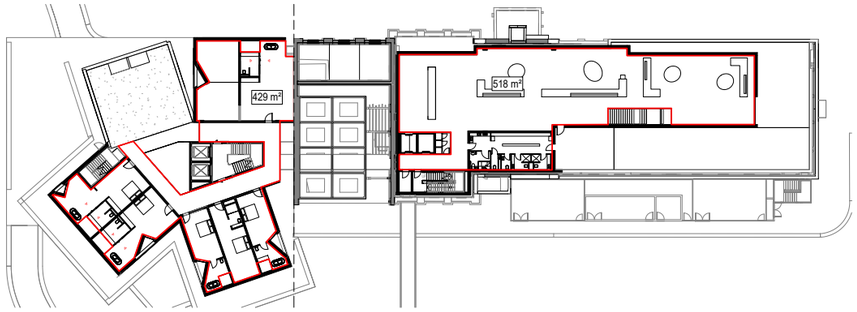
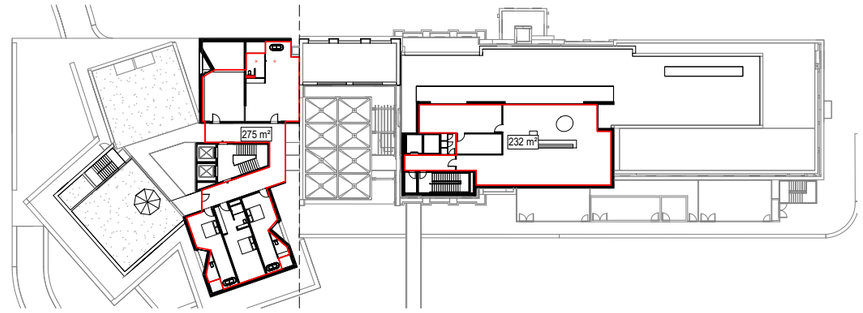


5 --- M3/4 - L03
1 : 400



6 --- M3/4 - L04
1 : 400



7 --- M3/4 - L05
1 : 400

Current GFA

Area Schedule (AREA_GFA)

Name	Area	Level
M3+M4 Basement		
M4 Basement	165 m²	M3+M4 Basement
	165 m²	
M3+M4 Ground		
M3	1149 m²	M3+M4 Ground
	1149 m²	
M3+M4 L01		
M4	532 m²	M3+M4 L01
	532 m²	
M3+M4 L02		
M3+M4	399 m²	M3+M4 L02
M4	532 m²	M3+M4 L02
	931 m²	
M3+M4 L03		
M4	547 m²	M3+M4 L03
M3	562 m²	M3+M4 L03
	1109 m²	

Area Schedule (AREA_GFA)

Name	Area	Level
M3+M4 L04		
M3	518 m²	M3+M4 L04
M4	429 m²	M3+M4 L04
	948 m²	
M3+M4 L05		
M4	275 m²	M3+M4 L05
M3	232 m²	M3+M4 L05
	507 m²	
Grand total	5342 m²	

Previous GFA

Area Schedule (AREA_GFA)

Name	Level	Area
M3 + M4 B01	H-B1	177 m²
M3 + M4 L00	H-00	1423 m²
M3 + M4 L01	H-01	386 m²
M3 + M4 L01	H-01	497 m²
M3 + M4 L02	H-02	497 m²
M3 + M4 L02	H-02	774 m²
M3 + M4 L03	H-03	512 m²
M3 + M4 L04	H-04	296 m²
M3 + M4 L04	H-04	375 m²
M3 + M4 L05	H-05	264 m²
Grand total: 10		5200 m²

Reference Map

0 4 8 20 40 m

Scale 1:400

Notes

Figured dimensions take precedence to scaled readings.| All dimensions are in millimetres unless noted otherwise. | Dimensions are to be verified on Site prior to Project Commencement. | Any discrepancies are to be reported to Snøhetta in writing for decision before proceeding with work. | Drawing is to be read in conjunction with all relevant and associated material, Contracts, Specifications and Drawings. | This drawing is an uncontrolled copy, unless noted otherwise.

Revision	Description	Date
E	For Development Application	12.02.2024
D	Final draft	20.12.2023
C	For Coordination	08.12.2023

Consultant

Consultant

Consultant

Project
The Maltings
MITTAGONG NSW 2575

Client
MEDICH FAMILY OFFICE

Consultant
Snøhetta
Snøhetta Australasia Pty Ltd ABN 74 612 295 735
178 Sturt Street,
Adelaide SA 5000 Australia

Status
For Development Application

Title
1800 - Other Project Required Plans
M3/4 GFA Plans

Scale @ A1	Drawn	Reviewed	Approved
1 : 400	SNO	SM	KK

Project Number	Sheet Number	Rev
18-17	M3/4 1801	E

Original Sheet Format A1 | 841 x 594mm

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13/02/2024 5:13:40 PM

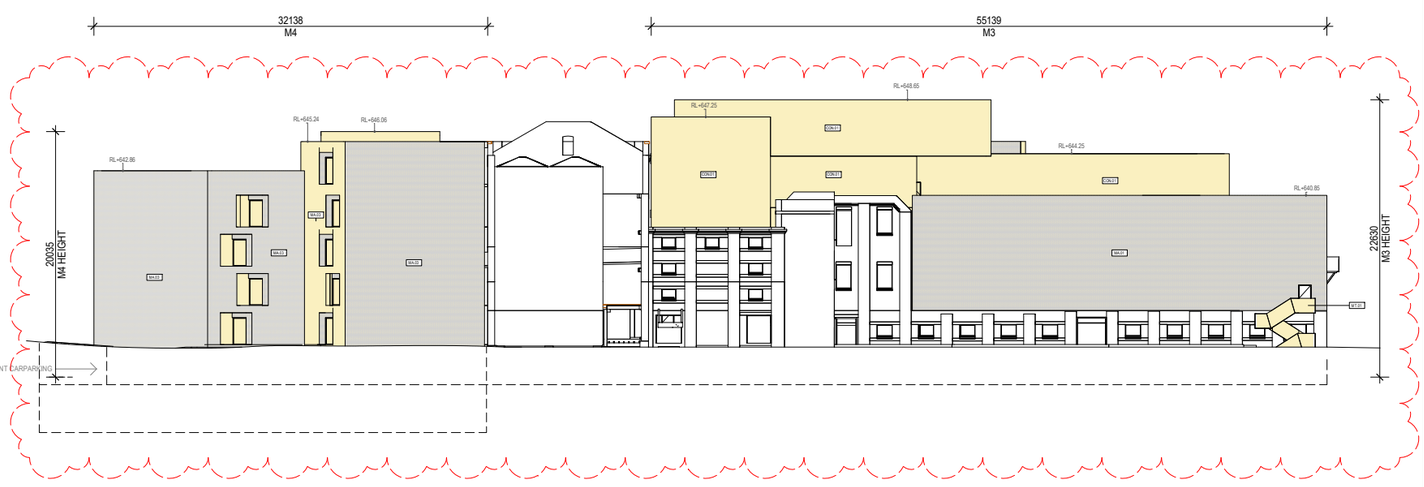
M3/4 Elevations - North, East, South, West

Keynote Legend	
Key Value	Keynote Text
CON.01	Concrete (Sustainable concrete or equivalent - opportunity to use Ashcrete)
GLS.01	Glass (Clear double galzing for new fenestration)
MA.01	Brick (New brick)
MA.03	Brick (New brick, uniform textured appearance,hit and miss, recessed and extruded bricks pattern
MT.01	Metal (Solid Metal Panel with applied finish / Axolotl steel metal - Dark tones)

1 M3/4 North Elevation
1 : 250

2 M3/4 West Elevation
1 : 250

3 M3/4 South Elevation
1 : 250



4 M3/4 East Elevation
1 : 250

Reference Map

0 1 2 5 10 m

Scale 1:100

Notes

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Revision	Description	Date
E	For Development Application	12.02.2024
D	Final draft	20.12.2023
C	For Coordination	08.12.2023
B	For Coordination	29.11.2023
A	For Coordination	03.11.2023

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Status
For Development Application

Title
2000 - Elevations (Exterior)
M3/4 Elevations - North, East, South, West

Scale @ A1	Drawn	Reviewed	Approved
1 : 250	SNO	SM	KK

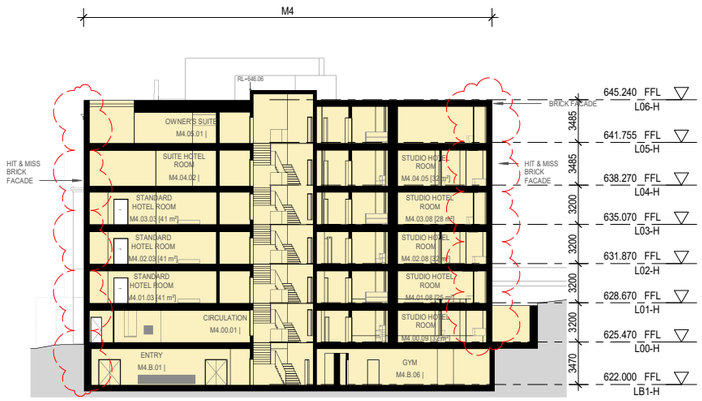
Project Number	Sheet Number	Rev
18-17	M3/4 2000	E

Original Sheet Format A1 | 841 x 594mm

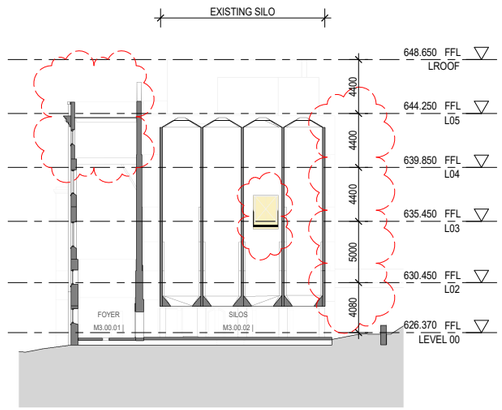
BIM 360://The Maltings/MLTGS_SN0_AR_MOD_M3_0001.rvt
13/02/2024 5:14:20 PM

M3/4 Sections

1 — M3/4 Section 1
1 : 250

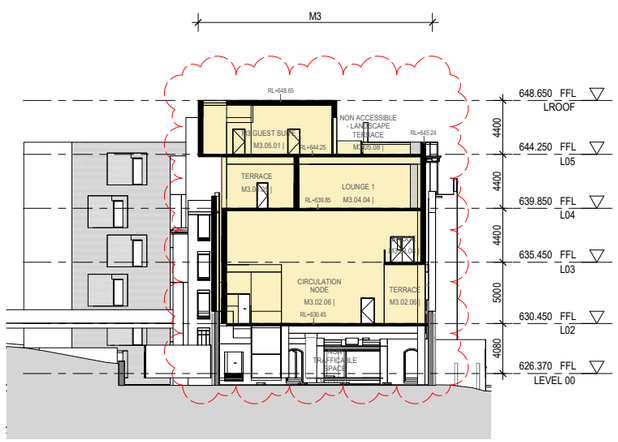


2 — M3/4 Section 2
1 : 250

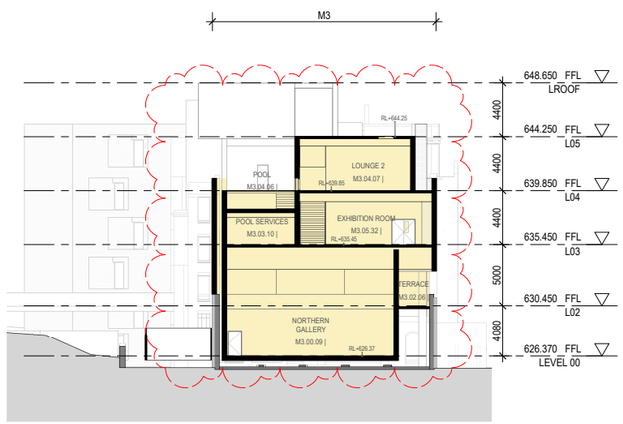


3 — M3/4 Section 3
1 : 250

4 — M3/4 Section 4
1 : 250



5 — M3/4 Section 5
1 : 250



6 — M3/4 Section 6
1 : 250

Reference Map

0 2.5 5 12.5 25 m

Scale 1:250

Notes

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E	For Development Application	12.02.2024
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C	For Coordination	08.12.2023

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Status
For Development Application

Title
3000 - Sections
M3/4 Sections

Scale @ A1	Drawn	Reviewed	Approved
1 : 250	SNO	SM	KK

Project Number	Sheet Number	Rev
18-17	M3/4 3000	E

Original Sheet Format A1 | 841 x 594mm

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M3/4 Materials Schedule

GLS.01

GLS.02

LV.01

CON.01

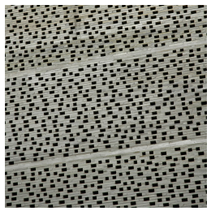
MT.01

MT.02/ MT.03

MT.04

MA.01

MA.02



MA.03

PV.01

Reference Map

0 1 2 5 10 m

Scale 1:100

Notes

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Revision	Description	Date
E	For Development Application	12.02.2024

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Status
For Development Application

Title
6000 - Schedules & Diagrams
M3/4 Materials Schedule

Scale @ A1	Drawn	Reviewed	Approved
1 : 50	SNO	SM	KK

Project Number	Sheet Number	Rev
18-17	M3/4 6000	E

Original Sheet Format A1 | 841 x 594mm

BIM 360://The Maltings/MLTGS_SNØ_AR_MOD_M3_0001.rvt
13/02/2024 5:14:31 PM

Appendix B Previously Approved Plans

1 Visitor entry and exit from Colo St.
2 Compacted granitic sand access (two way)
3 Visitor car park
4 Access to accommodation (one way)
5 New vehicle bridge
6 Reinstated timber rail bridge
7 Gallery
8 Plant and services
9 M1
10 M1 entrance terrace
11 Terrace
12 Pavilion Cafe
13 M2
14 M2 Terrace
15 Gallery
16 Service parking and delivery
17 Service entry/exit and emergency egress
18 Existing bridge ruin
19 River platform
20 New pedestrian bridge
21 The great meadow
22 East terrace
23 M3
24 M4
25 Car park underground
26 Sculptural stormwater basins
27 Maltster's House
28 Maltster's + Walled + Productive Garden
29 Propagation nursery
30 Accommodation and services parking
31 Edge planting
32 Visitor exit and service access

Site plan 1:2000

The Maltings

Mittagong, NSW

SHEET LIST SD SERIES

NUMBER	TITLE	REV	REV DESCRIPTION	DATE
A0000 - GENERAL				
SD-A000	Title Sheet	G	For Development Application	04.05.2020
SD-A002	Area Schedules	E	For Development Application	04.05.2020
A0000 - SITE				
SD-A003	Site Plan	I	For Development Application	04.05.2020
SD-A030	Site Elevations	G	For Development Application	04.05.2020
SD-A031	Site Elevations	G	For Development Application	04.05.2020
SD-A040	Flood Level Diagrams	I	For Development Application	04.05.2020
A0200 - 1:250 GA PLANS				
SD-A200	M1+2 Level G-1	K	For Development Application	04.05.2020
SD-A201	M1+2 Level 2-Roof	K	For Development Application	04.05.2020
SD-A203	M1+2 Area Plans	D	For Development Application	04.05.2020
SD-A210	M3+4 Level B-G	M	For Development Application	04.05.2020
SD-A211	M3+4 Level 1-2	L	For Development Application	04.05.2020
SD-A212	M3+4 Level 3-4	L	For Development Application	04.05.2020
SD-A213	M3+4 Level 5-R	L	For Development Application	04.05.2020
SD-A220	M3+4 Area Plans	D	For Development Application	04.05.2020
A0300 - 1:250 GA ELEVATIONS				
SD-A300	M1+2 Elevations	I	For Development Application	04.05.2020
SD-A310	M3+4 Elevations	I	For Development Application	04.05.2020
A0400 - 1:250 GA SECTIONS				
SD-A400	M1+2 Sections	H	For Development Application	04.05.2020
SD-A410	M3+4 Sections	H	For Development Application	04.05.2020
A0500 - LANDSCAPE				
SD-A500	Landscape Plan	C	For Development Application	04.05.2020
SD-A501	Landscape Plan 01	C	For Development Application	04.05.2020
SD-A502	Landscape Plan 02	C	For Development Application	04.05.2020
SD-A503	Landscape Plan 03	C	For Development Application	04.05.2020
SD-A504	Landscape Plan 04	C	For Development Application	04.05.2020
SD-A505	Landscape Plan 05	C	For Development Application	04.05.2020
SD-A506	Landscape Plan 06	C	For Development Application	04.05.2020
A0800 - 1:100 SITE STRUCTURES				
SD-A860	Maltster's House Plans	F	For Development Application	04.05.2020
SD-A861	Maltster's House Sections + Elevations	C	For Development Application	04.05.2020
A1000 - MISC				
SD-A1000	Shadow Study Existing	G	For Development Application	04.05.2020
SD-A1001	Shadow Study - Summer Solstice	F	For Development Application	04.05.2020
SD-A1002	Shadow Study - Winter Solstice	F	For Development Application	04.05.2020

Snøhetta
178 Sturt St | Adelaide | Australasia | SA 5000

Area Schedules

LAND AND ENVIRONMENT
COURT OF NSW
FILED ON

12 AUG 2021

INT

Room Areas M1+2				
Number	Name	Area	Level	Building
1.01	TERRACE BAR	142 m²	A-01_MEZ	M1+2
1.02	BOH	14 m²	A-01	M1+2
1.03	POOL TERRACE	655 m²	A-01_MEZ	M1+2
1.04	CORE	77 m²	A-01	M1+2
1.05	CORE	22 m²	A-01	M1+2
1.06	GREAT HALL	483 m²	A-01	M1+2
1.07	TERRACE	112 m²	A-01	M1+2
1.08	BOH	6 m²	A-01	M1+2
1.09	BOH	21 m²	A-01	M1+2
1.10	KITCHEN / BOH	46 m²	A-01	M1+2
2.01	GALLERY 1	220 m²	A-02_MEZ	M1+2
2.02	GALLERY 2	111 m²	A-02_MEZ	M1+2
2.03	GALLERY 3	86 m²	A-02_MEZ	M1+2
2.04	CORE	22 m²	A-02_MEZ	M1+2
2.05	BOH	7 m²	A-02_MEZ	M1+2
2.06	CORE	77 m²	A-02_MEZ	M1+2
G.01	MULTI-PURPOSE	335 m²	A-00_SHD	M1+2
G.02	BOH	68 m²	A-00_SHD	M1+2
G.03	BOH	21 m²	A-00_SHD	M1+2
G.04	CHANGE RM.	140 m²	A-00_SHD	M1+2
G.05	ARRIVAL	115 m²	A-00_SHD	M1+2
G.07	MULTI-PURPOSE	410 m²	A-00	M1+2
G.08	POOL PLANT	216 m²	A-00	M1+2
G.09	CORE	84 m²	A-00	M1+2
G.10	BOH	6 m²	A-00	M1+2
G.11	MULTI-PURPOSE	219 m²	A-00	M1+2
G.12	SILO	174 m²	A-00_PLA	M1+2
G.13	COURTYARD	23 m²	A-00	M1+2
G.14	TERRACE	93 m²	A-00	M1+2
G.15	COURTYARD	23 m²	A-00	M1+2
G.16	HANGING GARDENS	220 m²	A-00	M1+2
G.17	LOBBY	120 m²	A-00	M1+2
G.18	CORE	22 m²	A-00	M1+2
G.19	BOH	6 m²	A-00	M1+2
G.20	AMENITIES	34 m²	A-00	M1+2
G.21	STAFF AMENITIES	23 m²	A-00	M1+2
G.22	REFUSE	22 m²	A-00	M1+2
G.23	BOH	345 m²	A-00	M1+2
G.24	STREET	92 m²	A-00	M1+2
G.25	NORTH SHED	583 m²	A-00	M1+2
G.26	KITCHEN / BOH	31 m²	FHL	M1+2
Grand total: 41		5528 m²		

M1+2 FECA		
Name	Level	Area
M1+2	A-00	2497 m²
M1+2 Sheds	A-00	423 m²
M1+2 Sheds	A-00	296 m²
M1+2 Sheds	A-00	610 m²
M1+2	A-00	39 m²
M1+2	A-01	1058 m²
M1+2	A-01	666 m²
M1+2	A-02_MEZ	586 m²
Grand total: 8		6175 m²

Room Areas M3				
Number	Name	Area	Level	Building
G.01	FOYER	63 m²	C-00	M3
G.02	SILOS	173 m²	C-00	M3
G.03	CORE	44 m²	C-00	M3
G.03	RECEPTION	168 m²	C-00	M3
G.04	EXP. GARDEN	565 m²	C-00	M3
G.05	BOH	22 m²	C-00	M3
G.06	MUILTI-PURPOSE SPACE	107 m²	C-00	M3
C-00: 7		1142 m²		
1.01	CINEMA LOBBY	144 m²	C-01	M3
1.02	CINEMA	45 m²	C-01	M3
1.03	BOH / STORAGE	75 m²	C-01	M3
1.04	AMENITIES	34 m²	C-01	M3
1.05	STAFF AMENITIES	28 m²	C-01	M3
C-01: 5		326 m²		
2.01	KITCHEN / DINING	137 m²	C-02	M3
2.02	BOH KITCHEN	64 m²	C-02	M3
2.03	BOH	26 m²	C-02	M3
2.04	LOUNGE	459 m²	C-02	M3
2.05	BAR	58 m²	C-02	M3
C-02: 5		744 m²		
3.01	ASSOCIATED HOTEL USES	112 m²	C-04	M3
3.02	SPA	102 m²	C-04	M3
3.03	ASSOCIATED HOTEL USES	27 m²	C-04	M3
3.03	ASSOCIATED HOTEL USES	11 m²	C-04	M3
3.04	STORE	16 m²	C-04	M3
3.05	GALLERY	88 m²	C-04	M3
3.06	PRIVATE EVENT ROOM	41 m²	C-04	M3
3.07	BOH	7 m²	C-04	M3
C-04: 8		405 m²		
4.01	MEZZANINE	132 m²	C-04_MEZ	M3
C-04_MEZ: 1		132 m²		
5.02	STUDY	62 m²	C-05	M3
C-05: 1		62 m²		
Grand total: 27		M3+4 FECA 2610 m²		

Name	Level	Area
M3	H-05	79 m²
M3	H-04	108 m²
M3	H-03	439 m²
M3	H-02	1029 m²
M3	H-01	701 m²
M3	H-00	1396 m²
M4	H-05	320 m²
M4	H-04	432 m²
M4	H-03	572 m²
M4	H-02	584 m²
M4	H-01	558 m²
M4	H-00	656 m²
M4	H-B1	198 m²
Grand total: 13		7072 m²

Room Areas M4				
Number	Name	Area	Level	Building
B.03	GYM	177 m²	H-B1	M4
H-B1: 1		177 m²		
H.G.00	CIRCULATION	151 m²	H-00	M4
H.G.01	STANDARD	48 m²	H-00	M4
H.G.02	STANDARD	47 m²	H-00	M4
H.G.03	STUDIO	30 m²	H-00	M4
H.G.04	STUDIO	30 m²	H-00	M4
H.G.05	STUDIO	32 m²	H-00	M4
H.G.06	STUDIO	30 m²	H-00	M4
H.G.07	STUDIO	30 m²	H-00	M4
H.G.08	STUDIO	30 m²	H-00	M4
H-00: 9		427 m²		
H.1.00	CIRCULATION	98 m²	H-01	M4
H.1.01	STANDARD	47 m²	H-01	M4
H.1.02	STANDARD	48 m²	H-01	M4
H.1.03	STANDARD	48 m²	H-01	M4
H.1.04	STANDARD	47 m²	H-01	M4
H.1.05	STANDARD	47 m²	H-01	M4
H.1.06	STANDARD	48 m²	H-01	M4
H.1.07	STUDIO	30 m²	H-01	M4
H.1.08	STUDIO	30 m²	H-01	M4
H.1.09	STUDIO	30 m²	H-01	M4
H-01: 10		472 m²		
H.2.00	CIRCULATION	98 m²	H-02	M4
H.2.01	STANDARD	47 m²	H-02	M4
H.2.02	STANDARD	48 m²	H-02	M4
H.2.03	STANDARD	48 m²	H-02	M4
H.2.04	STANDARD	47 m²	H-02	M4
H.2.05	STANDARD	47 m²	H-02	M4
H.2.06	STANDARD	48 m²	H-02	M4
H.2.07	STUDIO	30 m²	H-02	M4
H.2.08	STUDIO	30 m²	H-02	M4
H.2.09	STUDIO	30 m²	H-02	M4
H-02: 10		472 m²		
H.3.00	CIRCULATION	98 m²	H-03	M4
H.3.01	STANDARD	47 m²	H-03	M4
H.3.02	STANDARD	48 m²	H-03	M4
H.3.03	STANDARD	48 m²	H-03	M4
H.3.04	STANDARD	47 m²	H-03	M4
H.3.05	STANDARD	47 m²	H-03	M4
H.3.06	STANDARD	48 m²	H-03	M4
H.3.07	STUDIO	30 m²	H-03	M4
H.3.08	STUDIO	30 m²	H-03	M4
H.3.09	STUDIO	30 m²	H-03	M4
H-03: 10		473 m²		
H.4.00	CIRCULATION	66 m²	H-04	M4
H.4.01	4.01 SUITE	95 m²	H-04	M4
H.4.02	4.02 SUITE	95 m²	H-04	M4
H.4.03	STUDIO	30 m²	H-04	M4
H.4.04	STUDIO	30 m²	H-04	M4
H.4.05	STUDIO	30 m²	H-04	M4
H-04: 6		347 m²		
5.01	PRIVATE TERRACE	103 m²	H-05	M4
H.5.01	OWNER'S SUITE	255 m²	H-05	M4
H-05: 2		358 m²		
Grand total: 48		2727 m²		

M4 ROOM COUNT	AREA	TOTAL
SMALL	33m²	18
MEDIUM	50m²	20
LARGE	100m²	2
TOTAL		40 + 1 OWNER

Maltster's House Areas				
Number	Name	Area	Level	Building
1.01	MEZZANINE	28 m²	MALTSTER'S MEZ	Maltster's
G.01	EXHIBITION	173 m²	MALTSTER'S GROUND	Maltster's
G.02	KITCHEN	7 m²	MALTSTER'S GROUND	Maltster's
G.03	BATHROOM	12 m²	MALTSTER'S GROUND	Maltster's
Grand total: 4		221 m²		

CARPARKING COUNT	TOTAL
M1 OVERFLOW PARKING	25
M1 FORMAL PARKING	49
M2 BOH PARKING	15
M3+4 FORMAL PARKING	46
M4 BOH PARKING	3 + 1DDA
FUTURE M5+6 FORMAL PARKING	82

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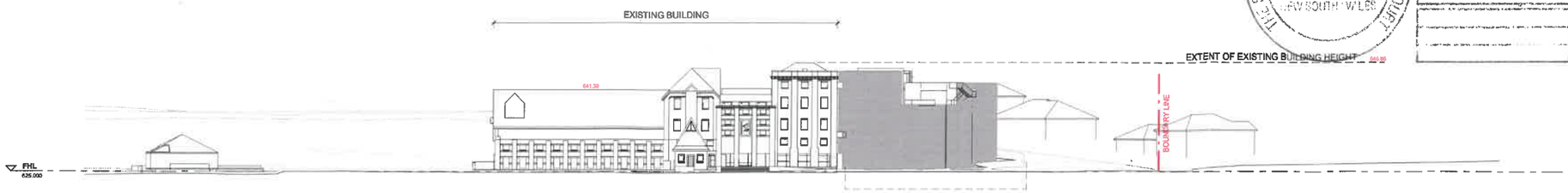
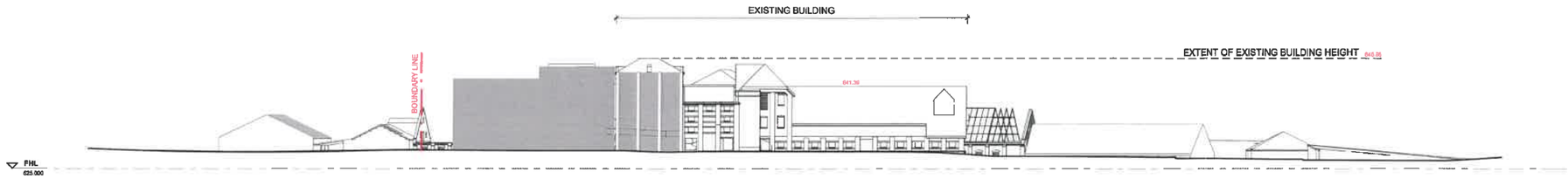
Scale @ A1: 1 : 50

SD-A002

Site Elevations

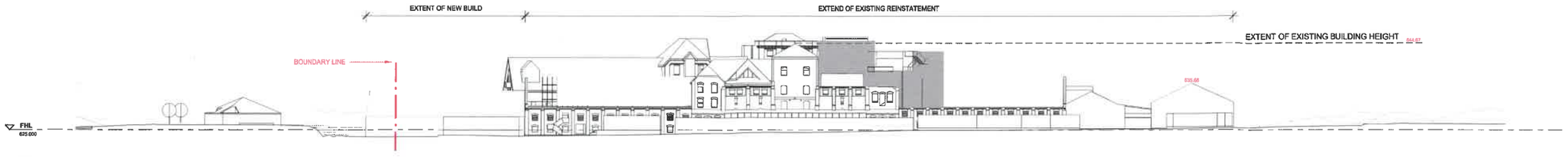


1 **West Elevation - Site**
1 : 500



2 **East Elevation - Site**
1 : 500

3 **East Elevation 2 - Site**
1 : 500



4 **West Elevation 2 - Site**
1 : 500

Notes:
- Boundary line not perpendicular to view.

5 10 25 50

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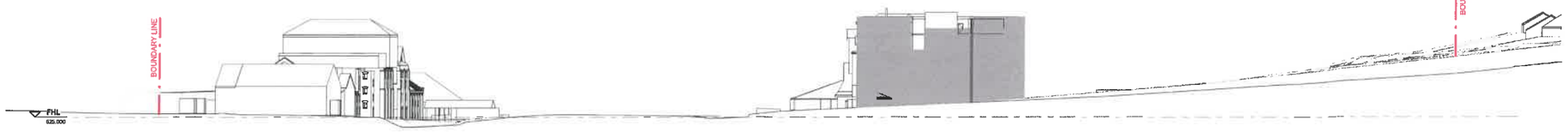
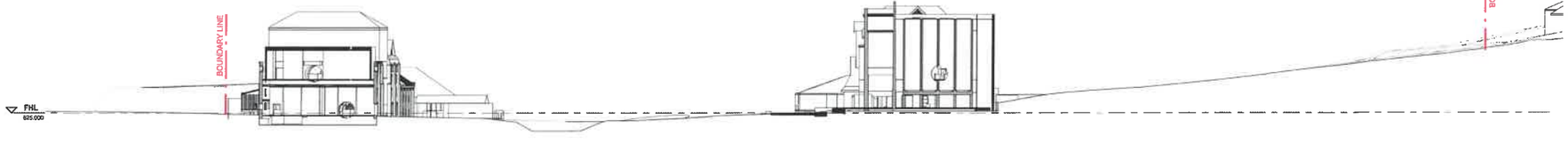
Scale @ A1: 1 : 500

SD-A030

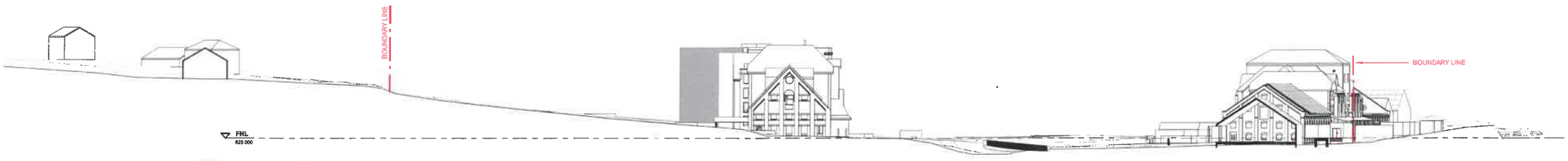
Site Elevations



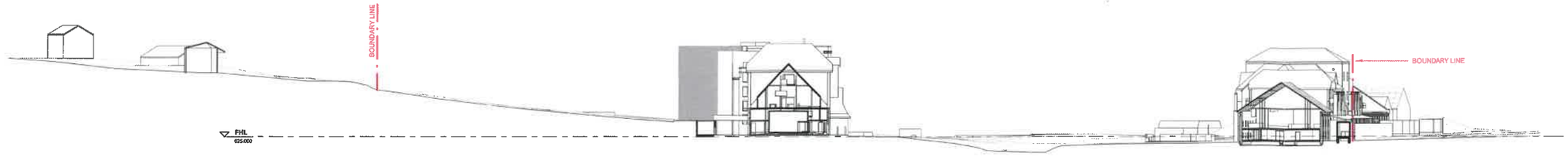
1 **West - East Elevation 1**
1 : 500



4 **West - East Section 1**
1 : 500



2 **East - West Elevation 1**
1 : 500



3 **East - West Section 1**
1 : 500

Notes:
- Boundary line not perpendicular to view.

0 5 10 25 50 m

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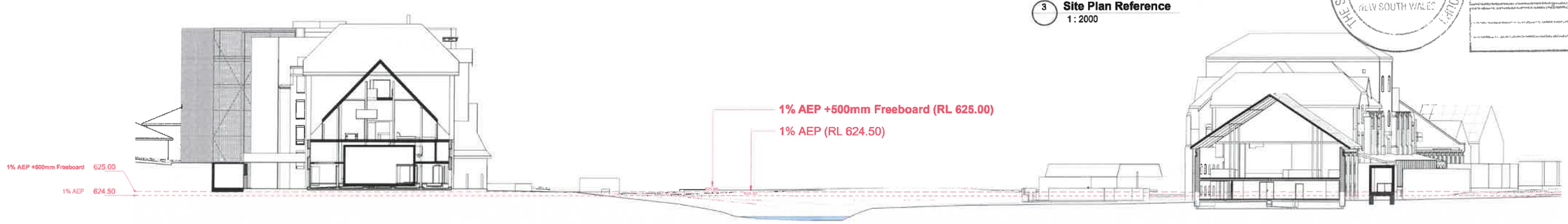
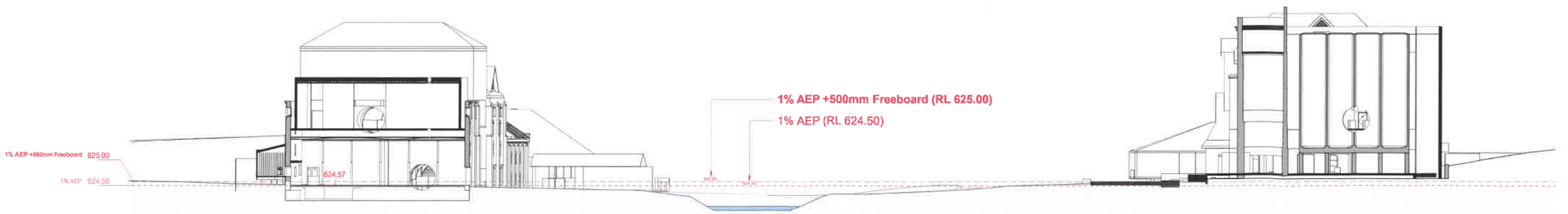
Scale @ A1: 1 : 500

SD-A031

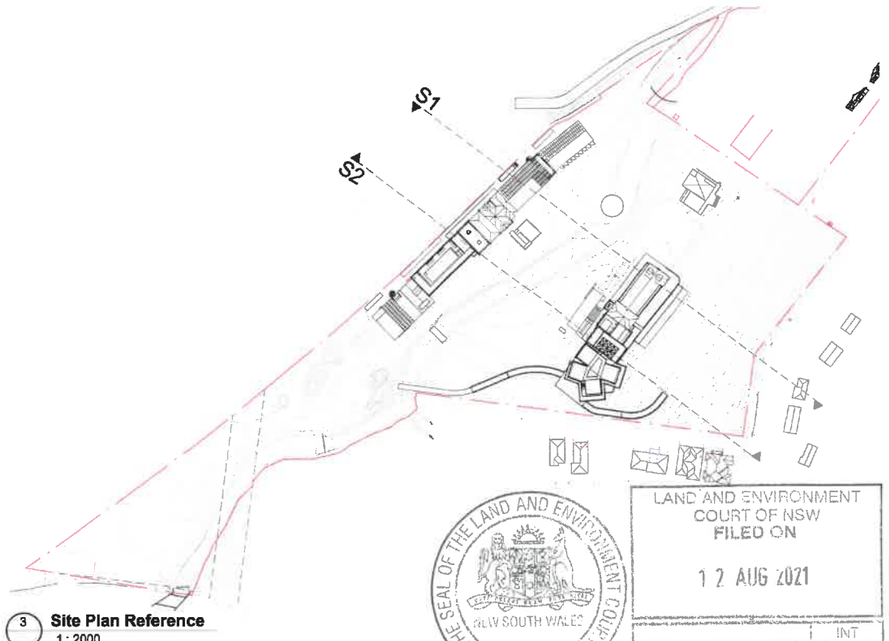
Flood Level Diagrams



1 **Section 1 Flood Level**
1 : 250



2 **Section 2 Flood Level**
1 : 250



3 **Site Plan Reference**
1 : 2000

0 2.5 5 12.5 25 m

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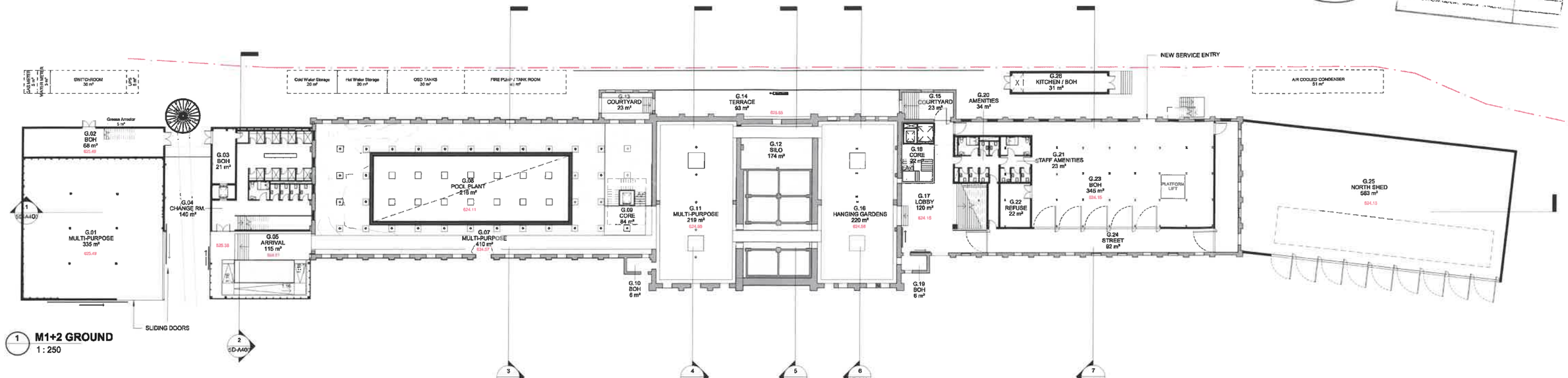
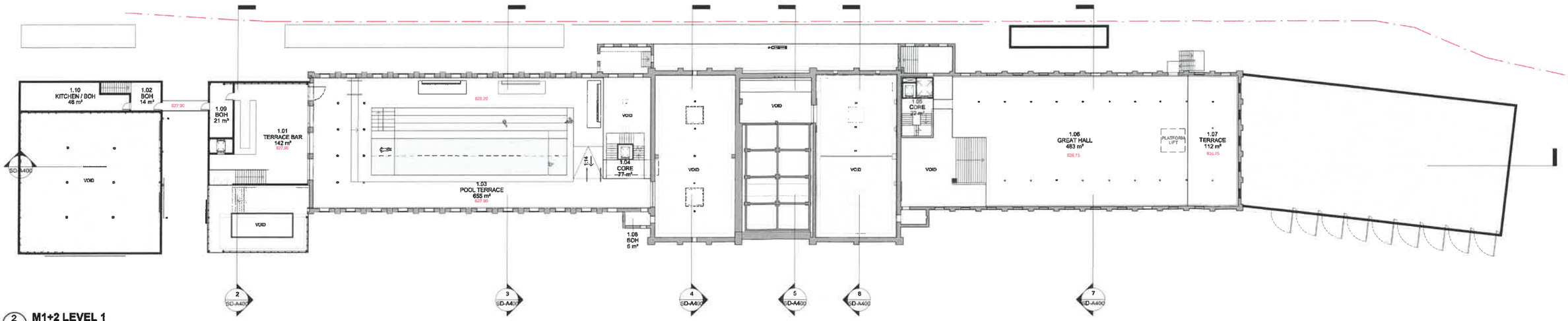
Scale @ A1: As indicated

SD-A040

M1+2 Level G-1



1 M1+2 GROUND
1 : 250



2 M1+2 LEVEL 1
1 : 250

0 2.5 5 12.5 25 m

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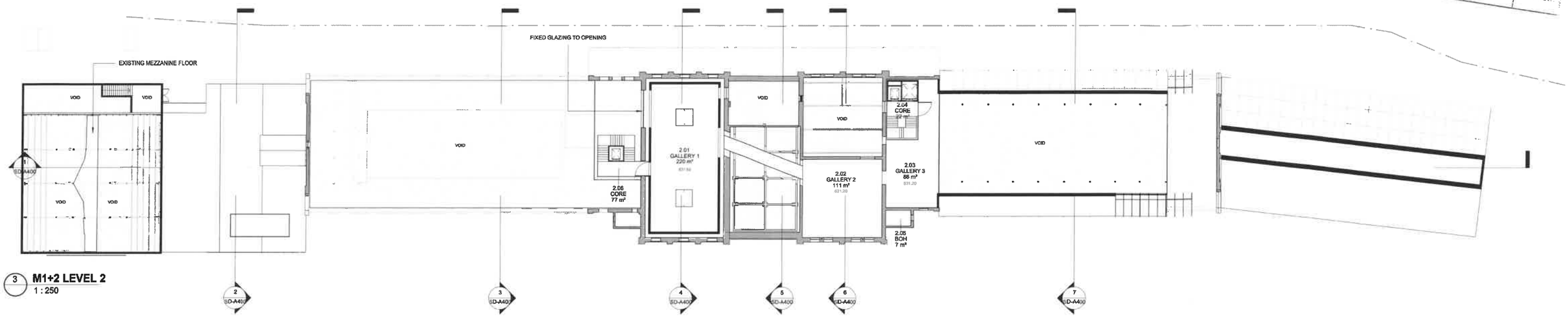
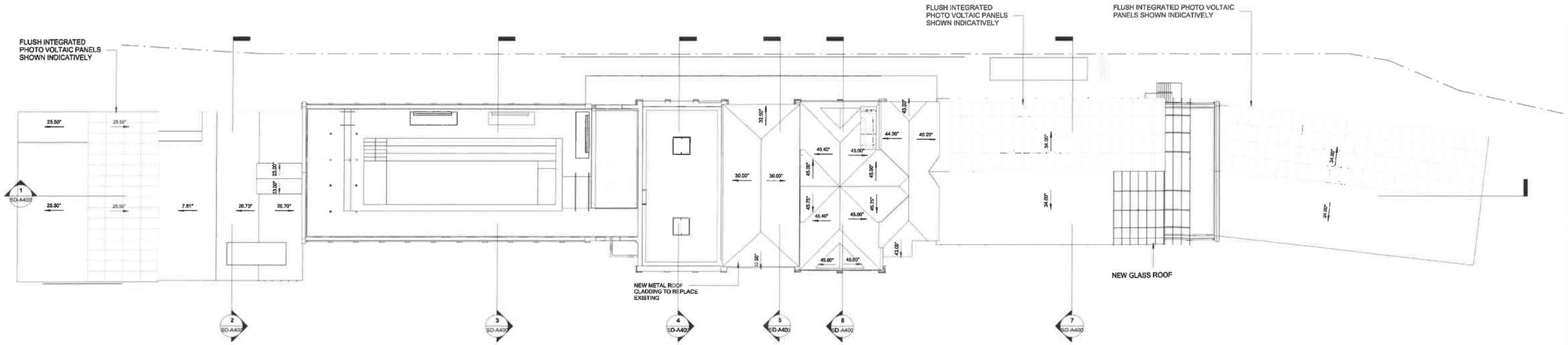
Scale @ A1: 1 : 250

SD-A200

M1+2 Level 2-Roof



3 **M1+2 LEVEL 2**
1 : 250



1 **M1+2 ROOF PLAN**
1 : 250

0 2.5 5 12.5 25 m

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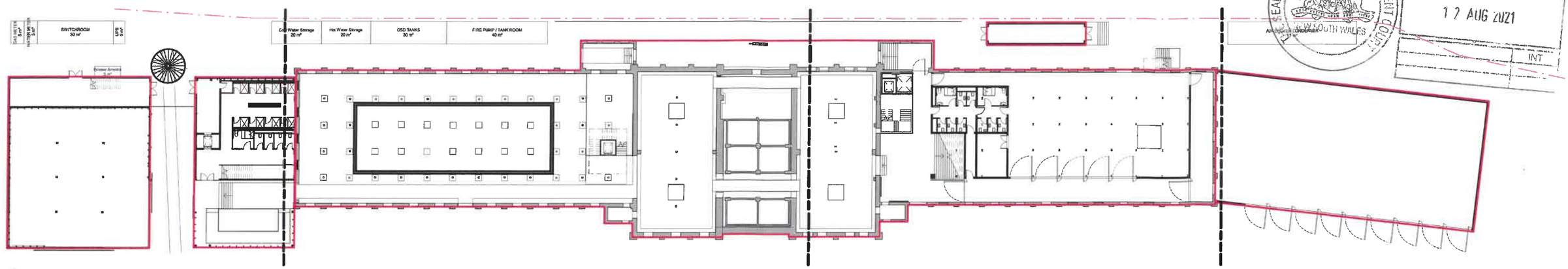
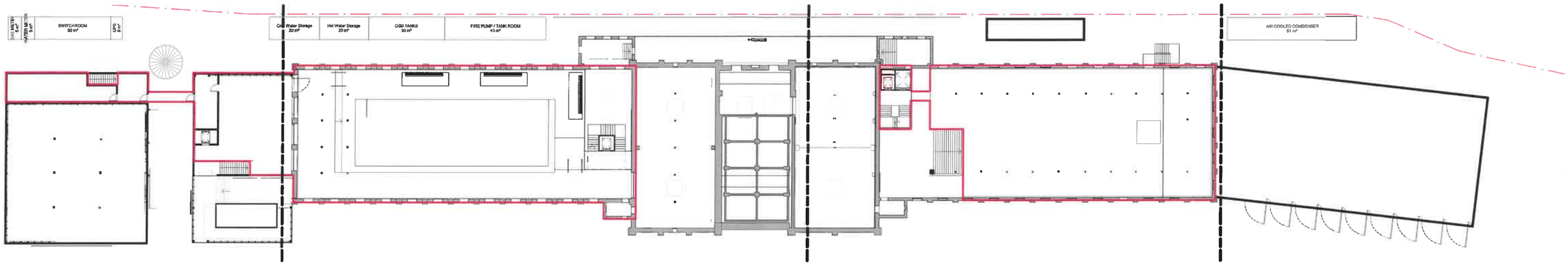
Scale @ A1: 1 : 250

SD-A201

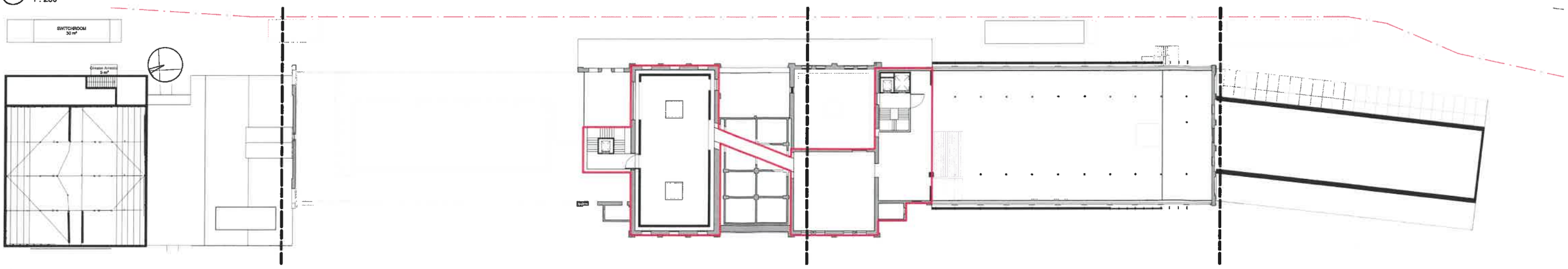
M1+2 Area Plans



1 **M1+2 Ground Level**
1 : 250



3 **M1+2 Level 1**
1 : 250



2 **M1+2 Level 2**
1 : 250

M1+2 FECA		
Name	Level	Area
M1+2	A-00	2497 m²
M1+2 Sheds	A-00	423 m²
M1+2 Sheds	A-00	296 m²
M1+2 Sheds	A-00	610 m²
M1+2	A-00	39 m²
M1+2	A-01	1058 m²
M1+2	A-01	666 m²
M1+2	A-02_MEZ	586 m²
Grand total: 8		6175 m²

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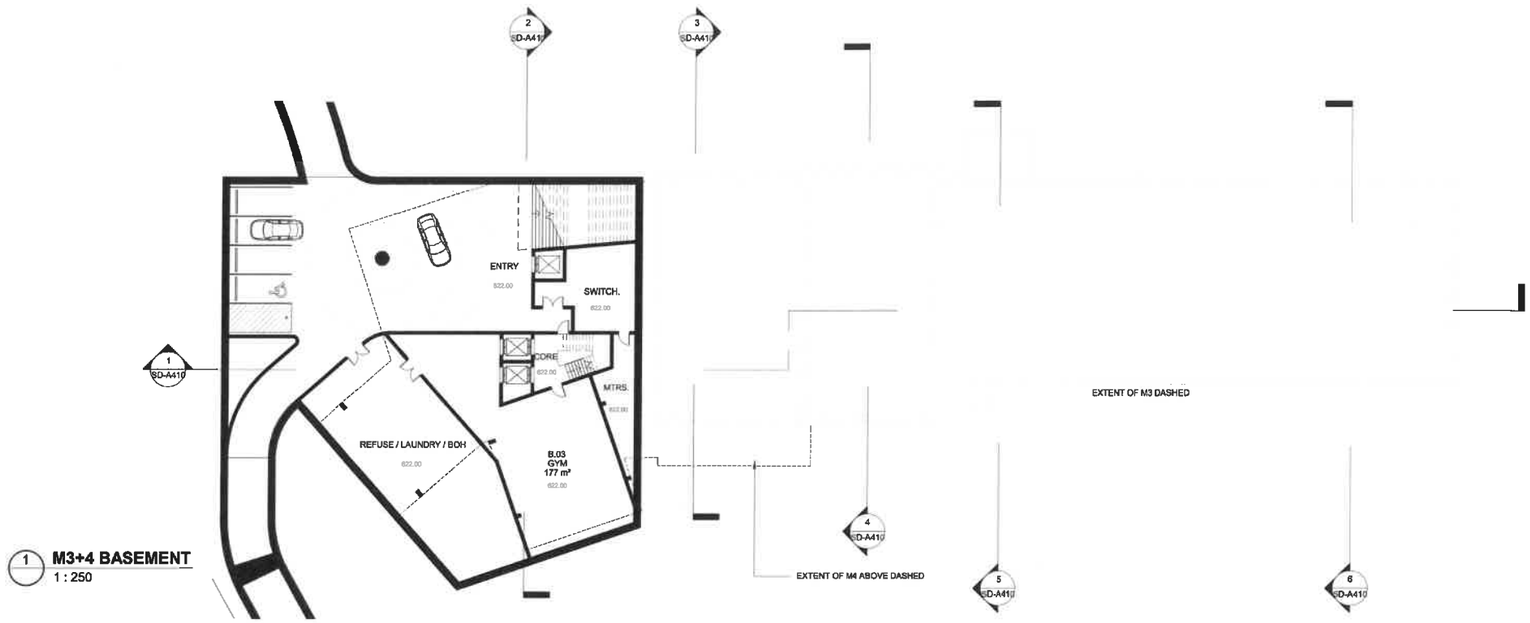
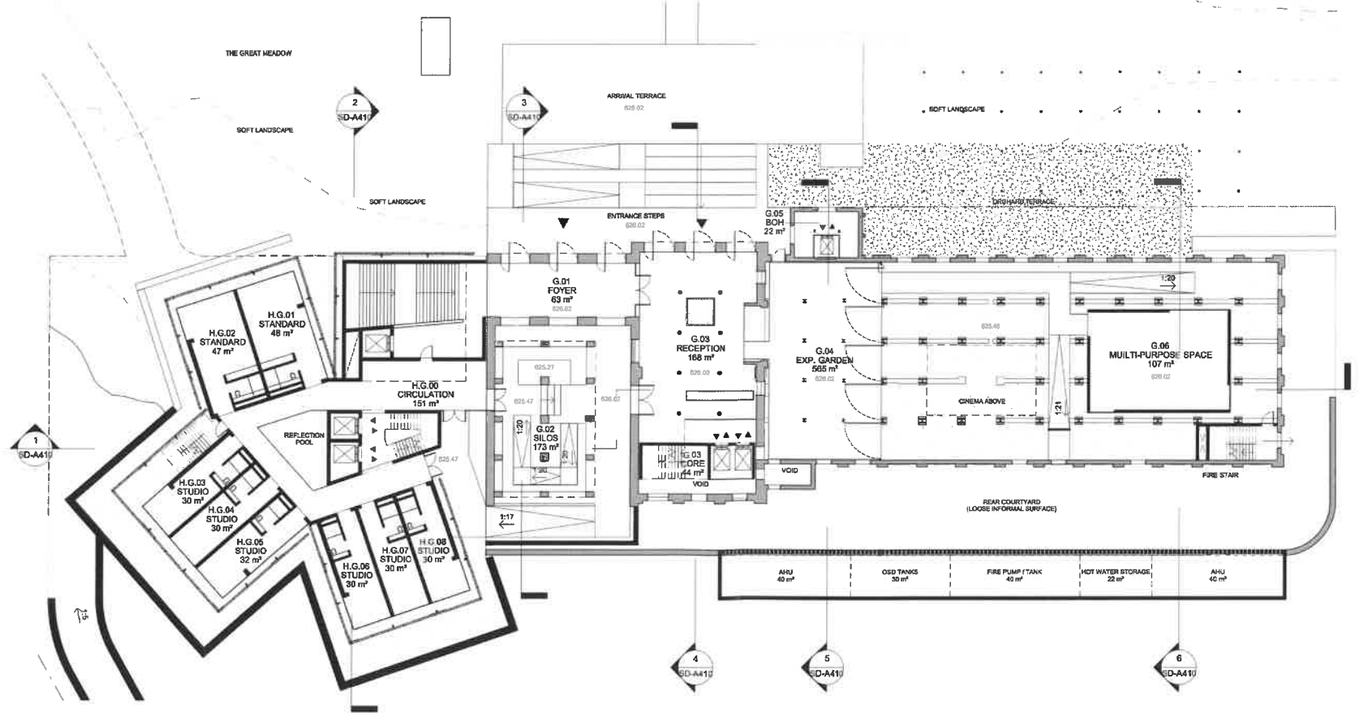
Scale @ A1: 1 : 250

SD-A203

M3+4 Level B-G



1 **M3+4 BASEMENT**
1 : 250



2 **M3+4 GROUND**
1 : 250

0 2.5 5 12.5 25 m

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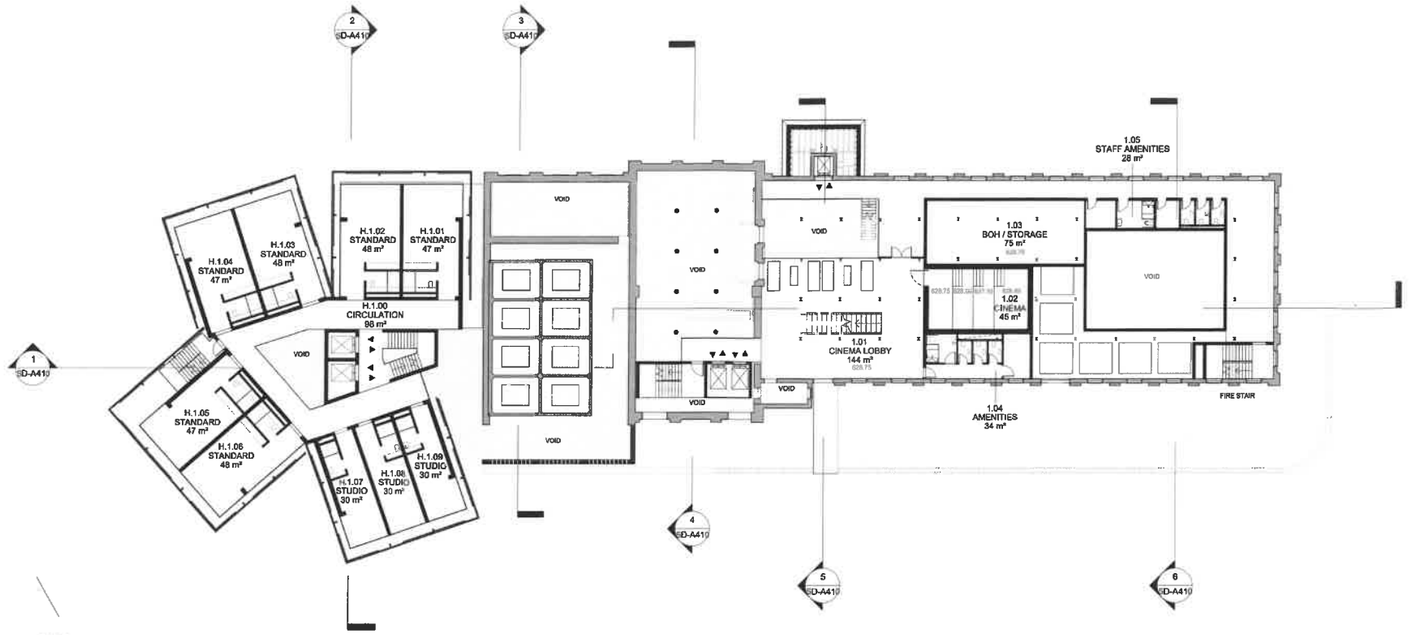
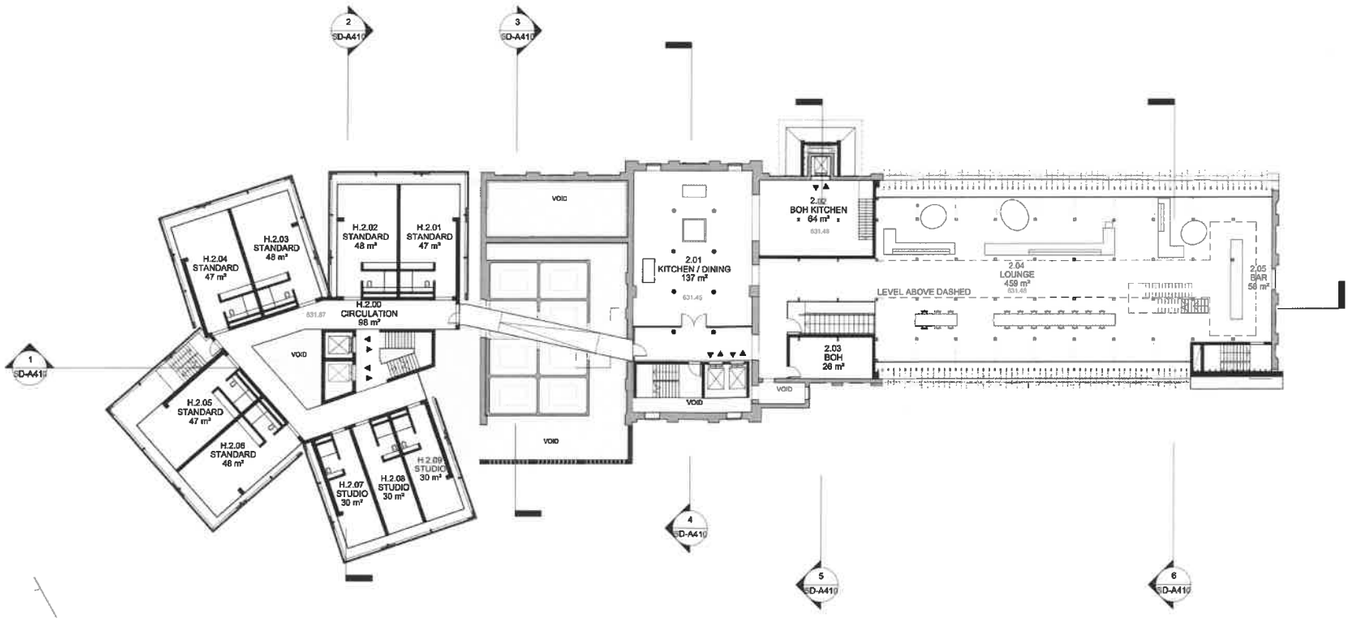
Scale @ A1: 1 : 250

SD-A210

M3+4 Level 1-2



1 M3+4 LEVEL 1
1 : 250



2 M3+4 LEVEL 2
1 : 250

0 2.5 5 12.5 25 m

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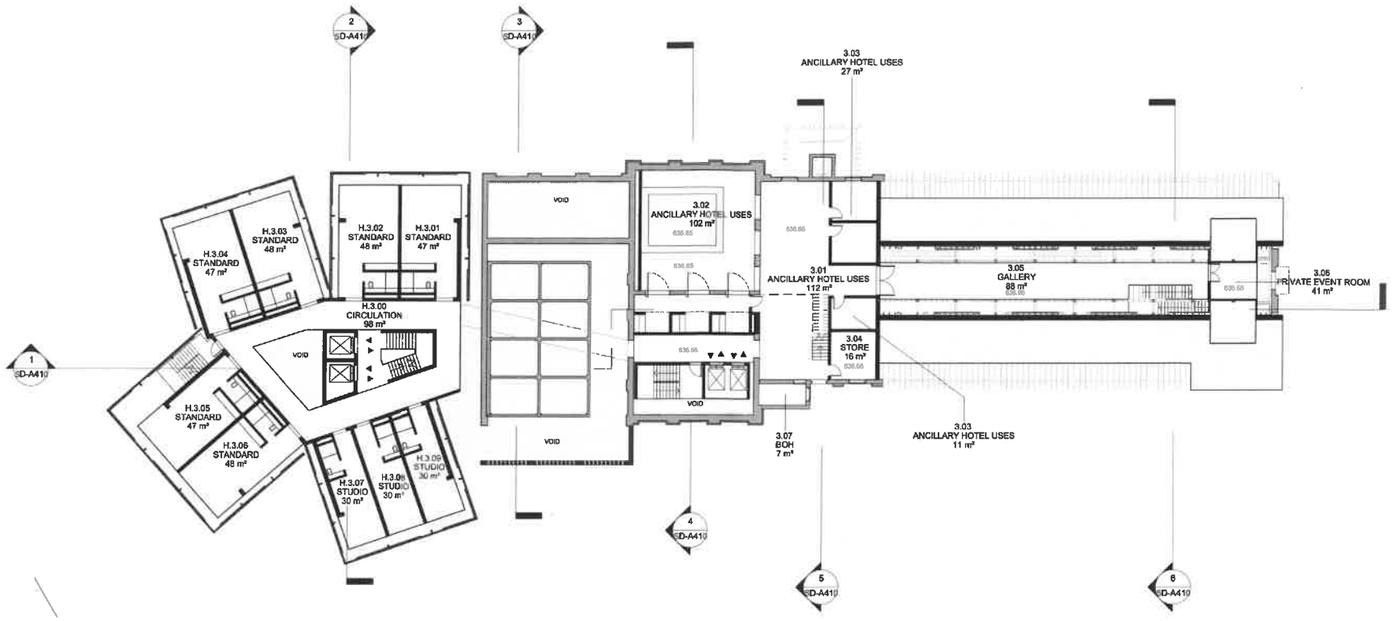
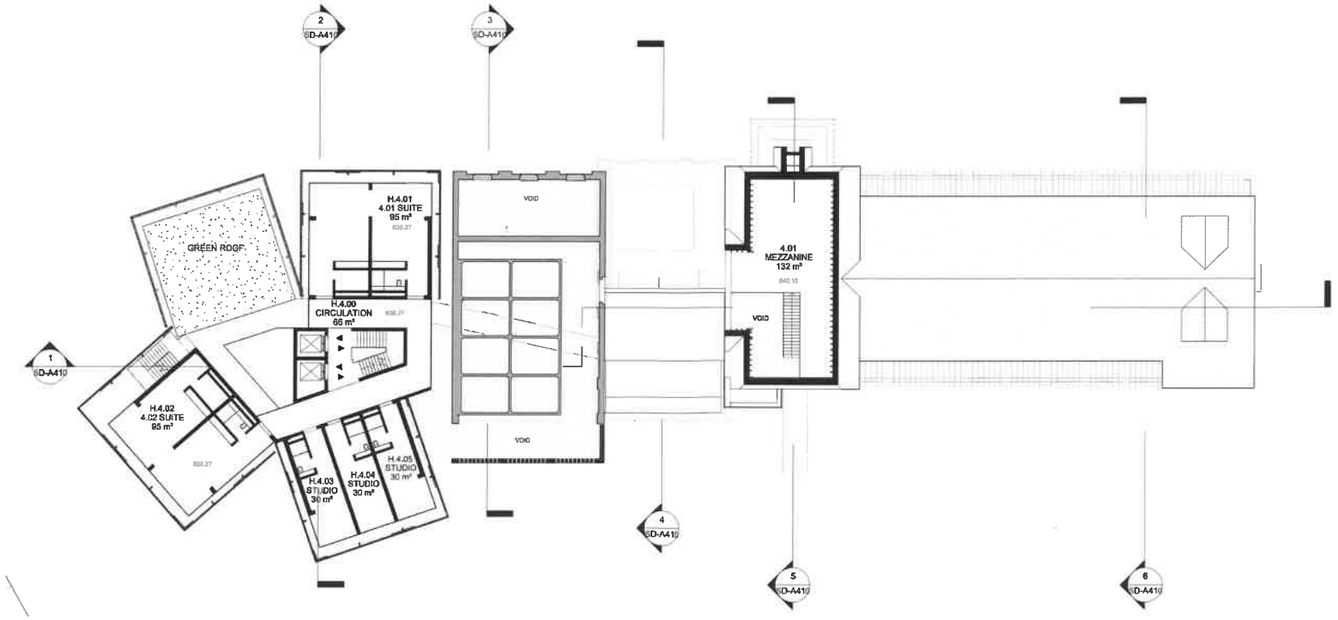
Scale @ A1: 1 : 250

SD-A211

M3+4 Level 3-4



2 **M3+4 LEVEL 3**
1 : 250



1 **M3+4 LEVEL 4**
1 : 250

0 2.5 5 12.5 25 m

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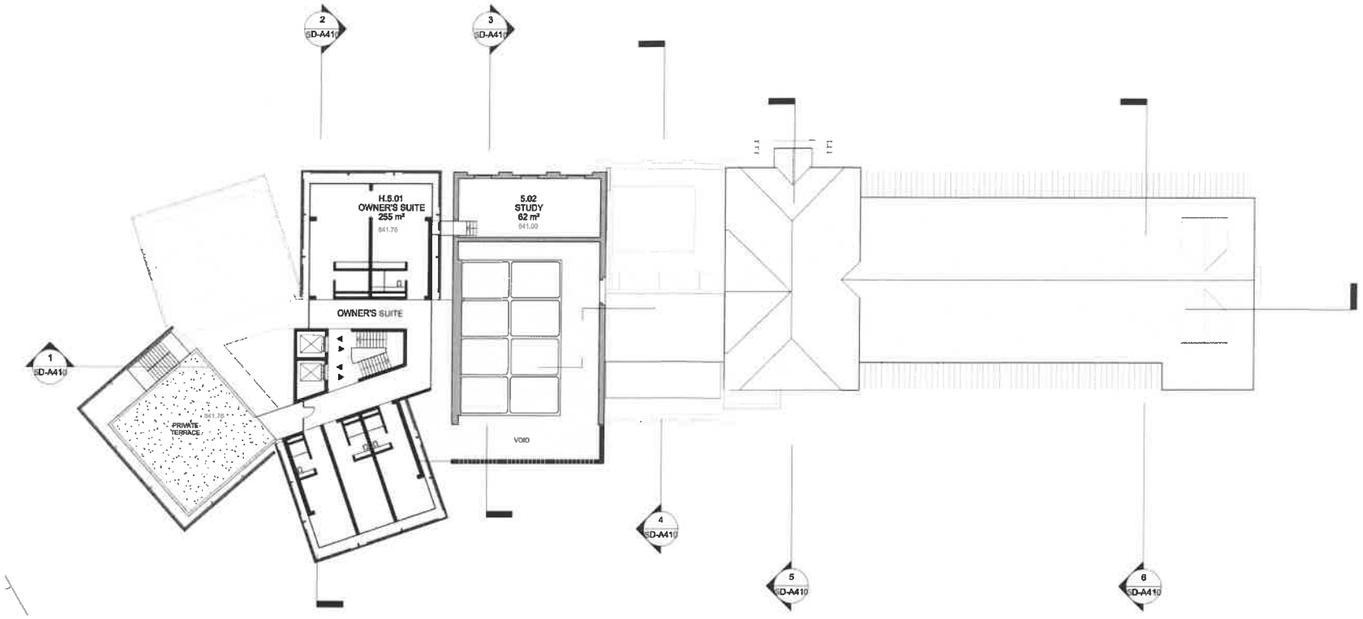
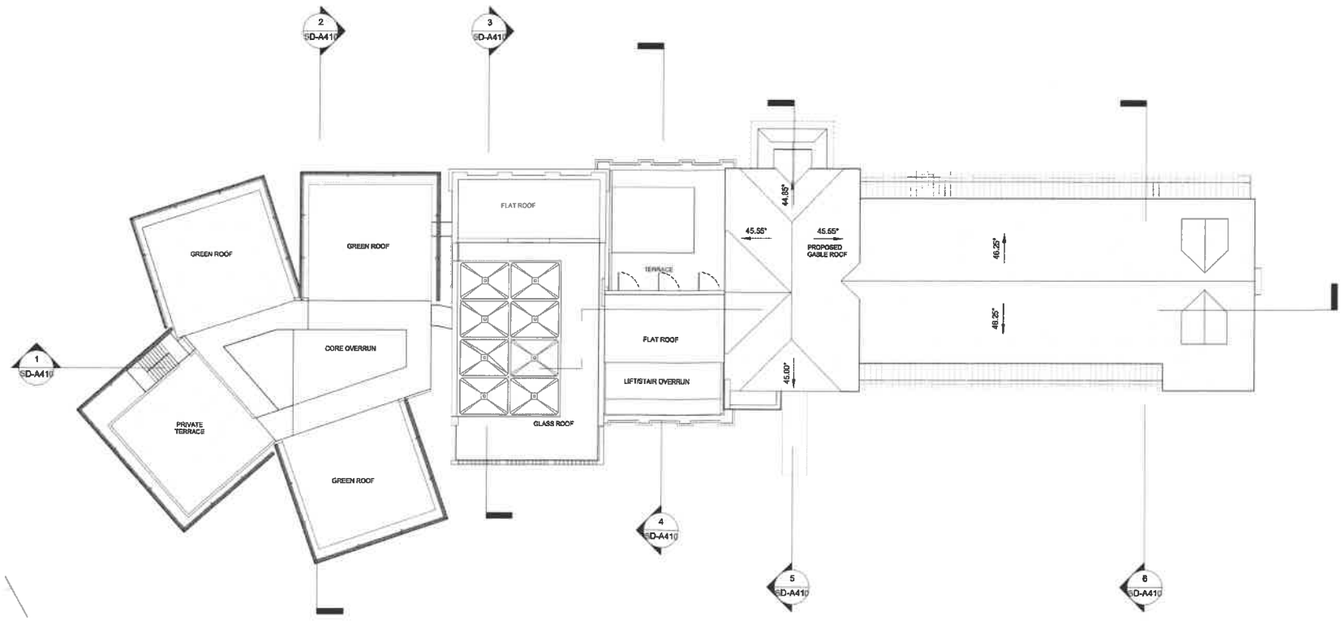
Scale @ A1: 1 : 250

SD-A212

M3+4 Level 5-R



1 **M3+4 LEVEL 5**
1 : 250



2 **M3+4 ROOF PLAN**
1 : 250

0 2.5 5 12.5 25 m

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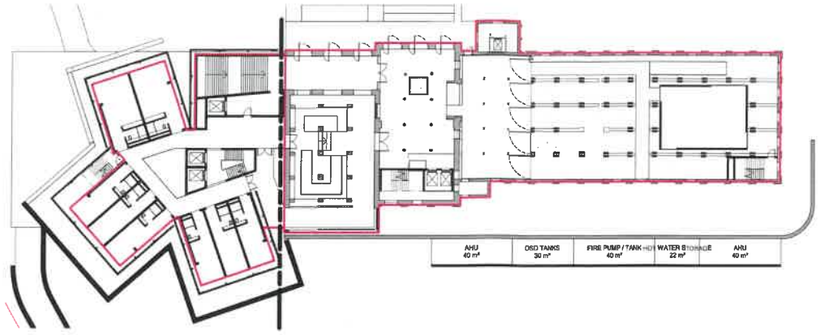
Scale @ A1: 1 : 250

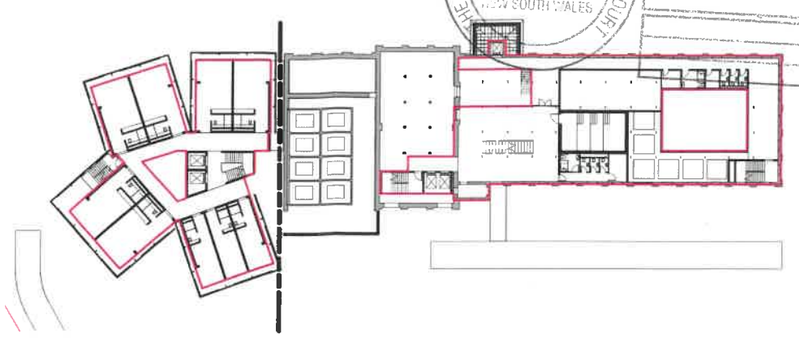
SD-A213

M3+4 Area Plans

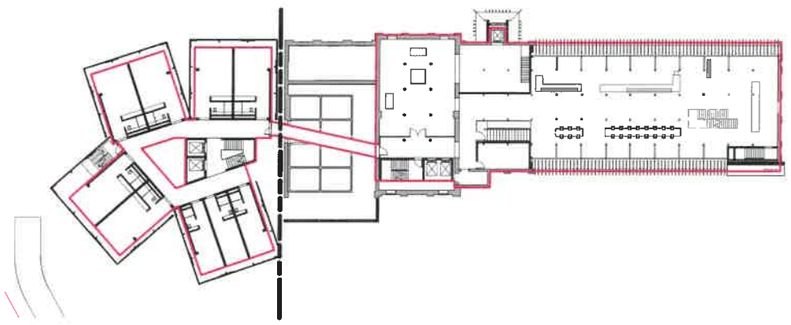
7 **M4 Basement**
1 : 400



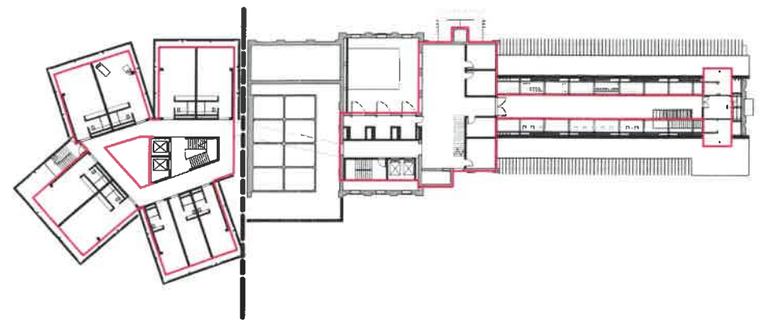
1 **M3+4 Ground Level**
1 : 400



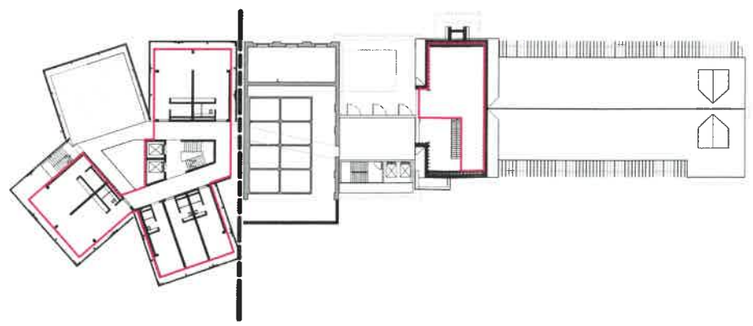
2 **M3+4 Level 1**
1 : 400



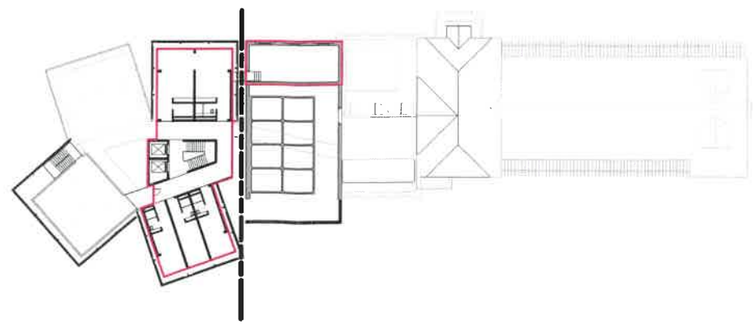
3 **M3+4 Level 2**
1 : 400



4 **M3+4 Level 3**
1 : 400



5 **M3+4 Level 4**
1 : 400



6 **M3+4 Level 5**
1 : 400

M3+4 FECA		
Name	Level	Area
M3	H-05	79 m²
M3	H-04	108 m²
M3	H-03	439 m²
M3	H-02	1029 m²
M3	H-01	701 m²
M3	H-00	1396 m²
M4	H-05	320 m²
M4	H-04	432 m²
M4	H-03	572 m²
M4	H-02	584 m²
M4	H-01	558 m²
M4	H-00	656 m²
M4	H-B1	198 m²
Grand total: 13		7072 m²

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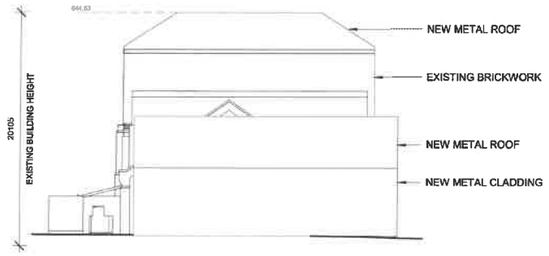
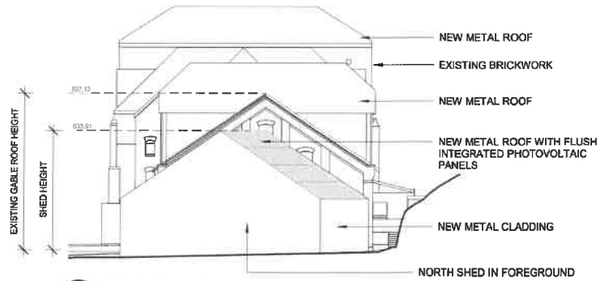
Scale @ A1: 1 : 400

SD-A220

M1+2 Elevations

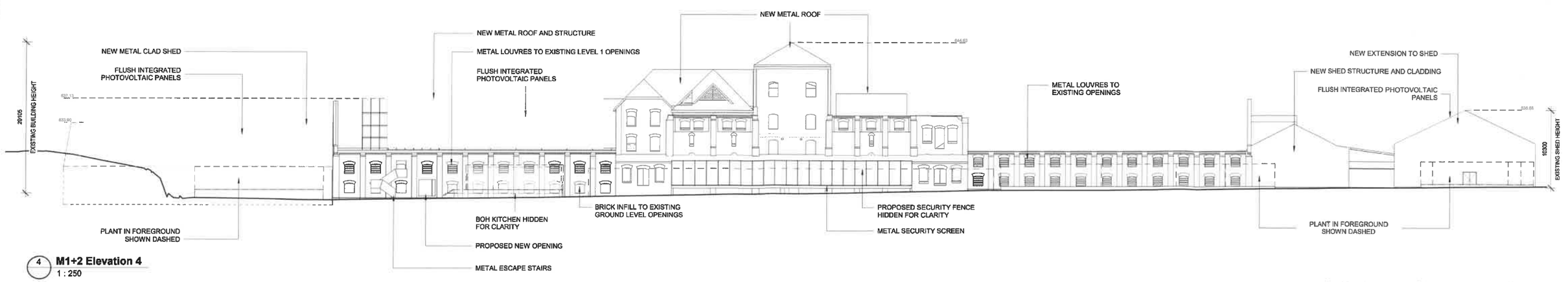


1 **M1+2 Elevation 1**
1 : 250



2 **M1+2 Elevation 2**
1 : 250

3 **M1+2 Elevation 3**
1 : 250



4 **M1+2 Elevation 4**
1 : 250

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Scale @ A1: 1 : 250

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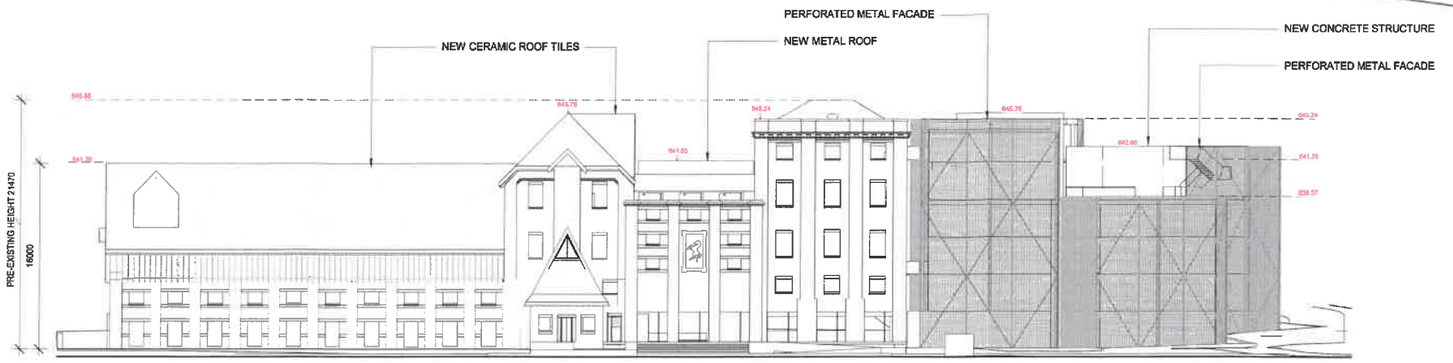
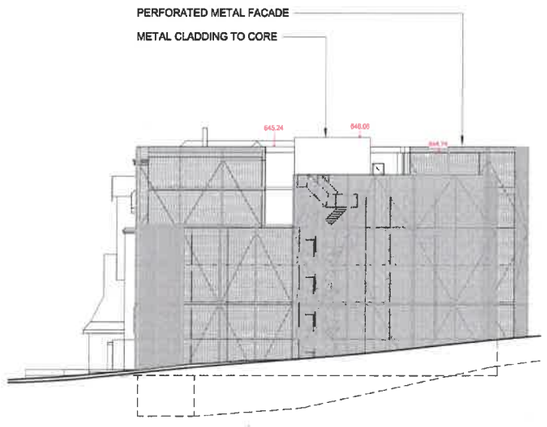
SD-A300

M3+4 Elevations

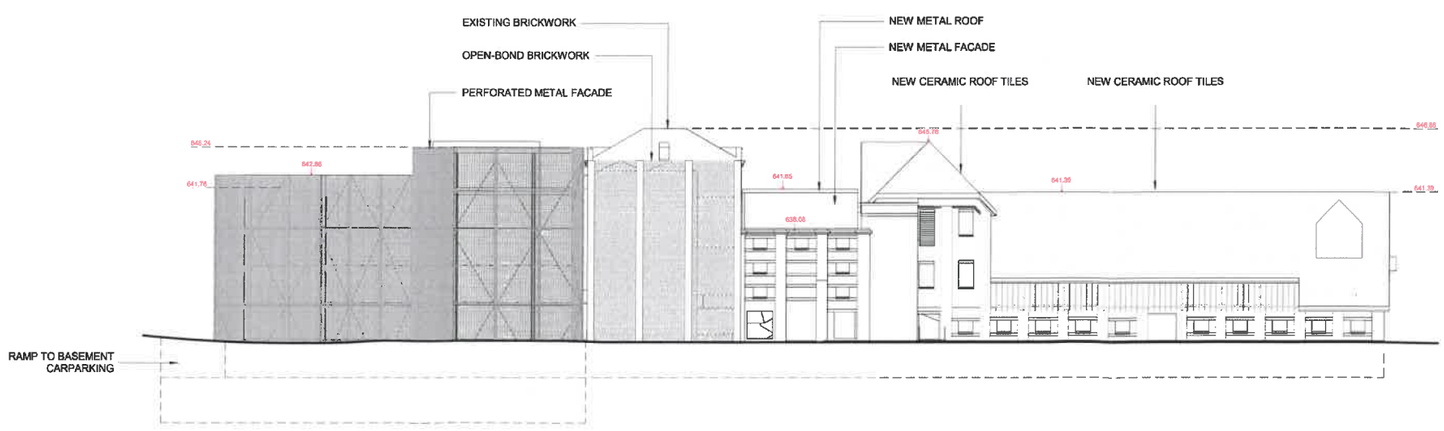
1 **M3+4 Elevation 1**
1 : 250



2 **M3+4 Elevation 2**
1 : 250



3 **M3+4 Elevation 3**
1 : 250



4 **M3+4 Elevation 4**
1 : 250

0 2.5 5 12.5 25 m

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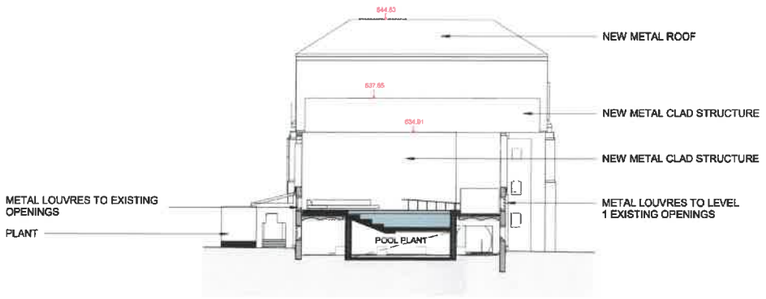
Scale @ A1: 1 : 250

SD-A310

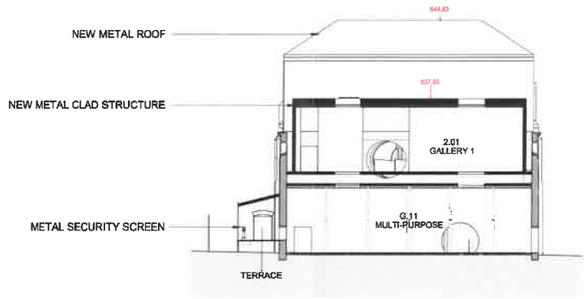
M1+2 Sections

1 **M1+2 Section 01**
1 : 250

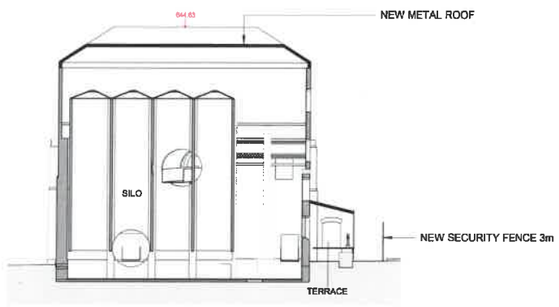
2 **M1+2 Section 02**
1 : 250



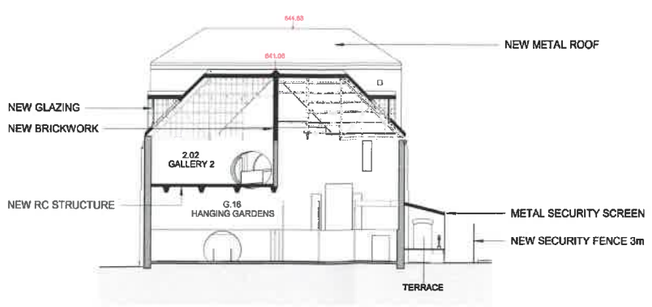
3 **M1+2 Section 03**
1 : 250



4 **M1+2 Section 04**
1 : 250



5 **M1+2 Section 05**
1 : 250



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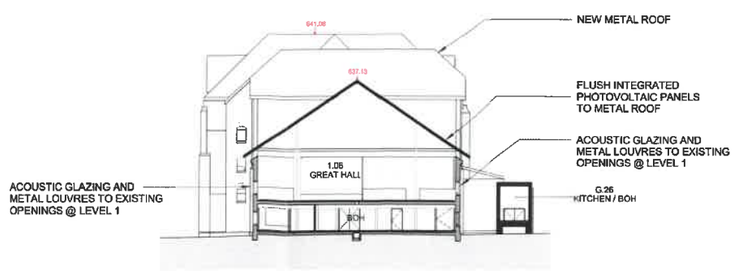

7 **M1+2 Section 07**
1 : 250

0 2.5 5 12.5 25 m

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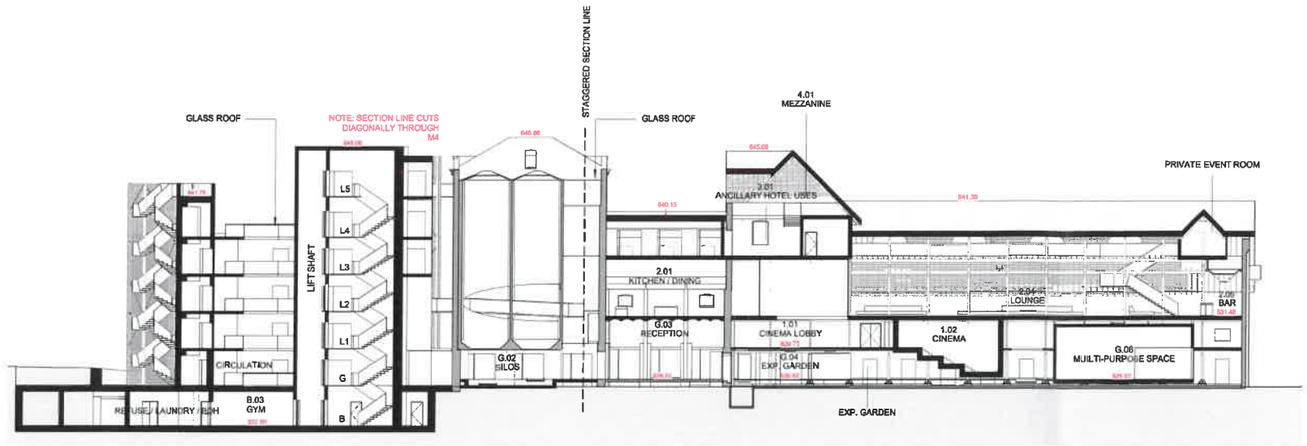
Scale @ A1: 1 : 250

SD-A400

M3+4 Sections



1 (D-A210) **M3+4 Section 1**
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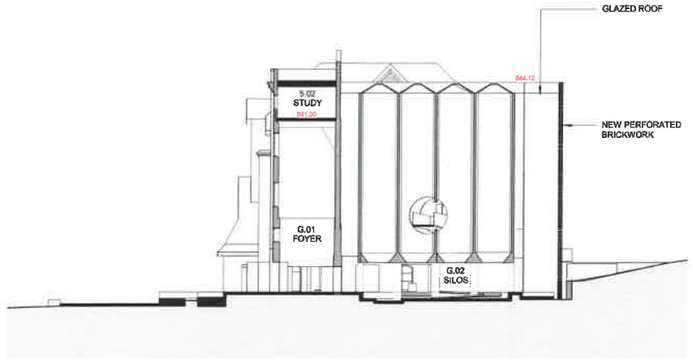
2 (D-A210) **M3+4 Section 2**
1 : 250



3 (D-A210) **M3+4 Section 3**
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4 (D-A210) **M3+4 Section 4**
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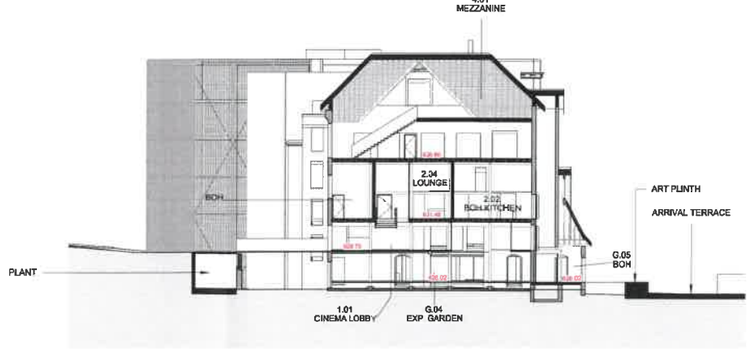

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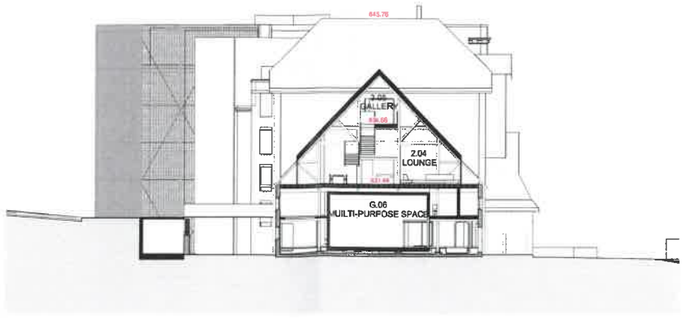

6 (D-A210) **M3+4 Section 6**
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0 2.5 5 12.5 25 m

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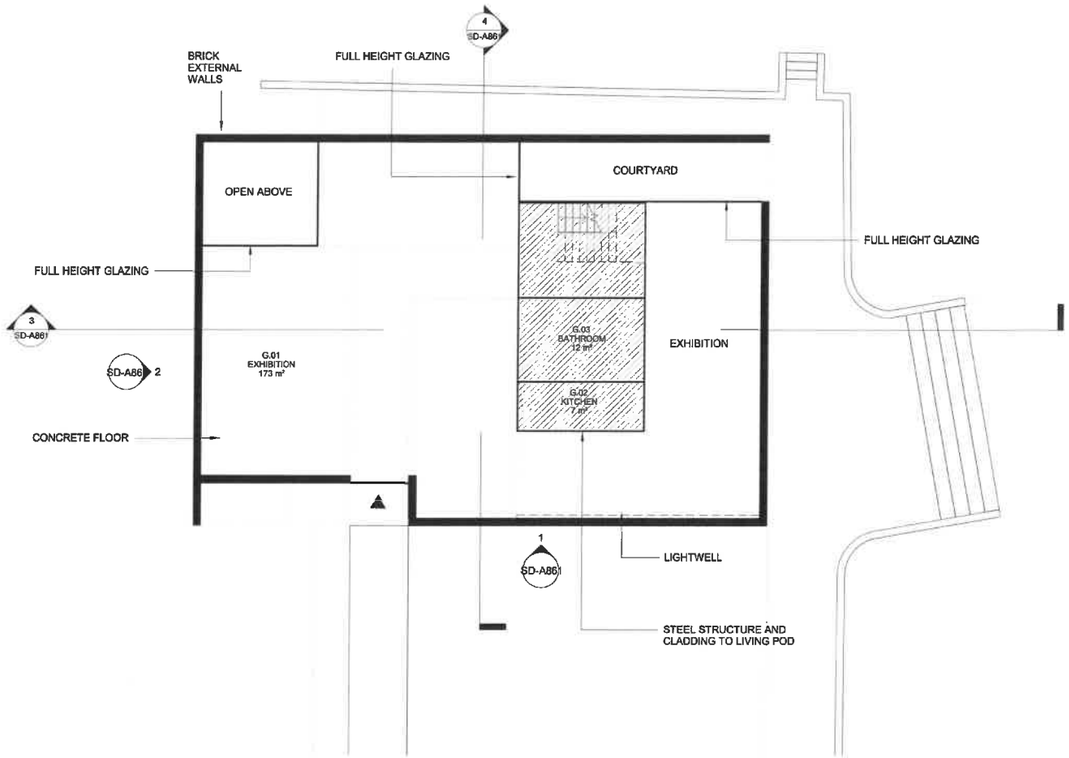
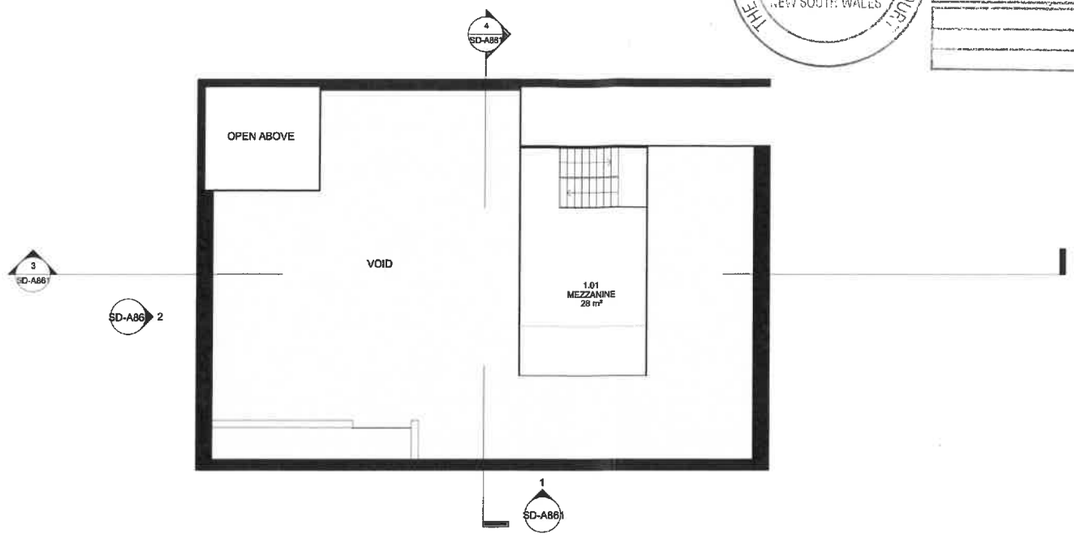
Scale @ A1: 1 : 250

SD-A410

Maltster's House Plans

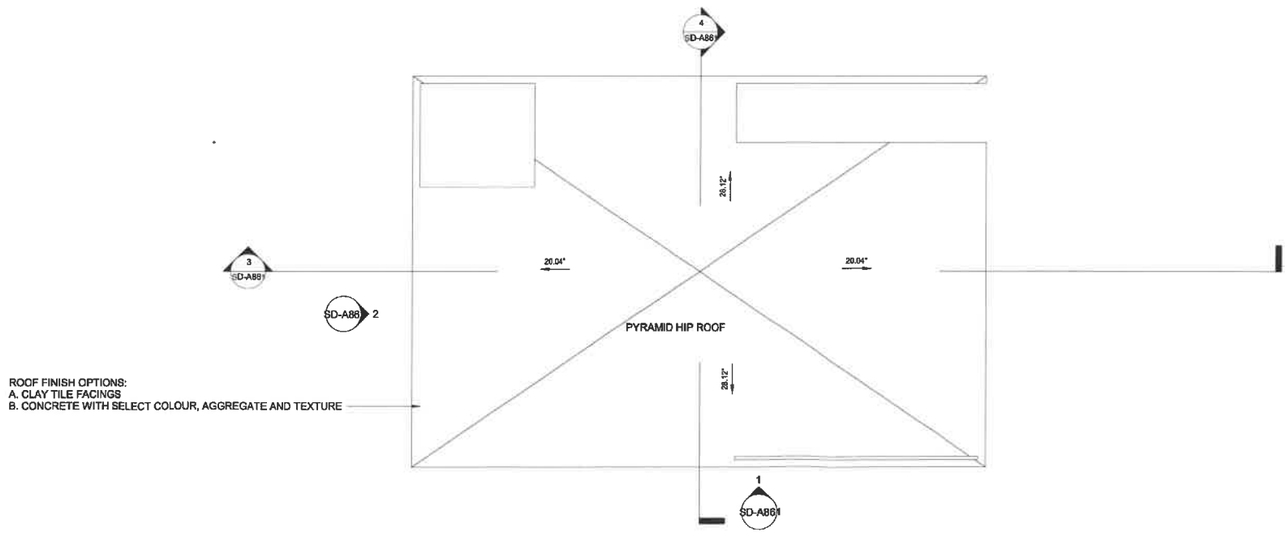


1 **Malster's House Ground Floor Plan**
1 : 100



2 **Malster's House Mezzanine Floor Plan**
1 : 100

Maltster's House Areas				
Number	Name	Area	Level	Building
1.01	MEZZANINE	28 m²	MALTSTER'S MEZ	Maltster's
G.01	EXHIBITION	173 m²	MALTSTER'S GROUND	Maltster's
G.02	KITCHEN	7 m²	MALTSTER'S GROUND	Maltster's
G.03	BATHROOM	12 m²	MALTSTER'S GROUND	Maltster's
Grand total: 4		221 m²		



3 **Malster's House Roof Plan**
1 : 100

0 1 2 5 10 m

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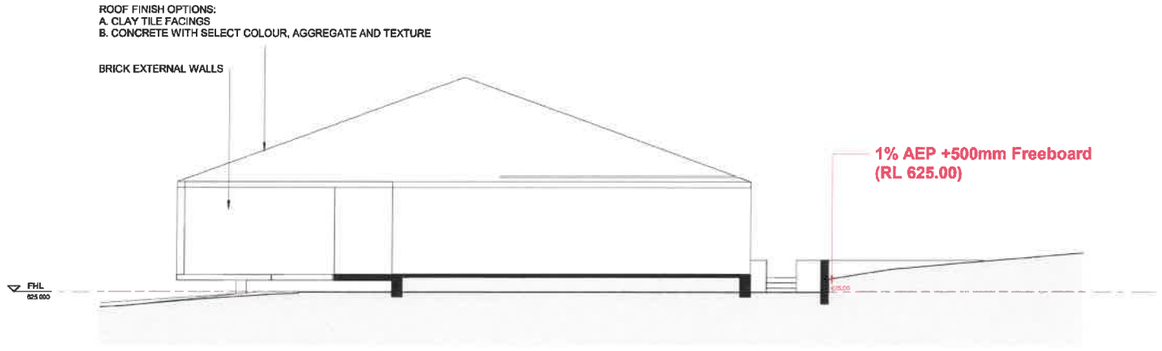
SD-A860

Maltster's House Sections + Elevations



1 **Maltster's House Elevation 1**
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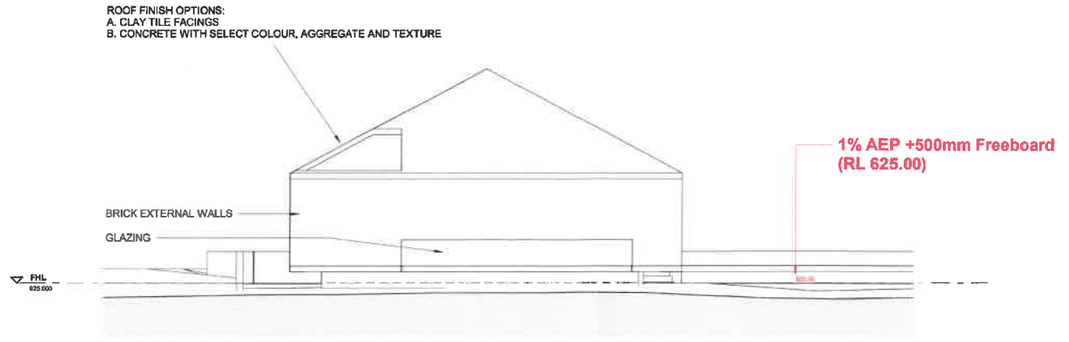

2 **Maltster's House Elevation 2**
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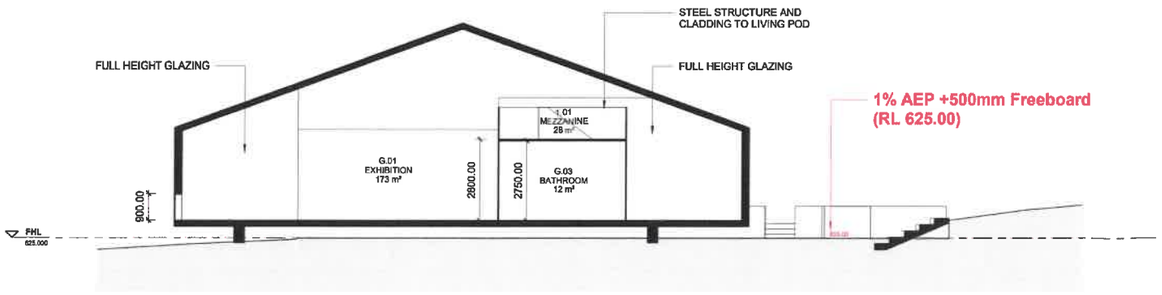
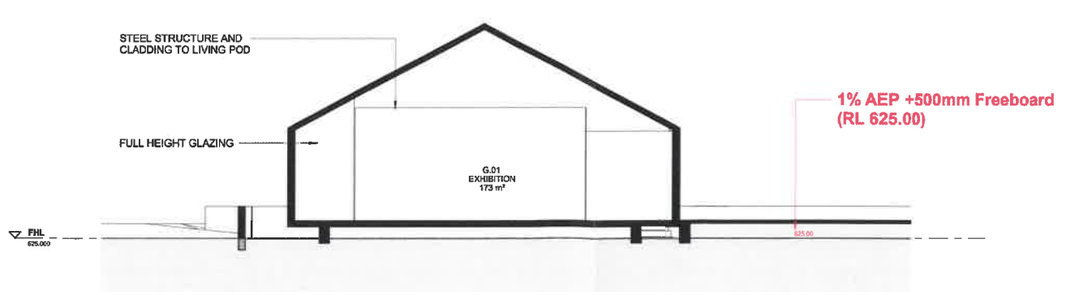


3 **Maltster's House Section 1**
1 : 100



4 **Maltster's House Section 2**
1 : 100

0 1 2 5 10 m

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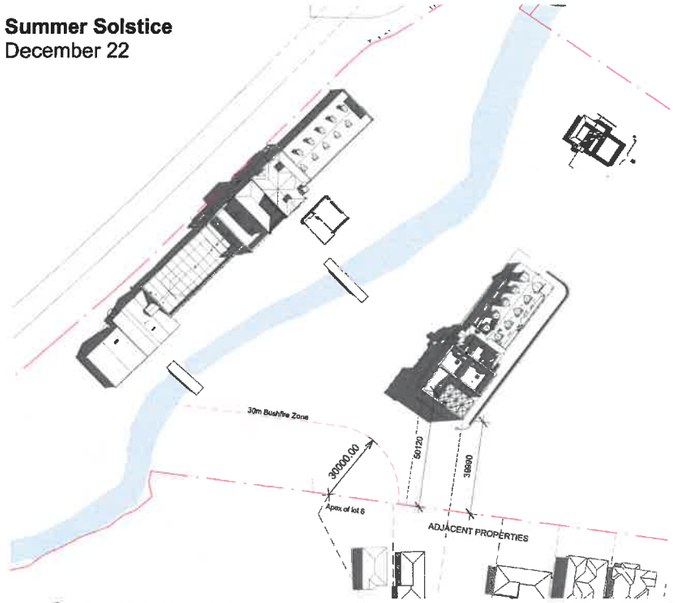
Scale @ A1: 1 : 100

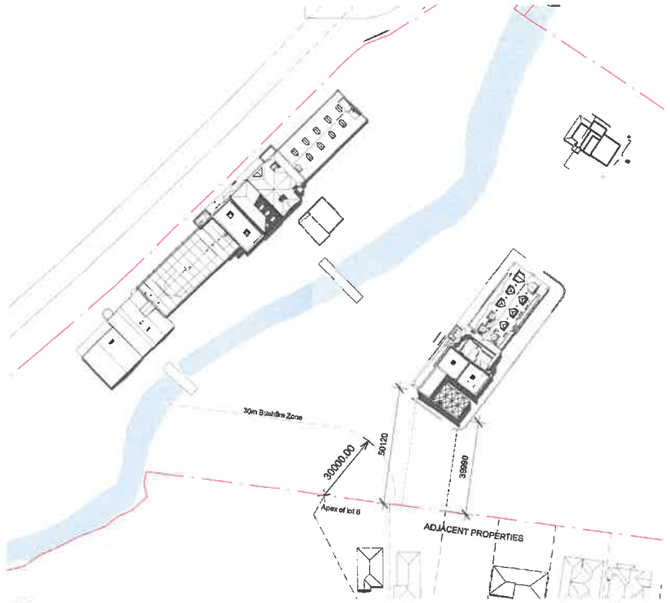
SD-A861

Shadow Study Existing

Summer Solstice
December 22



1 **Dec 22 9AM - Existing**
1 : 1250



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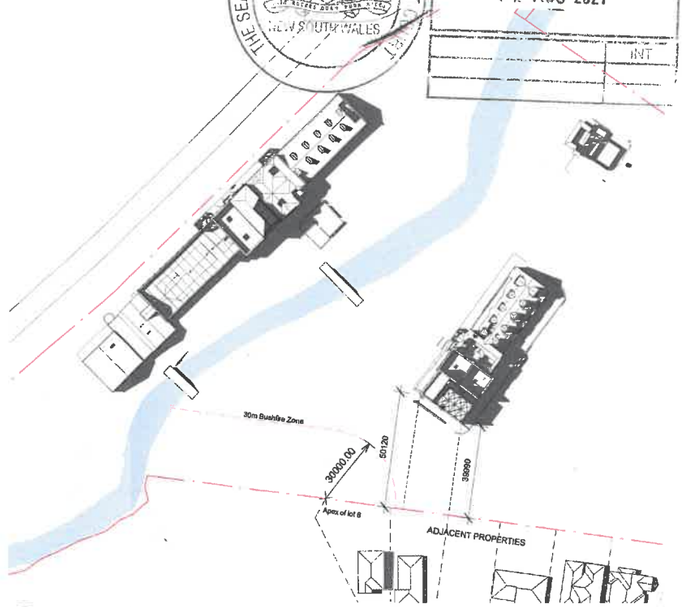

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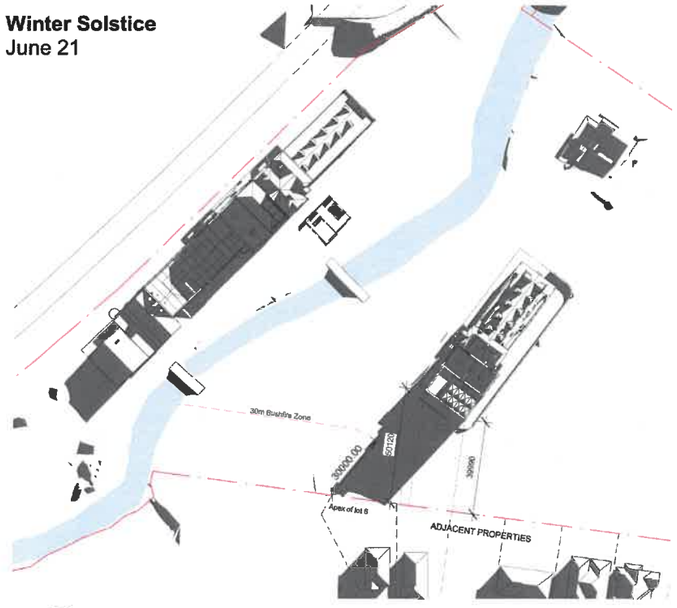
Winter Solstice
June 21



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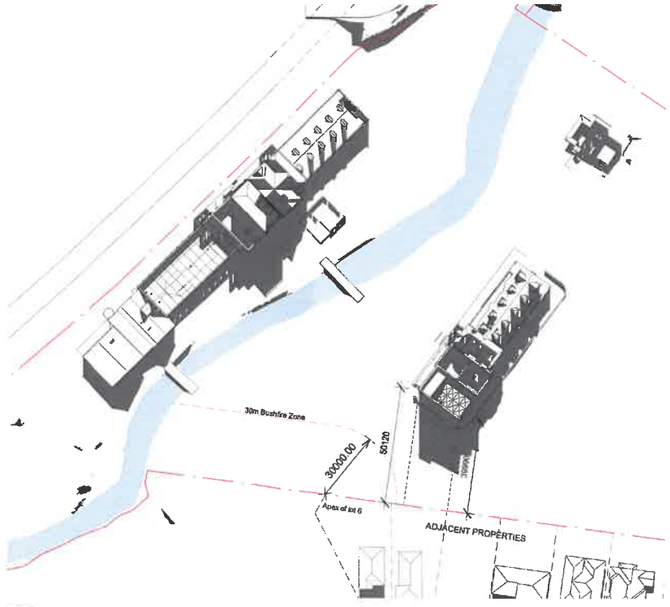

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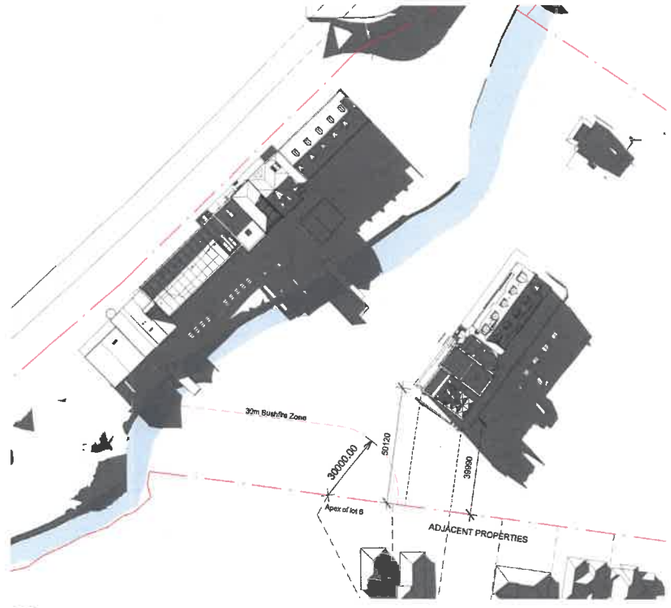

6 **Jun 21 3PM - Existing**
1 : 1250

0 12.5 25 62.5 125 m

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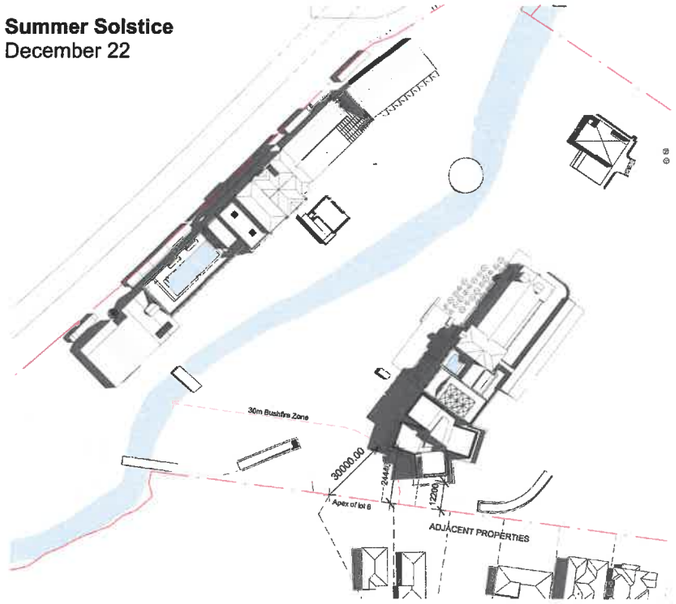
SD-A1000

Shadow Study - Summer Solstice

Summer Solstice
December 22



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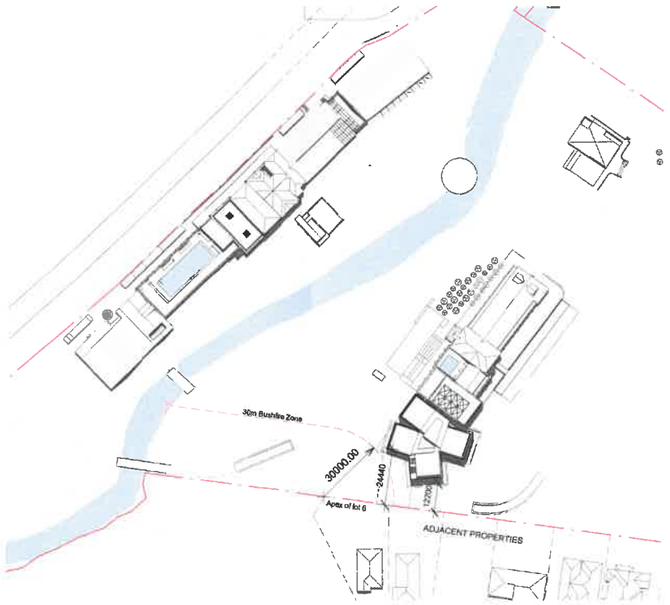

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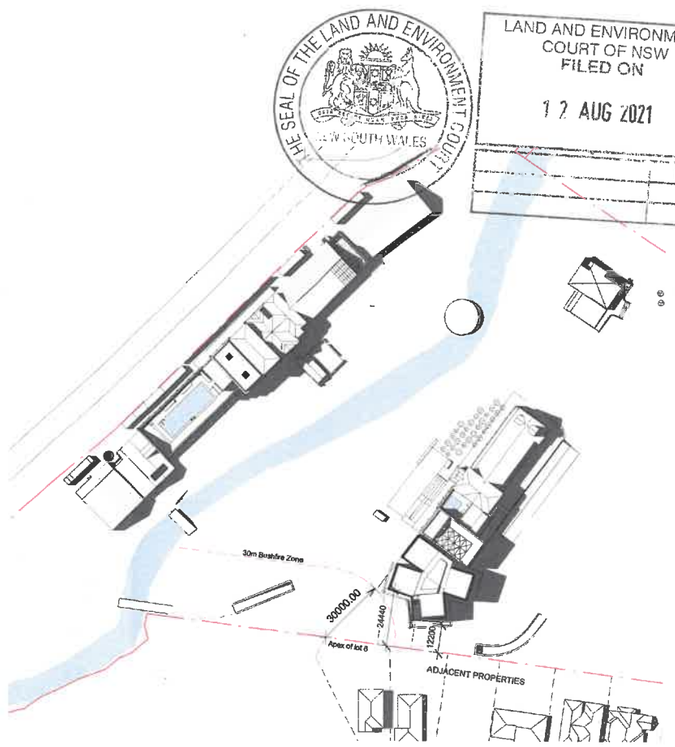

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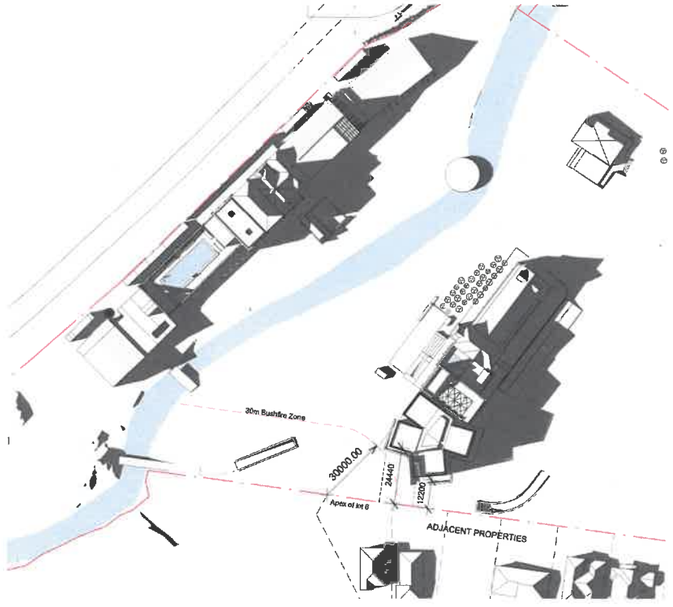

4 **Dec 22 5PM**
1 : 1250

0 12.5 25 62.5 125 m

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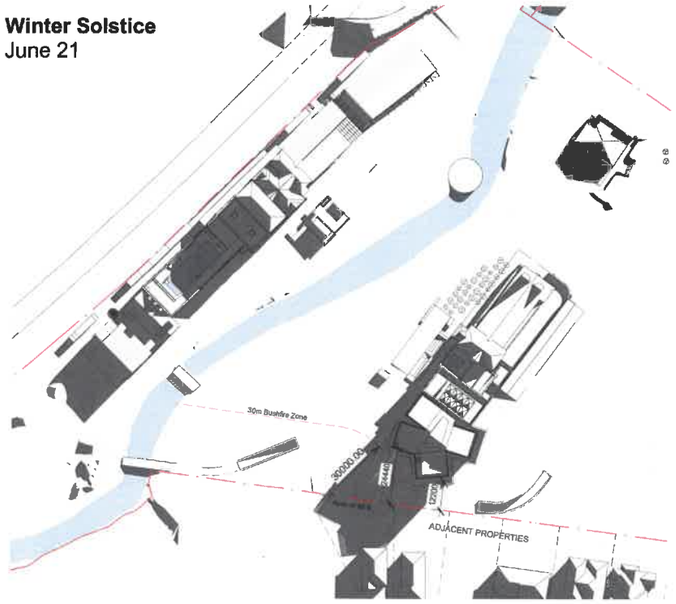
SD-A1001

Shadow Study - Winter Solstice

Winter Solstice
June 21



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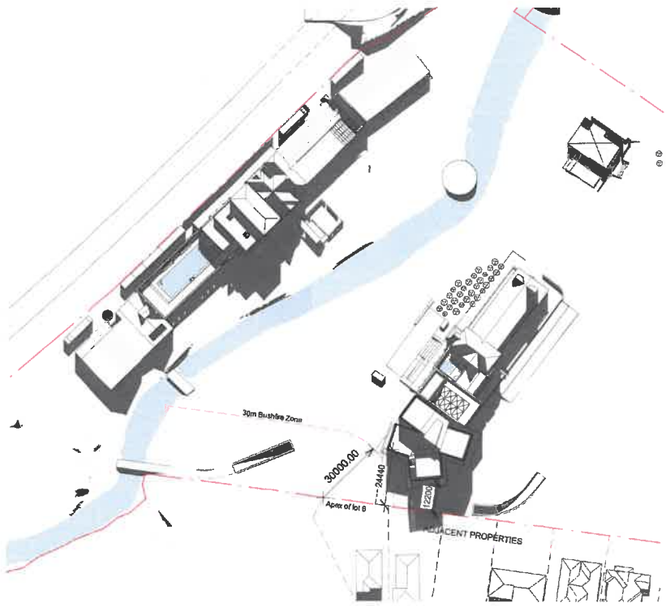

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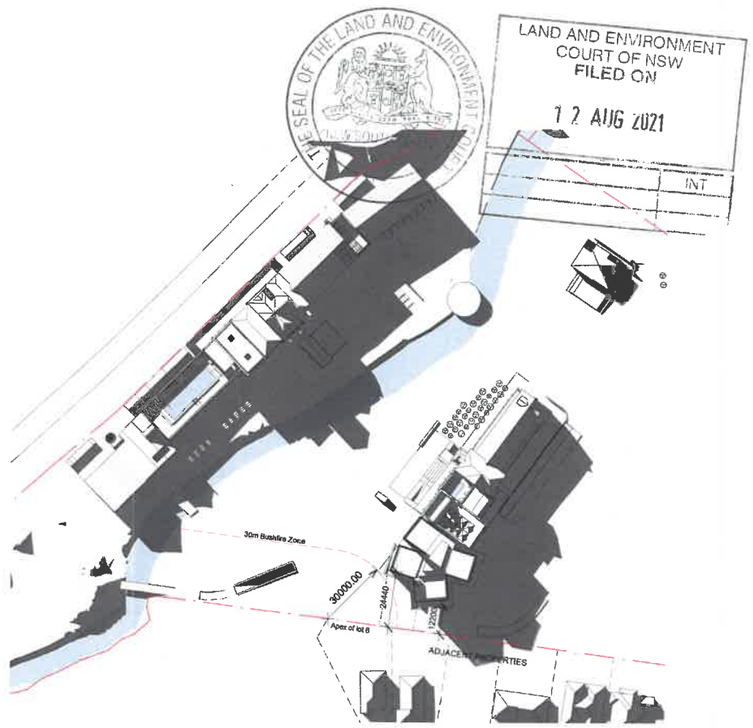

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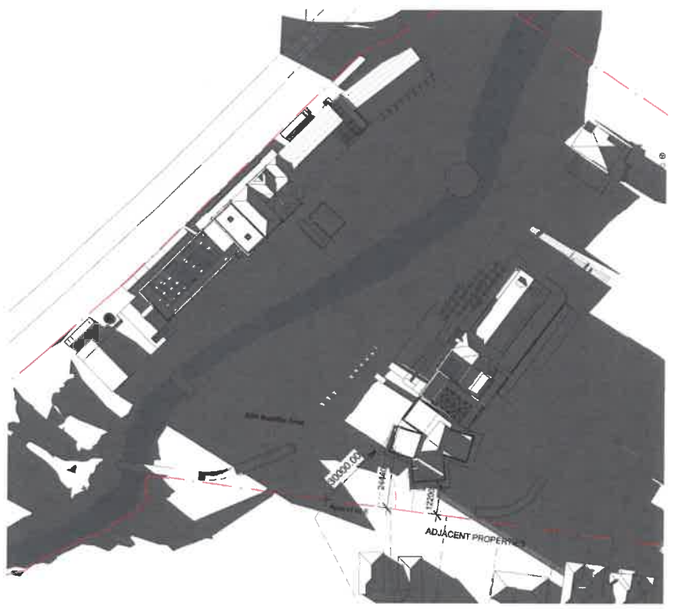

4 **Jun 21 5PM**
1 : 1250

0 12.5 25 62.5 125 m

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12 AUG 2021
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Scale @ A1: 1 : 1250

SD-A1002

Appendix C Previous Traffic Analysis – 1 (12 May 2020)

The Maltings, Mittagong

Traffic Impact Assessment

80020032

Prepared for

Halcyon Hotels Pty Ltd C\O Elton Consulting

12 May 2020

Contact Information

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Document Information

Prepared for	Halcyon Hotels Pty Ltd C\O Elton Consulting
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Job Reference	80020032
Date	12 May 2020
Version Number	02
Effective Date	12/05/2020
Date Approved	12/05/2020

Approved By:

Hayden Calvey
Traffic Engineering Lead

Document History

Version	Effective Date	Description of Revision	Prepared by	Reviewed by
01	23/04/2020	Draft		Hayden Calvey
02	12/05/2020	Final		Hayden Calvey

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Appendices

Tables

Figures

1 Introduction

Cardno has been engaged by Elton Consulting (on behalf of Halcyon Hotels Pty Ltd) to produce a Traffic and Transport impact assessment to support the proposed adaptive re-use of the Southern Highlands heritage icon known as The Maltings Mittagong, Lot 21, DP 1029384 according the to the Wingecarribee LEP 2010.

The Maltings Mittagong (the subject site) is currently a ruin of its former self and one of two key heritage conservation sites in Mittagong Town Centre, as recognised by Wingecarribee Shire Council. The proposal seeks to develop flexible spaces across Maltings 1 and 2 for the use of galleries, functions and cultural activities. Maltings 3 and 4 is proposed to accommodate a Hotel and ancillary facilities whilst further concept development approval will be sort for Maltings 5 and 6 for residential and/or tourist land use. In addition to the building works, the landscape and gardens of the Maltings site will be regenerated.

1.1 Scope of works

Cardno's scope of works is:

- Review the current transport context for the subject site, including road access, public transport, active transport provisions and demonstrate how they integrate with the wider transport network;
- Assess the on-site car parking and loading provision against Council's DCP and other standards.
- Review the site's access arrangements in accordance with relevant standards and guidelines;
- Assess the operational traffic impacts associated with the proposed development;
- Conduct a SIDRA analysis at key locations to assess the development impact on the surrounding road network
- Identify the need, if any, to provide mitigation measures to accommodate future traffic or parking impacts
- Make recommendations for the relevant intersections if there is a need to improve safety.

1.2 Reference documents & standards

In preparing this report, reference has been made to a number of background documents, including:

- Schedule of Classified Roads and Unclassified Regional Roads (Roads and Maritime, 2017);
- Guide to Traffic Generating Developments (Roads and Maritime, 2002);
- Technical Direction 2013/04a (Roads and Maritime, TDT 2013/04a);
- Wingecarribee Local Environmental Plan, (Wingecarribee Shire Council, 2010); and,
- Mittagong Township Development Control Plan, (Wingecarribee Shire Council, 2010).

1.3 SEPP (Infrastructure) 2007

Assessment against the State Environmental Planning Policy (Infrastructure) 2007 is required to determine if concurrence from the state road authority, Transport for NSW (TfNSW) is required. Clause 104 is reproduced below.

(1) This clause applies to development specified in Column 1 of the Table to Schedule 3 that involves—
(a) new premises of the relevant size or capacity, or
(b) an enlargement or extension of existing premises, being an alteration or addition of the relevant size or capacity.

(2) In this clause, relevant size or capacity means—
(a) in relation to development on a site that has direct vehicular or pedestrian access to any road (except as provided by paragraph (b))—the size or capacity specified opposite that development in Column 2 of the Table to Schedule 3, or
(b) in relation to development on a site that has direct vehicular or pedestrian access to a classified road or to a road that connects to a classified road where the access (measured along the alignment of the connecting road) is within 90m of the connection—the size or capacity specified opposite that development in Column 3 of the Table to Schedule 3.

(2A) A public authority, or a person acting on behalf of a public authority, must not carry out development to which this clause applies that this Policy provides may be carried out without consent unless the authority or person has—

(a) given written notice of the intention to carry out the development to RMS in relation to the development, and

(b) taken into consideration any response to the notice that is received from RMS within 21 days after the notice is given.

(3) Before determining a development application for development to which this clause applies, the consent authority must—

(a) give written notice of the application to RMS within 7 days after the application is made, and

(b) take into consideration—

(i) any submission that RMS provides in response to that notice within 21 days after the notice was given (unless, before the 21 days have passed, RMS advises that it will not be making a submission), and

(ii) the accessibility of the site concerned, including—

(A) the efficiency of movement of people and freight to and from the site and the extent of multi-purpose trips, and

(B) the potential to minimise the need for travel by car and to maximise movement of freight in containers or bulk freight by rail, and

(iii) any potential traffic safety, road congestion or parking implications of the development.

(4) The consent authority must give RMS a copy of the determination of the application within 7 days after the determination is made.

The applicable land uses / requirements in Schedule 3 (referred to in Itm 1 of Clause 104 above) are produced below. It is noted that the site and its access points are not within 90 metres of the classified road network and therefore Column 3 of Schedule 3 is not applicable.

Table 1-1 Breakdown of SEPP Infrastructure 2007 Schedule 3

Purpose of Development	Size or Capacity	Comment
Car parks	200 or more car parking spaces	The site provides less than 200 car spaces and therefore does not trigger this.
Food and Drink Premises (other than take away food premises etc)	Car parking for 200 or more motor vehicles	The site provides less than 200 car spaces and therefore does not trigger this.
Residential Accommodation	300 or more dwellings	The site has 40 Hotel rooms, which is less than the 300 and therefore does not trigger this.
Any other purpose	200 ore more motor vehicles per hour	The site generates less than 200vph and therefore does not trigger this.

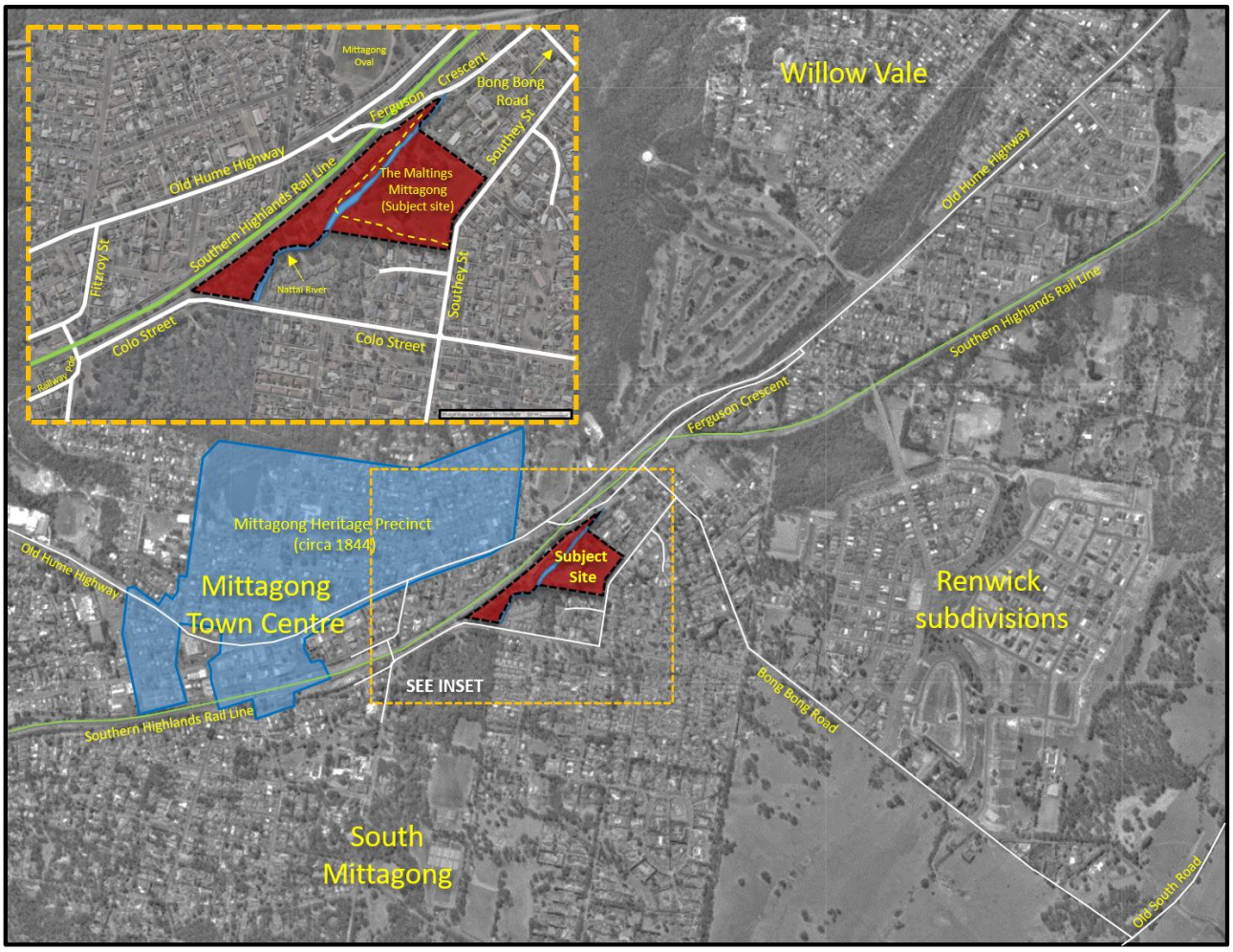
In summary, the development scale does not trigger Clause 104 of the Infrastructure SEPP and therefore TfNSW concurrence is not required. Comments provided by TfNSW can be considered be considered by Council if necessary.

2 Existing conditions

2.1 Site Location

The subject site covers approximately 6.5 hectares of land, located approximately 700 metres from the Mittagong Train Station and Town Centre as shown in **Figure 2-1**.

Figure 2-1 The Maltings Mittagong



Map Source: Nearmap.com (with alterations and additions by Cardno).

The subject site is bordered by Southey Street in the east, adjacent properties and Ferguson Crescent in the north, the rail line in the west and Colo Street, the Nattai River and more residential development in the south.

2.2 Road network

All roads in NSW are categorised by TfNSW based on their role in the road network and for road management responsibilities:

- State Roads link urban and rural centres for the movement of people and freight across the state
- Regional Roads are secondary roads that provide connectivity between towns or places of interest within a region
- Local Roads are low-capacity roads that provide local access to residences and businesses within a town or locality.

State Roads are managed and financed by TfNSW. Regional and Local roads are managed and financed by councils, however TfNSW may provide financial assistance to councils for the management of Regional Roads due to their network significance.

Roads can also be classified functionally by the traffic volume they are expected to convey and their typical characteristics:

- Arterial Roads are major roads that connect one region to another
- Sub-arterial Roads are secondary roads the connect different areas within a region
- Collector Roads are minor roads that link local areas to sub-arterial and arterial roads
- Local Roads are minor roads that provide access to houses and carry low traffic volumes.

Table 3 6 provides the expected daily and peak hour traffic volumes, vehicle operating speed, heavy vehicle restrictions and pedestrian crossing requirements for each functional road classification.

Table 2-1 Road Function Description

Road characteristic	Arterial	Sub-arterial	Collector	Local
Daily traffic volume	> 15,000	5000 – 20,000	2000 – 10,000	< 2000
Peak hour traffic volume	> 1500	500 – 2000	250 – 1000	< 250
Vehicle operating speed	70 – 100 km/hr	60 – 80 km/hr	40 – 60 km/hr	≤ 40 km/hr
Heavy vehicles restrictions	None	Preferably none	Yes	Yes
Pedestrian crossings	Grade-separated or signals	Signals or refuge	Marked crossing or refuge	Marked crossing or refuge

The immediate road network surrounding the subject site consists of:

- The Old Hume Highway (a State road);
- Ferguson Crescent (a Local road);
- Fitzroy Street / Regent Street / Railway Parade (a Local road);
- Colo Street (a Local road);
- Southey Street (a Local road);
- Bong Bong Road (a Local Road); and,
- Fernbrook Crescent, Barton Close and all other roads (Local Roads).

The following summaries detail the key roads likely to generate traffic which will affect the subject site.

2.2.2 The Old Hume Highway

The Old Hume Highway (or B73) is the main road passing through Mittagong. It is classified as a State Road and therefore managed and maintained by RMS. It carries most of the through-traffic into the local area from outside of town. Within the vicinity of the subject site, the Old Hume Highway is typically two lanes in each direction, separated by concrete and or painted medians, and parking shoulders on either side. Sign posted speed limit is 60km/h into Mittagong and 50km/h into the Town Cnetre.

2.2.3 Ferguson Crescent

Ferguson Crescent is a 1.1 kilometre Local Road that provides a single lane in each direction. It is managed and maintained by Council. It crosses the Southern Highlands Rail Line twice and provides access to the subject site, Bong Bong Road, Highlander Street and Renwick Drive. It is a local road with default speed limit of 50km/h.

2.2.4 Fitzroy Street / Regent Street / Railway Parade

Fitzroy Street, Regent Street and Railway Parade are all local roads that combine in purpose to link the Old Hume Highway with Colo Street, on the other side of the Southern Highlands Rail Line. All three local roads

are maintained by Wollondilly Shire Council and each provides a lane in both directions. Railway Parade features a narrow bridge with a 5 tonne crossing limit above the rail line. These are local roads with default speed limit of 50km/h.

2.2.5 Colo Street

Colo Street is a Local Road that extending eastbound from Railway Parade. It is managed and maintained by Council. Colo Street travels towards, and then the along, the southern boundary of the subject site. It then intersects with Southey Street at a roundabout before heading east into nearby suburbs. It is a local road with default speed limit of 50km/h.

2.2.6 Southey Street

Southey Street is a Local Road managed and maintained by Council. It intersects with Colo Street at a roundabout 170 metres south of the subject site, stretching north along the site's eastern boundary. Further north, it stretches beyond the site boundary to form a T-Junction with Bong Bong Road. It is a local road with default speed limit of 50km/h..

2.2.7 Bong Bong Road

Bong Bong Road is a Local Road maintained by Wingecarribee Council. It also provides a short street-link which is 120 metre between Southey Street and Ferguson Crescent, north of the subject site. Beyond Southey Street, Bong Bong Road continues east for 2.5kilometres to connect with Old South Road. It is a local road with default speed limit of 50km/h.

2.2.8 Fernbrook Crescent and Barton Close

Fernbrook Crescent and Barton Close are both classified as Local Streets and function as typical residential cul-de-sacs. Fernbrook Crescent sits adjacent to the subject site on its southern side, extending from the western side of Southey Street. Barton Close extends eastbound from Southey Street, 120 metres north of the subject site. Both these roads are maintained and managed by Council, all other surrounding roads within a 500 metre radius appear to be Local Roads as well. These are local roads with default speed limit of 50km/h.

2.3 Traffic volumes

An indication of the existing traffic volumes in the vicinity of the subject site is provided by peak hour traffic surveys, undertaken by TransTraffic Survey (TTS), on 26 and 29 October 2019 at the following locations:

- Old Hume Highway / Ferguson Crescent
- Old Hume Highway / Louisa Street / Fitzroy Street
- Railway Parade / Colo Street
- Colo Street / Southey Street

The network peak hour summaries are provided in **Appendix A**. The network peak hours have been identified as:

- 8:00 – 9:00am weekdays
- 4:15-5:15pm weekdays
- 11:30am – 12:30pm Saturday

2.4 Public transport

2.4.1 Trains

Train provide an important tourist connection for Mittagong, a relatively small rural township with one rail station. Mittagong Station connects the Mittagong town centre with Sydney and neighbouring settlements, as well as less directly with the rest of NSW. More regional services link Mittagong with less frequency to the rest of rural NSW, Canberra, Sydney and Brisbane.

The main train service for Mittagong is the Southern Highlands Line (SHL) which runs regular services between Moss Vale and Circular Quay, in Sydney's CBD, which occurs several times a day. Additional services are also provided by TrainLink with further options between Canberra and Sydney, and more direct northern services to Sydney stopping only in Campbelltown as they continue north from Mittagong.

Table 2-2 shows the existing train services utilising Mittagong Station on a typical weekday and Saturday.

Table 2-2 Mittagong Station Services

Weekday Trains			
Service	**AM Services**	**PM Services**	**Total number of daily services**
Southern Highlands Line (Moss Vale to Circular Quay)	11	12	23
Southern Highlands Line (Circular Quay to Moss Vale)	7	15	22
TrainLink Services: 632, 634 & 636. (Canberra to Sydney Central)	1	2	3
TrainLink Services: 633 & 635. (Sydney Central to Canberra)	1	1	2
Weekend Trains (Saturday)			
Service	**AM Services**	**PM Services**	**Total number of daily services**
Southern Highlands Line (Moss Vale to Sydney City Circle)	6	12	18
Southern Highlands Line (Circular Quay to Sydney City Circle	6	6	12
TrainLink Services: 632, 634 & 636. (Canberra to Sydney Central)	1	2	3
TrainLink Services: 631, 633 & 635. (Sydney Central to Canberra)	1	2	3

Frequencies sourced from Transport for NSW.

On weekdays, 11 inbound services (Moss Vale to Circular Quay) run in the mornings and 12 in the PM periods. Likewise, three TrainLink services (the 632, 634 and 636) operate between Canberra and Sydney on weekdays, each providing an additional service to Sydney from Mittagong, stopping only at Campbelltown along the way.

Seven outbound services (Circular Quay to Moss Vale) run in the opposite direction each morning, with an additional 15 in the PM periods. Two TrainLink services (the 633 and 635) operate between Sydney Central and Canberra daily, providing one additional southbound service each from Mittagong to all remaining Southern Highlands stops, including Goulburn and Queanbeyan.

On Saturdays, six inbound services run to Circular Quay from Moss Vale in the AM periods and 12 more run in the PM periods. Outbound (from Circular Quay to Moss Vale) there are six services during the AM period, as well as six in the PM period.

2.4.2 Regional Coaches

Regional coach services operate within the southern highlands and can be connected to via the Southern Highlands Line and Mittagong Station.

2.4.3 Local Buses

Berrima BusLines is the local Southern Highlands bus company that provides local services to central Mittagong. Its services provide Mittagong with regional connections to Moss Vale, Colo Vale, Bargo and Bowral amongst other nearby villages. Berrima BusLines also provide charter bus services upon request.

There are three bus routes providing local connections for the subject site, these are shown in **Figure 2-2**. The most easily reached stops from the subject site are highlighted in red. Other stops covered by the various routes are coloured blue. All three routes provide a connection with Mittagong town centre, Mittagong Station and north to or beyond Willow Vale.

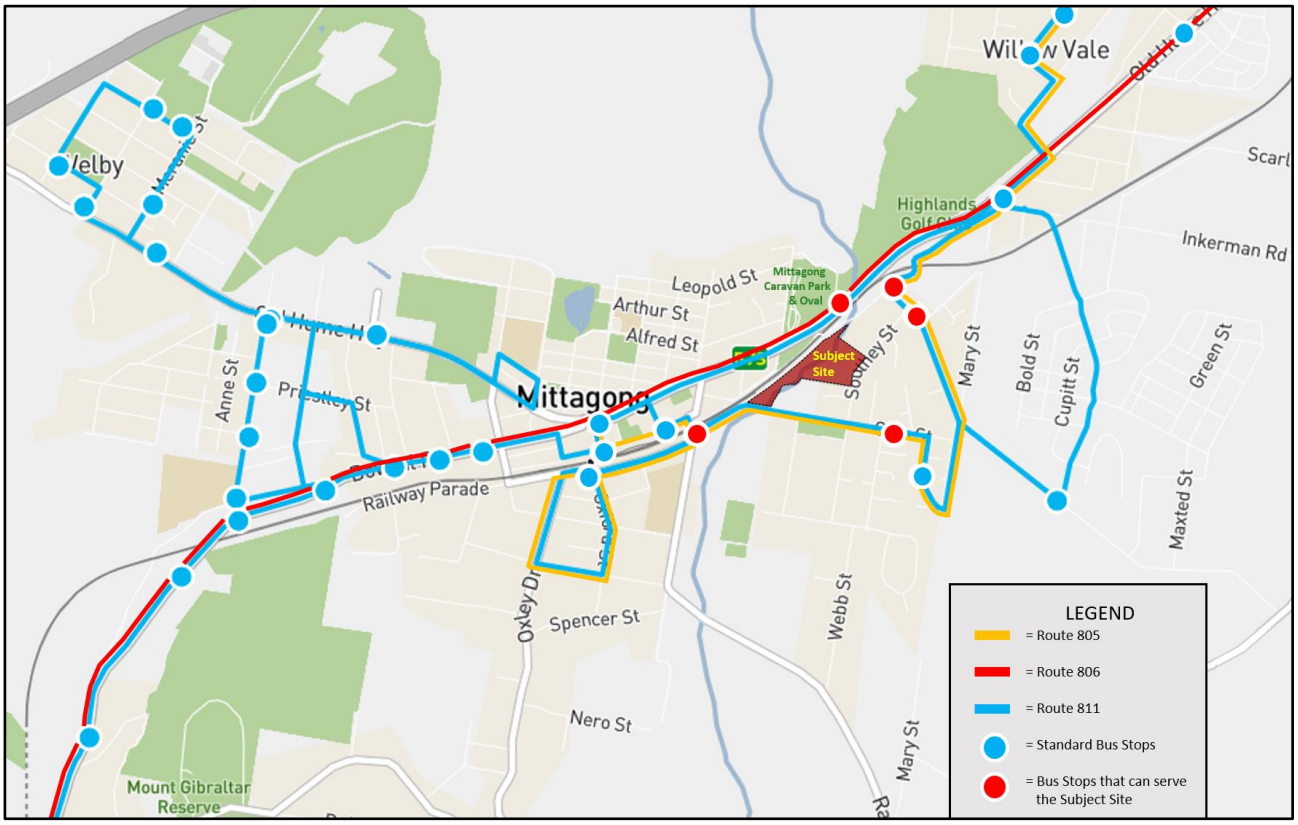
> Route 805: Hilltop to Mittagong via Colo Vale

> Route 806: Bargo to Bowral via Mittagong

> Route 811: Willow Vale to Moss Vale via Mittagong & Bowral

From the subject site, the most direct and easily accessed routes is the 806. This has stops on the Old Hume Highway close to the Mittagong Caravan Park and Oval. The service offering the best local coverage is the Route 811 as it covers most of Mittagong (including Bong Bong Road & Renwick), Willow Vale, Welby, Bowral and Moss Vale.

Figure 2-2 Surrounding Bus Routes



Map Source: Transport for NSW (with modifications by Cardno)

2.5 Pedestrian and cycle provisions

The general footpath and cycling provisions surrounding the site are shown in Figure 2-3**.**

Figure 2-3 Surrounding Cycle & Footpath Provisions

Map source: RMS Cycleway Finder (with modifications by Cardno)

Council's strategic bike plan shows link improvements for the cycling network (e.g Colo Street) that will assist the development. The existing footpath connectivity is somewhat typical for the rural area, where more recent residential subdivisions appear to be delivering footpath networks within their site (e.g. Renwick).

3 Proposed Development

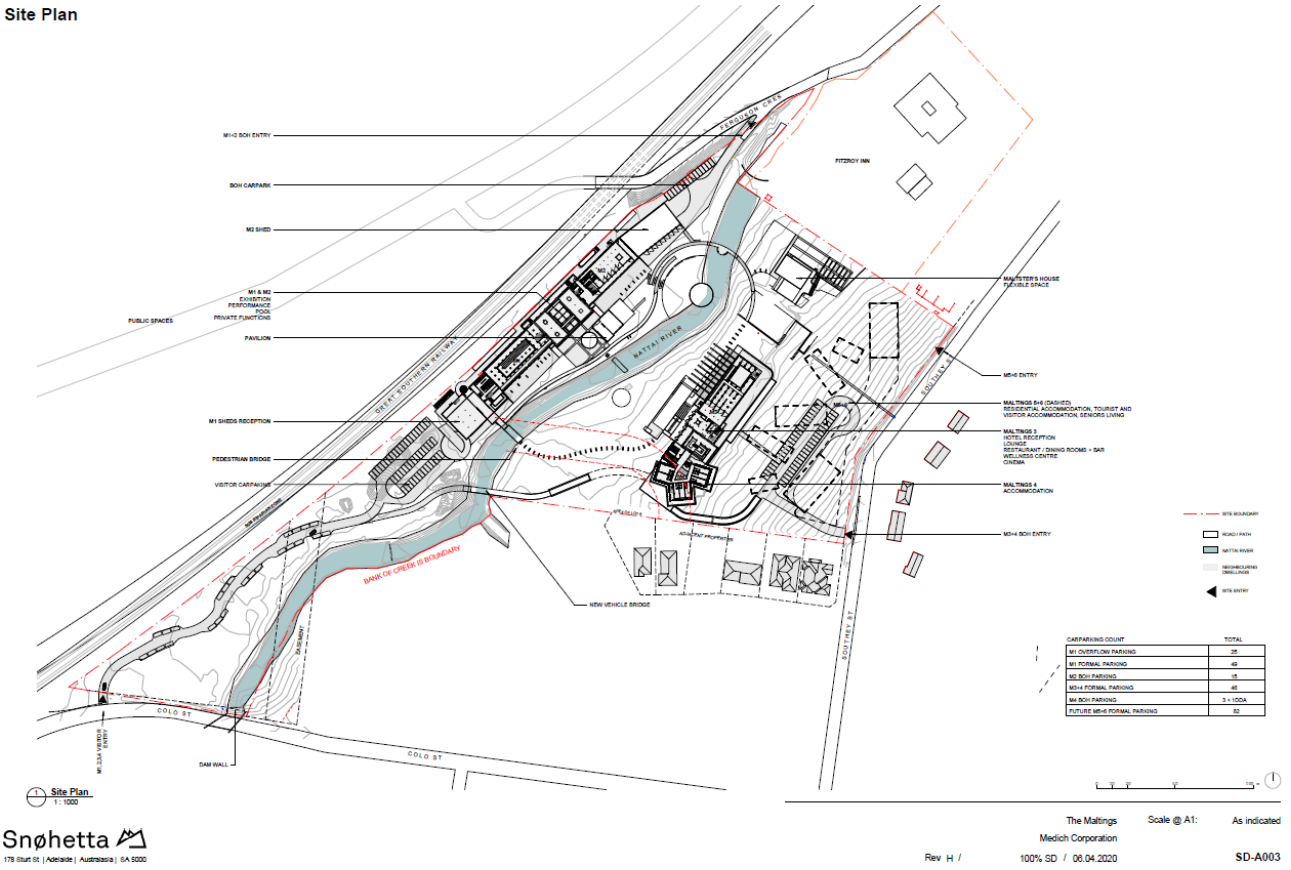
3.1 Overview

The application is a concept development application seeking the following:

1. Detailed development consent for Maltings 1 to 4 (referred to M1, M2, M3 & M4 respectively) to accommodate a range of uses including a bar, pool area, multipurpose spaces suitable for exhibitions, function and performances, as well as a hotel with associated ancillary uses, and ground improvements including landscaping, parking and vehicular access.
2. Concept approval for Maltings 5 and 6 (M5 and M6) to accommodate the following potential uses:
    a. Residential accommodation;
    b. Tourist and visitor accommodation; and/or
    c. Seniors living development

The site plan is shown in **Figure 3-1**. Reference should be made to the architectural design package submitted as part of the application for further detail

Figure 3-1 Site Plan



Descriptions of the various buildings and uses are provided in detail as part of the Statement of Environmental Effects. Key forms of the proposal are outlined below in the following tables.

Table 3-1 Maltings 1 & 2 Use Detailed DA

Level	Description	Scale	Proposed Uses(1)
Ground	Multipurpose G.01	335m^2	*function centre - a building or place used for the holding of events, functions, conferences and the like, and includes convention centres, exhibition centres and reception centres, but does not include an entertainment facility.* *information and education facility - a building or place used for providing information or education to visitors, and the exhibition or display of items, and includes an art gallery, museum, library, visitor information centre and the like.* *pub - licensed premises under the Liquor Act 2007 the principal purpose of which is the retail sale of liquor for consumption on the premises, whether or not the premises include hotel or motel accommodation and whether or not food is sold or entertainment is provided on the premises.*
	Multipurpose G.07	410m^2	
	Multipurpose G.11	219m^2	
	Multipurpose G.16	220m^2	
	North Shed	583m^2	
Level 1	M1 Terrace bar	142m^2	
	M1 Pool & Terrace	665m^2	
	M2 Great Hall	483m^2	
	M2 Terrace	112m^2	
Level 2	Gallery Spaces	372m^2	

Table 3-2 Maltings 3 & 4 Use Detailed DA

Level	Description	Scale	Proposed Uses(1)
Basement	- Basement valet area; and - BOH	ancillary	*hotel or motel accommodation - a building or place (whether or not licensed premises under the Liquor Act 2007) that provides temporary or short-term accommodation on a commercial basis and that-* *(a) comprises rooms or self-contained suites, and* *(b) may provide meals to guests or the general public and facilities for the parking of guests' vehicles, but does not include backpackers' accommodation, a boarding house, bed and breakfast accommodation or farm stay accommodation.* *restaurant or cafe - a building or place the principal purpose of which is the preparation and serving, on a retail basis, of food and drink to people for consumption on the premises, whether or not liquor, take away meals and drinks or entertainment are also provided.*
Ground	- Primary pedestrian access - Garden Spaces - Hotel rooms (8)	- ancillary - ancillary - 8 rooms	
Level 1	- Cinema - BOH - Hotel Rooms (9)	- ancillary - ancillary - 9 rooms	
Level 2	- Restaurant - Bar - Hotel Rooms (9)	- ancillary - ancillary - 9 rooms	
Level 3	- Ancillary amenities - Lounge area - Gallery - Hotel rooms (9)	- ancillary - ancillary - ancillary - 9 rooms	
Level 4	- Multipurpose area - Hotel rooms (5)	- ancillary - 5 rooms	
Level 5	Private accommodation suite		

Table 3-3 Maltings 5 & 6 Uses Concept DA

Level	Description	Proposed Uses(1)
n/a	Approximate site area of 10,400m^2 Apartment / Building footprint of 2,650m^2 Potential GA of 7,430m^2 Future parking of some 82 car spaces	*Residential accommodation means a building or place used predominantly as a place of residence, and includes any of the following—* *(g) multi dwelling housing,* *(h) residential flat buildings,* *(l) seniors housing,* *[a focus on higher density accommodation is requested]* *o Tourist and visitor accommodation means a building or place that provides temporary or short-term accommodation on a commercial basis, and includes any of the following—* *(d) hotel or motel accommodation,* *(e) serviced apartments,* *o Seniors living development means a building or place that is—* *(a) a residential care facility, or* *(b) a hostel within the meaning of clause 12 of State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004, or* *(c) a group of self-contained dwellings, or* *(d) a combination of any of the buildings or places referred to in paragraphs (a)–(c),* *and that is, or is intended to be, used permanently for—* *(e) seniors or people who have a disability, or* *(f) people who live in the same household with seniors or people who have a disability, or* *(g) staff employed to assist in the administration of the building or place or in the provision of services to persons living in the building or place, but does not include a hospital.* *[a focus on self-contained dwellings which are basically like residential apartments or townhouses but have higher accessibility standards]*

The proposal seeks flexibility across the proposed uses in M1 and M2. In most cases the M1 and M2 will attract low levels of visitors for small style gallery or bespoke functions. It is expected that the Great Hall will have a maximum patron capacity of up to 250 people. The proposed pool bar and pool terrace will have a maximum patron capacity of 150 people.

In addition, 25 staff are proposed to support the functions in Maltings 1 and 2 with flexibility to modify staffing resources as required.

Maltings 1 and 2 will operate between 8am and midnight from Sunday to Thursday. On Fridays and Saturdays, the premises will operate from 8am until 1am (the following morning). In addition, up to ten times in any 12-month period the premises will operate until 2am (the following morning) including on New Year's Eve.

The hotel includes a range of non-accommodation uses which are ancillary, including the private accommodation space in M3 and M4 The restaurant and bar will be predominantly utilised by hotel guests.

As the development of M5 & M6 is a concept DA at this stage, the final use is not yet determined. This assessment will however look at the higher traffic and parking generator.

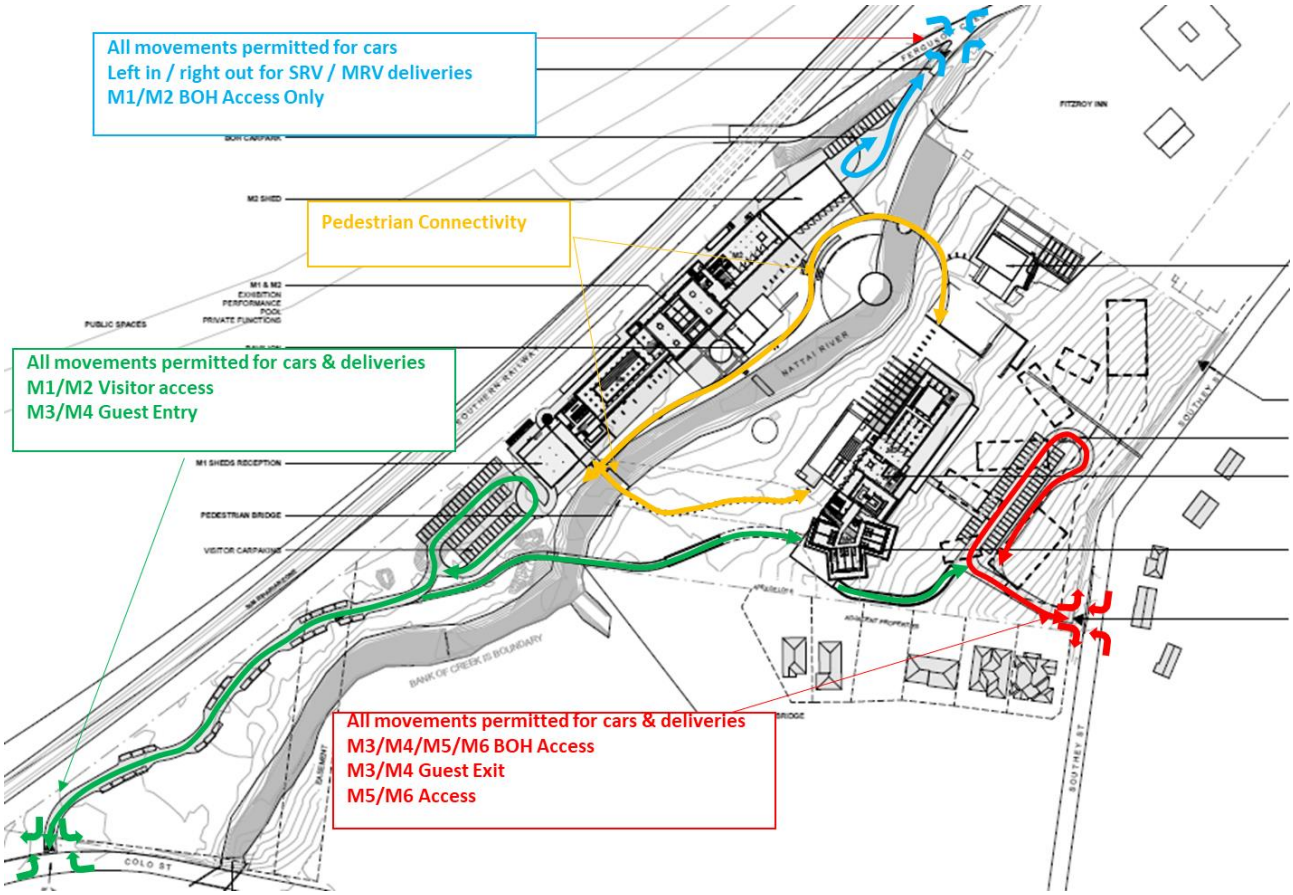
3.2 Site Access Arrangements

The site proposes three access points to service multiple parts of the site. The access is summarised below:

- Colo Street driveway will facilitate majority of all visitors to M1/ M2 and hotel guest of M3 / M4.
- Southey Street will be for outbound hotel guests of M3 / M4 and staff. Future access from the M5/M6 car park will be via Southey Street and will be subject to a detailed assessment at DA stage.
- Ferguson Crescent will be staff and BOH deliveries only. No visitor access is granted from this location.

Internally, there will be a bridge connection from the Colo Street car park to the M3/M4 basement parking. This will be for hotel guests only and accordingly sign posted.

Pedestrian access can be achieved from all road frontages, with internal links across the Nattai River allowing permeability for pedestrians though the landscaped gardens.



The location of car parking across the site is summarised below:

- M1/M2 off Colo Street – 74 parking spaces
- M1/M2 off Ferguson Crescent – 15 parking spaces
- M3/M4 Basement – 4 parking spaces
- M3/M4 off Southey Street – 46 parking spaces
- Future M5/M6 off Southey Street – 42 spaces for M3/M4 and 40 spaces for M5/M6 (subject to a separate detailed development application at the applicable time)

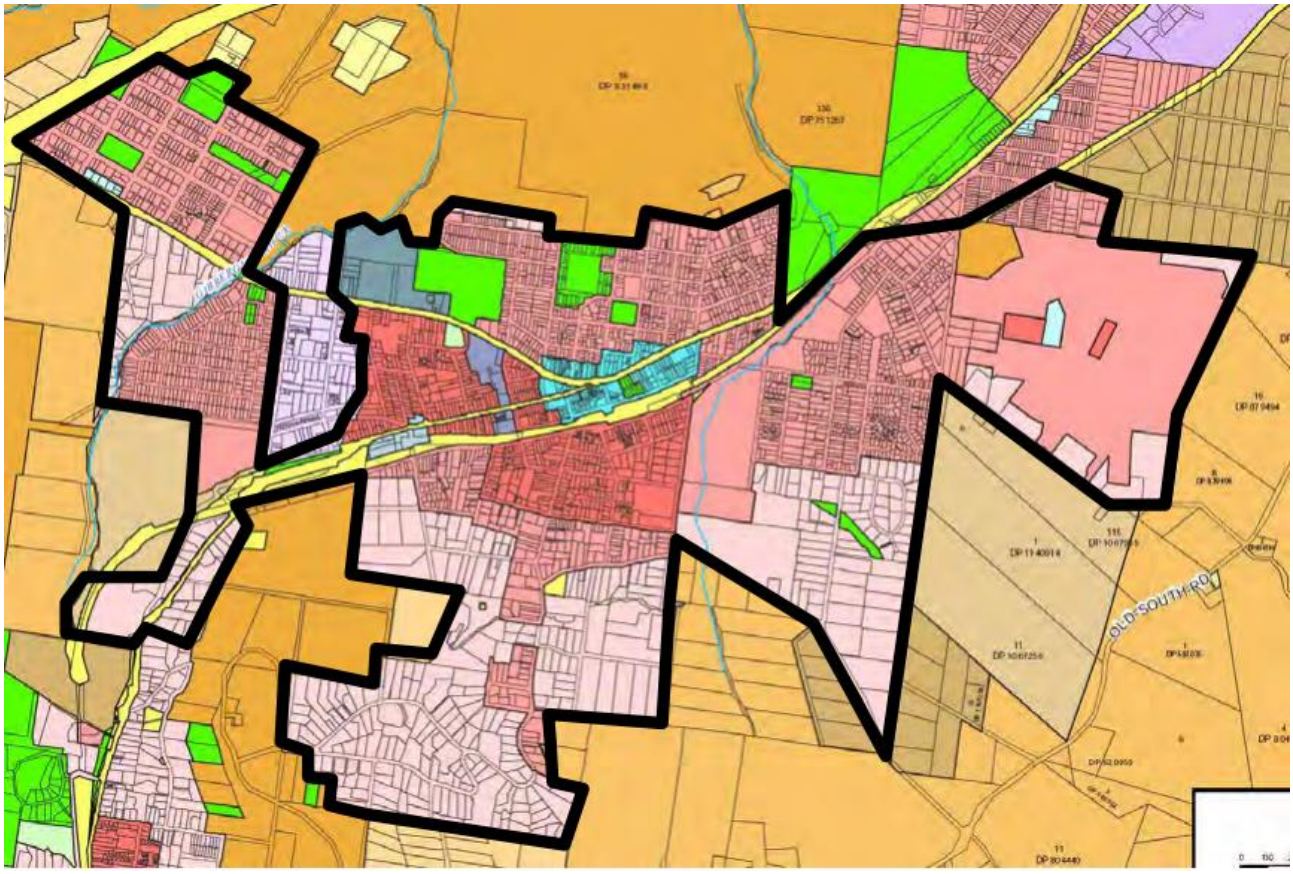
With regard to emergency vehicle access, these vehicles (Ambulance, Fire, Police) are permitted on-site at all access points. If necessary, the bridge between the M1/M2 Colo Street car park and the M3/M4 basement can be utilised by emergency services.

4 Parking assessment

4.1 Council Development Control Plan

The town of Mittagong has two specific DCP's applicable, being the Township DCP (amendment 8) and the Industrial Lands DCP (amendment 6). The site is zoned Low Density Residential (R2) and sits within the Mittagong Town Boundary (refer to **Figure 4-1**). Therefore the Mittagong Township DCP is applicable.

Figure 4-1 Mittagong Town Centre Boundary



Furthermore, based on the sites heritage value, the DCP has special provisions for the Maltings Heritage Precinct (Part C, Section 15) where traffic and parking aspects of this control will be addressed as part of this assessment.

Figure 4-2 The Maltings Heritage Precinct

4.1.2 DCP Car Parking Rate Review

Section B.4 of the DCP is applicable to business zoned land within the township (identified as six different precincts). The site is not zoned as business land, however the savings provision of the heritage item permits potential business like uses within the R2 land. Additionally, the site is in close proximity to the commercial core of Mittagong, the Mittagong Train Station and the DCP parking requirements for residential zoned land has limited requirements for non-residential land.

Table 4-1 Council DCP Part B Potential Parking Rates

Use	Car Parking Spaces
Retail, Office, Commercial	1 space per 30m^2 of gross leaseable floor area for buildings of single storey. For buildings greater than one storey in height the disaggregated method of car parking calculation (Section 5 RTA Guide for Traffic Generating Developments) may be considered.
Clubs	A traffic study is to be prepared by a qualified traffic engineer, with the parking requirement established through surveys of similar existing developments, noting the existing supply of and demand for parking in the area, and of the peak parking periods of individual facilities within the club.
Hotels	Accommodation component: 1 space per Hotel room plus 1 space per 2 employees. Bar, lounge & dining component: A traffic study is to be prepared by a qualified traffic engineer, with the parking requirement established through surveys of similar existing developments, noting the existing supply of and demand for parking in the area, and of the peak parking periods of individual facilities within the hotel.
Wineries, Cellar Door Sales and other Local Rural Industries	1 space per 30m² of gross leaseable floor areas with a minimum of 3 spaces.
Educational Establishments	1 space per 2 staff, plus 1 space per 20 Year 12 students, plus: ▪ 1 space per 10 tertiary students, ▪ 1 space per 10 seats in an assembly hall (these spaces may be inclusive of all other requirements), ▪ Spaces for sports fields etc, shall be determined by Council in each case. Note: Where a facility is ancillary to the principle use eg; school, church, consideration will be given to the actual likely increased patronage.

'Source: Figure B5.4 Schedule of Car Parking Requirements, Mittagong Town Centre DCP

Part C of the DCP prescribes the requirements for residential zoned land (which is applicable to the site). Parking requirements within Part C are summarised in **Table 4-2**.

Table 4-2 Council DCP Part C Potential Parking Rates

Use	Car Parking Spaces
Medium density housing	1 space per 1 and 2 bedroom dwellings; 2 spaces per 3 or more bedroom dwellings Visitors parking at a rate of 1 space per 3 dwellings rounded up to the nearest whole number
Seniors Housing	If car parking (not being car parking for employees) is provided: (a) car parking spaces must comply with the requirements for parking for persons with a disability set out in AS 2890, and (b) 5% of the total number of car parking spaces (or at least one space if there are fewer than 20 spaces) must be designed to enable the width of the spaces to be increased to 3.8 metres, and MITTAGONG TOWN PLAN DCP PART C RESIDENTIAL ZONED LAND SECTION 8 SENIORS HOUSING Mittagong Town Plan – Effective 23 October 2019 PART C | Page 251 of 332 (c) any garage must have a power-operated door, or there must be a power point and an area for motor or control rods to enable a power-operated door to be installed at a later date.
Educational establishments	A Traffic Impact Study shall be submitted along with the development application. On-site car parking shall be required at the rate of 1 space per 5m² of Gross Floor Area, or 1 space per 6 persons attending, whichever is the greatest.

In general, Part C does not provide parking rates that best fit the proposed uses on the site. The traffic and parking generation of the site (particularly M1 & M2) will be driven by the patronage rate of the site. For the proposed Hotel use on M3 & M4, the parking provision will be guided by Part B of the DCP where Hotel is a prescribed land use. For uses on M5 & M6, the potential residential use would be based on the medium density requirements in Part C and SEPP (Housing for Seniors and Persons with a Disability) for Seniors Living.

4.2 Car Parking Requirement Analysis

The site layout results in separated parking locations for specific buildings on the site. The parking locations are summarised below:

- M1/M2 off Colo Street – 74 parking spaces to be used by visitors / guests
- M1/M2 off Ferguson Crescent – 15 parking spaces for staff only
- M3/M4 Basement – 4 parking spaces for hotel guests / valet and staff
- M3/M4 off Southey Street – 46 parking spaces for hotel guests / valet
- Future M5/M6 off Southey Street – 42 spaces for M3/M4 and 40 spaces for M5/M6. Whilst parking for M3/M4 is conceptually shown to reduce by 4 spaces, this will be addressed during the detailed design of M5/M6 and its own development application.

The parking requirement for M1 & M2 is derived based on a first principles approach accounting for the flexible uses across the site. This will be guided based on the level of parking available on the site assuming no overspill of parking during “business as usual” operation (i.e. excludes special events).

Visitors to M1 & M2 will only have a total of 74 car parking spaces. During the business as usual operation of the site there could be in the order of 2 persons per vehicle, equating to circa 150 people travelling by car.

During special events and functions, there are a number of factors to consider:

- Travel mode to the tourist destination of Mittagong
- Visitors accommodation location during evening special events and functions
- Heritage impacts for additional on-site parking or further overflow areas
- Car occupancy associated with larger groups of mutual connections.

During the special event usage of M1 & M2, and assuming the Great Hall and Pool & Terrace area operate separately at concurrent times, there could be in the order of 400 visitors across M1 & M2.:

- Increase car occupancy of 3 to 4 persons per vehicle equates to 222 to 296 based on the available 74 spaces off Colo Street. The assumed car occupancy is reflective of the restricted onsite parking, RBT enforcement where people do not want to drive separately to functions / events and prefer car pooling with partners and friend groups.
- Assume 20% of the M4/M5 accommodation is booked for the special event, with 2 persons per room. This equates to 16 persons who's parking is already accounted for by the Hotel's requirements.

  Assume 15% of guests stay in overnight accommodation within walking distance, public transport or taxi, not requiring the use of a private vehicle on the Maltings site. This equates to 60 persons.
- Remaining visitors travel by car and would be required to park on-street (assuming full patronage of 400 people). Adopting the 3 to 4 persons per car rate.

Table 4-3 Cumulative Parking Analysis for M1/M2

	Visitors Parking off Colo Street	Hotel Guests	Non-private car	Total accommodated by on-site parking	Parking On-street	
Car Occupancy of 3	222 people	16 people	60 people	298 people	112 people	28 to 37 cars
Car Occupancy of 4	296 people	16 people	60 people	372 people	28 people	7 to 9

Based on the above, there could be potential for 298 to 327 visitors accommodated by the on-site parking. This represents 74.5% to 81.8% of the maximum capacity sought of 400 visitors. Under the special event and function scenario, there could be in the order of 7 to 37 vehicles parked on-street.

It is important to acknowledge the Heritage limitations on the site. In particular, the RMS Guide states that:

The importance of parking must be kept in perspective in the overall planning assessment. There may be situations where it may not be physically possible to provide parking, but the potential planning benefits of the proposal are significant. For example, the adaptive re-use of an historic building may not include on-site parking as it could have an adverse impact on the structure of the building or on its curtilage.

The above is certainly true for the Maltings Heritage Precinct, whereby the disturbance to the existing buildings is to be minimal and retention to significant landscape elements result in limited opportunities to provide further at-grade of basement level car parking.

Further to the above, the RMS Guide also indicates that licenses premises (such as a club) should accommodate the average maximum demand (50th percentile). Furthermore, uses such as restaurants and motels should be designed based on 85% of the maximum capacity. If this logic is applied to the site (as it has been to numerous similar developments), then the 50% and 85% capacity would result in a design level of 200 to 340 persons such that overflow parking would be accepted.

Furthermore, the site can develop a Travel Access Guide and Traffic Management Plan to support sustainable travel modes to / from the site to limit the vehicular traffic and parking generation.

In the event parking overflows in the order of 7 to 37 vehicles, approximately 20 vehicles can be accommodated on the southern side of Colo Street or a further 20 spaces on the northern side (total of 40 spaces).

Staff parking for M1/M2 is accommodated off Ferguson Crescent, consisting of 15 spaces for 30 staff.

The hotel accommodation within M3/M4 would require the provision of 1 space per hotel room, equating to 40 spaces. For staffing of the hotel and ancillary kitchen it is assumed that a total of 5-10 staff may be required, resulting in 3 to 5 spaces for staff. Therefore the total of M4/M5 parking would be 43 to 45 car parking spaces.

Of interest, the RMS Guide details a car parking rate of 0.2 to 0.25 spaces per bed for 3-5 star hotel accommodation. For M3/M4, if it is assumed that all rooms are two bed's (80 beds in total) then the more stringent rate of 0.25 spaces per bed results in 20 car spaces for guests. Furthermore, the RMS Guide indicates that the design level for traffic and parking should be based on 85% occupancy / patronage for uses such as shopping centres, restaurants, licensed premises and motels. As such the consideration of 100% occupancy is worst case.

Parking for M5/M6 is shown as 82 parking spaces however this includes provision for 42 spaces for M3/M4 which would be assessed at the time of the M5/M6 development application. The final use of M5/M6 would need to address compliance with the on-site parking provision. For example, a provision of 75 medium density dwellings would require 100 car spaces, including visitor parking.

4.2.2 The Maltings Heritage Precinct

Relevant extracts of the DCP are italicised below and discussed with reference to the current set of drawings (applicable to traffic and parking).

C15.3 Additional Development Controls

(*c) Vehicular access to the Maltings precinct via Colo Street shall be restricted to access relating to residential development only.*

This cannot be feasibly achieved if the intention of the DCP is to also enable non-residential use of the Heritage Item. Colo Street provides at-grade vehicular access and as it runs parallel to the train line it is similarly relatively flat terrain such that it would minimise the degree of cut/fill required to create off-street car parking. Providing main access from Southey Street to non-residential land use will only increase traffic volumes within the existing residential precinct potentially impacting residential amenity in this location. The access from Ferguson Crescent similarly cannot be identified as the main access point for non-residential development due to the gradient of access and limited space for at-grade parking.

The Colo Street is actually the most suitable as it limits the amount of traffic entering the residential precinct to the east of the site. It also enables better desire lines (both vehicular and pedestrian) to the Mittagong town centre.

The clause above also does not allow for flexible land use, as it doesn't allow for a wider range of land uses, include ones conducive to heritage reuse and ones that potentially generate less traffic than residential.

(d) Vehicular access to any non-residential development or public car parking associated with same, shall be made via the Old Hume Highway, where such vehicular access arrangements do not compromise the safety or efficiency of the Old Hume Highway and the local road network.

The site does not have direct access to the Old Hume Highway. Utilising Ferguson Crescent as the main access point for non-residential development is not suitable for the constrained access and parking opportunities in this location.

(*e) All car parking and loading/unloading facilities associated with non-residential development shall be provided within the Maltings precinct.*

The current plans achieve this outcome.

4.3 Disabled parking requirements

Council's DCP does not provide rates for disabled parking provision. The site provides one disabled space for M1 – M4, however it is suggested an additional disabled space be achieved within the Colo Street car park west of the Nattai River. If achieved, the disabled parking provision would equate to 1.5% of the total parking provision for M1-M4.

4.4 Motorbike and cycling requirements

Council's DCP is silent on motorbike and cycling parking provisions. It is suggested that these types of facilities could be provided informally through in selected locations. It is suggested 5-6 motorbike spaces (rate of 1 per 25 car spaces) and 13-14 bicycle spaces be achieved (10% of the parking provision)

4.5 Servicing and loading requirements

The BOH area's for M1/M2 and M3/M4 will cater for heavy vehicles and courier deliveries. The loading areas for M1/M2 are informal spaces keep to minimise impact on the heritage item. Swept paths for loading areas are provided in the following figures.

Figure 4-3 Colo Street Car Park - HRV

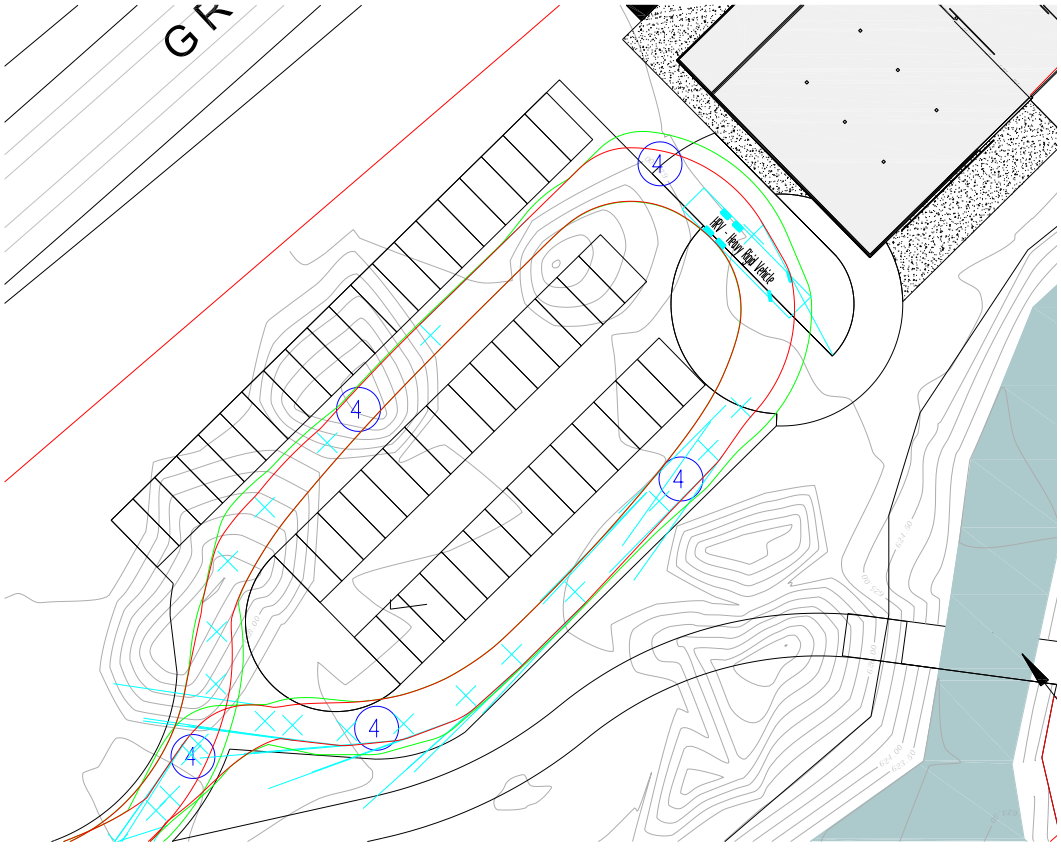


Figure 4-4 Ferguson Street Car Park Loading Area -MRV

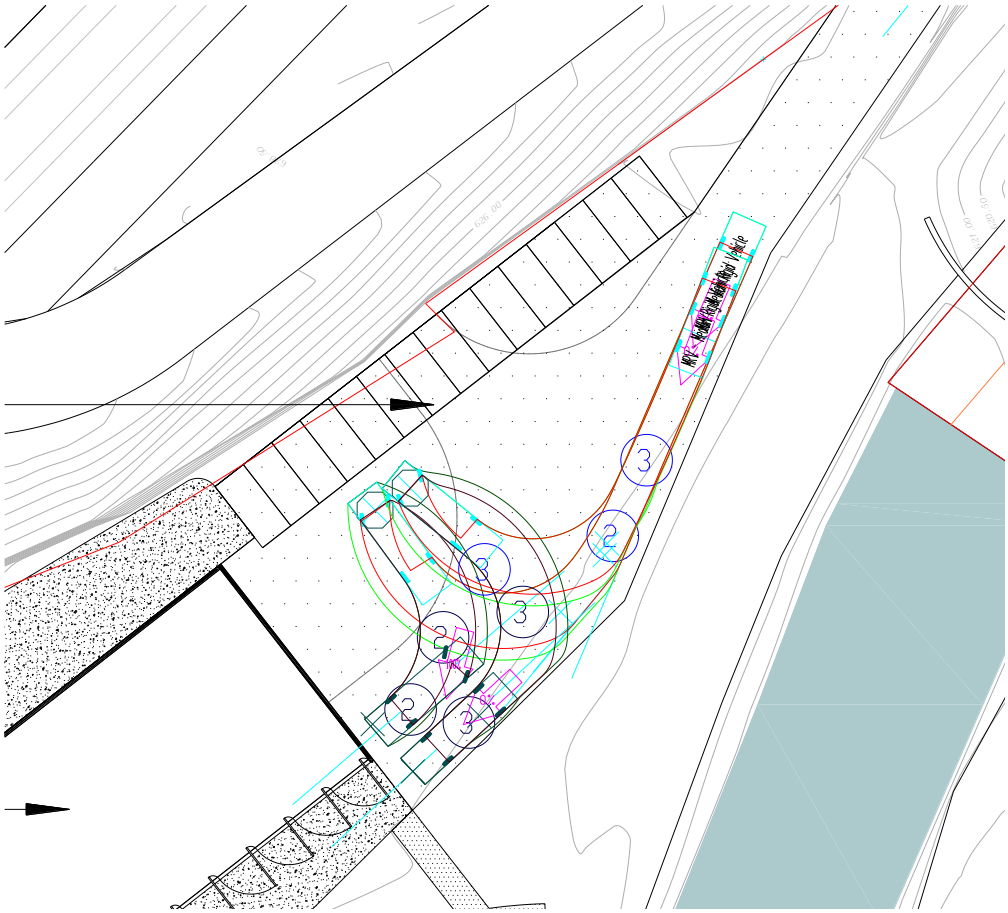
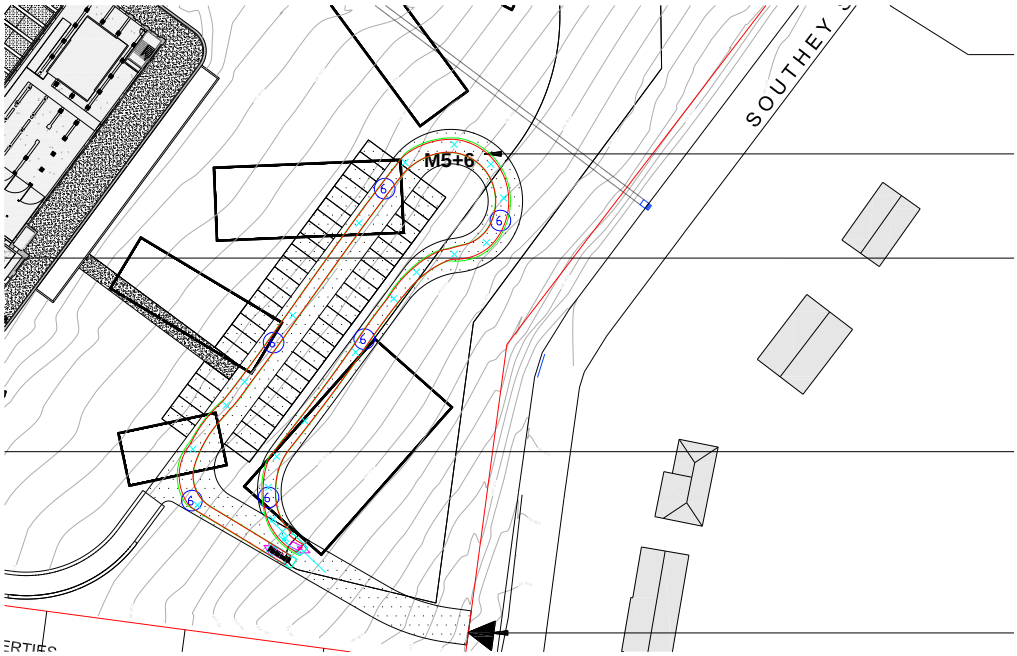


Figure 4-5 Southey Street Car Park



4.6 Car Park Design & Access

The car park design and layout has been reviewed against the requirements of AS2890.1:2004, AS2890.2:2018, AS2890.6:2009 and found to be compliant. It is expected that the same design check will be required as part of the release of a construction certificate and as such the design check should be reproduced for the construction plans (to account for any major or minor design changes).

The design achieves key items such as:

- 2.5m wide x 5.4m long spaces within the Colo Street car park and M3/M4 car park, with a 6.0m aisle. This is sufficient for the User Class 2 visitors
- 2.5m wide x 5.4m long spaces within the M1/M2 BOH parking. The aisle width is not defined due to the shared loading area however this exceeds the User Class 1/1A requirements for staff.
- Disabled parking is provided with an adjacent shared zone.
- Colo Street car park is provided with 5.5m circulating driveway compliant for two-way travel.

5 Traffic Impact

5.1 Traffic Generation

5.1.1 M1/M2 Land Use

The RMS Guide does not provide trip rates or the intended uses of M1/M2. It is assumed that the peak hour traffic generation would be associated with the Weekday evening event or a Saturday midday / evening event.

For the purpose of estimating the forecast traffic generation, the 74 space car park off Colo Street is used to estimate the traffic generation. That is, it is assumed that 74 vehicles would arrive within the hour of an event starting and departing at the end of the event. It is unlikely that the Weekday morning peak hour would see the same level of activity, which in this case is assumed to be 50% of the peak.

Staff traffic generation during these events are assumed to occur outside of the peak period and a contained to the M1/M2 parking off Ferguson Crescent.

5.1.2 M3/M4 Land Use

Traffic generation of M3/M4 is based on the Hotel accommodation. The RMS Guide does not provide a trip rate for this land use, and as such the motel evening peak hour trip rate of 0.4 trips per unit has been adopted. For ease of calculation the Weekday evening and Weekend midday are assumed to generate the same level of traffic.

Based on the 40 Hotel rooms, 16 vehicle trips are calculated.

5.1.3 M5/M6 Land Use

It is known that the parking provision for M5/M6 could be in the order of 82 spaces. For robustness, we have considered a parking provision of 100 spaces. The higher traffic generating land use would be medium density residential (up to 0.65 trips per dwelling), assuming a reduction for the weekend. Seniors Living typically attracts lower traffic generation rates (e.g. 0.2 to 0.4 trips per dwelling).

Based on Council's DCP parking requirement for medium density development, 75 dwellings would require 100 car parking spaces (assuming two bedroom units). Therefore, the assessed traffic generation is 50 peak hour trips during the weekday and 25 trips during the weekend.

5.1.4 Traffic Generation Summary

Table 5-1 Total Traffic Generation

	Weekday AM	Weekday PM	Weekend
M1/M2	37 inbound	74 inbound	74 inbound / outbound
M3/M4	n/a	16 inbound / outbound	16 inbound / outbound
M5/M6	50 inbound / outbound	50 inbound / outbound	25 inbound / outbound
Total	86	133	115

Table 5-2 Directional Flow

	Weekday AM	Weekday PM	Weekend
M1/M2	100% in 37 in	100% in 74 in	50% in; 50% out 37 in; 37 out
M3/M4	n/a	50% in; 50% out 8 in; 8 out	50% in; 50% out 8 in; 8 out
M5/M6	20% in; 80% out 10 in; 40 out	20% in; 80% out 40 in; 10 out	50% in; 50% out 13 in; 13 out
Total	47 in; 40 out	122 in; 18 out	58 in; 58 out

5.1.5 Service Vehicle Traffic Generation

The generation associated with servicing and delivery is likely to be infrequent across the week. The busiest times for loading and delivery would be associated with bump-in and out of functions, regular food / drink delivery, waste collection and other minor delivieries.

For the purpose of providing an indicative generation, the following has been considered:

Even

- M1/M2 Back of house loading for events– assuming a capacity of 4-5 vehicles on-site for loading ‘bumping in /out’ – 10 total movements (in + out) at the start or end of an event
- M1/M2 Back of house loading non-events – assume 10 per day (5 in; 5 out)
- M3/M4 Hotel deliveries – assumed 6 a week (3 in; 3 out for kitchen, maintenance and other uses)

5.2 Traffic assignment

5.2.1 M1/M2 Distribution

The land uses of this part of the development are likely to benefit from the tourist catchment of Mittagong. It is assumed that 50% will come from the north towards Sydney and the remaining 50% from the south from Bowral and East from the Illawarra.

In terms of distribution to the immediate local road network, the assessment has been based on Google Maps and adopting the fast path to / from the broader origins.

Figure 5-1 M1/M2 AM Peak Hour

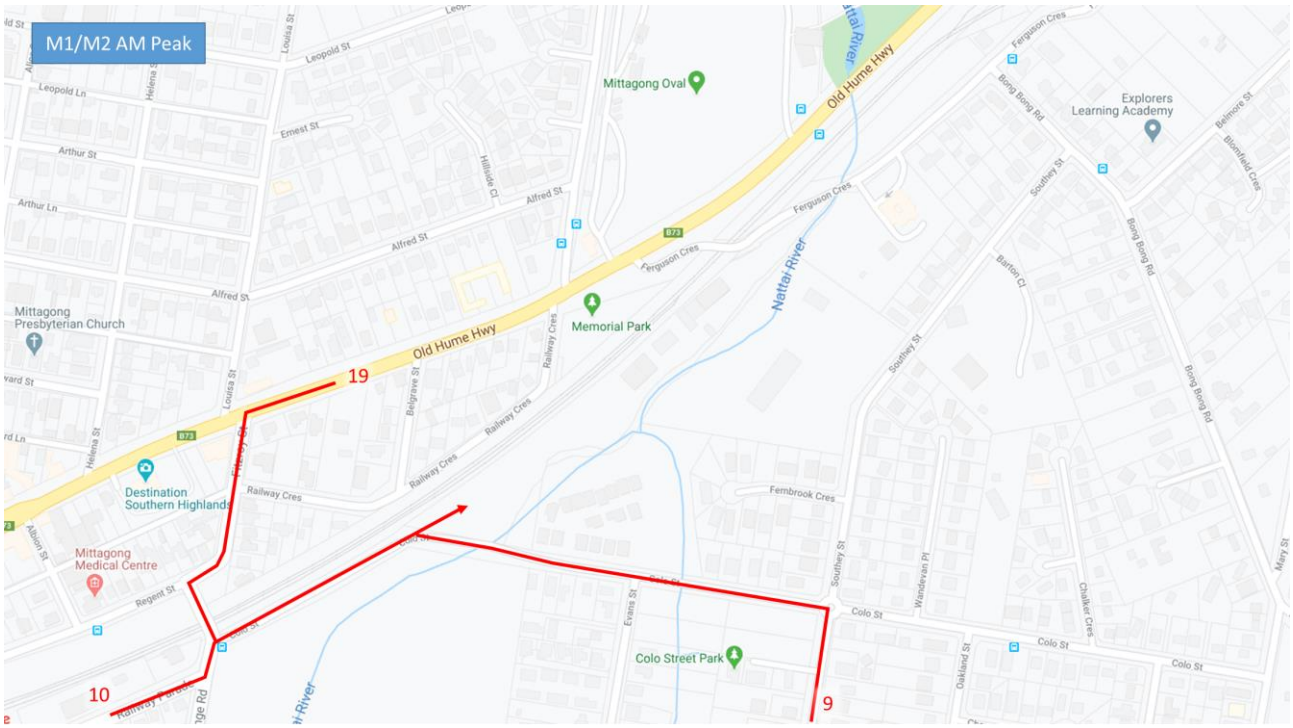


Figure 5-2 M1/M2 PM Peak Hour

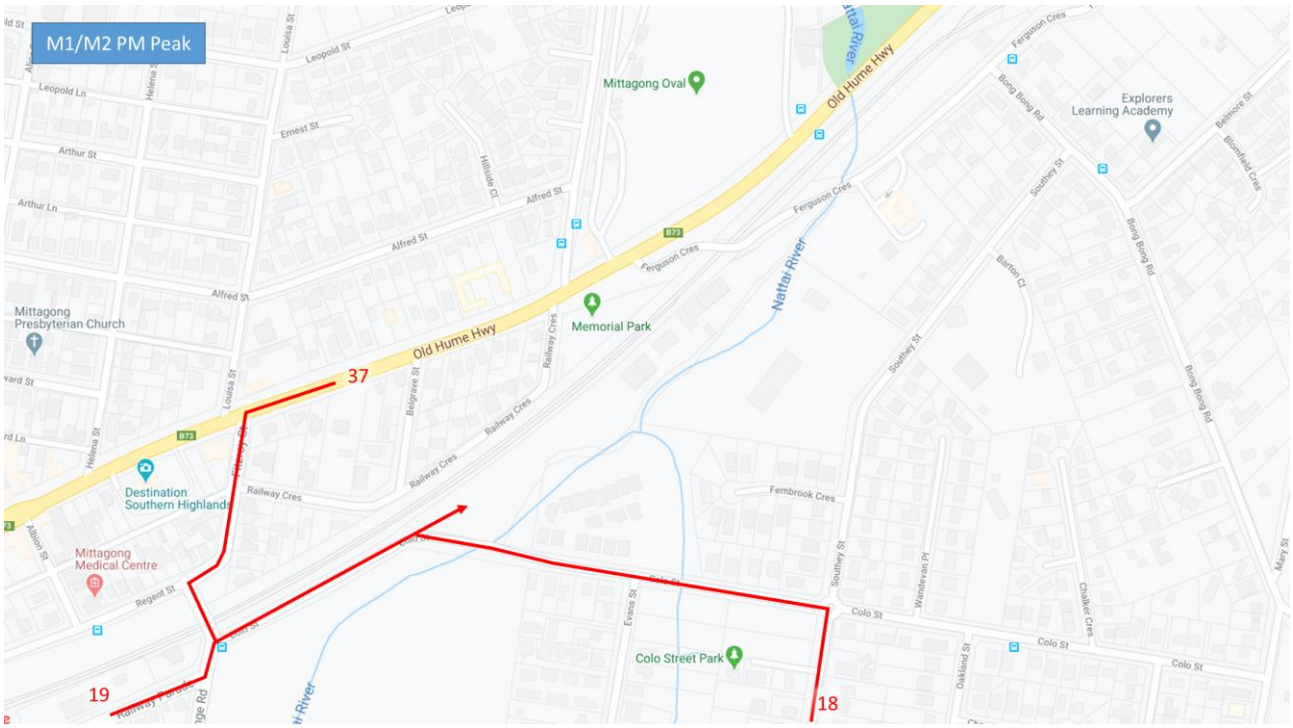
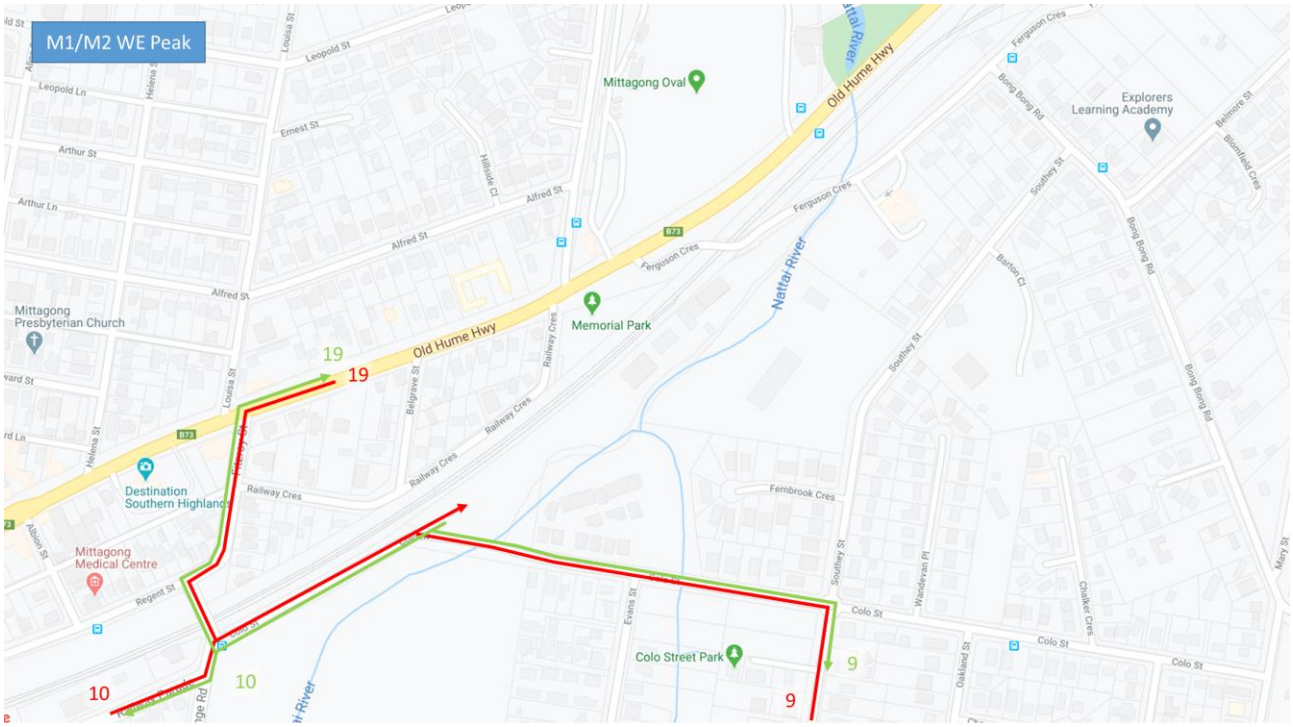


Figure 5-3 M1/M2 Weekend Peak Hour



5.2.2 M3/M4 Distribution

Similar to M1/M2, the split north and south is 50/50. In terms of distribution to the immediate local road network, the traffic distribution is shown in the following figures.

Figure 5-4 M3/M4 PM Peak Hour

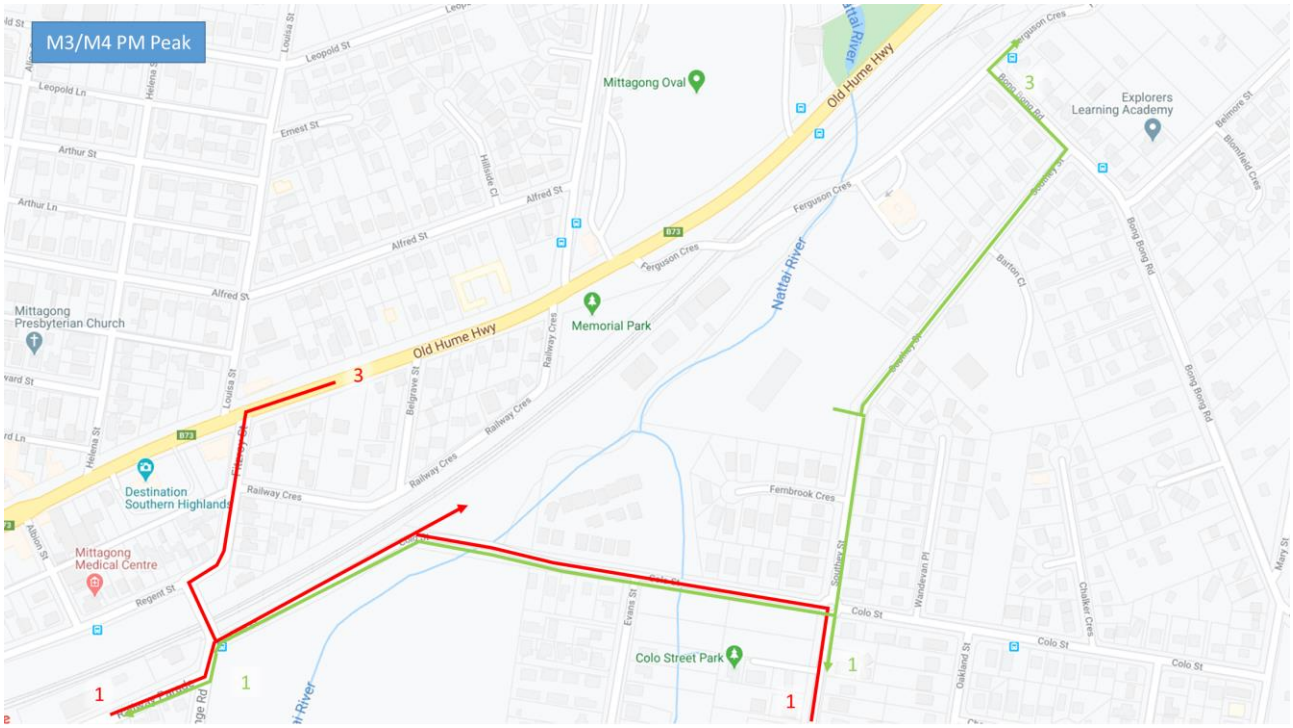
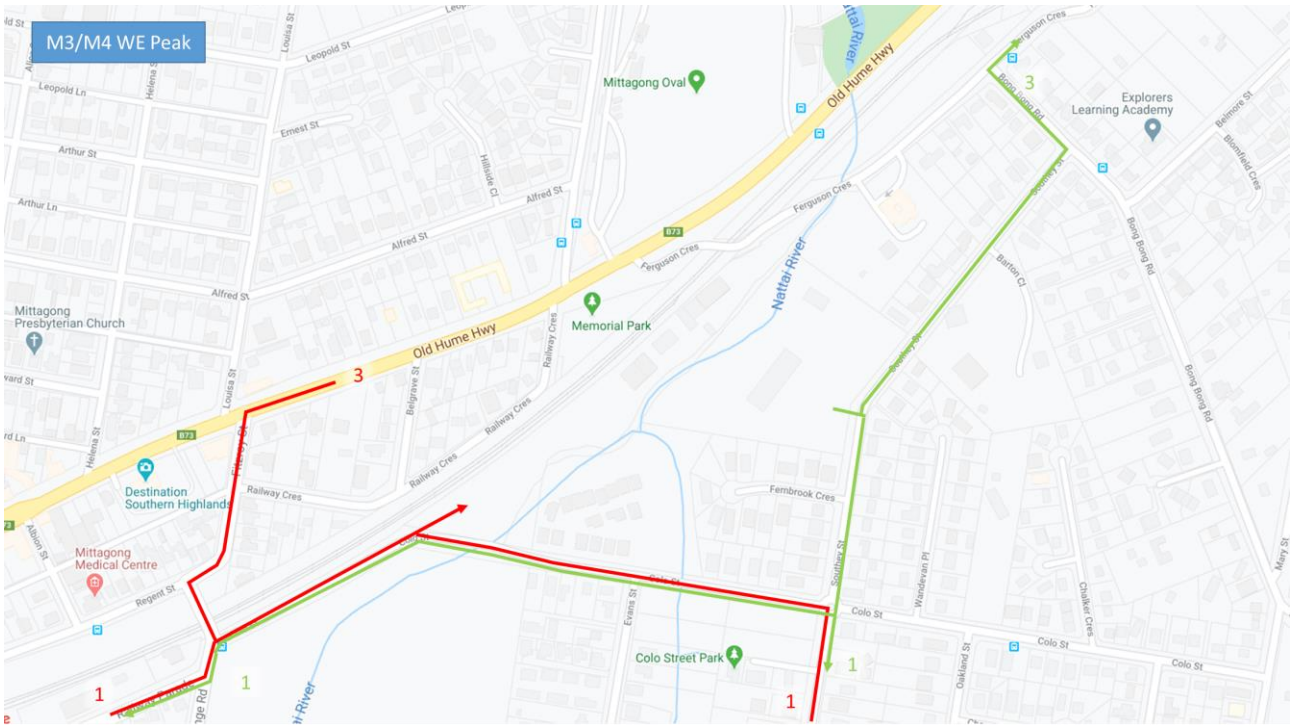


Figure 5-5 M3/M4 Weekend Peak Hour



5.2.3 M5/M6 Distribution

As this is residential, 2016 Journey To Work Data has been used to derive the traffic distribution. It is assumed that trips made within the Wingecarribee LGA split to the northern and southern directions of the site This is summarised below in **Table 5-3**.

Table 5-3 Journey To Work Summary

Destination	Percentage
Sydney and other northern locations via the Hume Highway / Motorway	57%
Goulburn and other southern locations via the Hume Highway / Motorway	41%
Wollongong and other eastern locations via Illawarra Highway	2%

The resulting traffic distribution on the immediate road network is shown in the following figures.

Figure 5-6 M5/M6 AM Peak Hour

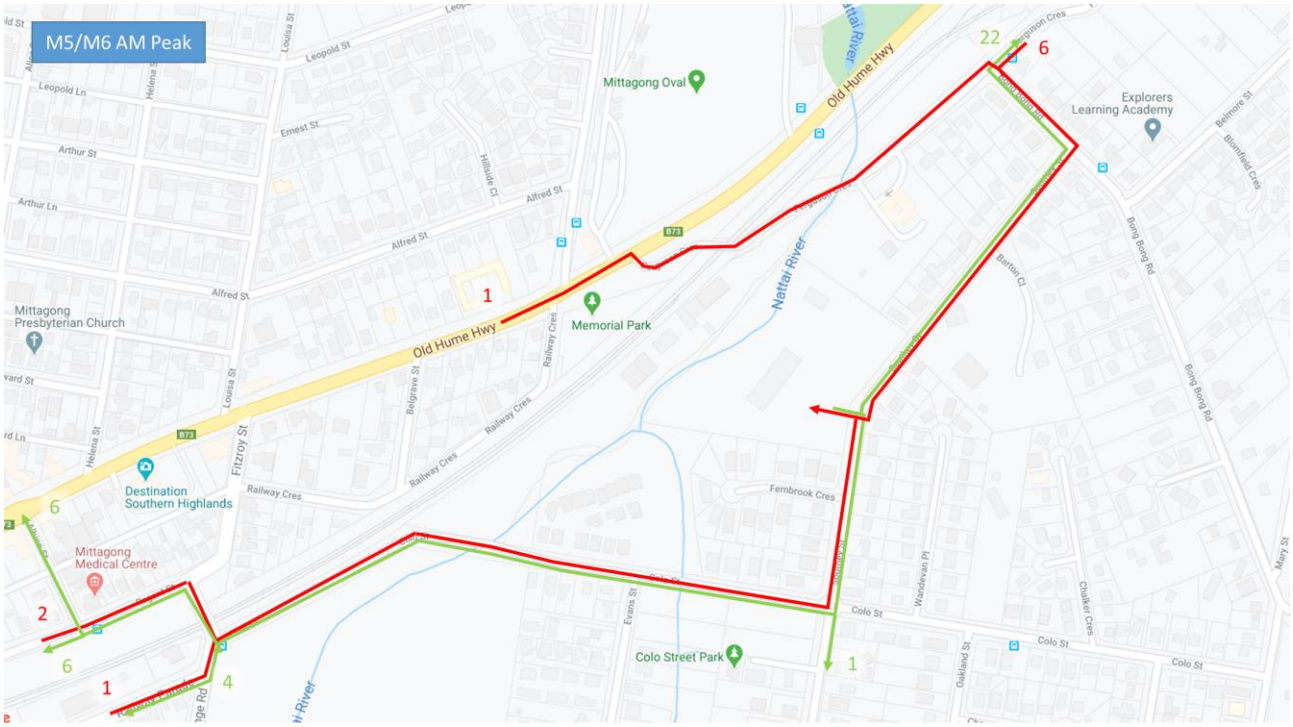


Figure 5-7 M5/M6 PM Peak Hour

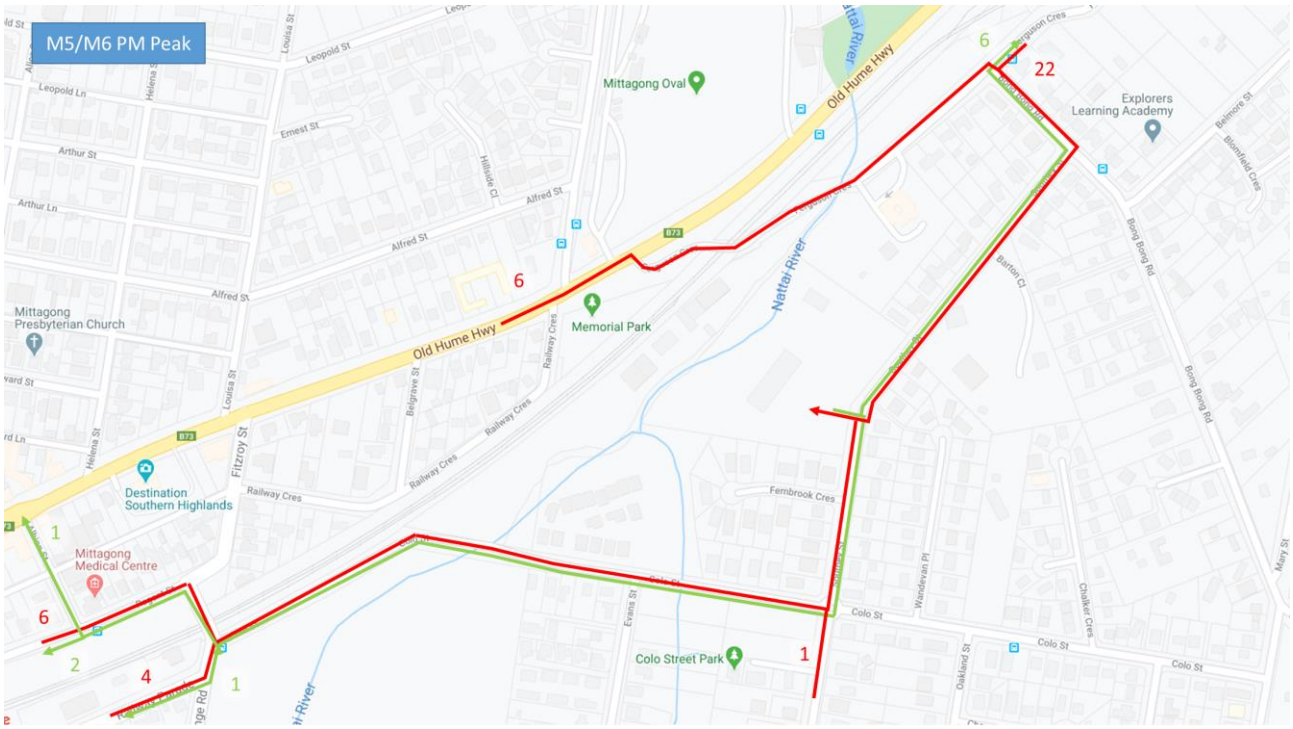
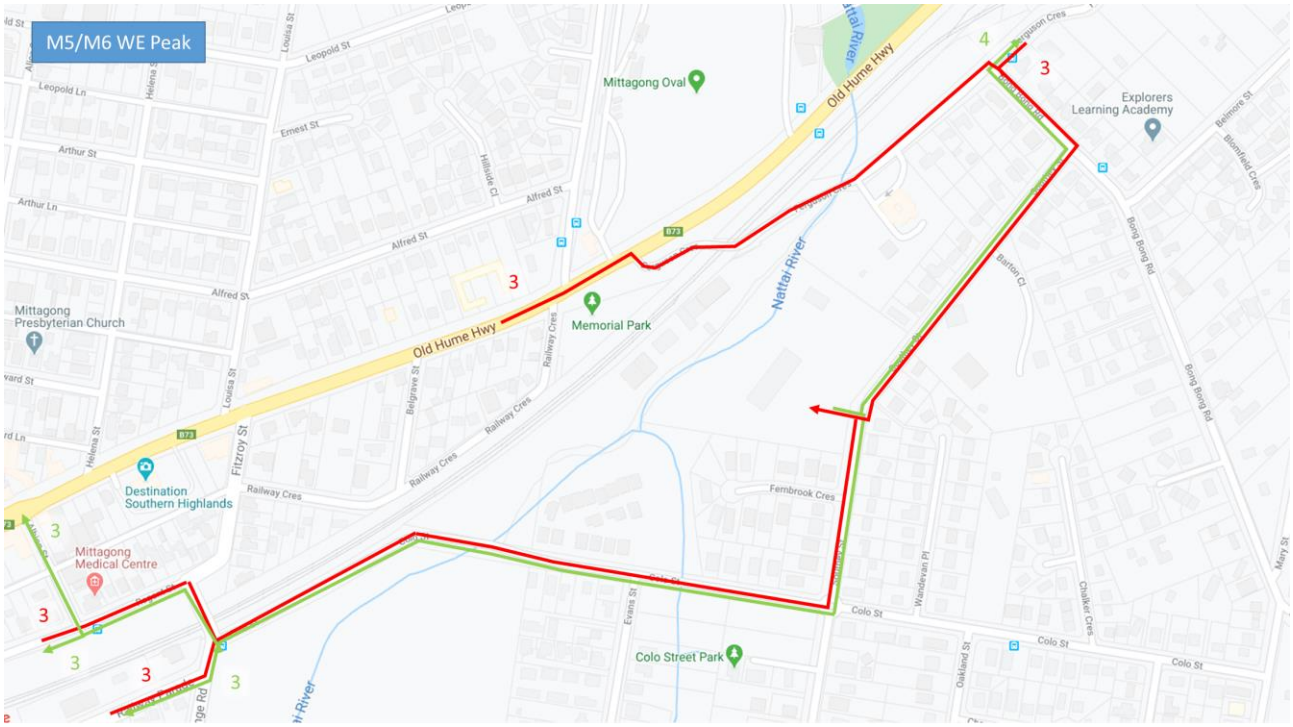


Figure 5-8 M5/M6 Weekend Peak Hour



The combined traffic generation and distribution over the network is shown in **Appendix B**.

5.3 Intersection performance

The intersection operation performance was assessed using the SIDRA Intersection 8.0 software package. The key indicator of intersection performance is typically the LoS, where results are placed on a scale from 'A' to 'F', outlined in **Table 5-4**.

Table 5-4 Level of Service Criteria for Intersections

Level of Service	Average Delay per Vehicle (sec/veh)	Traffic Signals, Roundabout	Giveway & Stop Signs
A	< 14	Good Operation	Good Operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near Capacity & accident study required
E	57 to 70	At Capacity, at signals incidents will cause excessive delays Roundabouts require other control mode	At capacity, requires other control mode
F	> 70	Unsatisfactory and requires additional capacity.	Unsatisfactory and requires additional capacity.

Source: Guide to Traffic Generating Developments (RMS, 2002)

The Average Vehicle Delay (AVD) provides a measure of the operational performance of an intersection and determines the LoS when applying the RMS method. It should be noted that the AVD's should be taken as a guide only as longer delays could be tolerated in some locations (i.e. inner-city conditions) and on some roads (i.e. minor side street intersecting with a major arterial route). For traffic signals, the weighted average delay overall movements should be utilised. For roundabouts and priority control intersections (sign control) the critical movement for assessing LoS should be the movement with the highest average delay.

The Degree of Saturation (DoS) is another measure of the operational performance of individual intersections. For intersections controlled by traffic signals, both queue length and delay increase rapidly as DOS approaches 1.0. It is usual to attempt to keep DOS to less than 0.9. Degrees of Saturation in the order of 0.7 generally represent satisfactory intersection operation. When DOS exceed 0.9 queues can be anticipated.

5.3.2 2019 Base Intersection Performance

The SIDRA intersection modelling for the 2019 AM, PM and Saturday peak periods are summarised below.

Table 5-5 2019 Performance of Fitzroy St / Old Hume Hwy / Louisa St

Intersection	AM Peak			PM Peak			Sat Peak		
	DoS	Delay (sec)	LoS	DoS	Delay (sec)	LoS	DoS	Delay (sec)	LoS
Fitzroy Street	>1.0	>70	F	>1.0	>70	F	>1.0	>70	F
Old Hume Hwy (East)	0.298	9.2	A	0.236	18.6	B	0.318	22.1	B
Louisa Street	>1.0	>70	F	>1.0	>70	F	>1.0	>70	F
Old Hum Highway (West)	0.150	14.6	A	0.325	11.3	A	-.257	17.2	B
Overall	>1.0	>70	F	>1.0	>70	F	>1.0	>70	F

As the intersection is priority controlled, the overall intersection performance is determined by the movement with the highest delay. In this case it is evident that the side roads of Fitzroy Street and Louisa Street experience high delays, resulting in LoS 'F' in all peaks. However, the major road of Old Hume Highway operates at LoS 'B' or better which is expected given the Old Hume Highway has priority.

Table 5-6 2019 Performance of Ferguson Cr / Old Hume Hwy

Intersection	AM Peak			PM Peak			Sat Peak		
	DoS	Delay (sec)	LoS	DoS	Delay (sec)	LoS	DoS	Delay (sec)	LoS
Ferguson Crescent	0.098	>70	F	1.0	>70	F	0.086	>70	F
Old Hume Hwy (East)	0.284	5.6	A	0.224	5.6	A	0.303	5.6	A
Old Hum Highway (West)	0.150	14.2	A	0.621	11.1	A	0.259	15.9	B
Overall	0.284	>70	F	1.0	>70	F	0.303	>70	F

The overall intersection performs at LoS 'F' due to the delays incurred on Ferguson Crescent associated with the right turn out onto the Old Hume Highway. In most cases there is no more than 1 vehicle making this turn and is therefore not a fair overview of the intersections performance. The left turn from Ferguson Crescent onto Old Hume Highway operates a LoS 'A'.

Table 5-7 2019 Performance of Colo Street / Railway Parade

Intersection	AM Peak			PM Peak			Sat Peak		
	DoS	Delay (sec)	LoS	DoS	Delay (sec)	LoS	DoS	Delay (sec)	LoS
Railway Parade (South)	0.075	6.2	A	0.092	6.6	A	0.122	6.3	A
Colo Street	0.042	6.5	A	0.031	7.0	A	0.047	7.2	A
Railway Parade (North)	0.083	5.5	A	0.153	5.6	A	0.119	5.6	A
Overall	0.083	6.5	A	0.153	7.0	A	0.122	7.2	A

The intersection of Colo Street / Railway Parade operates at LoS 'A' which is good operation with minimal delays, low queuing and available spare capacity in all peaks.

Table 5-8 2019 Performance of Southey Street / Colo Street

Intersection	AM Peak			PM Peak			Sat Peak		
	DoS	Delay (sec)	LoS	DoS	Delay (sec)	LoS	DoS	Delay (sec)	LoS
Southey Street (South)	0.025	8.1	A	0.019	8.4	A	0.017	9.5	A
Colo Street (East)	0.051	9.5	A	0.031	7.9	A	0.033	7.9	A
Southey Street (North)	0.031	7.9	A	0.022	9.8	A	0.024	8.1	A
Colo Street (West)	0.034	9.4	A	0.094	9.3	A	0.073	7.8	A
Overall	0.051	9.5	A	0.094	9.8	A	0.033	9.5	A

The roundabout intersection of Southey Street / Colo Street operates at LoS 'A' which is good operation with minimal delays, low queuing and available spare capacity in all peaks.

5.3.3 Base With Development Intersection Performance

The SIDRA intersection modelling for the "with development" scenarios for all peaks (AM, PM, Saturday) are summarised in the following tables.

Table 5-9 With Development Performance of Fitzroy St / Old Hume Hwy / Louise St

Intersection	AM Peak			PM Peak			Sat Peak		
	DoS	Delay (sec)	LoS	DoS	Delay (sec)	LoS	DoS	Delay (sec)	LoS
Fitzroy Street	>1.0	>70	F	>1.0	>70	F	>1.0	>70	F
Old Hume Hwy (East)	0.303	9.5	A	0.248	18.7	B	0.325	22.2	B
Louisa Street	>1.0	>70	F	>1.0	>70	F	>1.0	>70	F
Old Hum Highway (West)	0.150	15.0	B	0.325	11.9	A	0.256	17.8	B
Overall	>1.0	>70	F	>1.0	>70	F	>1.0	>70	F

Consistent with the 2019 Base performance, Fitzroy Street and Lousia Street experience the highest delays. The major road of Old Hume Highway operates at LoS 'B' or better which is expected given the Old Hume Highway has priority.

Table 5-10 2019 Performance of Ferguson Cr / Old Hume Hwy

Intersection	AM Peak			PM Peak			Sat Peak		
	DoS	Delay (sec)	LoS	DoS	Delay (sec)	LoS	DoS	Delay (sec)	LoS
Ferguson Crescent	0.098	>70	F	1.0	>70	F	0.087	>70	F
Old Hume Hwy (East)	0.284	5.6	A	0.224	5.6	A	0.303	5.6	A
Old Hum Highway (West)	0.150	14.2	A	0.621	11.2	A	0.260	16.0	B
Overall	0.284	>70	F	1.0	>70	F	0.303	>70	F

The overall intersection performs at LoS 'F' due to the delays incurred on Ferguson Crescent associated with the right turn out onto the Old Hume Highway. No additional traffic has been added to the right turn out onto the Old Hume Highway as a result of the development during the peak hour. The left turn from Ferguson Crescent onto Old Hume Highway operates a LoS 'A', consistent with the 2019 Base performance.

Table 5-11 2019 Performance of Colo Street / Railway Parade

Intersection	AM Peak			PM Peak			Sat Peak		
	DoS	Delay (sec)	LoS	DoS	Delay (sec)	LoS	DoS	Delay (sec)	LoS
Railway Parade (South)	0.082	6.3	A	0.113	6.8	A	0.133	6.5	A
Colo Street	0.061	6.6	A	0.050	7.3	A	0.078	7.4	A
Railway Parade (North)	0.095	5.5	A	0.181	5.6	A	0.134	5.6	A
Overall	0.095	6.6	A	0.181	7.3	A	0.134	7.4	A

The intersection of Colo Street / Railway Parade operates at LoS 'A' which is good operation with minimal delays, low queuing and available spare capacity in all peaks. This represents no change to the 2019 Base performance as a result of the development.

Table 5-12 2019 Performance of Southey Street / Colo Street

Intersection	AM Peak			PM Peak			Sat Peak		
	DoS	Delay (sec)	LoS	DoS	Delay (sec)	LoS	DoS	Delay (sec)	LoS
Southey Street (South)	0.033	8.2	A	0.036	8.5	A	0.026	9.6	A
Colo Street (East)	0.052	9.6	A	0.031	8.0	A	0.033	8.0	A
Southey Street (North)	0.045	7.9	A	0.028	9.8	A	0.033	8.1	A
Colo Street (West)	0.035	9.4	A	0.099	9.3	A	0.077	7.8	A
Overall	0.052	9.6	A	0.099	9.8	A	0.77	9.6	A

The roundabout intersection of Southey Street / Colo Street operates at LoS 'A' which is good operation with minimal delays, low queuing and available spare capacity in all peaks. This represents no change to the 2019 Base performance as a result of the development.

5.3.4 Residential amenity (RMS Guide)

The RMS Guide details the local road residential amenity is based on the thresholds shown in **Table 5-13** and below.

Table 5-13 Residential Amenity Guidelines

Road Class	Road Type	Maximum Speed	Maximum Peak Hour Volume
Local	Access Way	25	100
	Street	40	200 Environmental Goal
			300 Maximum
Collector	Street	50	300 Environmental Goal
			500 Maximum

The residential amenity threshold has been reviewed for Southey Street and Colo Street as detailed in Table 5-14.

Table 5-14 Traffic Volumes in Local Roads

Street	Location	Amenity Threshold	Existing			Forecast		
			AM	PM	WD	AM	PM	WD
Southey Street	North of Site Access	200 – 300 vph	56	65	71	88	105	82
	South of Site Access		56	65	71	76	81	86
Colo Street	West of Site Access		137	212	181	183	289	256
	West of Southey Street		119	172	148	147	205	181

Based on the residential amenity thresholds, the forecast traffic volumes are within the 200-300 vehicles per hour capacity of the local road network.

6 Site Traffic Management

It is recommended a site traffic management plan be prepared as part of the occupation certificate. The TMP is to consider the following:

> Colo Street Loading / Delivery Movements

- Colo Street access is capabable of catering deliveries up to and including 12.5m Heavy Rigid Vehicles (HRV). The swept path diagrams show minor overhang of non-road / sealed areas within the car park however the survey plan indicates no obstructions in these locations.
- The vehicle delivery is to circulate clockwise within the car park
- Loading is to occur in the norther portion of the car park and no obstruct other parked or circulating vehicles
- Loading should occur well before event times to avoid overlap with inbound (or outbound during bump-out procedures) visitors.

> Ferguson Crescent Loading / Delivery Movements

- Loading / delivery vehicles should be restricted to left in / right out movement only due to the acute nature of the driveway to Ferguson Crescent. The largest vehicle to access the site is no larger than an 8.8m Medium Rigid Vehicle (MRV)

> Southey Street Loading / Delivery Movements

- Loading / delivery vehicles from this location should be limited to vans / small trucks due to the gradient of the entry driveway.
- Loading / delivery is to not block parked or circulating cars.

> M3/M4 Valet Parking

- The valet parking for Hotel guests is located within the M3/M4 basement
- Entry to the basement, for guests, is from the Colo Street car park
- Upon departure, guests will have the option to collect their vehicle from the basement or from the rear car park.
  - Where vehicles a moved from the rear car park back to the basement for Guest collection, this is undertaken by the valet service. The valet service is to manage the arrival and departure of vehicles in the single lane ramp to avoid two-way conflict. Based on the relatively low traffic volume, and absolute control of the valet system, there is no need for any ramp signal or ramp widening.

In the event of a flooding event, car parks impacts by the event would be unavailable (most likely the M1/M2 Colo Street car park). In these cases, the Southey Street access and car park would be utilized temporarily for all land uses across the site until flood event has eased and car parking (M1/M2 Colo Street) becomes available.

7 TfNSW Preliminary Comments

Following a request to TfNSW for a courtesy review of the development application prior to lodgement, the following details were requested to assist in their assessment:

1. *How many car spaces are proposed/required to comply with Council's requirements;*
2. *How much commercial floor space and food and drink premises floor space is proposed (numbers for each);*
3. *How many people the proposed function centre and exhibition/ performance spaces will cater for (maximum numbers for each);*
4. *How many rooms the proposed hotel will have;*
5. *The number of proposed residential, seniors living and tourist/visitor accommodation units (numbers for each); and*
6. *The estimated maximum vehicle generation rate per hour for each component of the development based on what approval is being sought for.*

A response to each item above is provided below:

Response to 1

> In general, Council's DCP does not provide parking rates that best fit the proposed uses on the site. Parking is constrained across the site due to the well-established heritage significance of the site. A total of 139 spaces are provided across the site plus a further potential 82 spaces identified as part of the concept plan portion of the site (Maltings 5 and 6).

Response to 2

> Floor space summaries are provided in **Section 3.1**. Further detail can be obtained from the architectural design package and the SEE. In general, the site seeks a range of flexible spaces whereby much of the demand will be generated by the patronage of galleries and events and accordingly, much of the space would be ancillary to main areas (e.g. main areas of Great Hall, Pool Terrace, Hotel Accommodation).

Response to 3

> If concurrent use of the primary land uses (gallery, functions, special functions) was to occur, a maximum of 400 people could be achieved.

Response to 4

> The hotel will have 40 rooms

Response to 5

> The residential / seniors living component is associated with the concept application on M5/M6. For the purpose of traffic generation impacts, this assessment has considered 75 medium density dwellings with a trip rate of 0.65 trips per dwelling, though the final uses are to be confirmed. A hybrid of combination of uses may generate less traffic than that assumed for this DA.

Response to 6

> Traffic generation is provided in **Section 5.1**. During the AM, PM and Weekend peak it is forecast to generate some 87, 140 and 116 trips respectively.

8 Conclusions

Cardno has been engaged by Elton Consulting (on behalf of Halcyon Hotels Pty Ltd) to produce a Traffic and Transport impact assessment to support the proposed adaptive re-use of the Southern Highlands heritage icon known as The Maltings Mittagong. This traffic impact assessment has found the following:

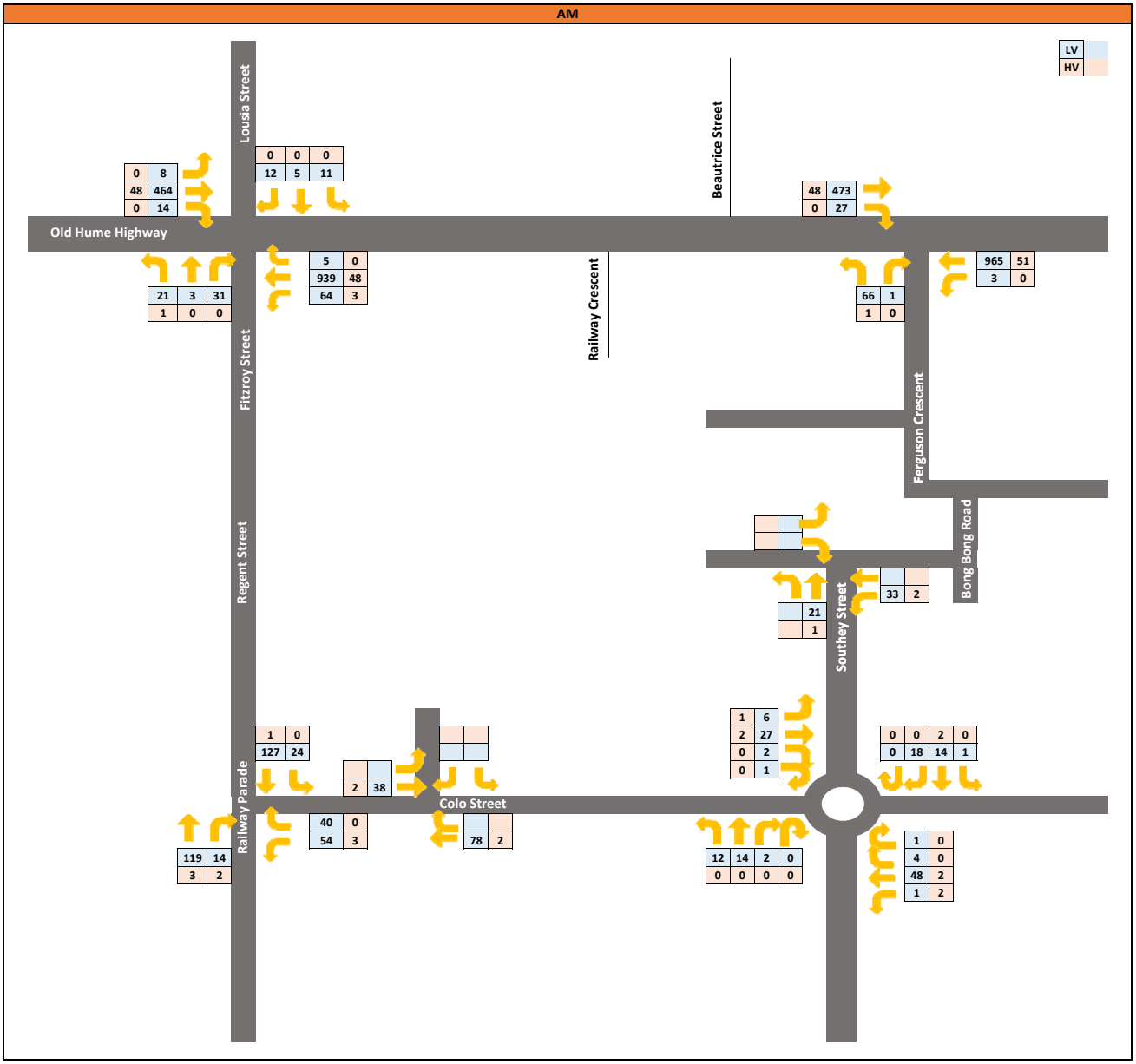
- The proposal seeks flexibility across the proposed uses in M1 and M2. In most cases the M1 and M2 will attract low levels of visitors for small style gallery or bespoke functions. It is expected that the Great Hall will have a maximum patron capacity of up to 250 people. The proposed pool bar and pool terrace will have a maximum patron capacity of 150 people.
- The proposed 40 unit Hotel in M3 and M4 includes ancillary uses such as restaurant and lounge which do not generate additional traffic or parking demands
- The potential land use on M5 and M6 is likely to consist of residential development, however the proposal is for a concept application to allow flexibility for the detailed design. This assessment has considered a 75 unit medium density housing as a worst case outcome for traffic generation.
- In general, Council's DCP does not provide parking rates that best fit the proposed uses on the site. The traffic and parking generation of the site (particularly M1 & M2) will be driven by the patronage rate of the site. For the proposed Hotel use on M3 & M4, the parking provision are guided by Part B of the DCP where Hotel is a prescribed land use. For uses on M5 & M6, the potential residential use are based on the medium density requirements in Part C.
- Assuming concurrent usage of M1/M2 resulting in a maximum capacity of 400 persons being reached, there is potential for 7 to 37 car spaces onto the public road. There is sufficient capacity in Colo Stret west of the site, which doesn't front any residential neighbours, to accommodate this overflow if it eventuates. This is likely to be a worst case if the peak of the peak is reached (i.e. 100th percentile). It is common practice to design for lower levels between the 50th and 85th percentile.
- The design of the car park complies with AS2890 standards. It is expected as part of any construction certificate that the final linemarking / delineation plan will be approved. This report provides suggested recommendations for signage within the site.
- Loading and deliveries are fully catered for on-site.
- A site loading dock and traffic management plan is recommended to be prepared as part of the occupation certificate. This will assist in formalising roles and responsibilities of personnel on the site.
- The traffic generation impacts on the surrounding intersections shows all junctions will maintain their LoS. Priority controlled intersections on the Old Hume Highway usually result in delays to the side road. This is common, where the major state road is given priority.
- Residential amenity considerations show that the capacity of the local road network is not exceeded and therefore residential amenity is maintained.

In summary, the traffic and parking impacts of the proposed development have been shown to have minimal impact on intersection performance, road capacity and residential amenity for the immediate residential precinct.

APPENDIX

A

2019 NETWORK TRAFFIC VOLUMES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HV
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Old Hume Highway
Railway Crescent
Fitzroy Street
Regent Street
Ferguson Crescent
Bong Bong Road
Southey Street
Railway Parade
Colo Street
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0 0 0
12 5 11
48 473
0 27
21 3 31
1 0 0
5 0
939 48
64 3
66 1
1 0
965 51
3 0
21
1
33 2
1 0
127 24
2 38
40 0
54 3
78 2
1 6
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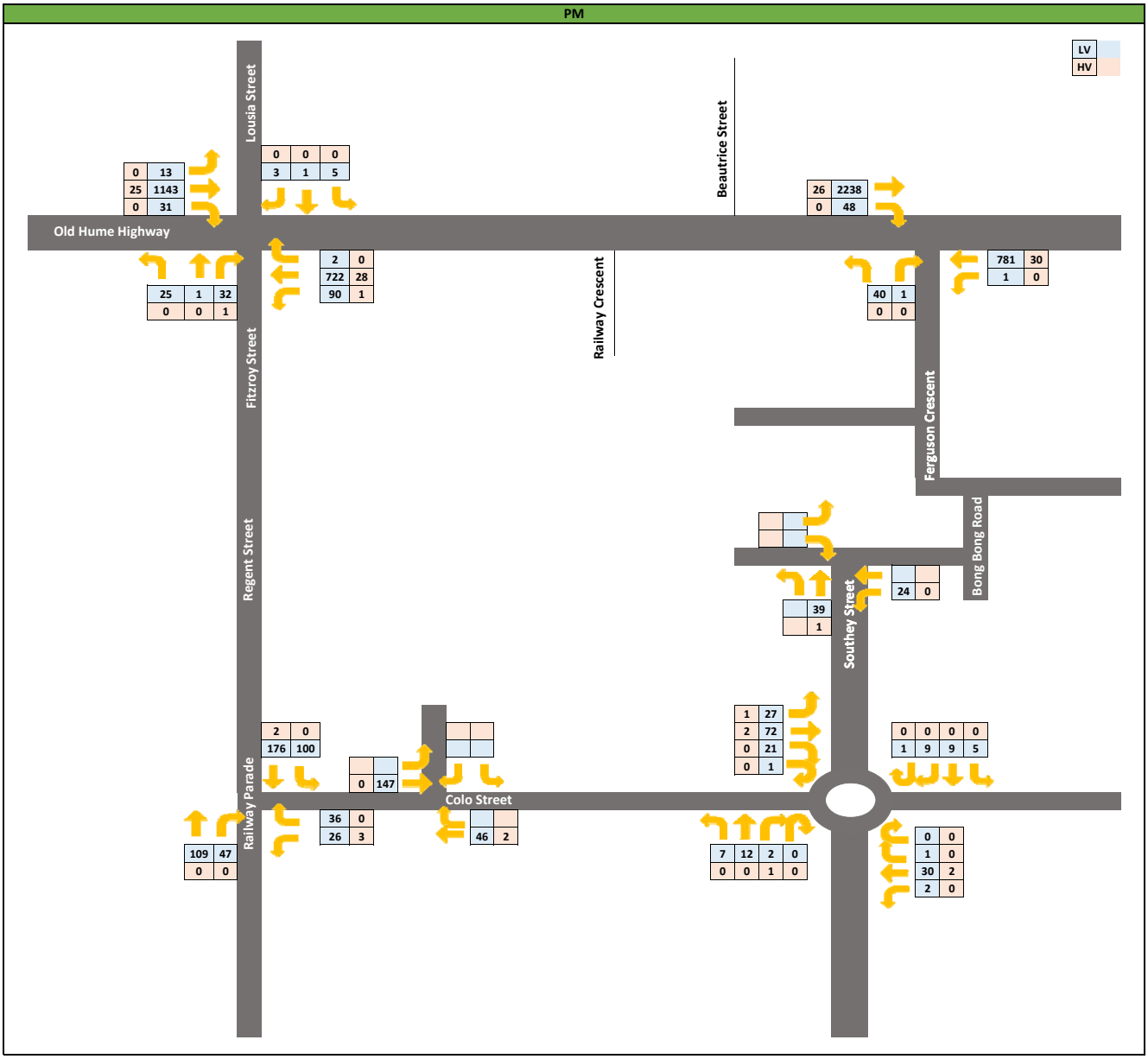
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Bong Bong Road
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2 0
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24 0
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2 72
0 21
0 1
0 0 0 0
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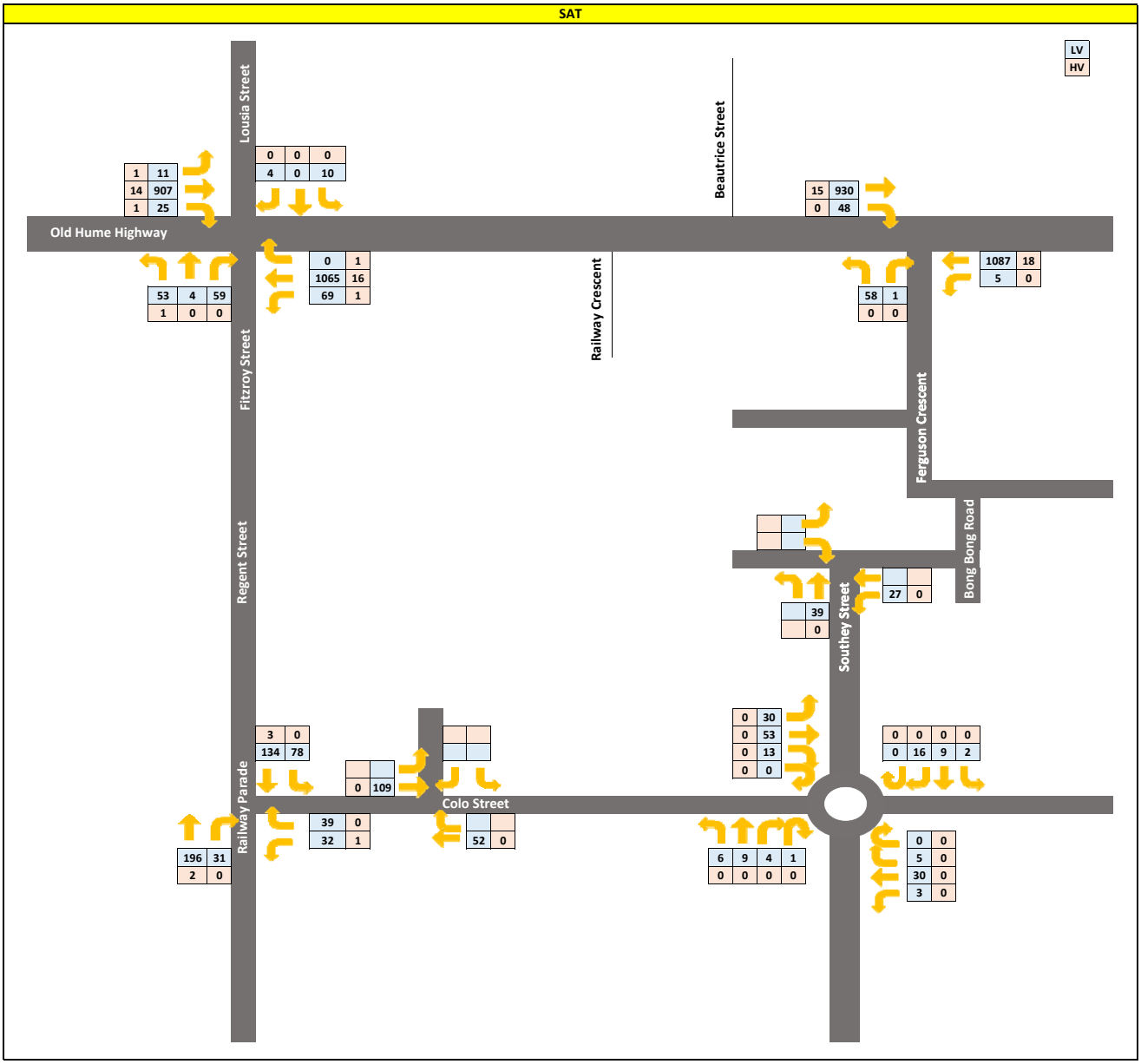
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1 25
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15 930
0 48
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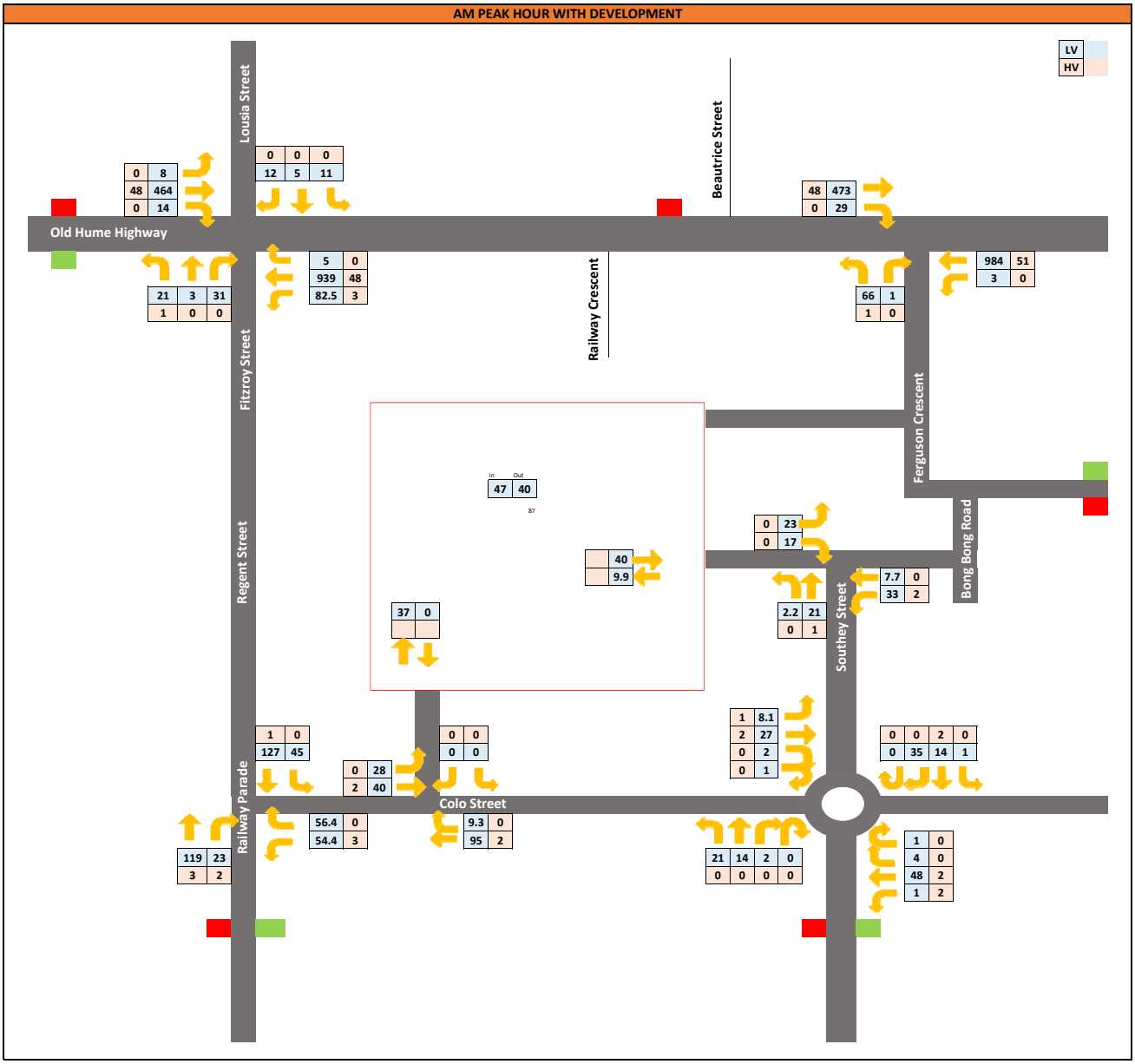
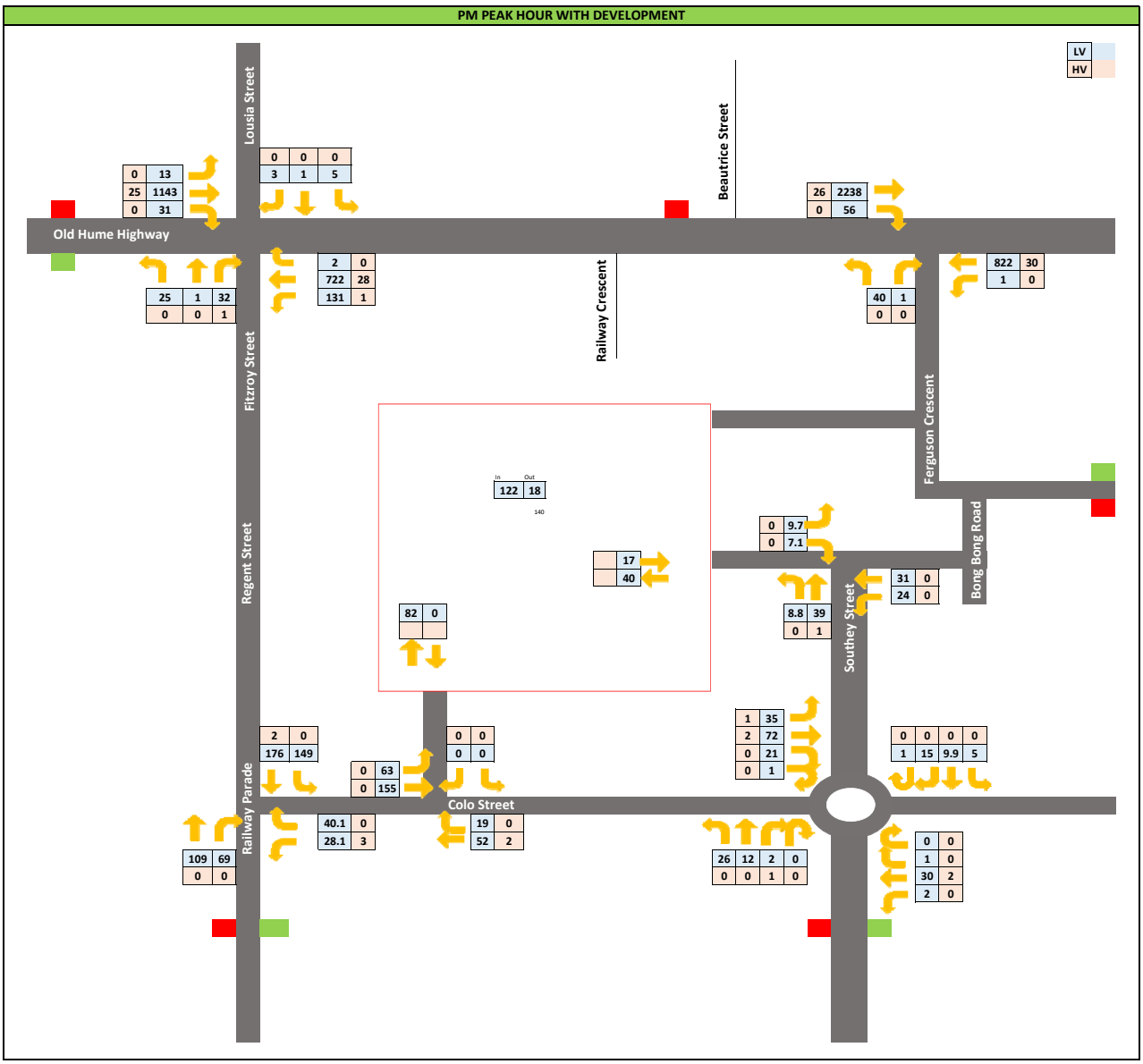
0 1
1065 16
69 1
58 1
0 0
1087 18
5 0
27 0
39
0
3 0
134 78
0 109
39 0
32 1
52 0
0 30
0 53
0 13
0 0
0 0 0 0
0 16 9 2
196 31
2 0
6 9 4 1
0 0 0 0
0 0
5 0
30 0
3 0

APPENDIX

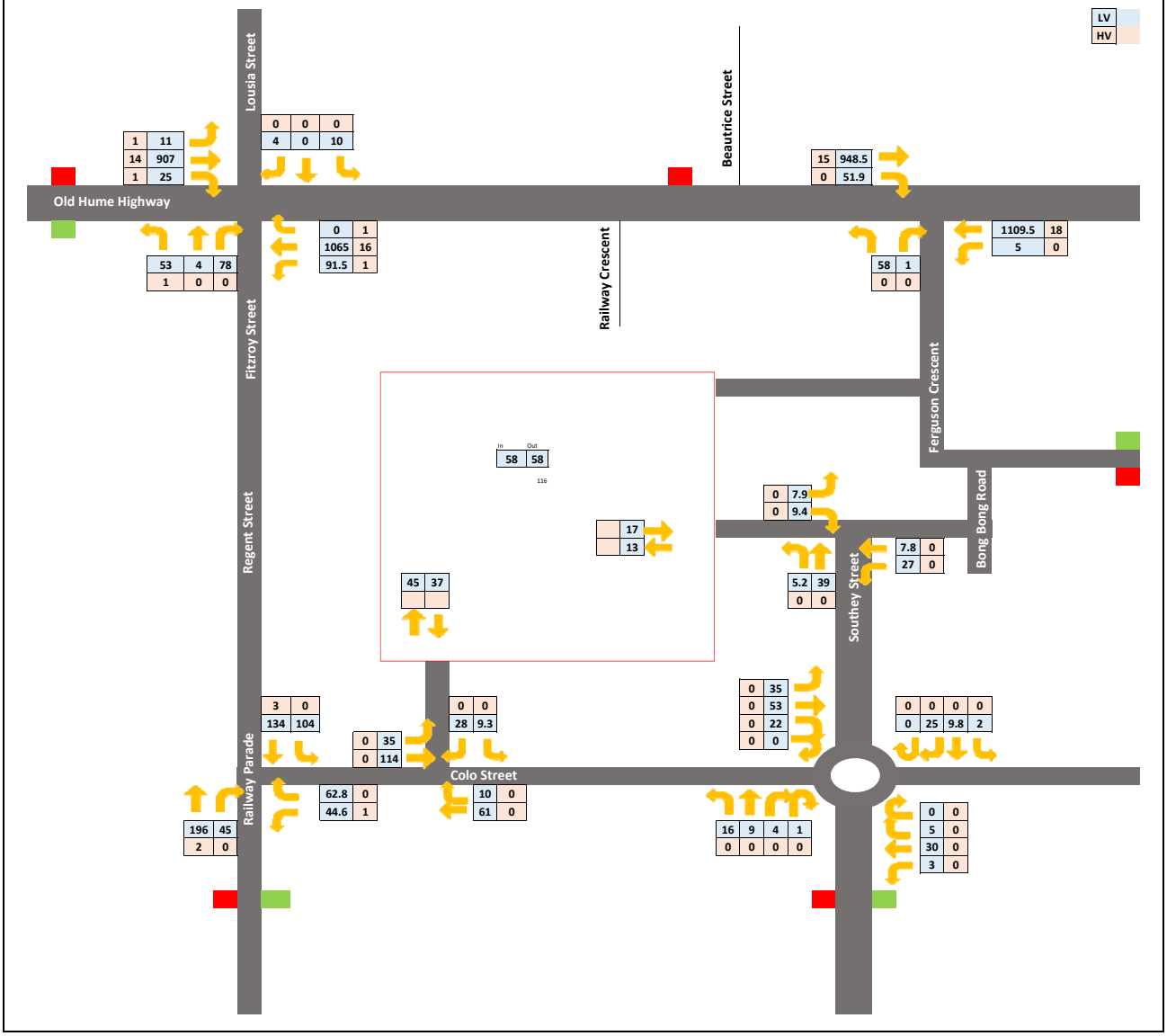
B

WITH DEVELOPMENT VOLUMES


AM PEAK HOUR WITH DEVELOPMENT
LV
HV
Louisa Street
Beautrice Street
Old Hume Highway
Railway Crescent
Fitzroy Street
Ferguson Crescent
Regent Street
Bong Bong Road
Southey Street
Railway Parade
Colo Street
In
Out
47
40
87


PM PEAK HOUR WITH DEVELOPMENT
LV
HV
Lousia Street
Beautrice Street
Old Hume Highway
Railway Crescent
Fitzroy Street
Ferguson Crescent
Bong Bong Road
Regent Street
Southey Street
Railway Parade
Colo Street
In
Out
122
18
140

SATURDAY PEAK HOUR WITH DEVELOPMENT



APPENDIX

C

2019 BASE SIDRA

MOVEMENT SUMMARY

Site: 1 [AM Old Hume Hwy / Ferguson Cres]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Ferguson Cres												
1	L2	71	1.5	0.098	8.6	LOS A	0.3	2.4	0.51	0.75	0.51	51.3
3	R2	1	0.0	0.024	79.6	LOS F	0.1	0.4	0.96	0.98	0.96	25.6
Approach		72	1.5	0.098	9.7	LOS A	0.3	2.4	0.52	0.75	0.52	50.5
East: Old Hume Hwy												
4	L2	3	0.0	0.284	5.6	LOS A	0.0	0.0	0.00	0.00	0.00	58.3
5	T1	1069	5.0	0.284	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		1073	5.0	0.284	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.9
West: Old Hume Hwy												
11	T1	548	9.2	0.150	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
12	R2	28	0.0	0.075	14.2	LOS A	0.3	1.8	0.75	0.89	0.75	47.6
Approach		577	8.8	0.150	0.7	NA	0.3	1.8	0.04	0.04	0.04	59.2
All Vehicles		1721	6.1	0.284	0.7	NA	0.3	2.4	0.03	0.05	0.03	59.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 2 [AM Old Hume Hwy / Louisa St / Fitzroy St - Conversion]

New Site
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Fitzroy St												
1	L2	23	4.5	1.421	504.7	LOS F	15.3	108.5	1.00	1.97	4.68	5.6
3	R2	33	0.0	1.421	611.4	LOS F	15.3	108.5	1.00	1.97	4.68	5.6
Approach		56	1.9	1.421	567.1	LOS F	15.3	108.5	1.00	1.97	4.68	5.6
East: Old Hume Hwy												
4	L2	71	4.5	0.298	5.6	LOS A	0.0	0.0	0.00	0.08	0.00	57.4
5	T1	1039	4.9	0.298	0.1	LOS A	0.1	0.7	0.01	0.04	0.01	59.6
6	R2	5	0.0	0.298	9.2	LOS A	0.1	0.7	0.02	0.01	0.02	57.9
Approach		1115	4.8	0.298	0.4	NA	0.1	0.7	0.01	0.04	0.01	59.4
North: Louisa St												
7	L2	12	0.0	0.523	61.2	LOS E	1.7	11.7	0.90	1.01	1.20	18.8
9	R2	13	0.0	0.523	200.5	LOS F	1.7	11.7	0.90	1.01	1.20	18.8
Approach		24	0.0	0.523	133.9	LOS F	1.7	11.7	0.90	1.01	1.20	18.8
West: Old Hume Hwy												
10	L2	8	0.0	0.150	5.6	LOS A	0.0	0.0	0.00	0.02	0.00	58.2
11	T1	539	9.4	0.150	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
12	R2	15	0.0	0.041	14.6	LOS B	0.1	0.8	0.76	0.90	0.76	47.1
Approach		562	9.0	0.150	0.5	NA	0.1	0.8	0.02	0.03	0.02	59.4
All Vehicles		1757	6.0	1.421	20.3	NA	15.3	108.5	0.06	0.11	0.18	44.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [AM Railway Pde / Colo St]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Railway Pde												
2	T1	128	2.5	0.075	0.1	LOS A	0.1	0.9	0.08	0.07	0.08	59.1
3	R2	17	12.5	0.075	6.2	LOS A	0.1	0.9	0.08	0.07	0.08	56.8
Approach		145	3.6	0.075	0.8	NA	0.1	0.9	0.08	0.07	0.08	58.8
East: Colo St												
4	L2	60	5.3	0.042	6.0	LOS A	0.2	1.2	0.23	0.55	0.23	52.7
6	R2	42	0.0	0.042	6.5	LOS A	0.1	1.0	0.32	0.62	0.32	52.3
Approach		102	3.1	0.042	6.2	LOS A	0.2	1.2	0.27	0.58	0.27	52.5
North: Railway Pde												
7	L2	25	0.0	0.083	5.5	LOS A	0.0	0.0	0.00	0.09	0.00	57.5
8	T1	135	0.8	0.083	0.0	LOS A	0.0	0.0	0.00	0.09	0.00	59.1
Approach		160	0.7	0.083	0.9	NA	0.0	0.0	0.00	0.09	0.00	58.9
All Vehicles		407	2.3	0.083	2.2	NA	0.2	1.2	0.10	0.21	0.10	57.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [AM Colo St /Southey St]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Southey St												
1	L2	13	0.0	0.025	5.3	LOS A	0.1	0.8	0.21	0.51	0.21	53.0
2	T1	15	0.0	0.025	5.2	LOS A	0.1	0.8	0.21	0.51	0.21	53.9
3	R2	2	0.0	0.025	8.1	LOS A	0.1	0.8	0.21	0.51	0.21	53.4
Approach		29	0.0	0.025	5.4	LOS A	0.1	0.8	0.21	0.51	0.21	53.5
East: Colo St												
4	L2	3	66.7	0.051	6.0	LOS A	0.2	1.8	0.15	0.50	0.15	50.5
5	T1	53	4.0	0.051	5.1	LOS A	0.2	1.8	0.15	0.50	0.15	53.8
6	R2	4	0.0	0.051	7.9	LOS A	0.2	1.8	0.15	0.50	0.15	53.6
6u	U	1	0.0	0.051	9.5	LOS A	0.2	1.8	0.15	0.50	0.15	54.1
Approach		61	6.9	0.051	5.4	LOS A	0.2	1.8	0.15	0.50	0.15	53.6
North: Southey st												
7	L2	1	0.0	0.031	5.1	LOS A	0.1	1.0	0.15	0.57	0.15	52.3
8	T1	17	12.5	0.031	5.2	LOS A	0.1	1.0	0.15	0.57	0.15	52.7
9	R2	19	0.0	0.031	7.9	LOS A	0.1	1.0	0.15	0.57	0.15	52.7
Approach		37	5.7	0.031	6.6	LOS A	0.1	1.0	0.15	0.57	0.15	52.7
West: Colo St												
10	L2	7	14.3	0.034	5.2	LOS A	0.2	1.2	0.11	0.51	0.11	52.7
11	T1	31	6.9	0.034	5.0	LOS A	0.2	1.2	0.11	0.51	0.11	53.9
12	R2	3	0.0	0.034	7.8	LOS A	0.2	1.2	0.11	0.51	0.11	53.7
12u	U	1	0.0	0.034	9.4	LOS A	0.2	1.2	0.11	0.51	0.11	54.2
Approach		42	7.5	0.034	5.3	LOS A	0.2	1.2	0.11	0.51	0.11	53.7
All Vehicles		169	5.6	0.051	5.6	LOS A	0.2	1.8	0.15	0.52	0.15	53.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 2 [PM Old Hume Hwy / Louisa St / Fitzroy St - Conversion]

New Site
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Fitzroy St												
1	L2	26	0.0	1.463	520.5	LOS F	16.7	118.7	1.00	2.25	5.36	5.5
3	R2	35	3.0	1.463	615.3	LOS F	16.7	118.7	1.00	2.25	5.36	5.5
Approach		61	1.7	1.463	574.4	LOS F	16.7	118.7	1.00	2.25	5.36	5.5
East: Old Hume Hwy												
4	L2	96	1.1	0.236	5.6	LOS A	0.0	0.0	0.00	0.13	0.00	57.2
5	T1	789	3.7	0.236	0.1	LOS A	0.1	0.9	0.01	0.06	0.01	59.3
6	R2	2	0.0	0.236	18.5	LOS B	0.1	0.9	0.02	0.00	0.02	57.8
Approach		887	3.4	0.236	0.8	NA	0.1	0.9	0.01	0.07	0.01	59.0
North: Lousia St												
7	L2	3	0.0	0.574	176.2	LOS F	1.5	10.7	0.98	1.05	1.16	8.2
9	R2	5	0.0	0.574	515.1	LOS F	1.5	10.7	0.98	1.05	1.16	8.2
Approach		8	0.0	0.574	388.0	LOS F	1.5	10.7	0.98	1.05	1.16	8.2
West: Old Hume Hwy												
10	L2	14	0.0	0.325	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	58.2
11	T1	1229	2.1	0.325	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
12	R2	33	0.0	0.064	11.3	LOS A	0.2	1.4	0.66	0.85	0.66	49.2
Approach		1276	2.1	0.325	0.4	NA	0.2	1.4	0.02	0.03	0.02	59.5
All Vehicles		2233	2.6	1.463	17.7	NA	16.7	118.7	0.04	0.11	0.17	45.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [PM Old Hume Hwy / Ferguson Cres]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Ferguson Cres												
1	L2	42	0.0	0.050	7.6	LOS A	0.2	1.2	0.44	0.66	0.44	52.1
3	R2	1	0.0	1.000	3949.6	LOS F	2.0	14.3	1.00	1.02	1.09	0.9
Approach		43	0.0	1.000	103.7	LOS F	2.0	14.3	0.46	0.67	0.46	22.0
East: Old Hume Hwy												
4	L2	1	0.0	0.224	5.6	LOS A	0.0	0.0	0.00	0.00	0.00	58.3
5	T1	854	3.7	0.224	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		855	3.7	0.224	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
West: Old Hume Hwy												
11	T1	2383	1.1	0.621	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
12	R2	51	0.0	0.094	11.1	LOS A	0.3	2.4	0.65	0.85	0.65	49.6
Approach		2434	1.1	0.621	0.4	NA	0.3	2.4	0.01	0.02	0.01	59.5
All Vehicles		3332	1.8	1.000	1.6	NA	2.0	14.3	0.02	0.02	0.02	58.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [PM Railway Pde / Colo St]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Railway Pde												
2	T1	115	0.0	0.092	0.5	LOS A	0.4	2.5	0.25	0.18	0.25	57.4
3	R2	49	0.0	0.092	6.6	LOS A	0.4	2.5	0.25	0.18	0.25	55.8
Approach		164	0.0	0.092	2.3	NA	0.4	2.5	0.25	0.18	0.25	56.9
East: Colo St												
4	L2	41	7.7	0.031	6.2	LOS A	0.1	0.9	0.28	0.55	0.28	52.4
6	R2	27	0.0	0.031	7.0	LOS A	0.1	0.7	0.38	0.65	0.38	51.9
Approach		68	4.6	0.031	6.6	LOS A	0.1	0.9	0.32	0.59	0.32	52.2
North: Railway Pde												
7	L2	105	0.0	0.153	5.6	LOS A	0.0	0.0	0.00	0.21	0.00	56.5
8	T1	187	1.1	0.153	0.0	LOS A	0.0	0.0	0.00	0.21	0.00	58.1
Approach		293	0.7	0.153	2.0	NA	0.0	0.0	0.00	0.21	0.00	57.5
All Vehicles		525	1.0	0.153	2.7	NA	0.4	2.5	0.12	0.25	0.12	56.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [PM Colo St /Southey St]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Southey St												
1	L2	7	0.0	0.019	5.1	LOS A	0.1	0.6	0.16	0.51	0.16	53.1
2	T1	13	0.0	0.019	5.0	LOS A	0.1	0.6	0.16	0.51	0.16	54.0
3	R2	3	33.3	0.019	8.4	LOS A	0.1	0.6	0.16	0.51	0.16	52.1
Approach		23	4.5	0.019	5.5	LOS A	0.1	0.6	0.16	0.51	0.16	53.4
East: Colo St												
4	L2	2	0.0	0.031	5.1	LOS A	0.1	1.1	0.16	0.48	0.16	53.3
5	T1	34	6.3	0.031	5.1	LOS A	0.1	1.1	0.16	0.48	0.16	53.9
6	R2	1	0.0	0.031	7.9	LOS A	0.1	1.1	0.16	0.48	0.16	53.7
Approach		37	5.7	0.031	5.2	LOS A	0.1	1.1	0.16	0.48	0.16	53.9
North: Southey st												
7	L2	5	0.0	0.022	5.4	LOS A	0.1	0.7	0.25	0.56	0.25	52.2
8	T1	9	0.0	0.022	5.3	LOS A	0.1	0.7	0.25	0.56	0.25	53.0
9	R2	9	0.0	0.022	8.2	LOS A	0.1	0.7	0.25	0.56	0.25	52.6
9u	U	1	0.0	0.022	9.8	LOS A	0.1	0.7	0.25	0.56	0.25	53.1
Approach		25	0.0	0.022	6.6	LOS A	0.1	0.7	0.25	0.56	0.25	52.7
West: Colo St												
10	L2	29	3.6	0.094	5.0	LOS A	0.5	3.3	0.09	0.53	0.09	53.0
11	T1	78	2.7	0.094	4.9	LOS A	0.5	3.3	0.09	0.53	0.09	53.9
12	R2	22	0.0	0.094	7.8	LOS A	0.5	3.3	0.09	0.53	0.09	53.6
12u	U	1	0.0	0.094	9.3	LOS A	0.5	3.3	0.09	0.53	0.09	54.1
Approach		131	2.4	0.094	5.5	LOS A	0.5	3.3	0.09	0.53	0.09	53.7
All Vehicles		216	2.9	0.094	5.6	LOS A	0.5	3.3	0.13	0.52	0.13	53.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 2 [SAT Old Hume Hwy / Louisa St / Fitzroy St - Conversion]

New Site
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Fitzroy St												
1	L2	57	1.9	1.325	355.7	LOS F	23.6	166.4	1.00	2.74	7.51	8.0
3	R2	62	0.0	1.325	409.3	LOS F	23.6	166.4	1.00	2.74	7.51	8.0
Approach		119	0.9	1.325	383.7	LOS F	23.6	166.4	1.00	2.74	7.51	8.0
East: Old Hume Hwy												
4	L2	74	1.4	0.318	5.6	LOS A	0.0	0.0	0.00	0.07	0.00	57.6
5	T1	1138	1.5	0.318	0.1	LOS A	0.2	1.3	0.01	0.04	0.01	59.5
6	R2	2	50.0	0.318	22.1	LOS B	0.2	1.3	0.02	0.00	0.02	55.3
Approach		1214	1.6	0.318	0.5	NA	0.2	1.3	0.01	0.04	0.01	59.4
North: Louisa St												
7	L2	11	0.0	0.689	231.2	LOS F	2.2	15.2	0.96	1.13	1.39	8.4
9	R2	4	0.0	0.689	738.6	LOS F	2.2	15.2	0.96	1.13	1.39	8.4
Approach		15	0.0	0.689	376.1	LOS F	2.2	15.2	0.96	1.13	1.39	8.4
West: Old Hume Hwy												
10	L2	13	8.3	0.257	5.7	LOS A	0.0	0.0	0.00	0.02	0.00	57.8
11	T1	969	1.5	0.257	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
12	R2	27	3.8	0.093	17.2	LOS B	0.3	1.9	0.81	0.92	0.81	45.5
Approach		1009	1.7	0.257	0.6	NA	0.3	1.9	0.02	0.03	0.02	59.3
All Vehicles		2357	1.6	1.325	22.2	NA	23.6	166.4	0.07	0.18	0.40	43.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [SAT Old Hume Hwy / Ferguson Cres]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Ferguson Cres												
1	L2	61	0.0	0.088	8.8	LOS A	0.3	2.1	0.52	0.76	0.52	51.2
3	R2	1	0.0	0.086	256.5	LOS F	0.2	1.4	0.99	1.00	0.99	11.4
Approach		62	0.0	0.088	13.0	LOS A	0.3	2.1	0.53	0.76	0.53	48.3
East: Old Hume Hwy												
4	L2	5	0.0	0.303	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	58.3
5	T1	1163	1.6	0.303	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		1168	1.6	0.303	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.9
West: Old Hume Hwy												
11	T1	995	1.6	0.259	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
12	R2	51	0.0	0.151	15.9	LOS B	0.5	3.6	0.80	0.91	0.80	46.5
Approach		1045	1.5	0.259	0.8	NA	0.5	3.6	0.04	0.04	0.04	59.1
All Vehicles		2276	1.5	0.303	0.8	NA	0.5	3.6	0.03	0.04	0.03	59.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [SAT Railway Pde / Colo St]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Railway Pde												
2	T1	204	1.0	0.122	0.2	LOS A	0.2	1.8	0.11	0.08	0.11	58.8
3	R2	33	0.0	0.122	6.3	LOS A	0.2	1.8	0.11	0.08	0.11	57.1
Approach		237	0.9	0.122	1.0	NA	0.2	1.8	0.11	0.08	0.11	58.5
East: Colo St												
4	L2	35	3.0	0.024	6.0	LOS A	0.1	0.7	0.24	0.54	0.24	52.8
6	R2	41	0.0	0.047	7.2	LOS A	0.2	1.1	0.40	0.66	0.40	51.8
Approach		76	1.4	0.047	6.6	LOS A	0.2	1.1	0.32	0.61	0.32	52.3
North: Railway Pde												
7	L2	82	0.0	0.119	5.6	LOS A	0.0	0.0	0.00	0.22	0.00	56.5
8	T1	144	2.2	0.119	0.0	LOS A	0.0	0.0	0.00	0.22	0.00	58.0
Approach		226	1.4	0.119	2.0	NA	0.0	0.0	0.00	0.22	0.00	57.5
All Vehicles		539	1.2	0.122	2.2	NA	0.2	1.8	0.10	0.21	0.10	57.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [SAT Colo St /Southey St]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Southey St												
1	L2	6	0.0	0.017	5.2	LOS A	0.1	0.6	0.17	0.54	0.17	52.8
2	T1	9	0.0	0.017	5.1	LOS A	0.1	0.6	0.17	0.54	0.17	53.6
3	R2	4	0.0	0.017	8.0	LOS A	0.1	0.6	0.17	0.54	0.17	53.2
3u	U	1	0.0	0.017	9.5	LOS A	0.1	0.6	0.17	0.54	0.17	53.6
Approach		21	0.0	0.017	5.9	LOS A	0.1	0.6	0.17	0.54	0.17	53.3
East: Colo St												
4	L2	3	0.0	0.033	5.1	LOS A	0.2	1.1	0.15	0.50	0.15	53.1
5	T1	32	0.0	0.033	5.0	LOS A	0.2	1.1	0.15	0.50	0.15	54.0
6	R2	5	0.0	0.033	7.9	LOS A	0.2	1.1	0.15	0.50	0.15	53.5
Approach		40	0.0	0.033	5.4	LOS A	0.2	1.1	0.15	0.50	0.15	53.8
North: Southey st												
7	L2	2	0.0	0.024	5.3	LOS A	0.1	0.8	0.21	0.58	0.21	52.0
8	T1	9	0.0	0.024	5.2	LOS A	0.1	0.8	0.21	0.58	0.21	52.8
9	R2	17	0.0	0.024	8.1	LOS A	0.1	0.8	0.21	0.58	0.21	52.5
Approach		28	0.0	0.024	6.9	LOS A	0.1	0.8	0.21	0.58	0.21	52.6
West: Colo St												
10	L2	32	0.0	0.073	5.0	LOS A	0.4	2.5	0.10	0.52	0.10	53.3
11	T1	56	0.0	0.073	4.9	LOS A	0.4	2.5	0.10	0.52	0.10	54.1
12	R2	14	0.0	0.073	7.8	LOS A	0.4	2.5	0.10	0.52	0.10	53.7
Approach		101	0.0	0.073	5.3	LOS A	0.4	2.5	0.10	0.52	0.10	53.8
All Vehicles		191	0.0	0.073	5.6	LOS A	0.4	2.5	0.13	0.53	0.13	53.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX D

WITH DEVELOPMENT SIDRA

MOVEMENT SUMMARY

Site: 1 [AM Old Hume Hwy / Ferguson Cres]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Ferguson Cres												
1	L2	71	1.5	0.098	8.6	LOS A	0.3	2.4	0.51	0.75	0.51	51.3
3	R2	1	0.0	0.024	80.0	LOS F	0.1	0.4	0.96	0.98	0.96	25.5
Approach		72	1.5	0.098	9.7	LOS A	0.3	2.4	0.52	0.75	0.52	50.5
East: Old Hume Hwy												
4	L2	3	0.0	0.284	5.6	LOS A	0.0	0.0	0.00	0.00	0.00	58.3
5	T1	1069	5.0	0.284	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		1073	5.0	0.284	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.9
West: Old Hume Hwy												
11	T1	548	9.2	0.150	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
12	R2	31	0.0	0.080	14.2	LOS A	0.3	1.9	0.75	0.90	0.75	47.6
Approach		579	8.7	0.150	0.8	NA	0.3	1.9	0.04	0.05	0.04	59.2
All Vehicles		1723	6.1	0.284	0.7	NA	0.3	2.4	0.03	0.05	0.03	59.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 2 [AM Old Hume Hwy / Louisa St / Fitzroy St - Conversion]

New Site
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Fitzroy St												
1	L2	23	4.5	1.474	551.0	LOS F	16.2	115.2	1.00	2.01	4.79	5.2
3	R2	33	0.0	1.474	657.5	LOS F	16.2	115.2	1.00	2.01	4.79	5.2
Approach		56	1.9	1.474	613.3	LOS F	16.2	115.2	1.00	2.01	4.79	5.2
East: Old Hume Hwy												
4	L2	91	3.5	0.303	5.6	LOS A	0.0	0.0	0.00	0.09	0.00	57.3
5	T1	1039	4.9	0.303	0.1	LOS A	0.1	0.7	0.01	0.05	0.01	59.5
6	R2	5	0.0	0.303	9.2	LOS A	0.1	0.7	0.02	0.01	0.02	57.9
Approach		1135	4.7	0.303	0.5	NA	0.1	0.7	0.01	0.05	0.01	59.3
North: Louisa St												
7	L2	12	0.0	0.529	63.0	LOS E	1.7	11.9	0.90	1.01	1.21	18.5
9	R2	13	0.0	0.529	203.9	LOS F	1.7	11.9	0.90	1.01	1.21	18.5
Approach		24	0.0	0.529	136.5	LOS F	1.7	11.9	0.90	1.01	1.21	18.5
West: Old Hume Hwy												
10	L2	8	0.0	0.150	5.6	LOS A	0.0	0.0	0.00	0.02	0.00	58.2
11	T1	539	9.4	0.150	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
12	R2	15	0.0	0.043	15.0	LOS B	0.1	0.9	0.77	0.90	0.77	46.9
Approach		562	9.0	0.150	0.5	NA	0.1	0.9	0.02	0.03	0.02	59.4
All Vehicles		1777	5.9	1.474	21.6	NA	16.2	115.2	0.06	0.12	0.18	43.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [AM Railway Pde / Colo St]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Railway Pde												
2	T1	128	2.5	0.082	0.2	LOS A	0.2	1.4	0.12	0.10	0.12	58.6
3	R2	26	8.0	0.082	6.3	LOS A	0.2	1.4	0.12	0.10	0.12	56.6
Approach		155	3.4	0.082	1.2	NA	0.2	1.4	0.12	0.10	0.12	58.3
East: Colo St												
4	L2	60	5.3	0.042	6.0	LOS A	0.2	1.2	0.23	0.55	0.23	52.7
6	R2	59	0.0	0.061	6.6	LOS A	0.2	1.4	0.34	0.63	0.34	52.2
Approach		119	2.7	0.061	6.3	LOS A	0.2	1.4	0.28	0.59	0.28	52.4
North: Railway Pde												
7	L2	47	0.0	0.095	5.5	LOS A	0.0	0.0	0.00	0.15	0.00	57.0
8	T1	135	0.8	0.095	0.0	LOS A	0.0	0.0	0.00	0.15	0.00	58.6
Approach		182	0.6	0.095	1.5	NA	0.0	0.0	0.00	0.15	0.00	58.2
All Vehicles		456	2.1	0.095	2.6	NA	0.2	1.4	0.11	0.25	0.11	56.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [AM Colo St /Southey St]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Southey St												
1	L2	22	0.0	0.033	5.4	LOS A	0.2	1.1	0.24	0.52	0.24	53.0
2	T1	15	0.0	0.033	5.3	LOS A	0.2	1.1	0.24	0.52	0.24	53.8
3	R2	2	0.0	0.033	8.2	LOS A	0.2	1.1	0.24	0.52	0.24	53.4
Approach		39	0.0	0.033	5.5	LOS A	0.2	1.1	0.24	0.52	0.24	53.3
East: Colo St												
4	L2	3	66.7	0.052	6.2	LOS A	0.2	1.8	0.19	0.50	0.19	50.4
5	T1	53	4.0	0.052	5.2	LOS A	0.2	1.8	0.19	0.50	0.19	53.7
6	R2	4	0.0	0.052	8.0	LOS A	0.2	1.8	0.19	0.50	0.19	53.4
6u	U	1	0.0	0.052	9.6	LOS A	0.2	1.8	0.19	0.50	0.19	53.9
Approach		61	6.9	0.052	5.5	LOS A	0.2	1.8	0.19	0.50	0.19	53.5
North: Southey st												
7	L2	1	0.0	0.045	5.1	LOS A	0.2	1.5	0.15	0.60	0.15	52.0
8	T1	17	12.5	0.045	5.2	LOS A	0.2	1.5	0.15	0.60	0.15	52.4
9	R2	37	0.0	0.045	7.9	LOS A	0.2	1.5	0.15	0.60	0.15	52.4
Approach		55	3.8	0.045	7.0	LOS A	0.2	1.5	0.15	0.60	0.15	52.4
West: Colo St												
10	L2	9	11.1	0.035	5.1	LOS A	0.2	1.2	0.11	0.51	0.11	52.8
11	T1	31	6.9	0.035	5.0	LOS A	0.2	1.2	0.11	0.51	0.11	53.9
12	R2	3	0.0	0.035	7.8	LOS A	0.2	1.2	0.11	0.51	0.11	53.7
12u	U	1	0.0	0.035	9.4	LOS A	0.2	1.2	0.11	0.51	0.11	54.2
Approach		44	7.1	0.035	5.3	LOS A	0.2	1.2	0.11	0.51	0.11	53.6
All Vehicles		199	4.8	0.052	5.9	LOS A	0.2	1.8	0.17	0.53	0.17	53.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 2 [PM Old Hume Hwy / Louisa St / Fitzroy St - Conversion]

New Site
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Fitzroy St												
1	L2	26	0.0	1.519	570.4	LOS F	17.7	126.1	1.00	2.30	5.48	5.1
3	R2	35	3.0	1.519	665.3	LOS F	17.7	126.1	1.00	2.30	5.48	5.1
Approach		61	1.7	1.519	624.4	LOS F	17.7	126.1	1.00	2.30	5.48	5.1
East: Old Hume Hwy												
4	L2	139	0.8	0.248	5.6	LOS A	0.0	0.0	0.00	0.18	0.00	56.8
5	T1	789	3.7	0.248	0.1	LOS A	0.1	0.9	0.01	0.08	0.01	59.1
6	R2	2	0.0	0.248	18.7	LOS B	0.1	0.9	0.02	0.00	0.02	57.8
Approach		931	3.3	0.248	1.0	NA	0.1	0.9	0.01	0.09	0.01	58.8
North: Lousia St												
7	L2	3	0.0	0.563	168.5	LOS F	1.5	10.5	0.98	1.04	1.16	8.4
9	R2	5	0.0	0.563	501.0	LOS F	1.5	10.5	0.98	1.04	1.16	8.4
Approach		8	0.0	0.563	376.3	LOS F	1.5	10.5	0.98	1.04	1.16	8.4
West: Old Hume Hwy												
10	L2	14	0.0	0.325	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	58.2
11	T1	1229	2.1	0.325	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
12	R2	33	0.0	0.068	11.9	LOS A	0.2	1.5	0.68	0.87	0.68	48.9
Approach		1276	2.1	0.325	0.4	NA	0.2	1.5	0.02	0.03	0.02	59.5
All Vehicles		2276	2.5	1.519	18.8	NA	17.7	126.1	0.04	0.12	0.17	45.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [PM Old Hume Hwy / Ferguson Cres]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Ferguson Cres												
1	L2	42	0.0	0.050	7.6	LOS A	0.2	1.2	0.44	0.66	0.44	52.1
3	R2	1	0.0	1.000	3943.5	LOS F	2.0	14.3	1.00	1.02	1.09	0.9
Approach		43	0.0	1.000	103.6	LOS F	2.0	14.3	0.46	0.67	0.46	22.0
East: Old Hume Hwy												
4	L2	1	0.0	0.224	5.6	LOS A	0.0	0.0	0.00	0.00	0.00	58.3
5	T1	854	3.7	0.224	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		855	3.7	0.224	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
West: Old Hume Hwy												
11	T1	2383	1.1	0.621	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
12	R2	59	0.0	0.110	11.2	LOS A	0.4	2.8	0.65	0.85	0.65	49.5
Approach		2442	1.1	0.621	0.4	NA	0.4	2.8	0.02	0.02	0.02	59.4
All Vehicles		3340	1.8	1.000	1.6	NA	2.0	14.3	0.02	0.02	0.02	58.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [PM Railway Pde / Colo St]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Railway Pde												
2	T1	115	0.0	0.113	0.8	LOS A	0.5	3.6	0.34	0.24	0.34	56.7
3	R2	73	0.0	0.113	6.8	LOS A	0.5	3.6	0.34	0.24	0.34	55.1
Approach		187	0.0	0.113	3.1	NA	0.5	3.6	0.34	0.24	0.34	56.0
East: Colo St												
4	L2	33	9.7	0.025	6.3	LOS A	0.1	0.7	0.28	0.55	0.28	52.3
6	R2	42	0.0	0.050	7.3	LOS A	0.2	1.1	0.41	0.68	0.41	51.7
Approach		75	4.2	0.050	6.9	LOS A	0.2	1.1	0.35	0.62	0.35	52.0
North: Railway Pde												
7	L2	157	0.0	0.181	5.6	LOS A	0.0	0.0	0.00	0.27	0.00	56.1
8	T1	187	1.1	0.181	0.0	LOS A	0.0	0.0	0.00	0.27	0.00	57.6
Approach		344	0.6	0.181	2.5	NA	0.0	0.0	0.00	0.27	0.00	56.9
All Vehicles		606	0.9	0.181	3.3	NA	0.5	3.6	0.15	0.31	0.15	56.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [PM Colo St /Southey St]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Southey St												
1	L2	27	0.0	0.036	5.2	LOS A	0.2	1.2	0.18	0.52	0.18	53.2
2	T1	13	0.0	0.036	5.1	LOS A	0.2	1.2	0.18	0.52	0.18	54.0
3	R2	3	33.3	0.036	8.5	LOS A	0.2	1.2	0.18	0.52	0.18	52.1
Approach		43	2.4	0.036	5.4	LOS A	0.2	1.2	0.18	0.52	0.18	53.4
East: Colo St												
4	L2	2	0.0	0.031	5.2	LOS A	0.1	1.1	0.17	0.48	0.17	53.2
5	T1	34	6.3	0.031	5.1	LOS A	0.1	1.1	0.17	0.48	0.17	53.8
6	R2	1	0.0	0.031	8.0	LOS A	0.1	1.1	0.17	0.48	0.17	53.7
Approach		37	5.7	0.031	5.2	LOS A	0.1	1.1	0.17	0.48	0.17	53.8
North: Southey st												
7	L2	5	0.0	0.028	5.4	LOS A	0.1	0.9	0.25	0.57	0.25	52.0
8	T1	11	0.0	0.028	5.3	LOS A	0.1	0.9	0.25	0.57	0.25	52.8
9	R2	16	0.0	0.028	8.3	LOS A	0.1	0.9	0.25	0.57	0.25	52.4
9u	U	1	0.0	0.028	9.8	LOS A	0.1	0.9	0.25	0.57	0.25	52.9
Approach		33	0.0	0.028	6.9	LOS A	0.1	0.9	0.25	0.57	0.25	52.5
West: Colo St												
10	L2	38	2.8	0.099	5.0	LOS A	0.5	3.6	0.10	0.53	0.10	53.1
11	T1	78	2.7	0.099	4.9	LOS A	0.5	3.6	0.10	0.53	0.10	53.9
12	R2	22	0.0	0.099	7.8	LOS A	0.5	3.6	0.10	0.53	0.10	53.6
12u	U	1	0.0	0.099	9.3	LOS A	0.5	3.6	0.10	0.53	0.10	54.1
Approach		139	2.3	0.099	5.4	LOS A	0.5	3.6	0.10	0.53	0.10	53.7
All Vehicles		252	2.5	0.099	5.6	LOS A	0.5	3.6	0.14	0.53	0.14	53.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 2 [SAT Old Hume Hwy / Louisa St / Fitzroy St - Conversion]

New Site
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Fitzroy St												
1	L2	57	1.9	1.782	747.6	LOS F	43.8	308.9	1.00	3.47	10.50	4.3
3	R2	82	0.0	1.782	788.0	LOS F	43.8	308.9	1.00	3.47	10.50	4.3
Approach		139	0.8	1.782	771.5	LOS F	43.8	308.9	1.00	3.47	10.50	4.3
East: Old Hume Hwy												
4	L2	98	1.1	0.325	5.6	LOS A	0.0	0.0	0.00	0.09	0.00	57.4
5	T1	1138	1.5	0.325	0.1	LOS A	0.2	1.3	0.01	0.04	0.01	59.4
6	R2	2	50.0	0.325	22.2	LOS B	0.2	1.3	0.02	0.00	0.02	55.3
Approach		1238	1.5	0.325	0.6	NA	0.2	1.3	0.01	0.05	0.01	59.3
North: Louisa St												
7	L2	11	0.0	0.706	244.8	LOS F	2.2	15.7	0.96	1.14	1.41	8.1
9	R2	4	0.0	0.706	764.2	LOS F	2.2	15.7	0.96	1.14	1.41	8.1
Approach		15	0.0	0.706	393.2	LOS F	2.2	15.7	0.96	1.14	1.41	8.1
West: Old Hume Hwy												
10	L2	13	8.3	0.256	5.7	LOS A	0.0	0.0	0.00	0.02	0.00	57.8
11	T1	969	1.5	0.256	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
12	R2	27	3.8	0.097	17.8	LOS B	0.3	2.0	0.82	0.92	0.82	45.2
Approach		1009	1.7	0.256	0.6	NA	0.3	2.0	0.02	0.03	0.02	59.3
All Vehicles		2401	1.5	1.782	47.6	NA	43.8	308.9	0.08	0.25	0.63	33.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [SAT Old Hume Hwy / Ferguson Cres]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Ferguson Cres												
1	L2	61	0.0	0.088	8.8	LOS A	0.3	2.1	0.52	0.76	0.52	51.2
3	R2	1	0.0	0.087	259.3	LOS F	0.2	1.5	0.99	1.00	0.99	11.3
Approach		62	0.0	0.088	13.1	LOS A	0.3	2.1	0.53	0.76	0.53	48.3
East: Old Hume Hwy												
4	L2	5	0.0	0.303	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	58.3
5	T1	1163	1.6	0.303	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		1168	1.6	0.303	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.9
West: Old Hume Hwy												
11	T1	995	1.6	0.260	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
12	R2	55	0.0	0.164	16.0	LOS B	0.6	3.9	0.80	0.91	0.80	46.5
Approach		1049	1.5	0.260	0.9	NA	0.6	3.9	0.04	0.05	0.04	59.0
All Vehicles		2280	1.5	0.303	0.8	NA	0.6	3.9	0.03	0.04	0.03	59.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [SAT Railway Pde / Colo St]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Railway Pde												
2	T1	204	1.0	0.133	0.3	LOS A	0.4	2.6	0.16	0.11	0.16	58.3
3	R2	47	0.0	0.133	6.5	LOS A	0.4	2.6	0.16	0.11	0.16	56.7
Approach		252	0.8	0.133	1.4	NA	0.4	2.6	0.16	0.11	0.16	58.0
East: Colo St												
4	L2	48	2.2	0.034	6.0	LOS A	0.1	1.0	0.24	0.55	0.24	52.8
6	R2	66	0.0	0.078	7.4	LOS A	0.3	1.8	0.42	0.69	0.42	51.7
Approach		115	0.9	0.078	6.8	LOS A	0.3	1.8	0.34	0.63	0.34	52.1
North: Railway Pde												
7	L2	109	0.0	0.134	5.6	LOS A	0.0	0.0	0.00	0.26	0.00	56.2
8	T1	144	2.2	0.134	0.0	LOS A	0.0	0.0	0.00	0.26	0.00	57.7
Approach		254	1.2	0.134	2.4	NA	0.0	0.0	0.00	0.26	0.00	57.0
All Vehicles		620	1.0	0.134	2.8	NA	0.4	2.6	0.13	0.27	0.13	56.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [SAT Colo St /Southey St]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Southey St												
1	L2	17	0.0	0.026	5.2	LOS A	0.1	0.8	0.19	0.53	0.19	52.9
2	T1	9	0.0	0.026	5.1	LOS A	0.1	0.8	0.19	0.53	0.19	53.7
3	R2	4	0.0	0.026	8.0	LOS A	0.1	0.8	0.19	0.53	0.19	53.3
3u	U	1	0.0	0.026	9.6	LOS A	0.1	0.8	0.19	0.53	0.19	53.8
Approach		32	0.0	0.026	5.7	LOS A	0.1	0.8	0.19	0.53	0.19	53.2
East: Colo St												
4	L2	3	0.0	0.033	5.2	LOS A	0.2	1.1	0.17	0.50	0.17	53.0
5	T1	32	0.0	0.033	5.1	LOS A	0.2	1.1	0.17	0.50	0.17	53.9
6	R2	5	0.0	0.033	8.0	LOS A	0.2	1.1	0.17	0.50	0.17	53.5
Approach		40	0.0	0.033	5.5	LOS A	0.2	1.1	0.17	0.50	0.17	53.8
North: Southey st												
7	L2	2	0.0	0.033	5.3	LOS A	0.2	1.1	0.21	0.59	0.21	51.9
8	T1	11	0.0	0.033	5.2	LOS A	0.2	1.1	0.21	0.59	0.21	52.7
9	R2	26	0.0	0.033	8.1	LOS A	0.2	1.1	0.21	0.59	0.21	52.3
Approach		39	0.0	0.033	7.2	LOS A	0.2	1.1	0.21	0.59	0.21	52.4
West: Colo St												
10	L2	37	0.0	0.077	5.0	LOS A	0.4	2.6	0.10	0.52	0.10	53.3
11	T1	56	0.0	0.077	4.9	LOS A	0.4	2.6	0.10	0.52	0.10	54.1
12	R2	14	0.0	0.077	7.8	LOS A	0.4	2.6	0.10	0.52	0.10	53.7
Approach		106	0.0	0.077	5.3	LOS A	0.4	2.6	0.10	0.52	0.10	53.8
All Vehicles		217	0.0	0.077	5.7	LOS A	0.4	2.6	0.14	0.53	0.14	53.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Appendix D Previous Traffic Analysis – 2 (22 December 2020)

Technical Memorandum

To	Justin Foong Senior Consultant Elton Consultaning	**Author**	Hayden Calvey Traffic Engineering Team Leader Cardno (NSW/ACT) Pty Ltd
Date	22 December 2020	**Version**	Final | 02
Project	Maltings, Mittagong	**Discipline**	Traffic and Transport
Subject	Response to TfNSW & Wingecarribee Council RFI		

1 Introduction

Cardno has previously prepared the Traffic Impact Assessment for the redevelopment of the historic Maltings, Mittagong (Lot 21 DP 1029384, number 2 Colo Street Mittagong)). As part of the Development Application (DA) 20/1400, request for information has been received by both Transport for NSW (TfNSW).

The specific requests and comments provided by TfNSW and Council are shown in **Appendix A**, along with respective summary responses by Cardno. The detailed analysis and updated assessment in response to the RFI are contained within the following sub-headings. The general theme of comments are as follows:

- Provide sensitivity analysis for the 400 person events, including traffic generation and distribution
- Provide long term traffic modelling results for development of M1 to M4, and M1 to M6 respectively
- Identify mitigation measures and infrastructure upgrades where necessary.
- Pedestrian access and road safety considerations

In general, the use of M1 to M2 including the Malster's Cottage is forecast to generate up to 400 persons during peak events, whilst the use of M3 and M4 hotel area is in addition to the 400 persons (though likely to see a dual use between the two). M5 and M6 land use is subject of a concept design and has been assessed as a residential land use, though its exact form is subject to further detail.

The on-site car parking is provided across the site, with main visitor parking via Colo Street (74 spaces), parking at the rear off Ferguson Crescent for BOH activities and staff, and parking near Southey Street (82 spaces) is for M3 to M6 uses.

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2 Traffic Generation

TfNSW have requested a reassessment of the forecast traffic generation figures having regard to:

- Trip generation based on patronage
- Patronage across the site, including M1, M2, M3 and M4 as well as Maslter's Cottage
- Assumption on vehicle occupancies

The assumptions documented within the TIA for the parking demand is provided below.

- Assume 20% of the M4/M5 accommodation is booked for the special event, with 2 persons per room. This equates to 16 persons whose parking is already accounted for by the Hotel's requirements.
- Assume 15% of guests stay in overnight accommodation within walking distance, public transport or taxi, not requiring the use of a private vehicle on the Maltings site. This equates to 60 persons.

With regard to traffic generation associated with M1 and M2 uses, the assumptions above are carried through with the exception of car occupancy, whereby an occupancy of 2 people per car is conservatively adopted. This is level of car occupancy is considered to be low considering the peak events on-site are of various function and exhibition style events (excluding weddings).

Table 2-1 Vehicle Generation

Breakdown		Colo Street Car Park	Hotel Guests	Non-private car (e.g. taxi)	Non-private car (e.g. Public transport, walking)	Parking On-street	Total
Car Occupancy of 2	Peak Hour Traffic Generation	74 vehicles	0(1)	15 vehicles	0(1)(2)	88 vehicles	177 vehicles
	Persons	148 persons	16 people	30 people	30 people	176 people	400 people

Notes: (1) Does not coincide with peak hour assessment

(2)Assumed to be non car based transport

The occasional peak activity on-site for M1 and M2 uses is expected to be weekday evening and Saturday midday and evenings, that is, not typically a weekly occurence. The TIA assessed 74 peak trips, whereby the conservative approach detailed in **Table 2-1**, resulting in 177 trips, is an increase of 103 trips or a factor of 2.39 greater. This level of attendance (400 persons) is considered for special and unique occasions that will be infrequent across the year. Majority of the time, the site is expected to operate well below this number servicing the local area.

The traffic generation of M3 and M4 is driven by the hotel guests. The TIA documents their respective peak hour traffic generation based on the TfNSW Guide of 0.4 trips per unit in the evening peak hour, resulting in 16 peak hour trips in both the weekday evening and weekend peak. It is not appropriate to adopt a first principles trip assessment for hotel guests when there is a guiding document providing the necessary trip rate.

The traffic generation for M5 and M6 land uses, which is part of a concept design, is as per the TIA which assumes seniors living resulting in 50 weekday peak hour trips and 25 weekend peak hour trips. The TIA has

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provided sufficient information with regard to the traffic generation assumptions for seniors living based on the TfNSW Guide.

Table 2-2 Trip Generation Summary

Use	Weekday AM		Weekday PM		Weekend	
	TIA	Revision	TIA	Revision	TIA	Revision
M1/M2	37	89	74	177	74	177
M3/M4	n/a	n/a	16	16	16	16
Sub-Total	**37**	**89**	**90**	**193**	**90**	**193**
M5/M6	50	50	50	50	25	25
Total	**87**	**139**	**140**	**243**	**115**	**218**

During the key peak periods of the weekday evening and weekend, the revised analysis results in some additional 100 trips in the respective peaks periods.

3 Traffic Assignment

The TIA documented the assumption that the site will draw traffic from the Sydney region, Southern Highlands area and the Illawarra. The analysis was based on 50% travelling from north towards Sydney and the remaining 50% travelling from the south of the site.

Routes to / from the south are forecast to come along Bowral Road and cross the Rail line at Bessemer Street. Google maps also supports this route choice and it appears to be a logical choice, where motorists seek to avoid delays at the Old Hume Highway / Bowral Road intersection, Old Hume Highway pedestrian signals and general parking and friction within the Mittagong town centre.

TfNSW hold the position that it is their expectation that a greater portion will come from the Old Hume Highway. Trips to / from the north associated with M1 and M2 will favour Old Hume Highway based on access being from Colo Street. Trips associated with M3 and M4 will access the Old Hume Highway to travel north via Bong Bong Road, Ferguson Crescent, to the Renwick Drive / Old Hume Highway signalised intersection which provides greater and safer opportunities to turn right onto the highway.

Council have requested a sensitivity analysis of 80% of trips travelling to the north towards Sydney. Reference is made to the Southern Highlands Destination Strategy 2020-2030 which identifies that the visitation makeup of the Southern Highlands is 62%.The request from Council is considered a significant assumption and reflective of a worst case scenario. It evidently adds increased traffic to the right turn movement onto the Old Hume Highway from the local side roads, which are typically characterised by high delays. This assignment adds increased traffic volume to the Old Hume Highway intersections which conversely addresses TfNSW comments. Cardno has undertaken traffic modelling of this scenario based on the traffic assignment shown in **Appendix B**.

The right turn movement from Ferguson Crescent onto the Old Hume Highway is not predicted to increase during the peak hours due to drivers seeking the alternate and safer route via Ferguson Crescent to Renwick Drive / Old Hume Highway intersection, as well as the development limiting staff and service vehicle access via Ferguson Street which is predominantly low turnover outside of peak hours.

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4 Assessment Years

TfNSW have requested a horizon year assessment of 10 years. The horizon assessment is based on the year 2029 with a background growth rate of 1% on the Old Hume Highway to account for regional traffic movements along the arterial road network.

5 Traffic Distribution Diagrams

Refer to **Appendix B** for the detailed breakdown of the development assignment, and cumulative traffic distribution at the study intersections.

6 Traffic Analysis

It is relevant to outline that Council has their Section 94 Developer Contributions Plan in place for Roads and Traffic Facilities. Within this document, which covers the period of 2012 to 2031 includes identified upgrade of the Old Hume Highway / Fitzroy Street intersection.

The analysis presented within is based on the existing network geometry in the first instance, separating the M1 to M4 development from the M5/M6 development (which is subject to concept approval). An assessment of M1 to M6 is also provided.

The traffic generation analysis as detailed earlier, along with the traffic assignment sensitivity (80% to / from the north) provides a rounded response to Council and TfNSW comments and provides a level of certainty and predicted real-life scenarios with regard to the development traffic impact.

The intersection results are summarised in **Table 6-1** to **Table 6-3**, with detailed outputs provided in **Appendix C**.

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Table 6-1 Old Hume Highway / Fitzroy Street Intersection Existing Geometry

2029 BASE – NO DEVELOPMENT									
	AM Peak			PM Peak			SAT Peak		
Southern Approach	2.725	1743.8	F	2.828	1814.2	F	2.442	1386.6	F
Eastern Approach	0.326	9.9	A	0.26	22.4	B	0.35	26.7	B
Northern Approach	1.249	640.8	F	1.234	1082.9	F	1.018	1028.6	F
Western Approach	0.65	16.8	B	0.358	12.5	A	0.282	20.6	B
Overall	**2.725**	**1743.8**	**F**	**2.828**	**1814.2**	**F**	**2.442**	**1386.6**	**F**
2029 BASE – M1 TO M4 DEVELOPMENT									
	AM Peak			**PM Peak**			**SAT Peak**		
Southern Approach	3.149	2045.8	F	3.1	2064.6	F	4.045	2806.2	F
Eastern Approach	0.34	10	A	0.287	23.1	B	0.364	27.2	B
Northern Approach	1.388	739.5	F	1.409	1163.5	F	1.018	1026	F
Western Approach	0.165	18.1	F	0.358	14	A	0.282	22.2	B
Overall	**3.149**	**2045.8**	**F**	**3.1**	**2064.6**	**F**	**4.045**	**2806.2**	**F**
2029 BASE – M1 TO M6 DEVELOPMENT									
	AM Peak			**PM Peak**			**SAT Peak**		
Southern Approach	3.149	2128.1	F	3.1	2064.6	F	4.045	2806.2	F
Eastern Approach	0.34	10	A	0.287	23.1	B	0.364	2.2	B
Northern Approach	1.388	739.5	F	1.409	1163.5	F	1.018	1026	F
Western Approach	0.165	18.1	B	0.358	14	A	0.282	22.2	B
Overall	**3.149**	**2128.1**	**F**	**3.1**	**2064.6**	**F**	**4.045**	**2806.2**	**F**

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Table 6-2 Old Hume Highway / Fitzroy Street Intersection Sensitivity Assessment

2029 BASE – M1 TO M4 DEVELOPMENT									
	AM Peak			PM Peak			SAT Peak		
Southern Approach	n.a	n.a	n.a	3.274	2224.6	F	5.272	3902.8	F
Eastern Approach	n.a	n.a	n.a	0.302	23.6	B	0.372	27.5	B
Northern Approach	n.a	n.a	n.a	1.409	1165.4	F	1.018	1024.4	F
Western Approach	n.a	n.a	n.a	0.359	15.1	B	0.282	23.3	B
Overall	**n.a**	**n.a**	**n.a**	**3.274**	**2224.6**	**F**	**5.272**	**3902.8**	**F**

Table 6-3 Old Hume Highway / Fitzroy Street Intersection Signalised Upgrade w Sensitivity

2029 BASE – M1 TO M4 DEVELOPMENT									
	AM Peak			PM Peak			SAT Peak		
Southern Approach	n.a	n.a	n.a	0.269	50	D	0.685	36.9	C
Eastern Approach	n.a	n.a	n.a	0.358	11	A	0.676	15	B
Northern Approach	n.a	n.a	n.a	0.05	48.9	D	0.045	28.6	C
Western Approach	n.a	n.a	n.a	0.586	11.9	A	0.591	13.9	A
Overall	**n.a**	**n.a**	**n.a**	**0.586**	**12.7**	**A**	**0.685**	**16.3**	**B**

The assessment acknowledges the performance of the Old Hume Highway / Fitzroy Street / Louisa Street intersection's existing poor performance, however the existing performance and additional traffic introduced by the heritage site has been demonstrated to be of acceptable impact, and only experience peak periods irregularly, therefore, should not lead to the application carrying the burden of upgrading this intersection. Based on Council's contribution plan, whereby funds are understood to be collected for this intersection's upgrade, the issue of this intersection performance is not a new one and is recognised as a precinct / LGA-wide issue given its inclusion in its statutory contributions plan. Cardno would expect that any statutory obligations required under the relevant plan shall be made accordingly.

As expected, the additional traffic growth along the Old Hume Highway intersections associated with the 10-year design horizon only compounds existing delays. The signalised upgrade as identified in Council's contribution plan significantly improves this intersection's performance from LoS F to LoS A. The delays to the state road resulting from the proposed development is also marginal, with LoS A/B during the critical PM and Weekend analysis, which is consistent performance for the state road without the development or intersection upgrade. The assessment scenario inclusive of M5 & M6 does not result in any change at the Old Hume Highway / Fitzroy Street intersection.

The upgrade of Old Hume Highway / Fitzroy Street appears to have already been costed by Council and a strategic / concept design prepared as part of the contributions plan. Refer to extracts below.

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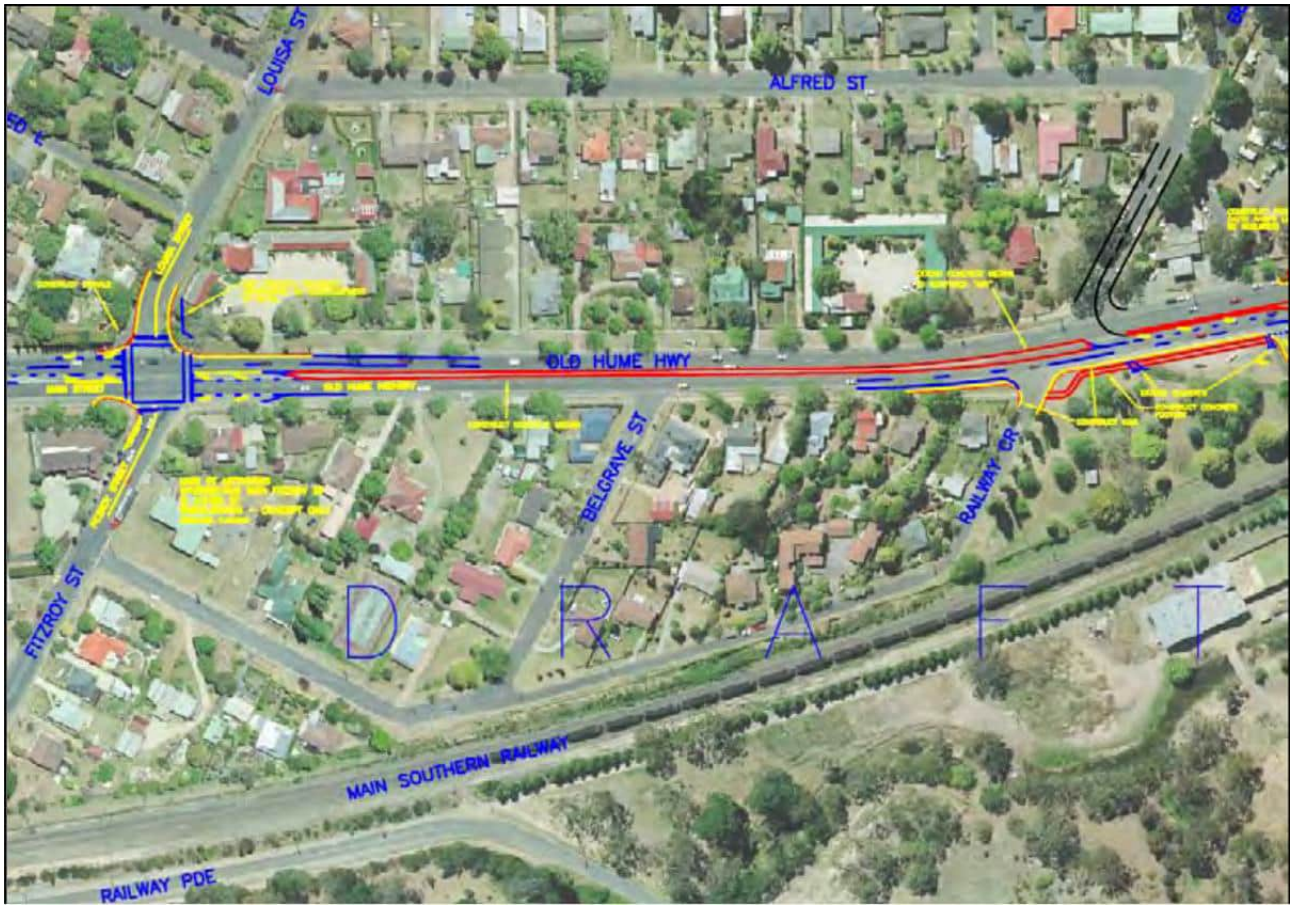

Timing Year	Posting Priority (Order of Schedule of Works)	Future Work or Recoupment or Acquisition	Contribution Catchment	District or Local	ITEM DESCRIPTION	ROAD / INTERSECTION / STUDY	Type Of Work	START	END	Plan No.	LENGTH (KM)	APPORTIONMENT TO DEVELOPER %	COST OF ITEM	COUNCIL CONTRIBUTION	DEVELOPER CONTRIBUTION AMOUNT	GRANTS - VPA Contributions - Old S94 Monies	Population	Persons Per Dwelling	Developer Contribution Per Lot / Residential and Per HA for Northern Gateway
2016	35	Future	Moss Vale	Local	Intersection Improvements - Argyle Street - Signalisation (including Lackey Road, Railway Street and Arthur Street)	Argyle Street	Signalisation	N/A	N/A	Figure 12	N/A	45%	$450,000	$247,500	$202,500		5,464	2.69	$99.69
2016	36	Future	Mittagong	District	Intersection Improvement - Main Street/Fitzroy Street/Louisa Street - Realignment and Signalisation	Main Street / Fitzroy Street / Louisa Street	Signalisation	N/A	N/A	Figure 11	N/A	28%	$800,000	$576,000	$224,000		16,400	2.71	$37.01
2016	37	Future	Shirewide	District	Bus Shelter 3 - Old South Road - Mittagong Caravan Park beside the caravan park shop – Route and school services	Old South Road	Bus Shelter	N/A	N/A	Figure 7	N/A	28%	$20,000	$14,400	$5,600		16,400	2.71	$0.93
2016	38	Future	Shirewide	District	LAMP - Moss Vale Road - Alcorn Street to Burradoo Road	Moss Vale Road	LAMP	Alcorn Street (north)	Burradoo Street (south)	Figure 7 & 8	0.52	28%	$1,000,000	$720,000	$280,000		16,400	2.71	$46.27

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All local road intersections of Railway Street, Colo Street and Southey Street operate satisfactorily under all scenarios. The intersection of the Old Hume Highway / Ferguson Crescent operates at LoS F however this is based on the single right turn movement onto the highway. All other movements perform at a satisfactory LoS and does not indicate any capacity constraints.

7 Parking Demand Management

It is acknowledged that from time to time, the proposed peak patronage may result in some over flow car parking. The original TIA identified overflow parking is most suitable to occur on Colo Street, where residential amenity is least affected.

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As suggested in the TIA, a Travel Access Guide and Traffic Management Plan is recommended to be developed as part of a future occupation certificate to support sustainable travel modes to / from the site to limit the parking and vehicular traffic generation. The site is not designed to cater for coach / tourist buses however could accommodate shuttle buses / mini-buses to service the Mittagong town centre and other tourist hubs during peak activity.

As described in the TIA, the future events on-site and the development itself are being proposed to foster and further stimulate the tourist destination which Mittagong (and the Southern Highlands) already attracts as well as service the arts and entertainment industries of the region through art gallery and exhibitions. The frequency and nature of such events is difficult to predict at this point in time given the variability of such attractions, however, these maximum peak capacities are unlikely to be a weekly occurrence and be subject to external factors such as market demands and conditions. The analysis is based on the 400 persons across M1 to M4, including the Malster's Cottage and this is considered a worst case, or absolute peak, event.

As originally stated in the TIA and reiterated below, the TfNSW Guide identifies that parking is not the be all and end all, and that the overall benefit of the site should be considered in context of all planning and impacts, particularly where heritage considerations present constrains across the site:

The importance of parking must be kept in perspective in the overall planning assessment. There may be situations where it may not be physically possible to provide parking, but the potential planning benefits of the proposal are significant. For example, the adaptive re-use of an historic building may not include on-site parking as it could have an adverse impact on the structure of the building or on its curtilage.

8 Pedestrian Access

Internally, the car parking area off Colo Street will be road base / pervious material with loosely defined road edges in keeping with the heritage item of the site. The road and parking area is to operate akin to a shared zone, whereby the 'winding' access road coupled with parking, and tree planting gives rise to a slow speed environment that compliments the regional, country setting.

Car parking within the M3/M4 building and at the rear to Southey Street is much more formal and is used by the guests of M3/M4 as well as staff. This car parking is low turnover and is not expected to result in significant pedestrian and vehicle conflicts that would be any different to other similar car park settings.

There are a number of scenic walkways throughout the site connecting each respective building such that the desire lines for pedestrians are accommodated away from car parking and loading areas. These routes meander through the site and could be formalised through wayfinding, appropriate lighting and design in future development phases.

Externally, there is a desire line to / from the Mittagong town centre and the Mittagong Railway Station. Colo Street has recently (2016/2017) had an upgrade to the south-east of the site which included a formalised footpath which terminates opposite the proposed Colo Street site entrance. Pedestrian movements are accommodated via the shoulder and grassed verge.

Council have indicated that Colo Street is likely to be realigned to coincide with the proposed Range Road bridge upgrade over the rail line, to be delivered by John Holland/ ARTC/ TfNSW. This realignment of Colo Street is to address road safety issues identified with the new bridge installation resulting in an alignment of Colo Street opposite Railway Parade via a new roundabout junction. Cardno has not seen any detailed drawings of this alignment, however it is not unreasonable to expect the continuation of the Colo Street footpath to be provided as part of this realignment. It is also noted that Council's Bike Plan identifies this segment of Colo Street as a designed on-road route under its Stage 2 plans. A mid-block or crossing point within the roundabout approach refuge island on Colo Street could be delivered to accommodate pedestrian movements along Colo Street. These upgrades are not required by the proposed development as it has been demonstrated to be able to operate independently.

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9 Road Safety

The crash history around the site has been reviewed based on information available from TfNSW Centre for Road Safety. In the most recent 5-year period to 2019, a total of 15 crashes were recorded along the Old Hume Highway, Ferguson Crescent and Southey Street. No Crashes were identified along Fitzroy Street (midblock) or Colo Street).

The crashes identified can be broken down as follows:

- Fitzroy Street / Louisa Street / Old Hume Highway
  - Five crashes in total at this intersection, of which three where moderate injury crashes and no fatalities
  - Three crashes were rear-end types whilst one was a cross intersection crash (e.g. T-bone).
- Ferguson Crescent / Old Hum Highway
  - Five crashes in total at this intersection, of which one was a serious injury crash type and two where moderate injury types, and no fatalities
  - Three crashes were rear-end types whilst two where cross intersection crashes
- Midblock Locations
  - Two crashes on the Old Hume Highway, between Ferguson Crescent and Fitzroy Street where one was a serious injury crash type (rear-end);
  - One crash on Ferguson Crescent on near the Old Hume Highway intersection, resulting in zero injuries.
  - One crash on Southey Street near the horizontal curve resulting in a serious injury crash

With particular focus on the crashes recorded at Fitzroy Street / Louisa Street / Old Hume Highway, it is broadly estimated there is some 18000 daily vehicles through this intersection (based on TfNSW Count Station 07002, east towards Braemer), which the number of crashes (five) translates to 18,500 x 365 (days/year) x 5 years / 10^7 = 3.38 10M Vehicles Entering (VE) at this intersection. The crash rate for this intersection is 5 crashes / 3.38 = 1.48 whereby this crash rate is near what would be expected for an urban

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setting 4-leg intersection (1.46), albeit slightly higher. The additional traffic generated by the development application would have a negligible impact to the crash rate at this location.

10 Summary

Cardno has reviewed both Wingecarribee Council and TfNSW request for additional information with regard to the Maltings development. Traffic modelling has been updated to account for increased traffic generation and sensitivity analysis with regard to the trip distribution.

The conservative analysis is based on both reduced car occupancy (to 2 persons per vehicle) which is below the 3-4 persons per vehicle assessed in the original TIA. Cardno maintains the position that a higher car occupancy is likely to occur based on the site's locality, being a tourist destination such that people will prefer to car pool, the offerings of licensed events such that visitors will prefer to car pool. In addition to this, a sensitivity analysis has been provide based on Council's suggested 80% of trips towards Sydney. Referring to the Southern Highlands Destination Strategy documentation shows that the tourism attraction of the Southern Highlands consists of approximately 62% of people from Sydney. It is acknowledged that the original TIA assumption of 50% is below this however adopting the 80% is a significant conservative assessment to address Council's concerns.

The assessment also considered TfNSW request for a 10-year design horizon. As expected, the additional traffic growth along the Old Hume Highway intersections associated with the 10-year design horizon only compounds existing delays. The reduced car occupancy and increased traffic assignment to the north towards Sydney also contribute to compounding the existing deficiencies along the Highway.

Of importance is the Fitzroy Street / Old Hume Highway intersection which is estimated to carry a large proportion of the site generated traffic (under peak conditions). Currently, without the Maltings development, this intersection fails and the conservative assessments of the traffic generated by the proposed development emphasises this existing problem. However, the intersection is identified in Councils contribution plan to be upgraded to a signalised intersection, which significantly improves this intersections performance from LoS F to LoS A. The delays to the state road is also marginal, with LoS A/B during the critical PM and Weekend analysis, which is consistent performance for the state road without the development or intersection upgrade. The assessment scenario inclusive of M5 & M6 does not result in any change at the Old Hume Highway / Fitzroy Street intersection. Cardno would expect that any statutory obligations required under the relevant plan shall be made accordingly

The upgrade of Old Hume Highway / Fitzroy Street appears to have already been costed by Council and a strategic / concept design prepared as part of the contributions plan. In addition to the works identified at the Old Hume Highway / Fitzroy Street intersection, Council has identified Colo Stret / Railway Parade intersection will be the subject of an upgrade to a roundabout. The traffic modelling shows the existing intersection has sufficient capacity for the forecast traffic increase and that the roundabout upgrade will only increase capacity. The upgrade of Colo Street however is not required by the proposed development as it has been demonstrated to be able to operate independently of this.

As originally stated in the TIA and reiterated below, the TfNSW Guide identifies that parking is not the be all and end all, and that the overall benefit of the site should be considered in context of all planning and impacts, particularly where heritage considerations present constrains across the site:

The importance of parking must be kept in perspective in the overall planning assessment. There may be situations where it may not be physically possible to provide parking, but the potential planning benefits of the proposal are significant. For example, the adaptive re-use of an historic building may not include on-site parking as it could have an adverse impact on the structure of the building or on its curtilage.

As suggested in the TIA, a Travel Access Guide and Traffic Management Plan is recommended to be developed as part of a future occupation certificate to support sustainable travel modes to / from the site to limit the parking and vehicular traffic generation. The site is not designed to cater for coach / tourist buses however could accommodate shuttle buses / mini-buses to service the Mittagong town centre and other

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tourist hubs during peak activity. The frequency and nature of such events is difficult to predict at this point in time given the variability of such attractions, however, these maximum peak capacities are unlikely to be a weekly occurrence and be subject to external factors such as market demands and conditions. The analysis is based on the 400 persons across M1 to M4, including the Malster's Cottage and this is considered a worst case, or absolute peak, event.

The site access arrangements is adequate, with main visitor parking for M1/M2 buildings and hotel within M3/M4 is via Colo Street. Limited access for staff and service vehicles is provided via Ferguson Crescent car park and is identified as low turnover parking and low frequency servicing requirements which is sympathetic to the road constraints on Ferguson Crescent

The crash rate for the Old Hume Highway / Fitzroy Street intersection has been calculated 1.48 per 10M VE whereby this crash rate is near what would be expected for an urban setting 4-leg intersection (1.46), albeit slightly higher. The additional traffic generated by the development application would have a negligible impact to the crash rate at this location.

Colo Street has a footpath for part of its length and terminates opposite the proposed Colo Street driveway. The link between this location and Railway Parade is grassed verge and shoulder areas. There is an opportunity to fulfil this missing segment through the future realignment of Colo Street as well as the Stage 2 implementation of Council's bike plan.

Overall, the proposed development has been shown to operate within the capacity of the immediate local road network and not result in detrimental impacts to the future network improvements planned nearby.

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APPENDIX

A

RESPONSE TO COMMENTS

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TfNSW Comment	Response
The key state road is the Old Hume Highway to which the development site has access via the local road network (e.g. Fitzroy Street and Ferguson Crescent); > It has previously provided pre DA advice on this proposal (refer to TfNSW email dated 19 March 2020 and TfNSW letter dated 30 June 2020); > The DA will generate a significant increase in traffic during peak periods. The impact of this extra traffic on the state road network needs to be adequately mitigated by the proposed development; and > No works are currently proposed as part of the DA at the intersections of its local road connections and the Old Hume Highway. The DA does not provide enough information to assess the development. Specifically, the development's impacts on the intersections of the Old Hume Highway and its local road connections that has been provided does not adequately assess and/or address the impact additional traffic that this development will generate may have.	
The Traffic Impact Assessment (TIA) has estimated the forecast traffic generation, in part, on the number of car spaces that the development is proposing to provide within the site and not on the maximum occupancy numbers for which approval is being sought. For example, buildings M1 and M2 are providing 74 on-site car spaces. The TIA forecasting that the maximum traffic generation for buildings M1 and M2 to be 74 vehicles (Table 5.1), noting that these buildings have a patron capacity of 400 people (not including the three gallery spaces on Level 2). A similar concern with the forecast traffic generation applies to buildings M3 and M4 which the TIA forecasts the maximum traffic generation to be 16 vehicle trips. This being well under the full capacity of the hotel (40 rooms) and as with buildings M1 and M2 does not include a proportion of staff vehicle trips. TfNSW also notes that the cumulative parking analysis for buildings M1 and M2 (Table 4.3) factors in onstreet parking, which has not been included in the forecast traffic generation. In addition, TfNSW questions the car occupancy rates that have been used (i.e. 3 to 4 persons per vehicle) based on the restricted onsite parking. This is not seen as reasonable or realistic for a regional location and noting the site is located away from the town centre. TfNSW requests that a reassessment of the forecast traffic generation figures be undertaken having regard for the above. Additional justification is also required for how the peak hour trips have	Noted. Cardno has provided analysis based on a reduced car occupancy rate of 2 persons per vehicle. Other assumptions regarding other transport modes and use by Hotel guests have been retained as per the original TIA.

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been determined noting the patron capacity figures for each building/use as detailed in the Statement of Environmental Effects as well as staff numbers.	
TfNSW while noting the trip distribution of 50% from the north and 50% from the south, is of the opinion that a greater proportion of the additional traffic generated will come from and go to the Old Hume Highway for the buildings M1 to M4 than what is detailed in Figures 5.1 to 5.5. TfNSW, therefore, requests updated trip distribution or additional justification be provided for the current trip distribution figures.	Referring to the Southern Highlands Destination Strategy 2020-2030, tourism from Sydney accounts for 62% of visitors. Nevertheless, Cardno has included a sensitivity analysis of 80% of traffic to / from the north, most of which travels on the Old Hume Highway within the assessed intersections.
An assessment of crash data for 5 years at the key intersections with the Old Hume Highway (e.g. Fitzroy Street/Old Hume Highway, Ferguson Crescent/Old Hume Highway) should be provided. This including an assessment of the impacts that this development may have on the safety of the key intersections to be used.	Crash analysis has been prepared and shows that whilst there is a history of crashes at the key intersection of Fitzroy Street, the crash rate is likely to be typical of an urban intersection.
TfNSW has reviewed the SIDRA modelling in the TIA and provides the following comments: > Calibration: The SIDRA base models needs to be calibrated with on-site observations relating to queue lengths, delays, etc. While it is noted that a peak hour traffic survey has been completed, no details have been provided on what calibration works have been undertaken. As such, TfNSW requires details on how the base model has been calibrated and validated with on-site observations in the AM and PM peaks in relation to queue lengths and delays, etc. > Delays: TfNSW notes that extended delays will be experienced for vehicles on local roads wishing to turn right onto the Old Hume Highway (i.e. Fitzroy Street, Ferguson Crescent). Based on the traffic distribution used in the TIA, noting the comments above, this accounts for 50% of the vehicle movements for buildings M1 to M4 and 57% for buildings M5 and M6. TfNSW has concerns with the impacts of the DA in terms of the additional traffic generation at these location on the safety and efficiency of the Old Hume Highway without adequate mitigation/improvement works being identified and implemented as part of the DA. TfNSW seeks additional information on this. > Right turns: Additional justification is required as to why no additional traffic has been added to the right turn out of Ferguson Crescent onto the Old Hume Highway as a result of the development during the peak hours (e.g. delivery vehicles, staff, etc). > Stages: Separate models should be provided for: i) the current situation (base model); ii) the development of M1, M2, M3, M4, redevelopment of the Maltster's Cottage and associated site works (detailed as Stage 1 in the SEE);	Noted. The SIDRA models were prepared based on traffic survey counts and video footage. Whilst there are gaps created in the Old Hume Highway traffic stream due to the signalised intersections to the west, there still remains a queue along Fitzroy Street and reduced gap acceptance. Based on the result provided by the SIDRA model, there is significant and unrealistic delay being reported. This, coupled with field observations, indicates the local road approach is significantly congested during peak periods. In this scenario, SIDRA is best used as a relative comparison model. The level of traffic added to the intersection as a result of the development is a fraction of the overall volume through the intersection. It is commonly acknowledged that TfNSW (previously RMS) priority is to maintain efficient flow along the state road network and this development has been modelled to have acceptable delays and limited impact to the state road network. There are numerous examples where side road delays are accepted and remain a Council road issue. In this scenario, it is likely that as traffic increases and delay increases, alternate routes will be selected by motorists to access the state road. Alternate routes via Renwick Drive to the north, and joining Bowral Road to the west prior to the Old Hume Highway. The development and traffic generation contribution, which has been assessed as an absolute peak scenario and not a reflection of 7-day a week operation, is not the reason for the existing deficiency at this intersection. This existing

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iii) the development of M1, M2, M3, M4, redevelopment of the Maltster's Cottage and associated site works and M5 and M6 (detailed as Stage 2/concept approval in the SEE); and iv) A 10 year future growth scenario. > Defaults: Details on any defaults that have been altered and associated justification for the changes should be provided. > Electronic files: Electronic copies of all SIDRA files need to be provided to enable TfNSW to undertake a review.	issue is in part recognised by Councils contribution plan to upgrade the Old Hume Highway / Fitzroy Street intersection. Electronic files can be accessed via the file link in **Appendix C**.
TfNSW notes that the TIA identifies that the DA will result in an increase in trip generation during peak periods at the intersections of the Old Hume Highway/Fitzroy Street and the Old Hume Highway/Ferguson Crescent. Contrary to statements made in the TIA, just because an intersection may have an existing poor level of service does not mean that it will reasonably be able to accept additional vehicle movements as a result of a development without improvement works being required. TfNSW is concerned with the impacts that the proposed developments additional traffic will have on the safety and efficiency of the Old Hume Highway at its main connection points with the local road network without adequate mitigation works being identified and implemented as part of the DA. TfNSW requests the developer to identify specific improvement works required as part of the DA and the stage at which the development would provide these works. Please note: > Any works the applicant proposes to undertake that impact on a state classified road to address the above will require the preparation of a strategic design.; and > TfNSW recommends the developer first seeks acceptance of the proposed upgrades before progressing to a strategic design as detailed in the point below.	Noted. Council have already identified the future signalisation of this intersection as part of its contributions plan. Cardno has analysed that no other works are required to offset or mitigate any impacts modelled as part of the TIA and this response. The assessment acknowledges the performance of the Old Hume Highway / Fitzroy Street / Louisa Street intersection's existing poor performance, however the existing performance and additional traffic introduced by the heritage site has been demonstrated to be of acceptable impact, and only experience peak periods irregularly, therefore, should not lead to the application carrying the burden of upgrading this intersection. Based on Council's contribution plan, whereby funds are understood to be collected for this intersection's upgrade, the issue of this intersection performance is not a new one and is recognised as a precinct / LGA-wide issue given its inclusion in its statutory contributions plan. Cardno would expect that any statutory obligations required under the relevant plan shall be made accordingly.
A strategic design for the identified upgrades above should be to be prepared before DA determination. This will clarify the scope of works, demonstrate a compliant design can be constructed within the road reserve, and allow the Council as the consent authority to consider any environmental impacts of the works as part of their Part 4 assessment under the Environmental Planning and Assessment Act 1979. The strategic concept design must: > Contain sufficient detail to demonstrate an Austroads compliant design can be constructed within the road reserve;	Noted. Council appears to have already prepared this level of detail as part of its contributions plan. No further traffic upgrades have been identified a being required for the proposed development, as shown in Section 6. The poorly performing intersection of Fitzroy Street / Old Hume Highway continue to operate as they are with or without the proposed development. The proposed development has been modelled and analysed to generate traffic volume increases which are negligible with regard to the peak and daily flows that already travel through these intersections.

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> Be to scale and include, but not be limited to, details on legal property boundaries including the existing road reserve boundaries, existing and proposed ground levels, existing and proposed lane configurations, existing and proposed lane widths at several locations along the length of the proposed works, typical cross-sections, conceptual drainage details (for any changes required), etc.; > Be based on a design speed of 10km/h over the posted speed limit; > Be accompanied by a brief design report which details the criteria used, assumptions made, and justification for any departures from required standards; and > Be prepared by a suitably qualified person (i.e. civil design engineer).	

Council Comment	Response
A 50% attraction to Sydney is stated. The turning movement differences between existing and post development are hard to follow in the report and the diagrams, even though schematic, are not clear representations of the actual road network. This needs to be clarified. I also suggest as a sensitivity analyses that an 80% attraction to Sydney for the function centre use also be evaluated. Once this is clarified further consideration will be given to the SIDRA analysis of key intersections.	Noted. Cardno has adopted a sensitivity analysis considering the increase to 80% to / from the north of the site.
We don't support access from Ferguson Cres due to poor configuration of Ferguson Cres (poor rail bridge horizontal and vertical alignment, narrow pavement width on the rail bridge, absence of an adequate pedestrian path on the 2 bridges which includes the narrow timber bridge over the Nattai River), very poor access arrangements at the existing access to the site (shallow angle, steep approach to Ferguson Cres, very limited site lines towards the west, insufficient room to pass a turning vehicle), significant existing pedestrian activity on Ferguson Cres and increase in traffic (which has grown in recent years, and will continue to grow, as Renwick further develops) all adds up to a poor access location to the site which is unlikely able to be upgraded adequately undertaking reasonable engineering works and possibly would not be able to be upgraded satisfactorily with moderate engineering work. It was advised by the developer at a site meeting that the access is intended to be used by site workers, however, anything other than a left turn in off Ferguson Cres appears to have safety issues. Denying access to the clientele would need to be accompanied with additional management information for further assessment. Any intended use should be	Noted. Ferguson Crescent access is limited to BOH services and staff parking. A turn restriction on this access point can be accepted and conditioned.

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accompanied by a road safety audit.	
Concern over parking numbers on site and how this is linked to proposed specific land use on site. There is indication that overflow parking can be provided on the adjacent road network for “special events”. This is of concern and the nature and frequency of these events should be provided for further consideration.	Noted. As outlined in the detailed submission, parking is one aspect to consider for the heritage constrained site. For majority of use the on-site parking is likely to be sufficient. It is only during peak events (which will be generally low across the calendar year) where parking overflow may occur. There is ample opportunity for parking overflow to occur on Colo Street, west of the site, retaining resident amenity which is more sensitive to the east of the site.
No allowance has been made for bus parking on-site. The developer advised that attracting people in buses was not consistent with the business they wished to attract. I believe that given the size and nature of the development that bus access and parking needs to be considered and as they have mentioned “special events” this usually generates bus parking. Event parking numbers needs to be assessed and further considered.	Noted. Shuttle bus / mini-bus services can be accommodated on-site during peak events.
Informal arrangements for delivery vehicles shown in the TIA, as stated, is based on preserving the heritage area. This needs to be discussed with our heritage planner as it would appear that proper arrangements does not necessarily mean that the heritage qualities would be compromised. The safety issues that could arise from the approach taken need to be assessed. It is assumed that an HRV used in the TIA is an Austroads 12.5 metre single unit vehicle.	The BOH loading area for majority of the on-site uses is via Ferguson Crescent, away from visitor parking and pedestrians.
The future development of the seniors housing is vague and should be clarified.	Noted. Development of M5 & M6 is subject of a concept approval and may consist of a range of residential uses. The traffic assessment considers an upper end development scenario and is conservative in its approach.
Traffic generation is not clearly linked to the intended land use, especially for the main function centre. It appears to be based on the parking numbers they are prepared to provide on-site. I believe It needs to be linked to the land use traffic generation. Once we are gain a clearer understanding of the traffic generation (regular activity and special events) I believe that we should look closer at the proposed on-site parking supply, connections between the parking areas and the road network, bus movement and parking on-site, delivery requirements and catering for the movement and loading/unloading. As there is proposed long term seniors living, the management	The revised traffic generation and assessment is been conservatively increased based on a lower car occupancy rate.

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of the traffic movement through the site needs to be assessed. As there is nothing shown we are not in a position to assess this aspect further.	
Pedestrian access and safety needs to be assessed. There is very limited information on this within the site and the connections to the adjoining network. The safety of pedestrians has been raised as an area of concern by the NSW Police.	
We recommend that the main access to the site be from Colo Street as Colo Street has been reconstructed and widened (further assessment of the design of the access is required) and the Range Road bridge over the Main Southern Railway will be replaced with a wider structure and a separate footpath (clear of traffic). TfNSW has already completed enabling works and construction is expected to commence in early 2021 (however, Council is not in control of that date and the actual commencement date needs to be confirmed with TfNSW).	Colo Street is proposed to be the main access for visitors. Traffic modelling shows the intersection performance of Colo Street / Railway Parade is not reliant on the roundabout intersection upgrade.
In conjunction with the rail bridge reconstruction Colo Street is planned to be realigned and include a roundabout at the intersection of Colo Street (realigned), Range Road and Railway Parade. This leads to Fitzroy Road and the Old Hume Highway which Council believes should be signalised in the future. Louisa Street, opposite, has a road widening proposal to enable it to form an aligned 4 way intersection at the highway. Timing of this facility is unknown but presents the best long term access route to this significant development. The secondary access off Southey Street appears suitable subject to considering further information (e.g. site line assessment).	Noted. Council's contributions plan identifies the intersection upgrade of Old Hume Highway / Fitzroy Street. The traffic modelling has considered this upgrade and showed to have little to no effect on the potential upgrade layout.
The developer has been requested to direct traffic to the Colo Street point of access in its promotions and street address. We have also asked that signage not proliferate the highway (advising that it would require RMS approval) and suggest they approach TASAC for guidance in this area.	Noted. This can be addressed as part of a construction certificate and wayfinding / advertisement strategy for the site.

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APPENDIX

B

TRAFFIC DISTRIBUTION DIAGRAMS

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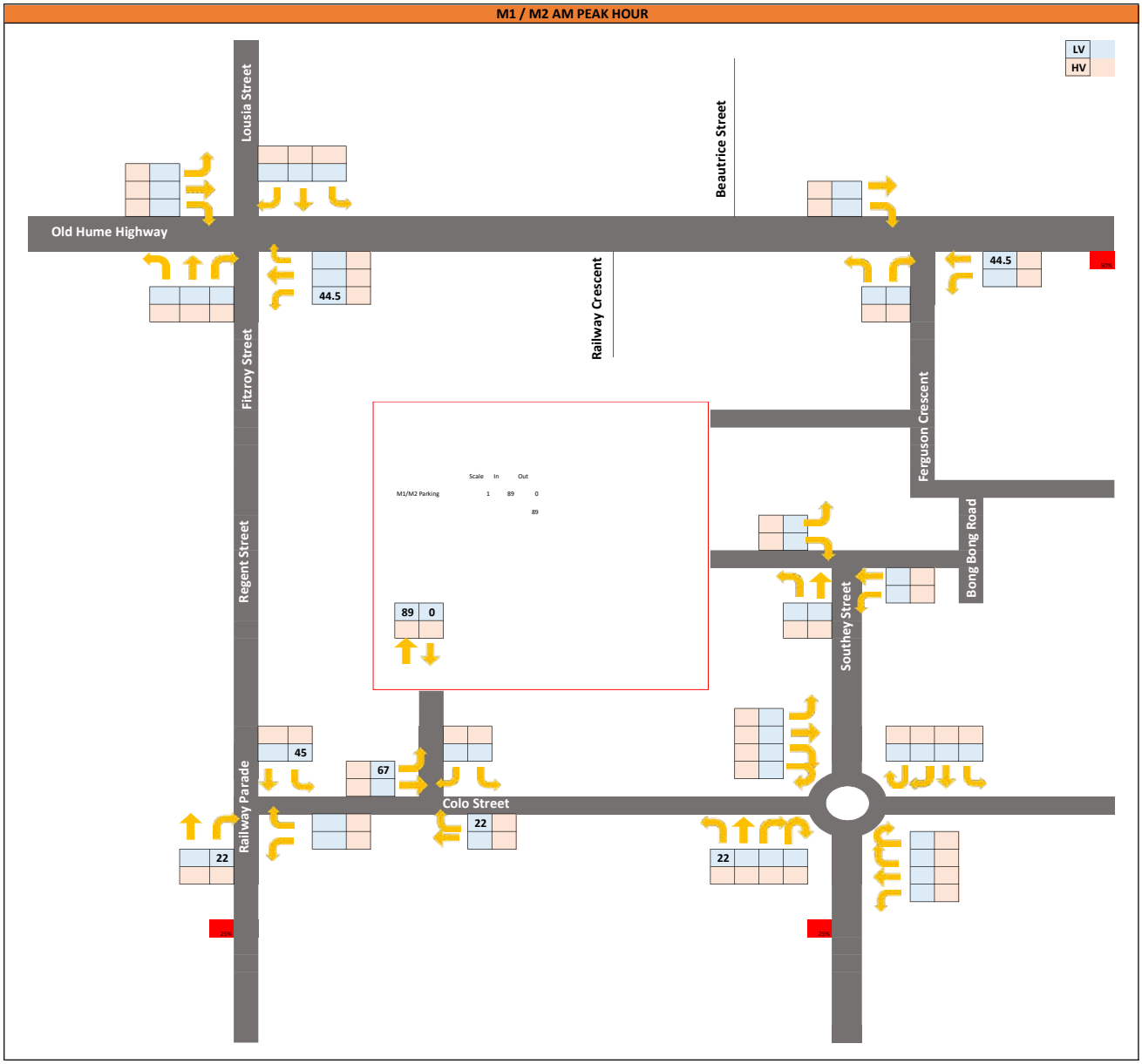
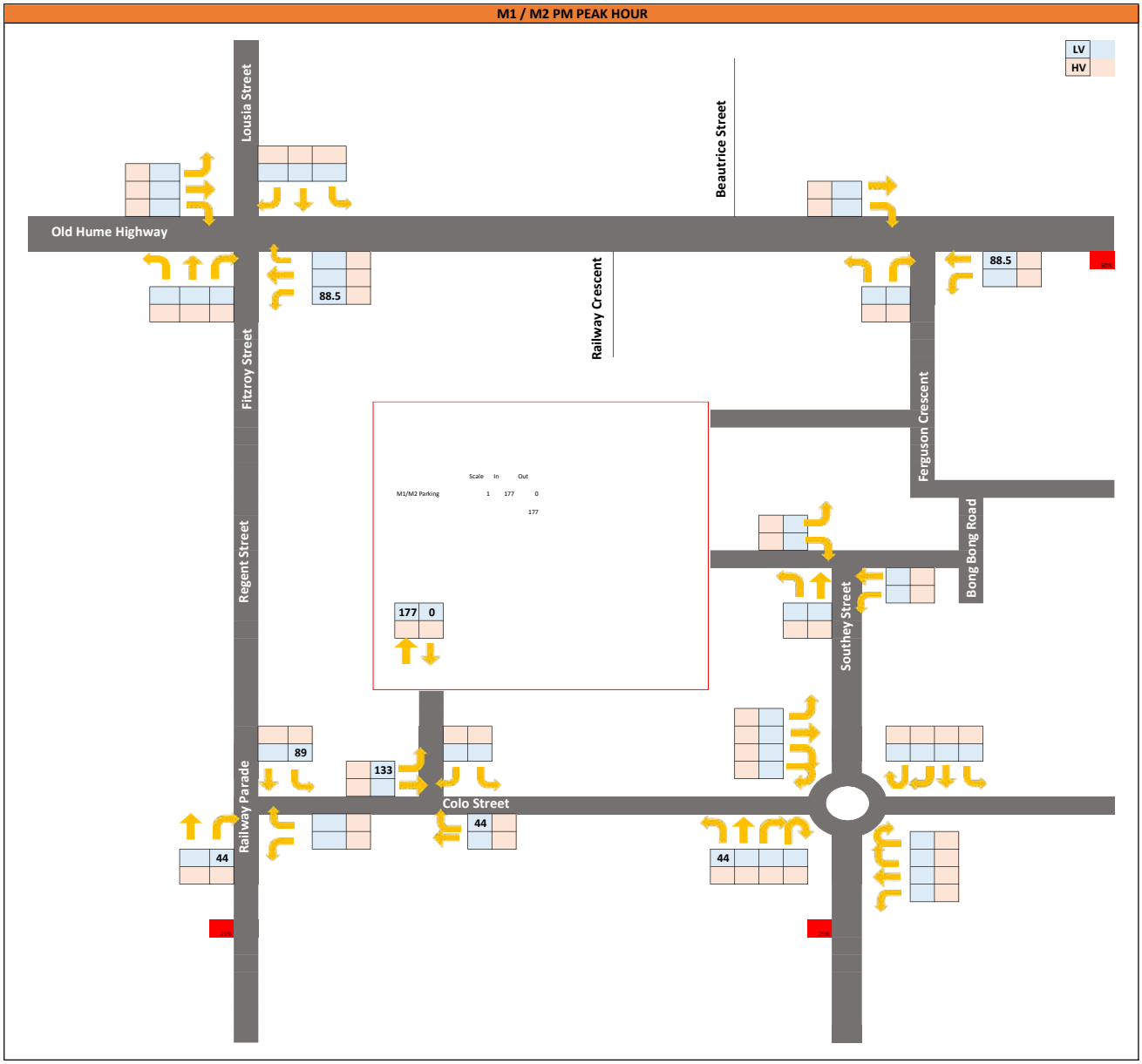
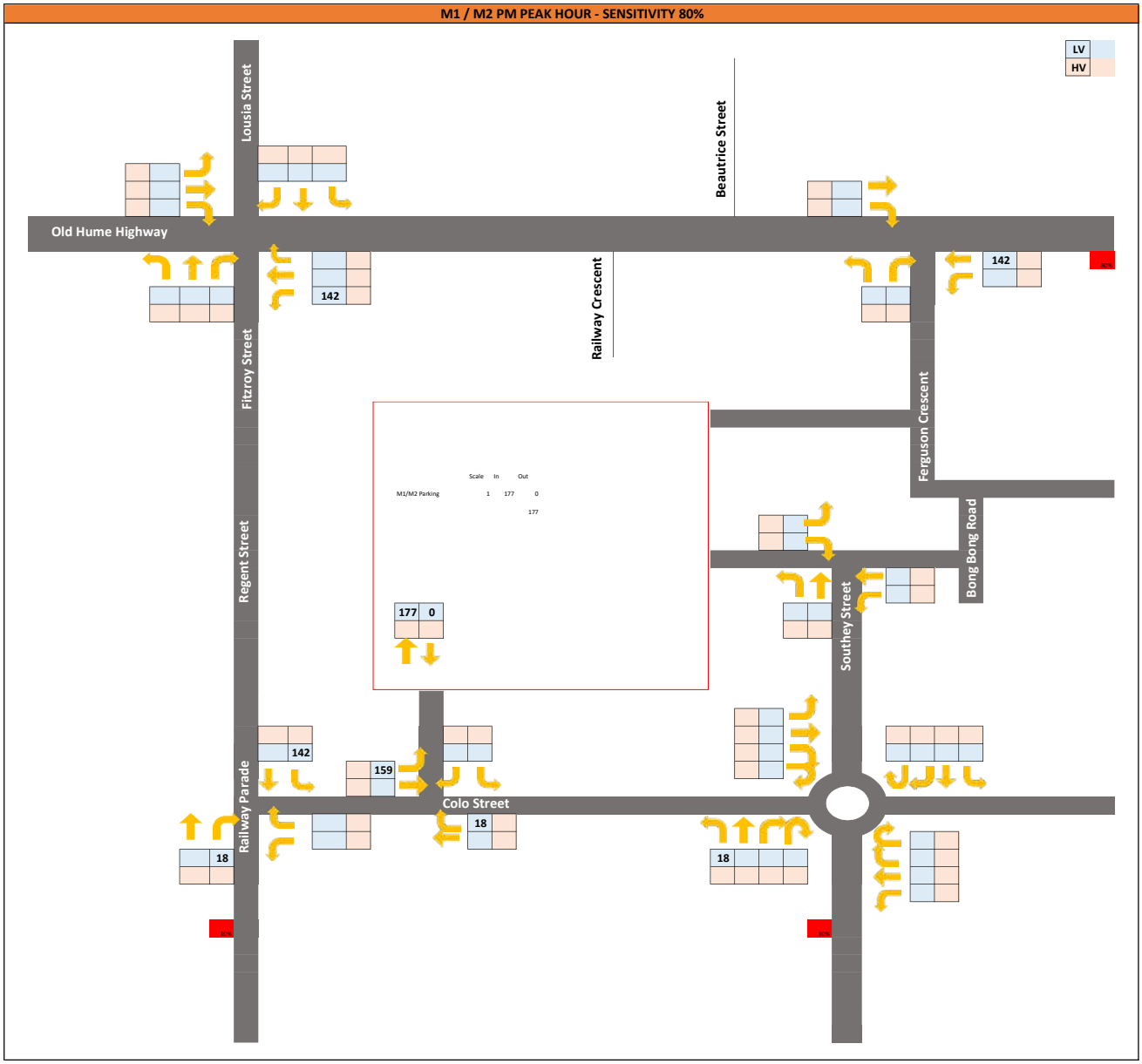
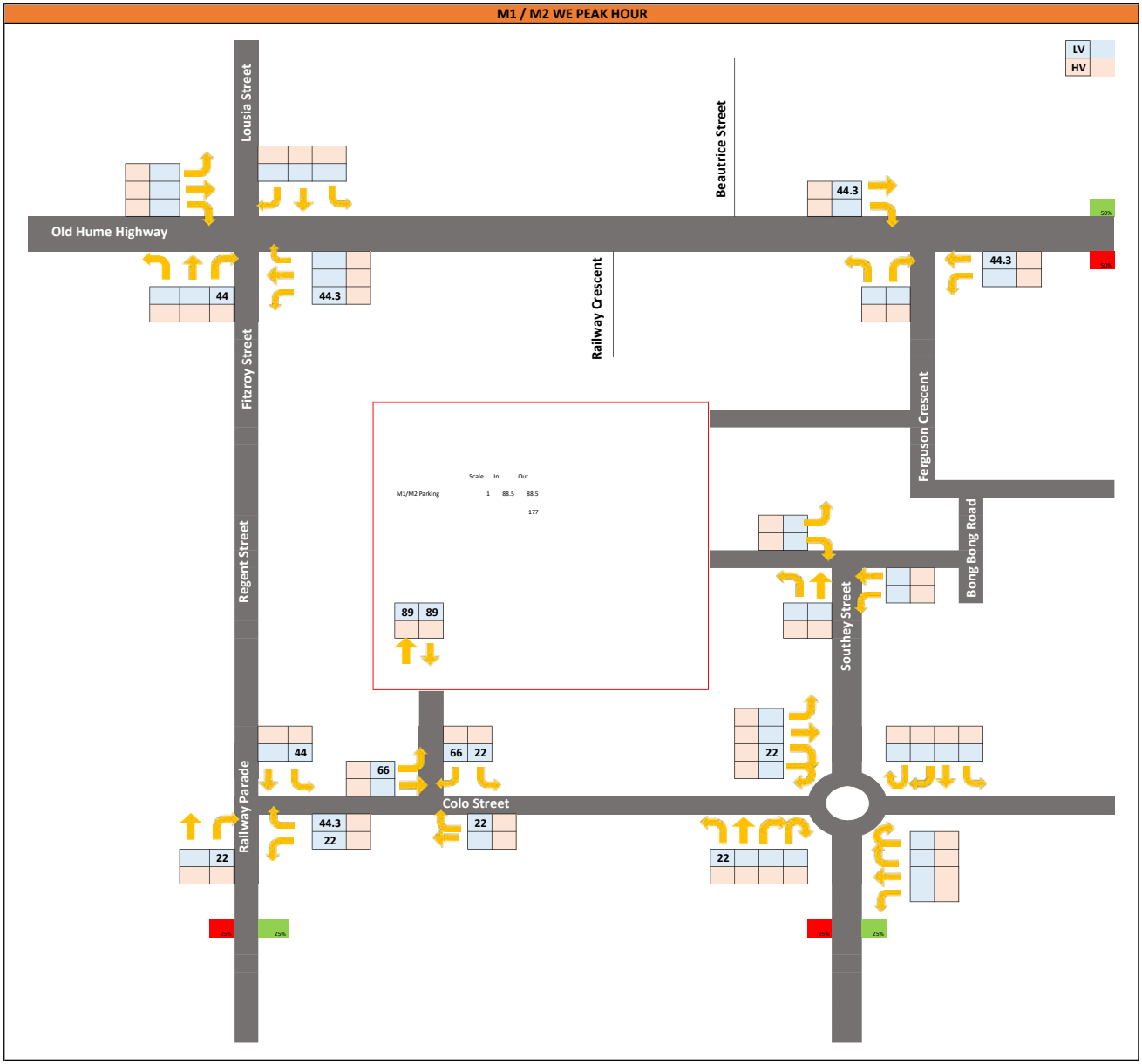
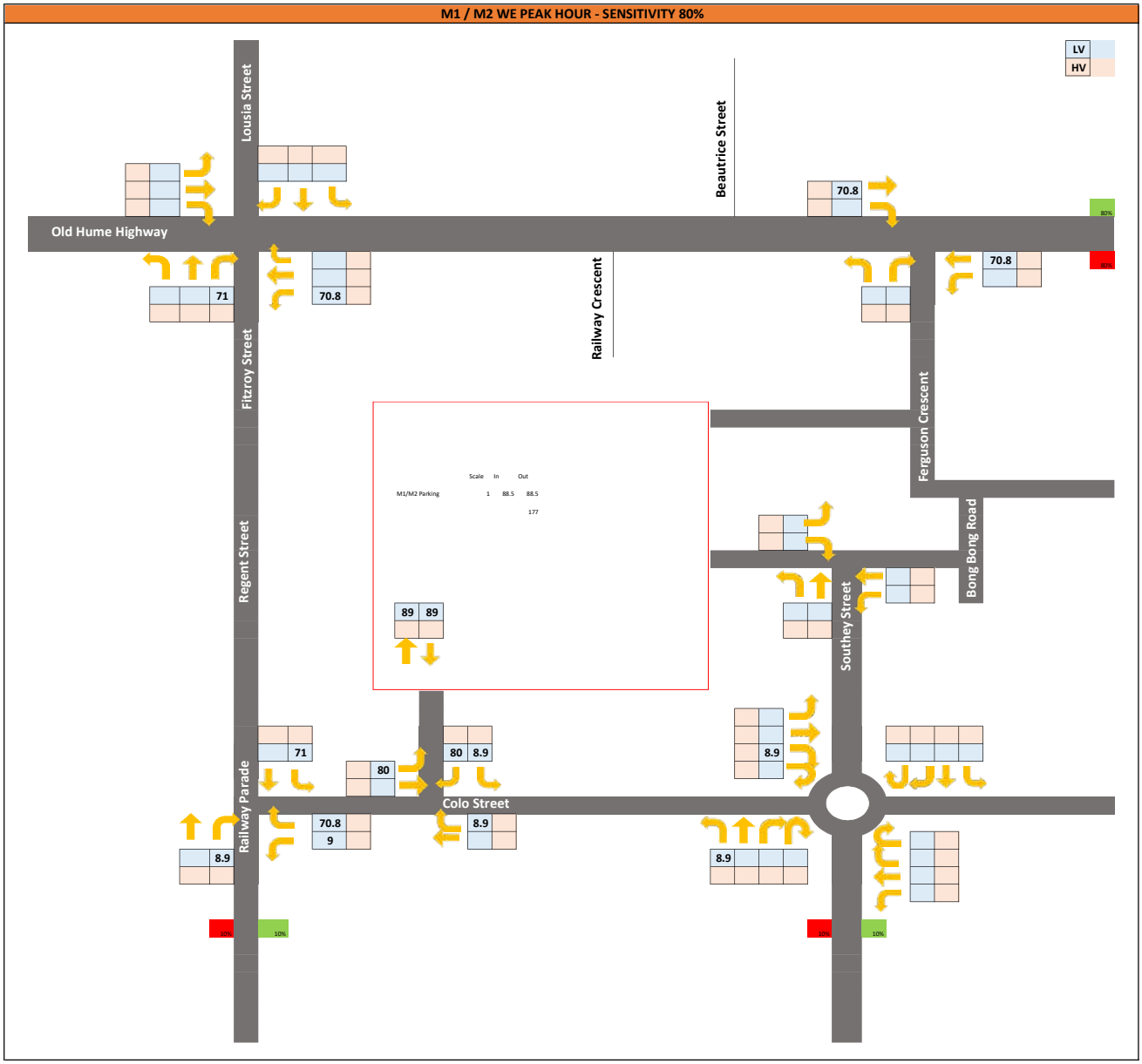
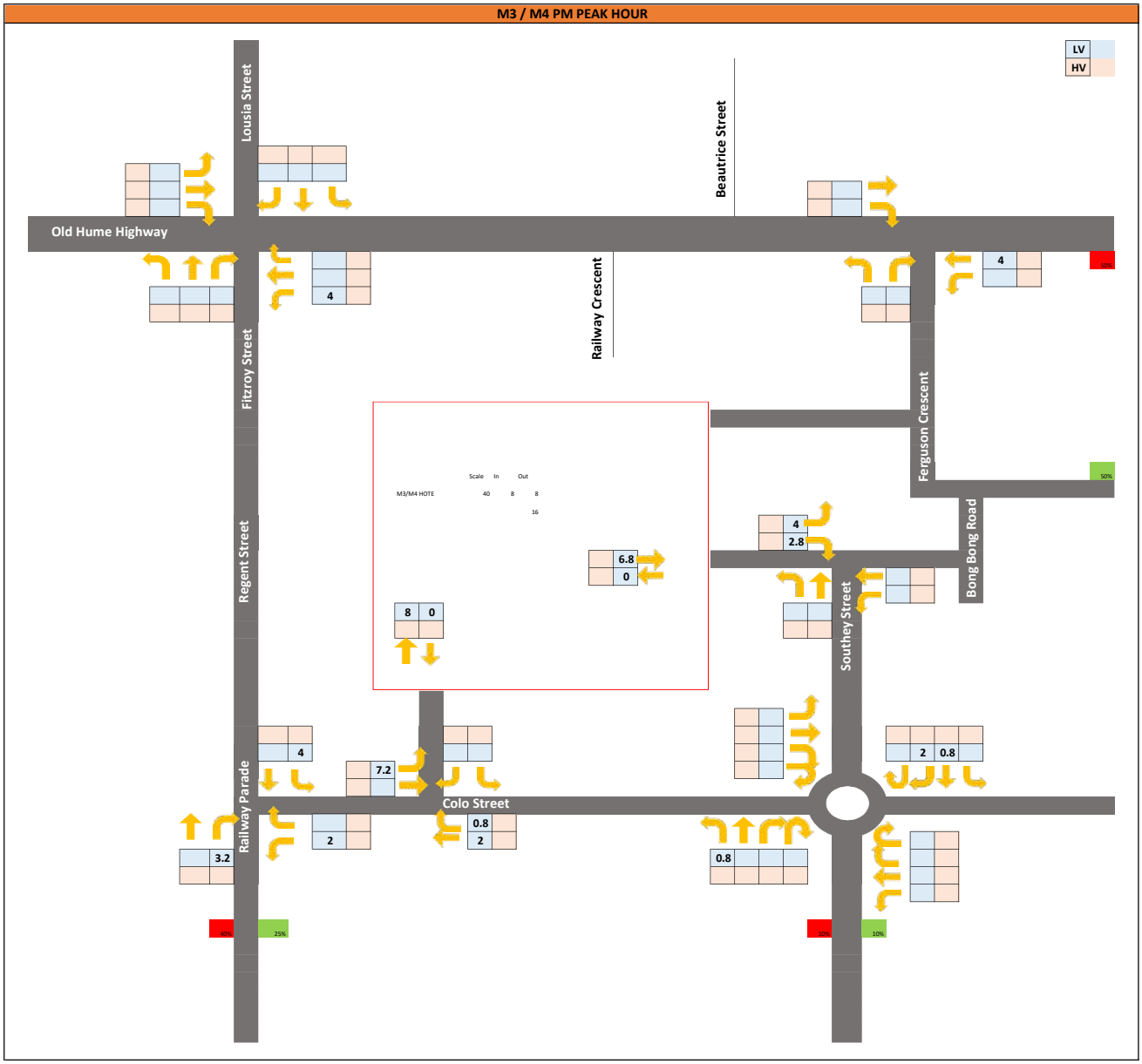

M1 / M2 AM PEAK HOUR
LV
HV
Lousia Street
Beautrice Street
Old Hume Highway
Railway Crescent
Fitzroy Street
Ferguson Crescent
Bong Bong Road
Regent Street
Southey Street
Railway Parade
Colo Street
Scale In Out
M1/M2 Parking 1 89 0
89
89 0
44.5
44.5
45
67
22
22
22
50km
25km
25km


M1 / M2 PM PEAK HOUR
LV
HV
Lousia Street
Beautrice Street
Old Hume Highway
Railway Crescent
Fitzroy Street
Ferguson Crescent
Bong Bong Road
Regent Street
Southey Street
Railway Parade
Colo Street
Scale In Out
M1/M2 Parking 1 177 0
177
177 0
88.5
88.5
89
133
44
44
44
50km
25km
25km

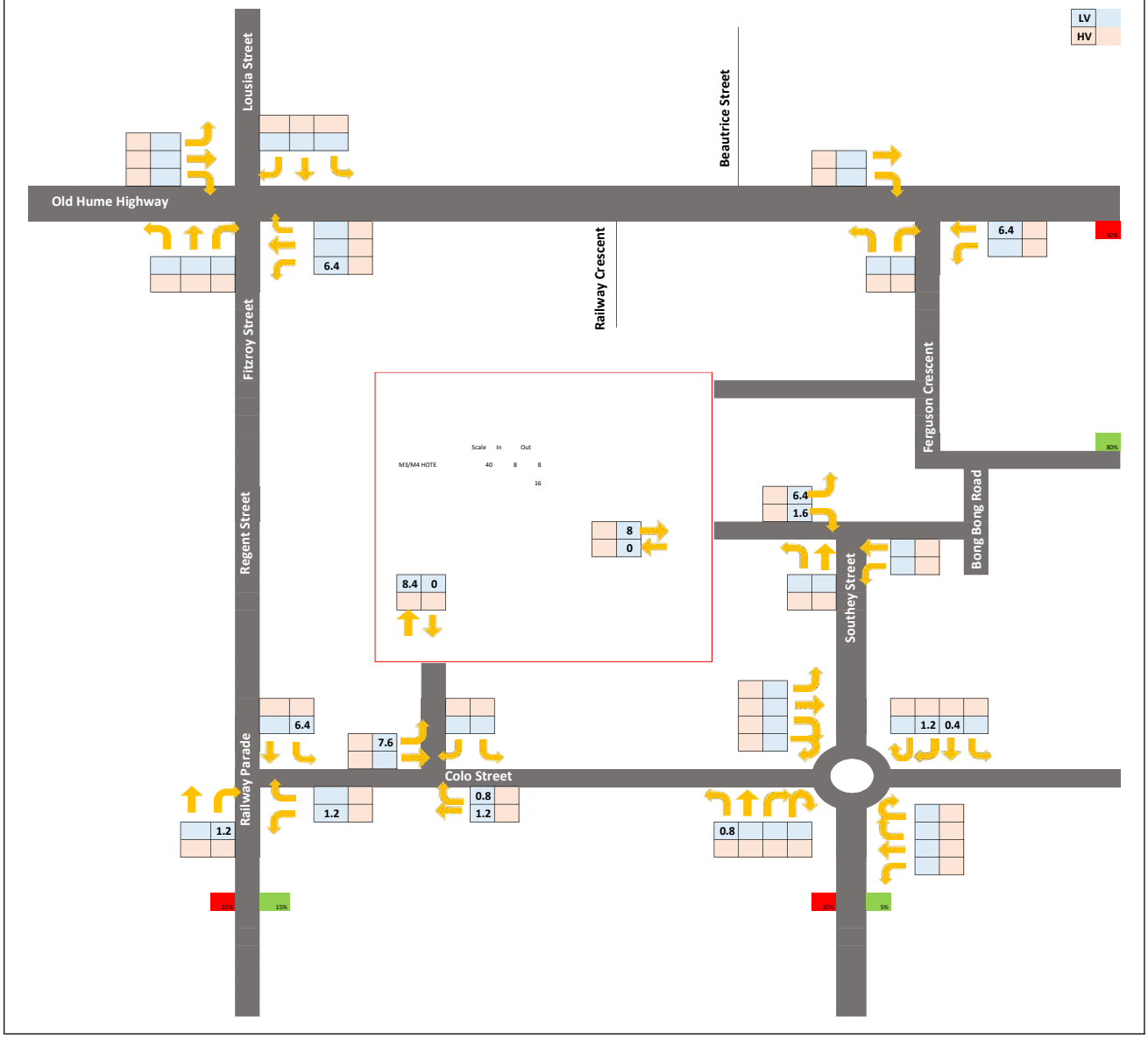

M1 / M2 PM PEAK HOUR - SENSITIVITY 80%
LV
HV
Lousia Street
Beautrice Street
Old Hume Highway
Railway Crescent
Fitzroy Street
Ferguson Crescent
Regent Street
Bong Bong Road
Southey Street
Railway Parade
Colo Street
Scale In Out
M1/M2 Parking 1 177 0
177
177 0
142
142
142
159
18
18
18


M1 / M2 WE PEAK HOUR
LV
HV
Lousia Street
Beautrice Street
Old Hume Highway
Railway Crescent
Fitzroy Street
Ferguson Crescent
Bong Bong Road
Regent Street
Southey Street
Railway Parade
Colo Street
Scale In Out
M1/M2 Parking 1 88.5 88.5
177
44
44.3
66
22
89
50%
25%

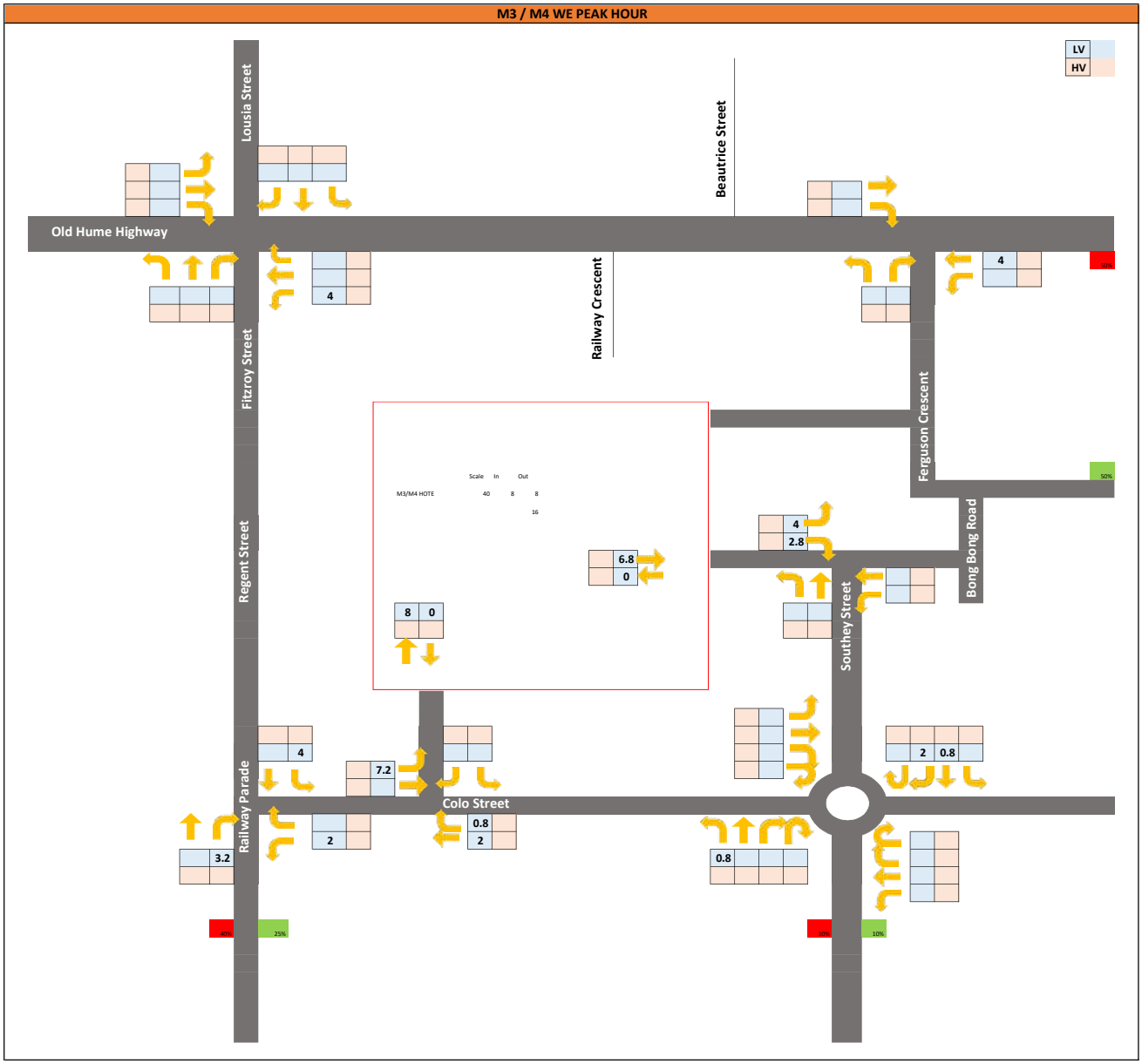

M1 / M2 WE PEAK HOUR - SENSITIVITY 80%
LV
HV
Lousia Street
Beautrice Street
Old Hume Highway
Railway Crescent
Fitzroy Street
Ferguson Crescent
Bong Bong Road
Regent Street
Southey Street
Railway Parade
Colo Street
Scale In Out
M1/M2 Parking 1 88.5 88.5
177
71
70.8
89 89
80
8.9
9
20%
10%
80%

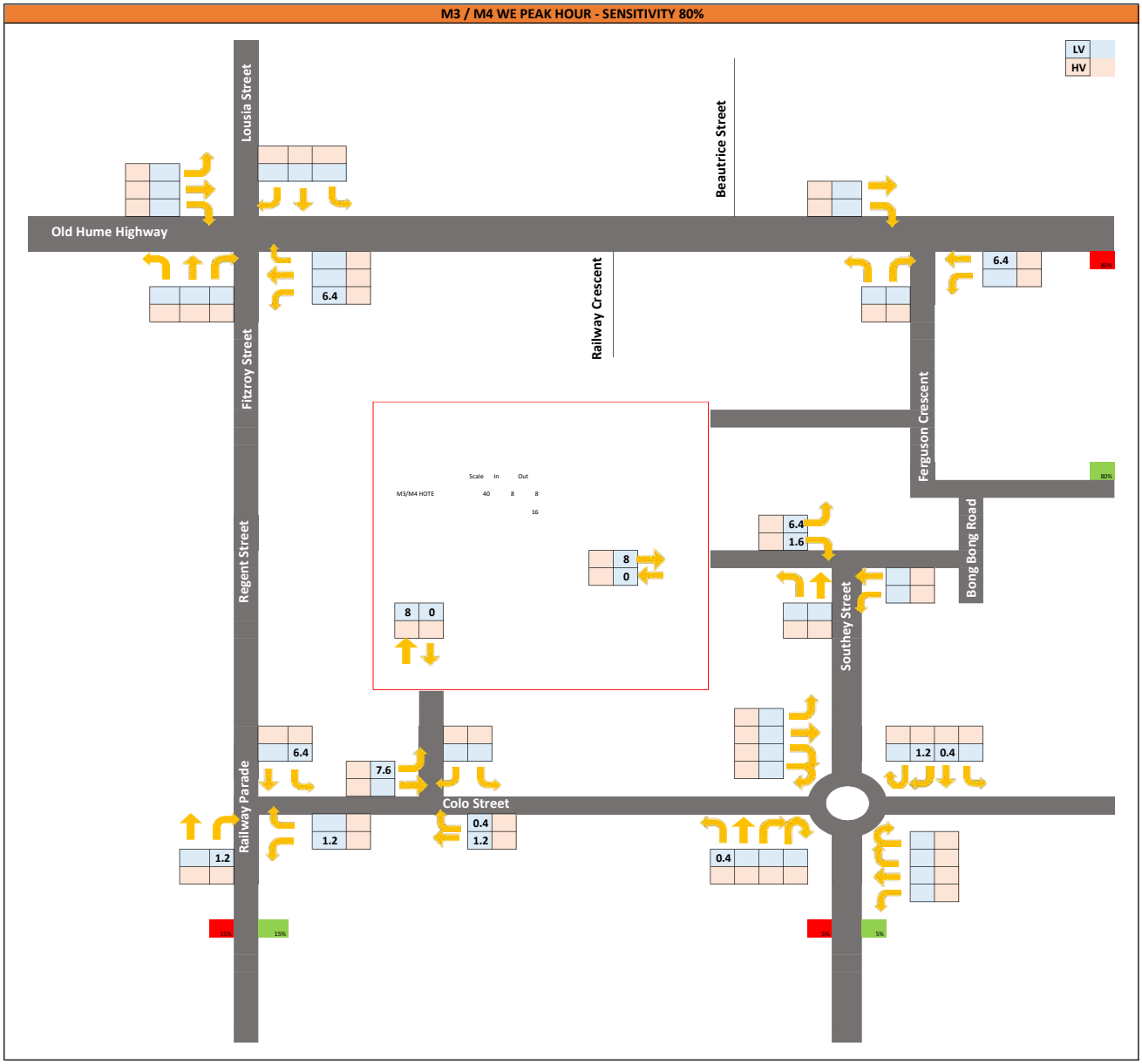

M3 / M4 PM PEAK HOUR
LV
HV
Lousia Street
Beautrice Street
Old Hume Highway
Railway Crescent
Fitzroy Street
Ferguson Crescent
Regent Street
Bong Bong Road
Southey Street
Railway Parade
Colo Street
Scale In Out
M3/M4 HOTE 40 8 8
16
4
4
4
2.8
6.8
0
8
0
7.2
4
2
0.8
2
0.8
2
3.2
0.8
50%
50%
40%
25%
10%
10%

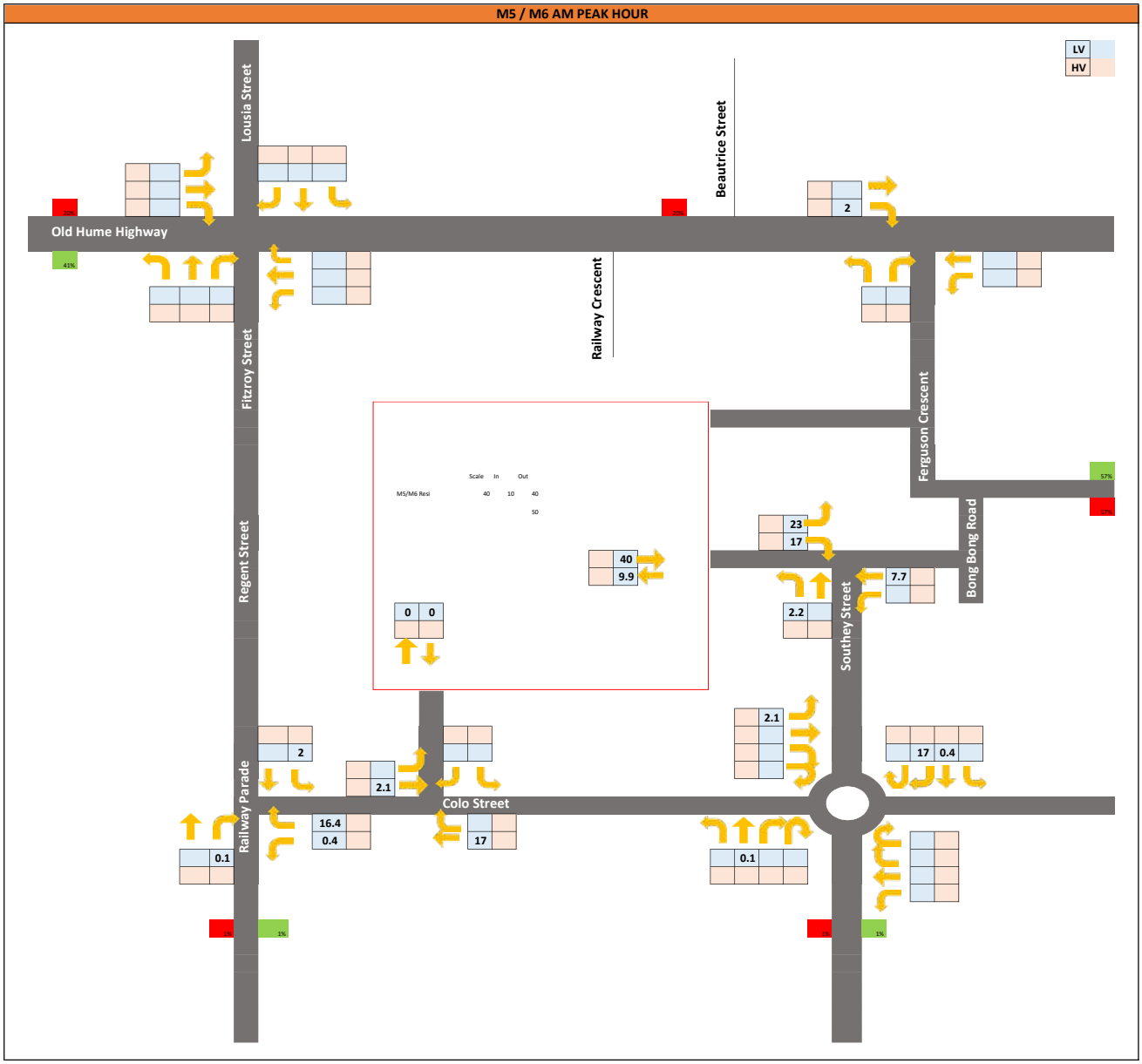
M3 / M4 PM PEAK HOUR - SENSITIVITY 80%

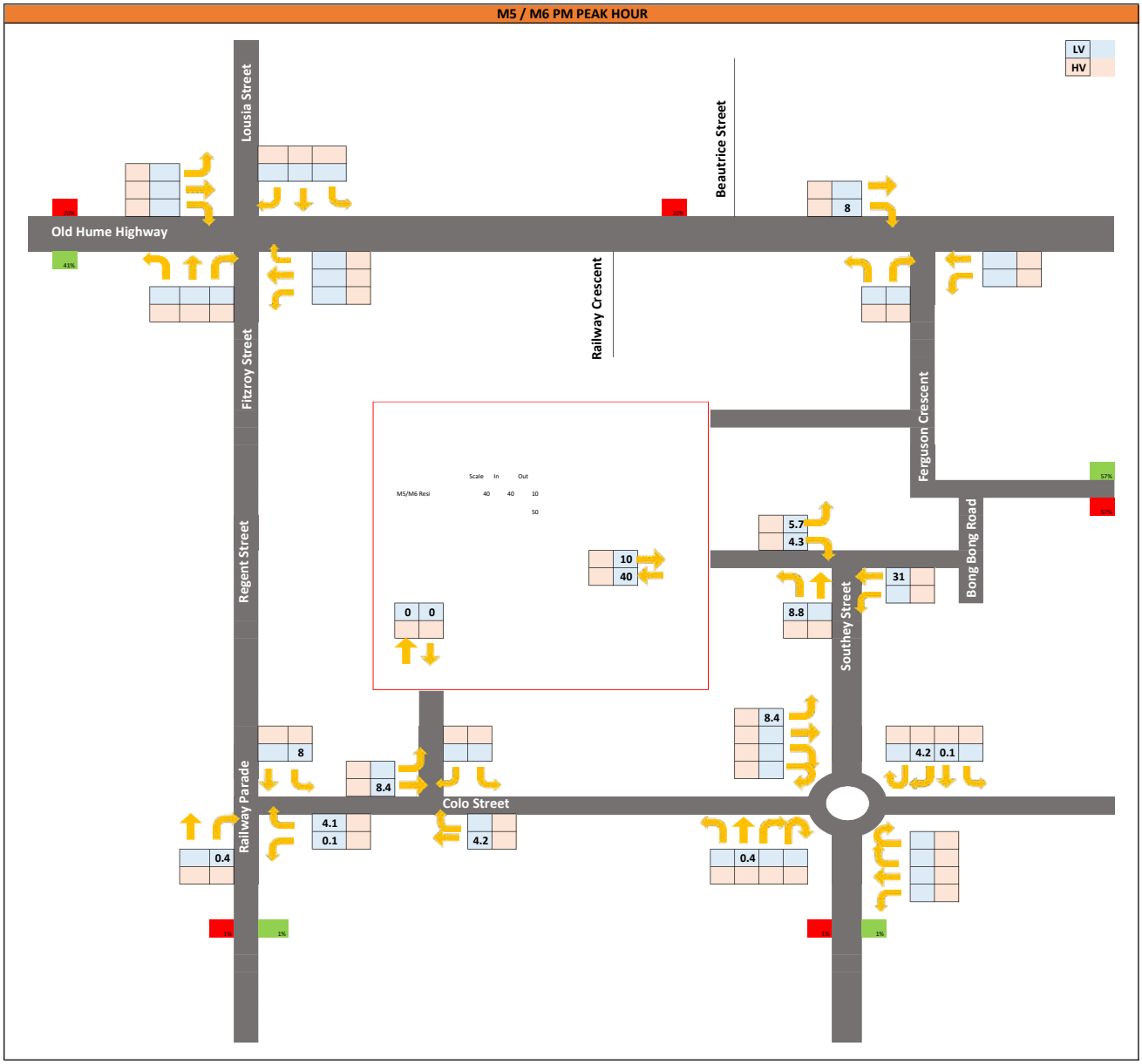


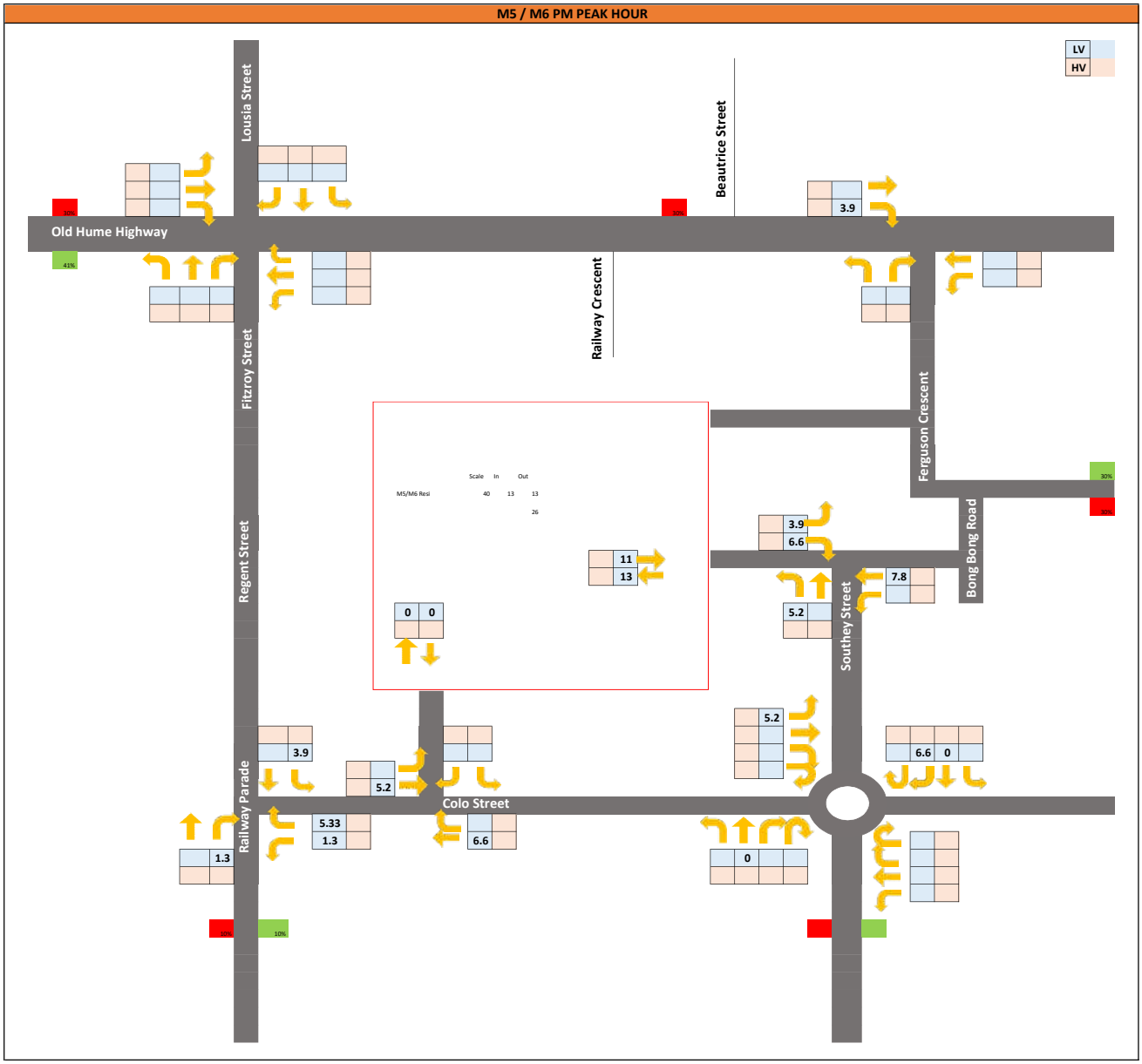
M3 / M4 WE PEAK HOUR

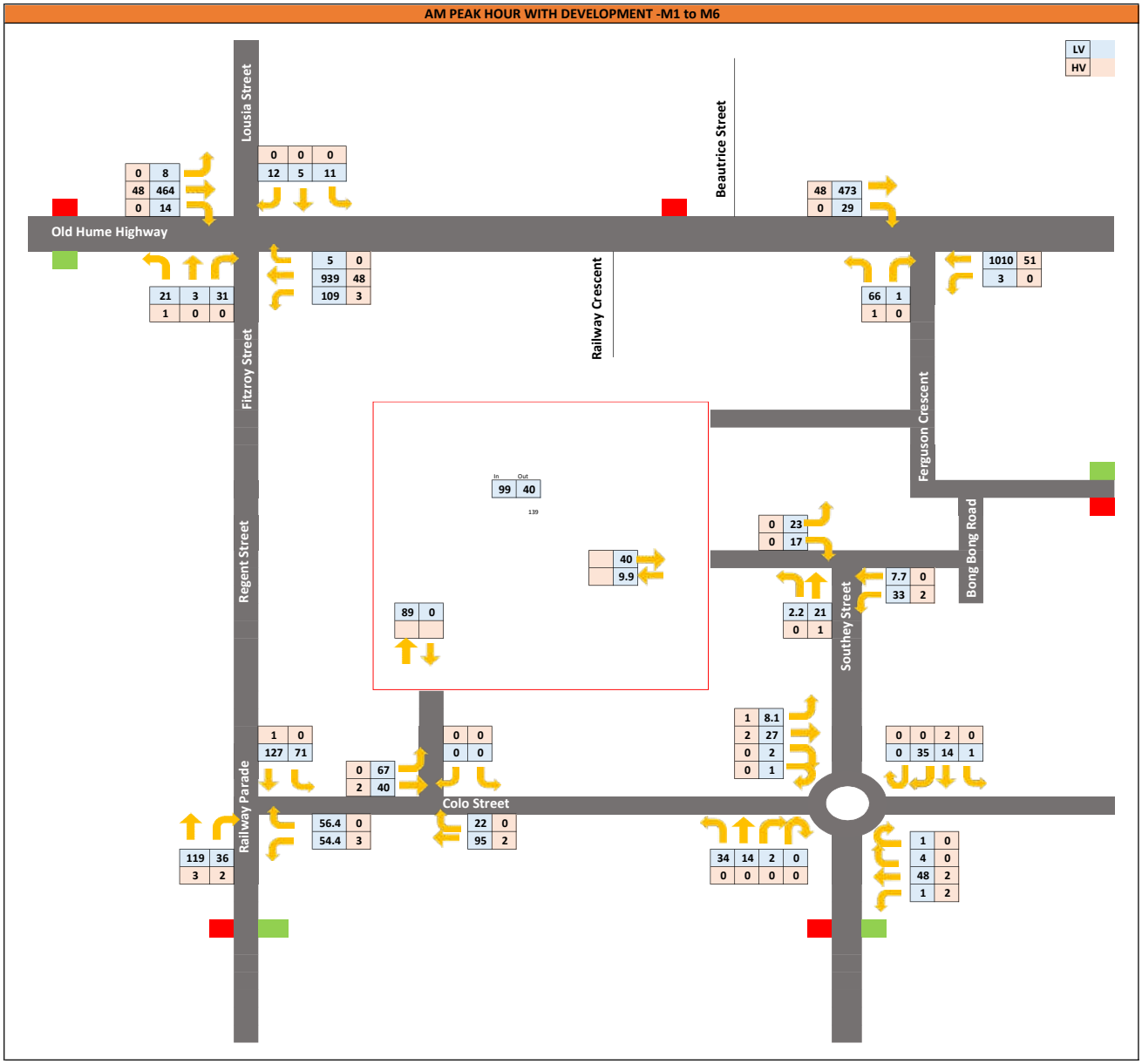


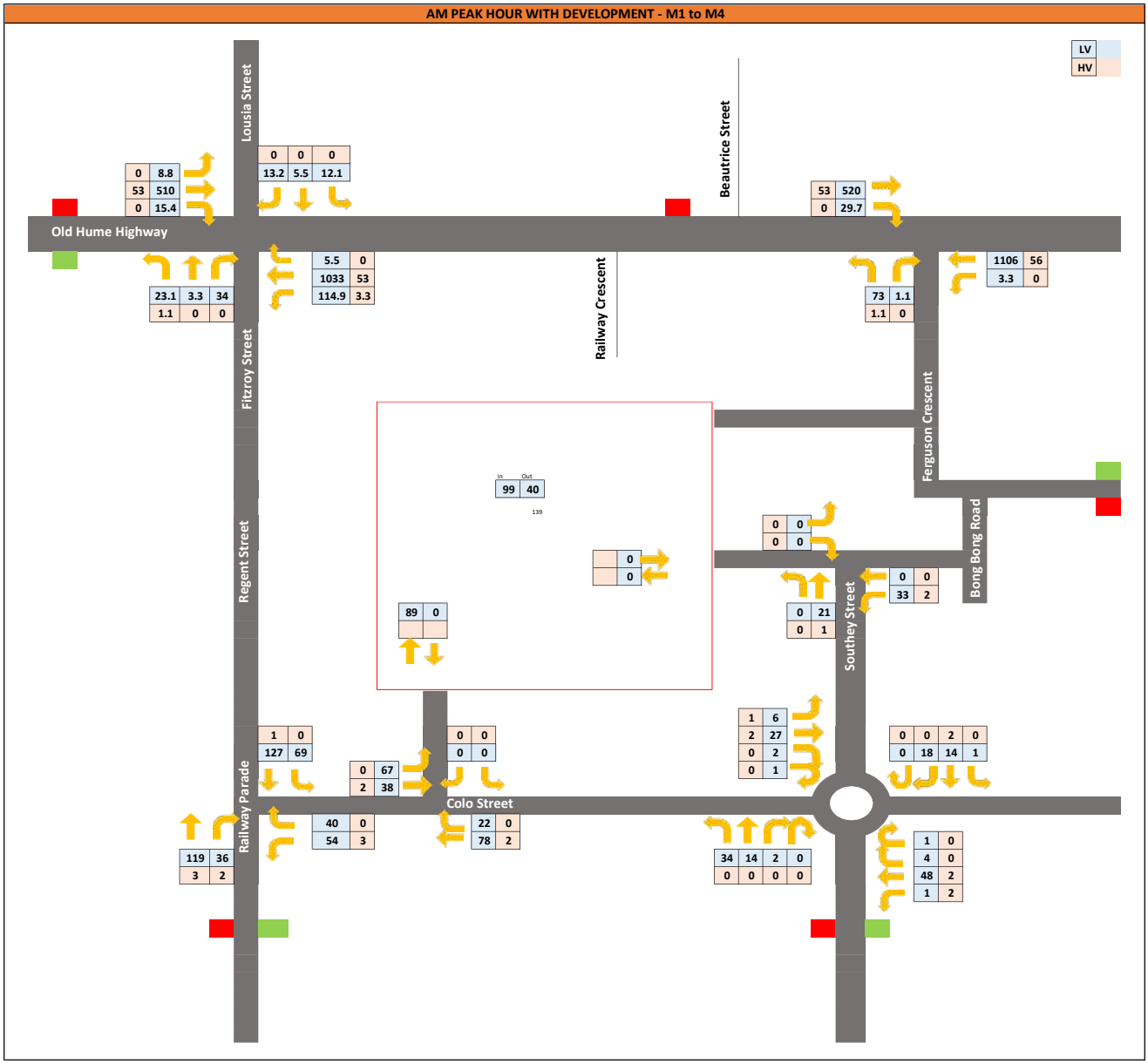

M3 / M4 WE PEAK HOUR - SENSITIVITY 80%
LV
HV
Lousia Street
Beautrice Street
Old Hume Highway
Railway Crescent
Fitzroy Street
Ferguson Crescent
Bong Bong Road
Regent Street
Southey Street
Railway Parade
Colo Street
Scale In Out
M3/M4 HOTE 40 8 8
16
6.4
1.6
8
0
7.6
1.2
0.4
80%
15%
5%

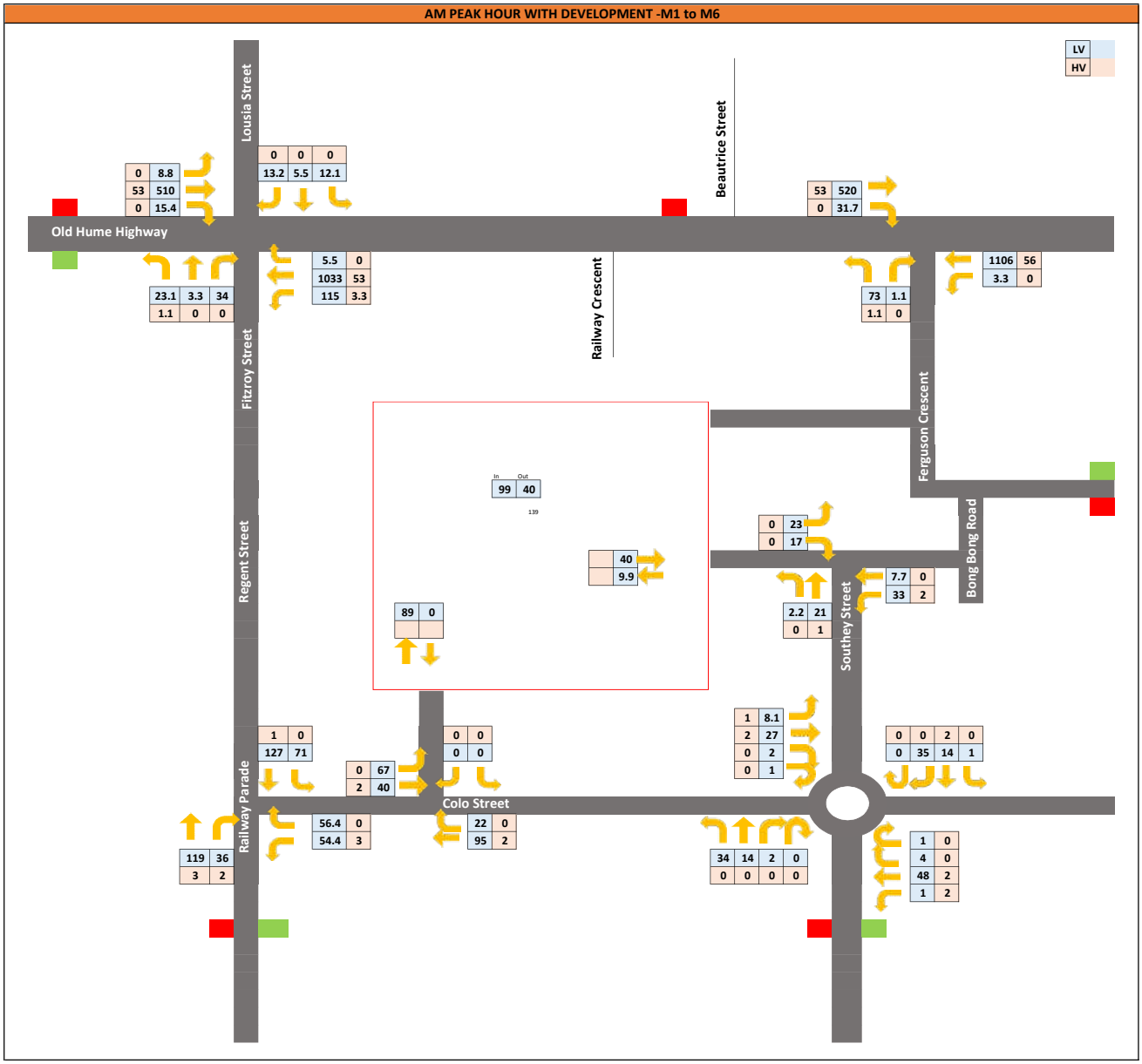

M5 / M6 AM PEAK HOUR
LV
HV
Lousia Street
Beautrice Street
Old Hume Highway
Railway Crescent
Fitzroy Street
Ferguson Crescent
Regent Street
Bong Bong Road
Southey Street
Railway Parade
Colo Street
Scale In Out
M5/M6 Resi 40 10 40
50
20%
41%
57%
1%
2
23
17
40
9.9
0 0
7.7
2.2
2.1
17 0.4
16.4
0.4
17
0.1


M5 / M6 PM PEAK HOUR
LV
HV
Lousia Street
Beautrice Street
Old Hume Highway
Railway Crescent
Fitzroy Street
Ferguson Crescent
Regent Street
Bong Bong Road
Southey Street
Railway Parade
Colo Street
Scale In Out
M5/M6 Resi 40 40 10
50
20%
41%
57%
1%
8
10
40
0 0
5.7
4.3
31
8.8
8.4
4.2 0.1
4.1
0.1
4.2
0.4

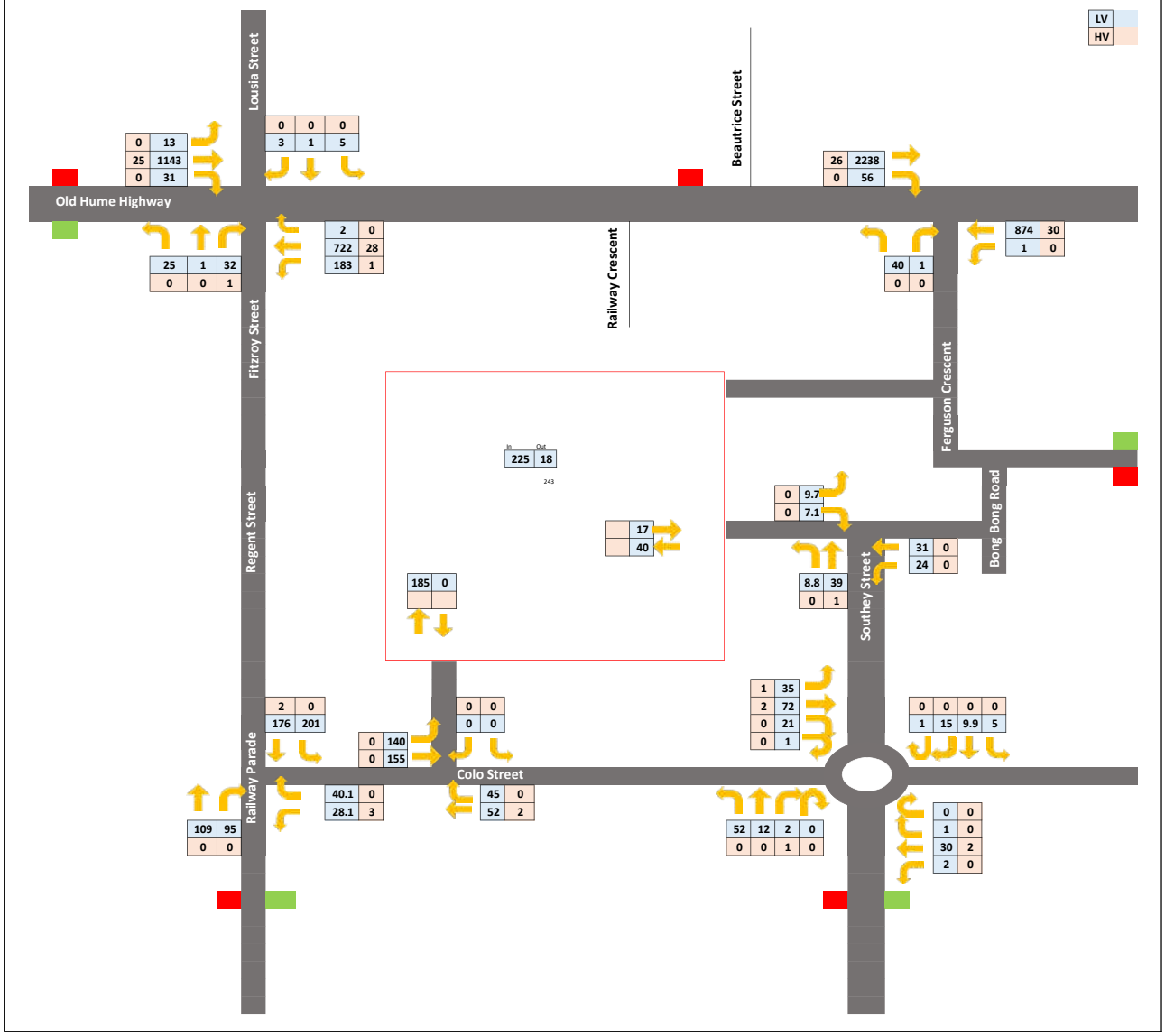

M5 / M6 PM PEAK HOUR
LV
HV
Lousia Street
Beautrice Street
Old Hume Highway
Railway Crescent
Fitzroy Street
Ferguson Crescent
Bong Bong Road
Regent Street
Southey Street
Railway Parade
Colo Street
Scale In Out
M5/M6 Resi 40 13 13
26
3.9
11
13
0 0
3.9
6.6
7.8
5.2
5.2
6.6 0
3.9
5.2
5.33
1.3
1.3
6.6
0
30%
41%
30%
30%
30%
10%
10%


AM PEAK HOUR WITH DEVELOPMENT -M1 to M6
LV
HV
Lousia Street
Beautrice Street
Old Hume Highway
Railway Crescent
Fitzroy Street
Ferguson Crescent
Regent Street
Bong Bong Road
Southey Street
Railway Parade
Colo Street
In
Out
99
40
139

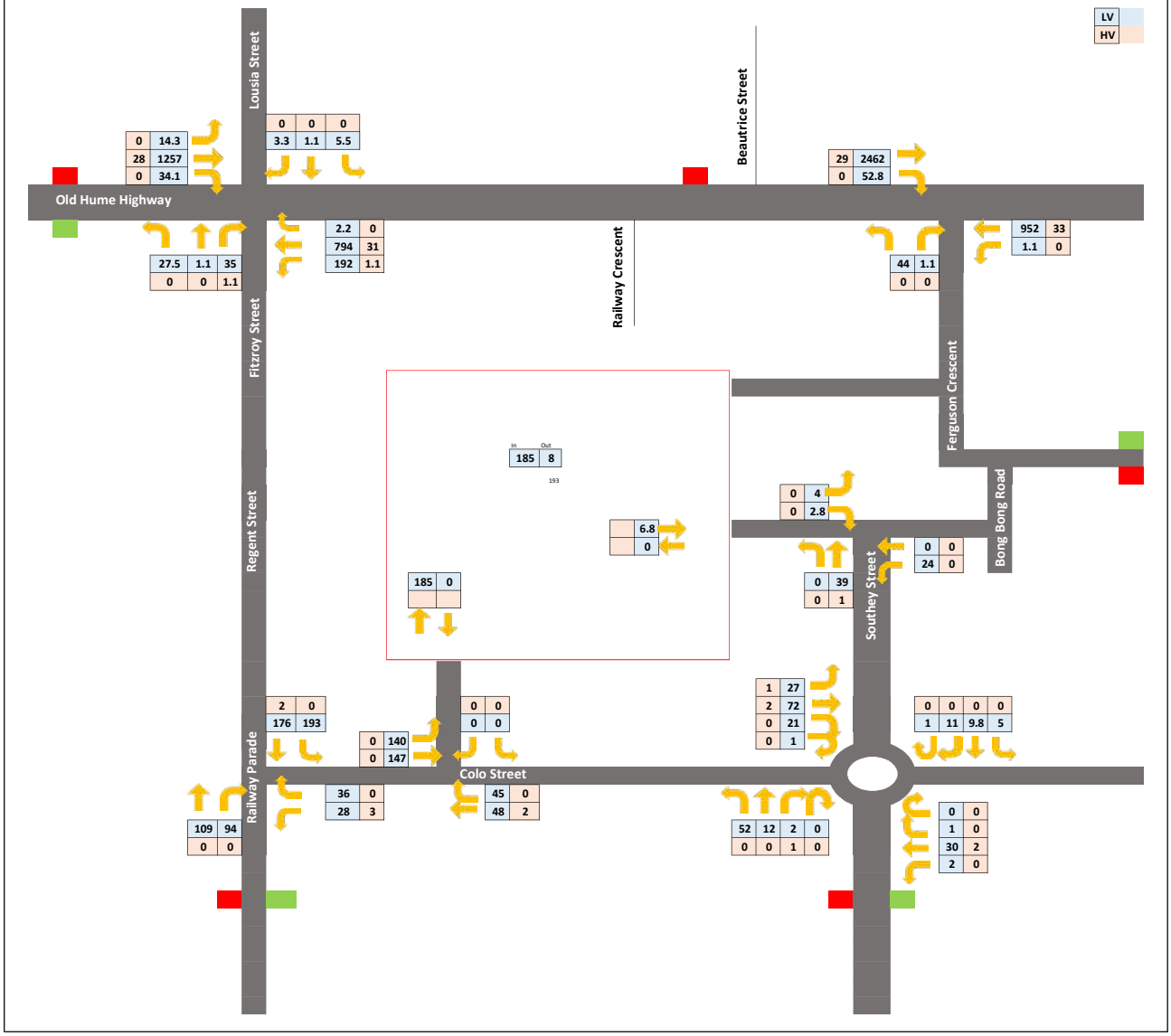

AM PEAK HOUR WITH DEVELOPMENT - M1 to M4
LV
HV
Lousia Street
Beautrice Street
Old Hume Highway
Railway Crescent
Fitzroy Street
Ferguson Crescent
Bong Bong Road
Regent Street
Southey Street
Railway Parade
Colo Street
In
Out
99
40
139
0 8.8
53 510
0 15.4
0 0 0
13.2 5.5 12.1
53 520
0 29.7
23.1 3.3 34
1.1 0 0
5.5 0
1033 53
114.9 3.3
73 1.1
1.1 0
1106 56
3.3 0
0 0
0 0
89 0
0 0
0 0
0 21
0 1
0 0
33 2
1 0
127 69
0 67
2 38
0 0
0 0
1 6
2 27
0 2
0 1
0 0 2 0
0 18 14 1
40 0
54 3
22 0
78 2
119 36
3 2
34 14 2 0
0 0 0 0
1 0
4 0
48 2
1 2


AM PEAK HOUR WITH DEVELOPMENT -M1 to M6
LV
HV
Lousia Street
Beautrice Street
Old Hume Highway
Railway Crescent
Fitzroy Street
Ferguson Crescent
Regent Street
Bong Bong Road
Southey Street
Railway Parade
Colo Street
In
Out
99
40
139
0 8.8
53 510
0 15.4
0 0 0
13.2 5.5 12.1
53 520
0 31.7
23.1 3.3 34
1.1 0 0
5.5 0
1033 53
115 3.3
73 1.1
1.1 0
1106 56
3.3 0
40
9.9
89 0
0 23
0 17
7.7 0
33 2
2.2 21
0 1
1 8.1
2 27
0 2
0 1
0 0 2 0
0 35 14 1
1 0
127 71
0 67
2 40
0 0
0 0
56.4 0
54.4 3
22 0
95 2
119 36
3 2
34 14 2 0
0 0 0 0
1 0
4 0
48 2
1 2

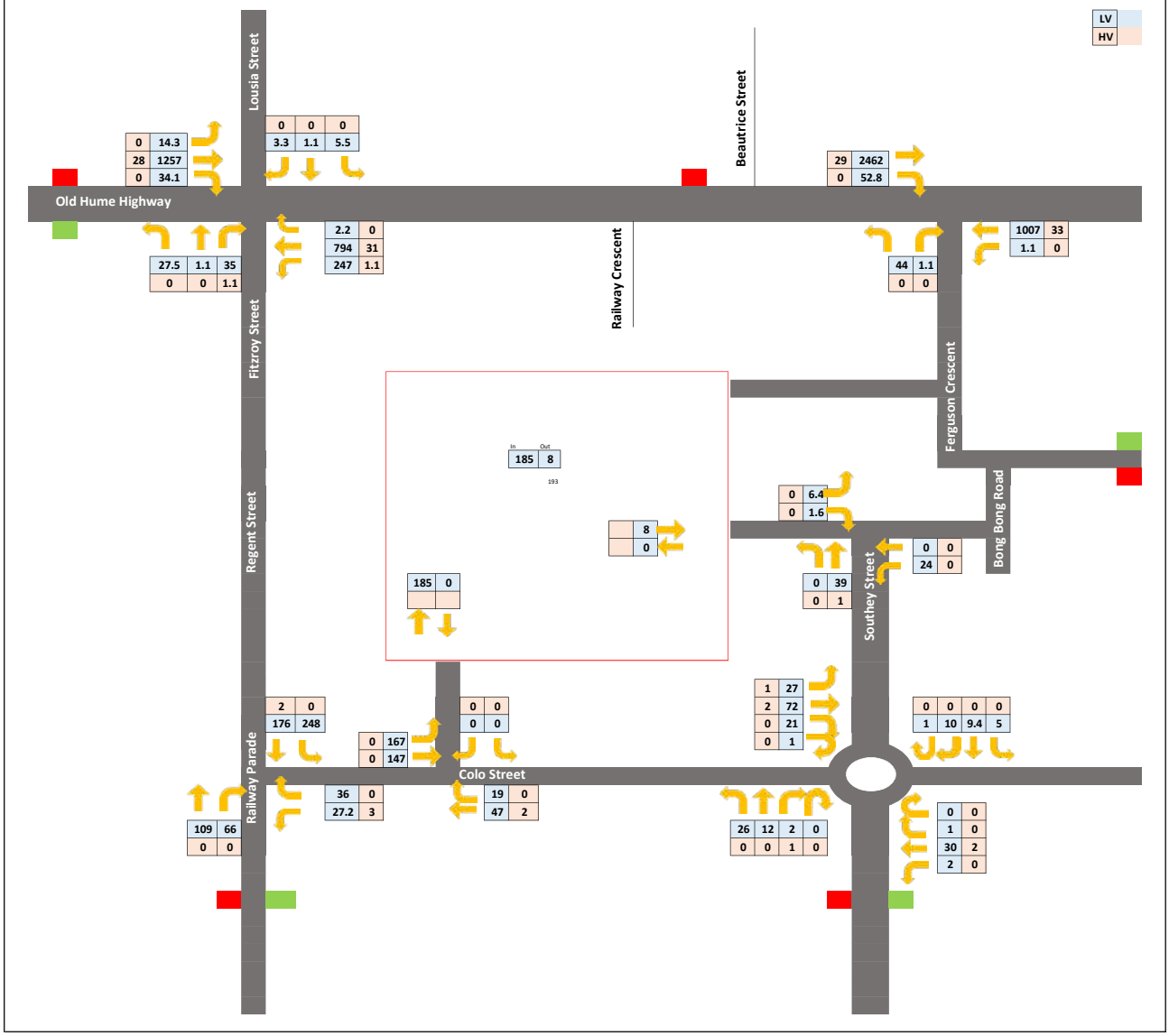
PM PEAK HOUR WITH DEVELOPMENT -M1 to M6



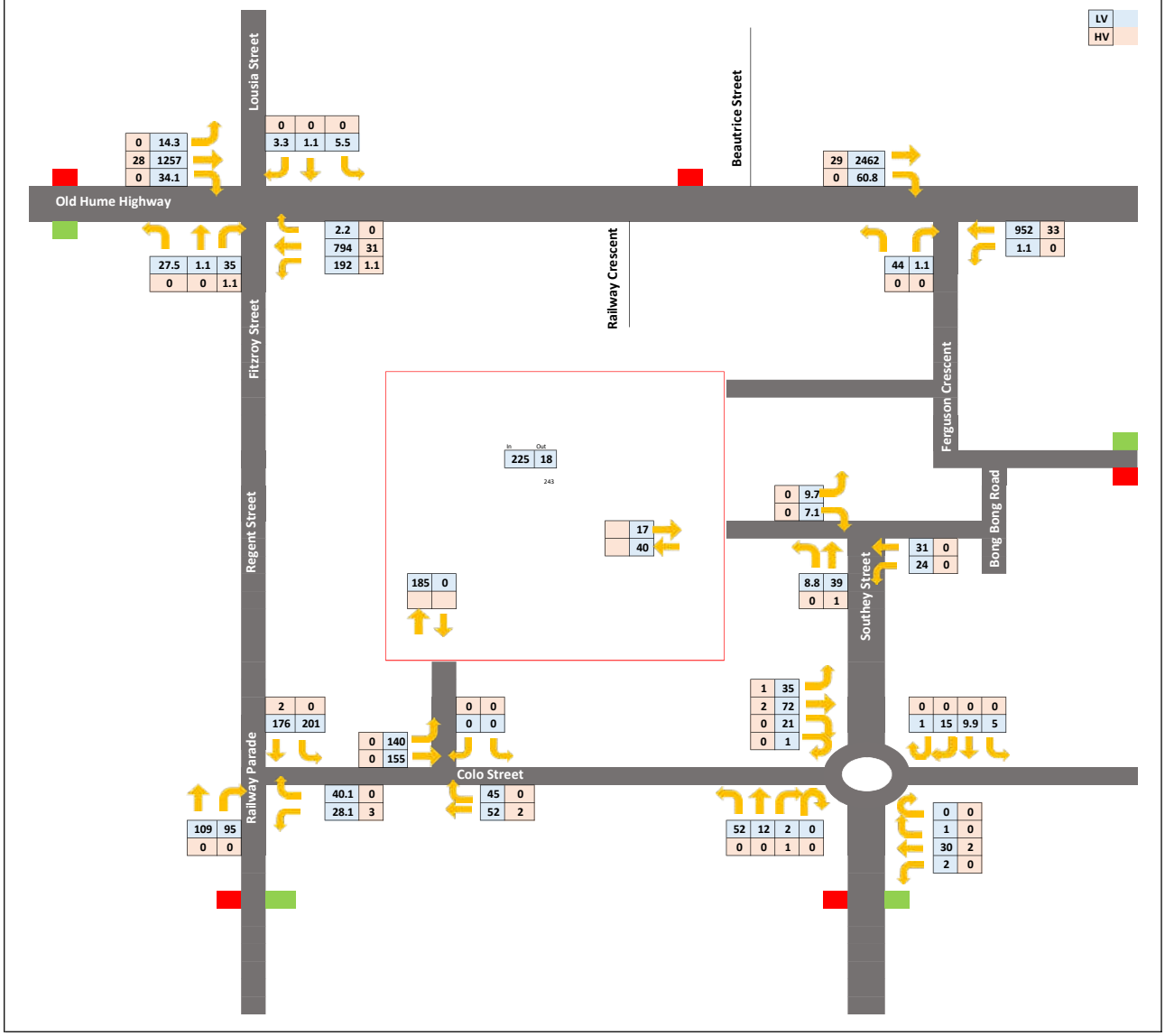
PM PEAK HOUR WITH DEVELOPMENT - M1 to M4



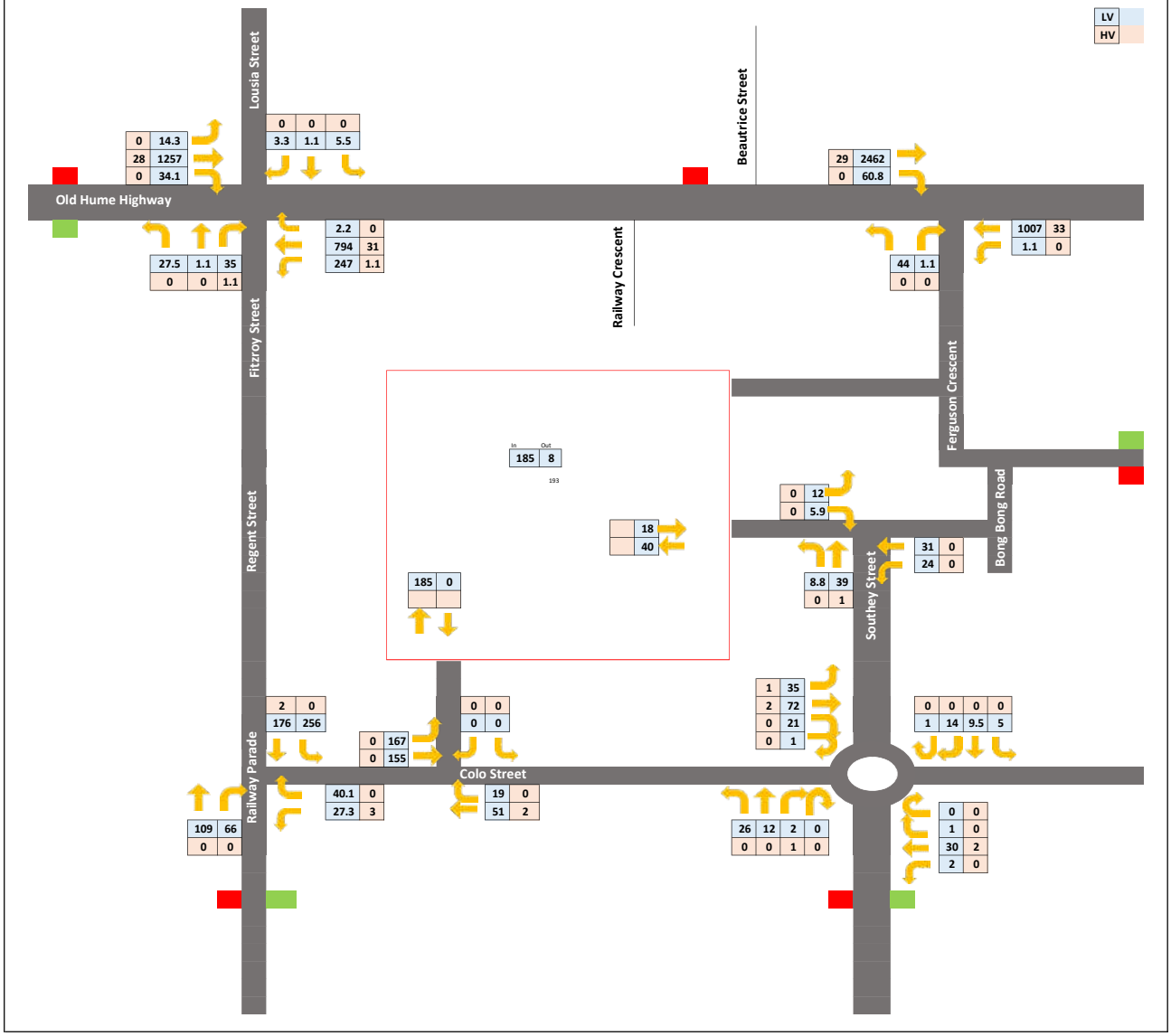
PM PEAK HOUR WITH DEVELOPMENT - M1 to M4 Sensitivity (80%)



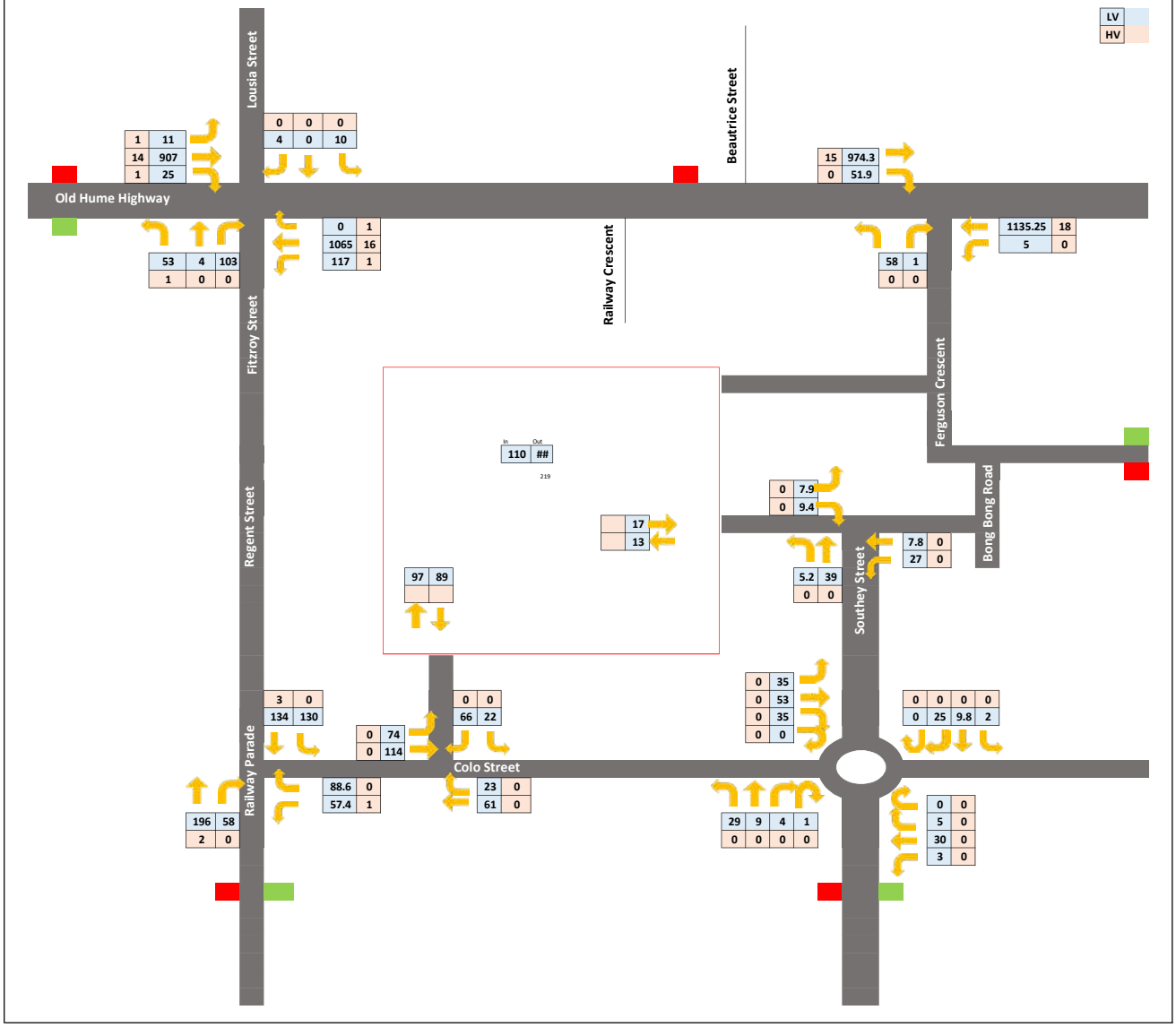
PM PEAK HOUR WITH DEVELOPMENT -M1 to M6



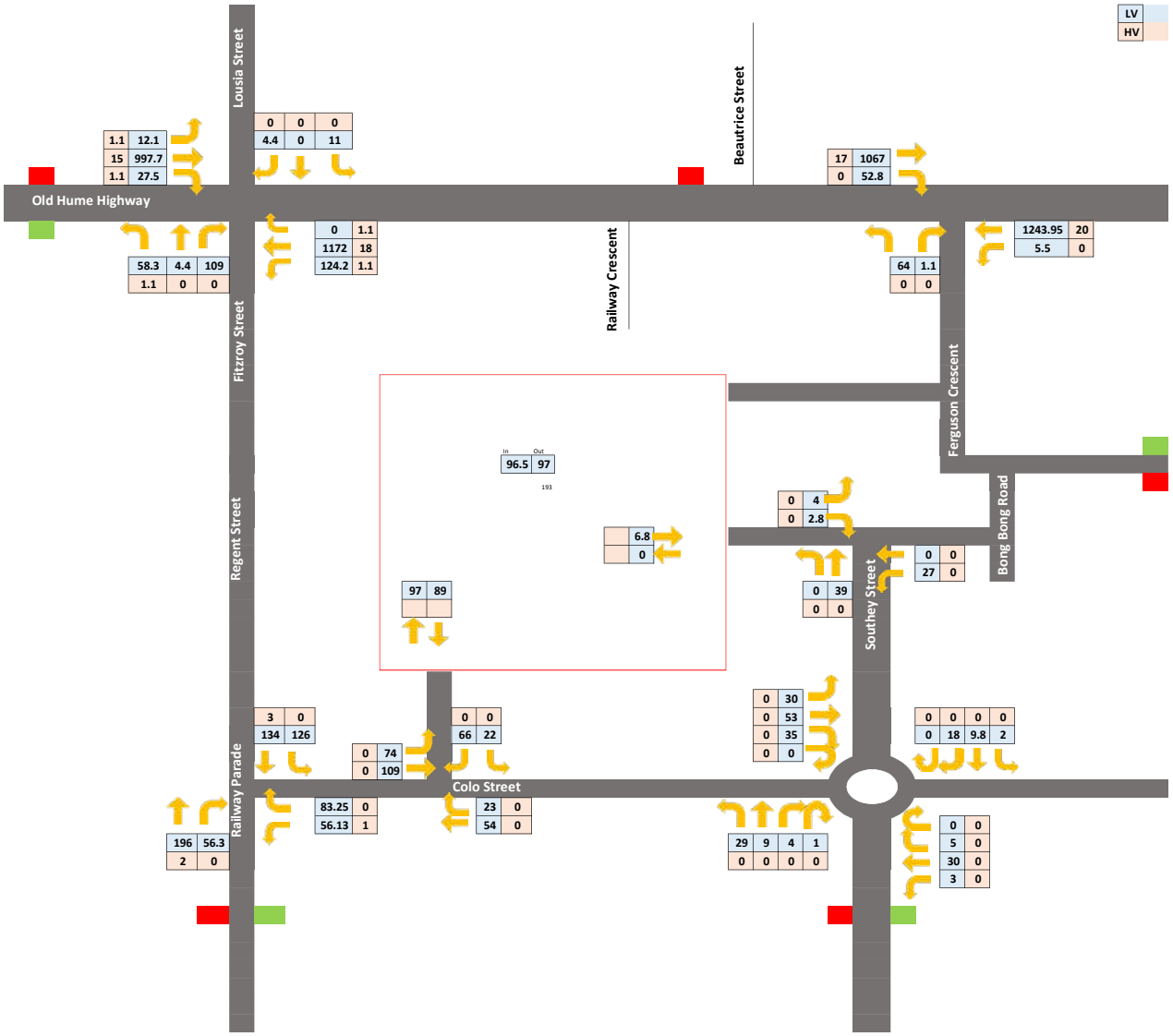
PM PEAK HOUR WITH DEVELOPMENT -M1 to M6 Sensitivity (80%)



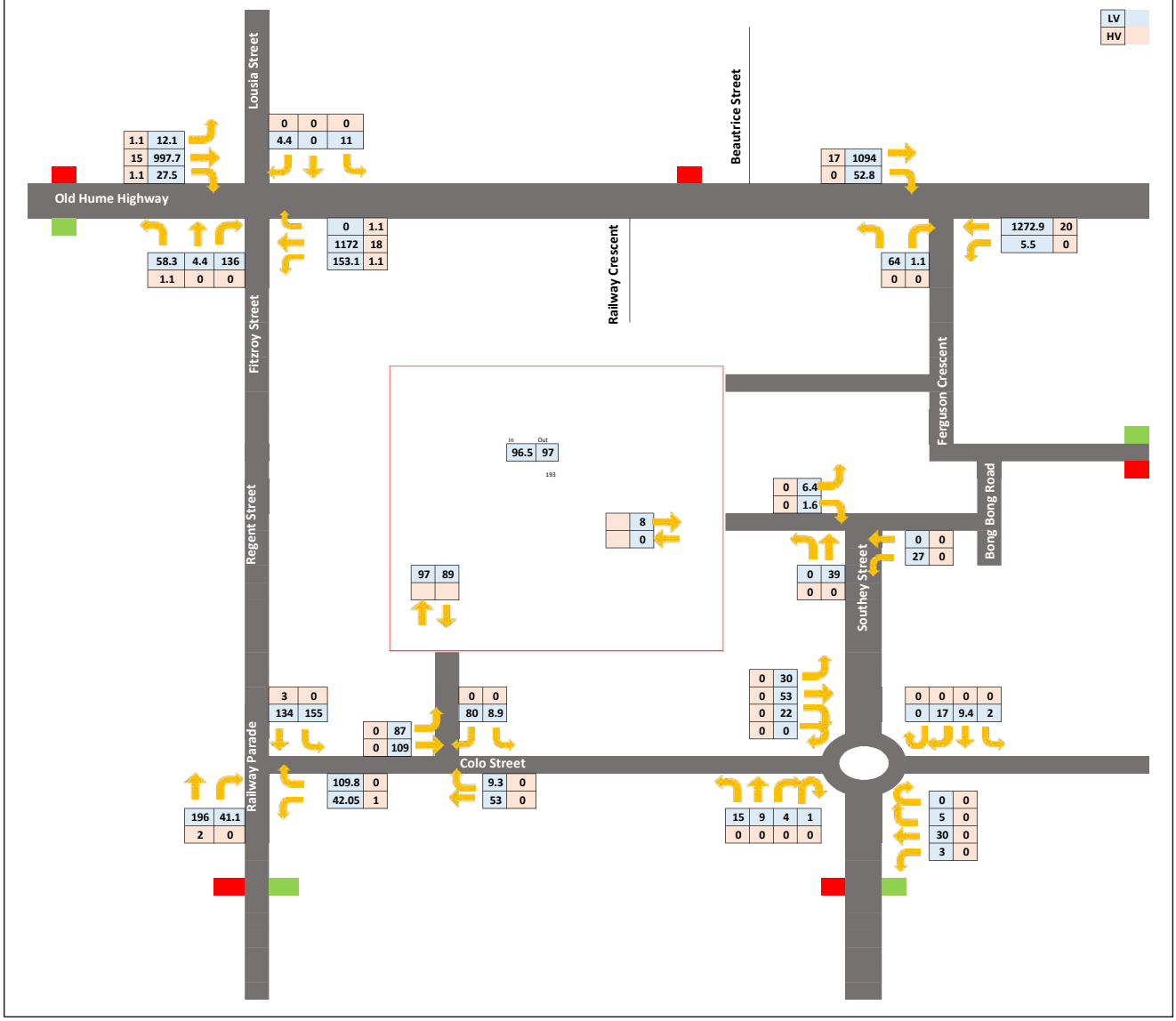
SATURDAY PEAK HOUR WITH DEVELOPMENT -M1 to M6



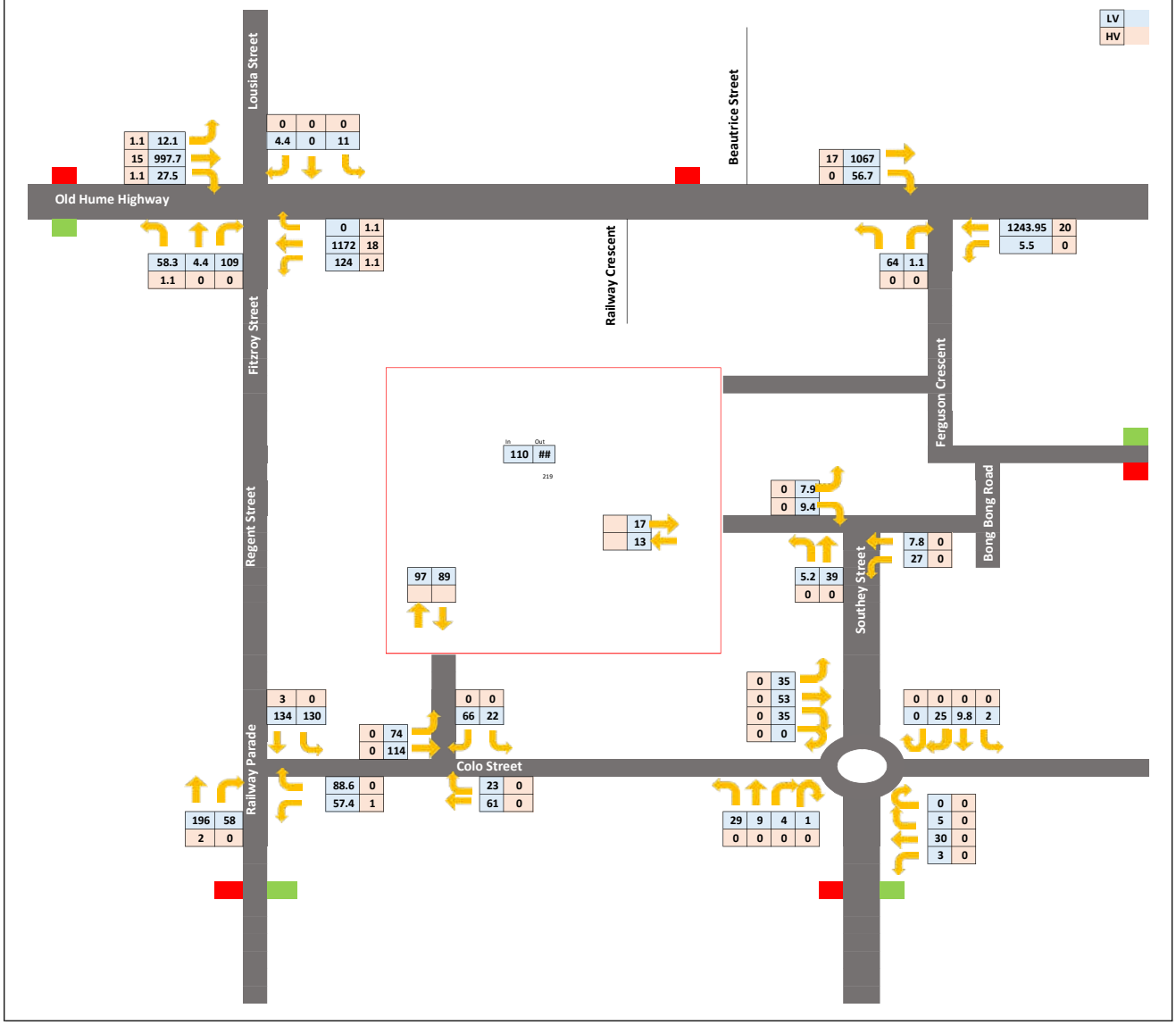
SATURDAY PEAK HOUR WITH DEVELOPMENT - M1 to M4



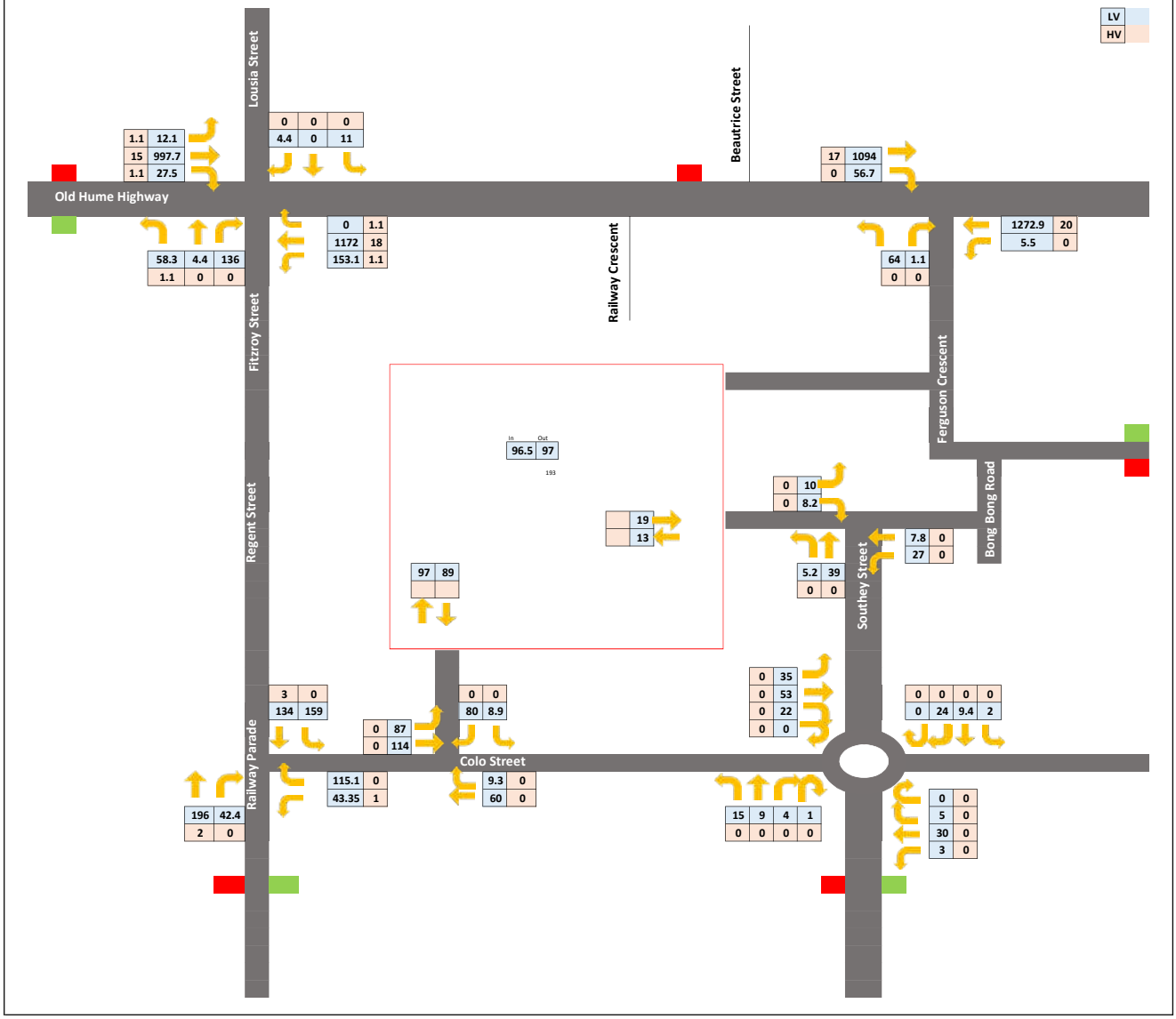
SATURDAY PEAK HOUR WITH DEVELOPMENT- M1 to M4 Sensitivity (80%)



SATURDAY PEAK HOUR WITH DEVELOPMENT -M1 to M6



SATURDAY PEAK HOUR WITH DEVELOPMENT -M1 to M6 Sensitivity (80%)



APPENDIX

C

SIDRA RESULTS

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Table 10-1 Old Hume Highway / Ferguson Crescent

2029 BASE – NO DEVELOPMENT									
	AM Peak			**PM Peak**			**SAT Peak**		
Southern Approach	0.116	119.3	F	1	3778.5	F	0.17	528.8	F
Eastern Approach	0.312	5.6	A	0.247	5.6	A	0.333	5.6	B
Western Approach	0.165	16.3	B	0.684	12.3	A	0.285	19.4	F
Overall	**0.312**	**119.3**	**F**	**1**	**3778.5**	**F**	**0.333**	**528.8**	**F**
2029 BASE – M1 TO M4 DEVELOPMENT									
	AM Peak			**PM Peak**			**SAT Peak**		
Southern Approach	0.12	135.3	F	1	3751.5	F	0.233	779.2	F
Eastern Approach	0.325	5.6	A	0.272	5.6	A	0.346	5.6	A
Western Approach	0.165	17.4	B	0.681	13.7	A	0.296	21.2	B
Overall	**0.325**	**135.3**	**F**	**1**	**3751.5**	**F**	**0.346**	**779.2**	**F**
2029 BASE – M1 TO M6 DEVELOPMENT									
	AM Peak			**PM Peak**			**SAT Peak**		
Southern Approach	0.12	136	F	1	3747	F	0.236	792.4	F
Eastern Approach	0.325	5.6	A	0.272	5.6	A	0.346	5.6	A
Western Approach	0.165	17.5	B	0.682	13.8	A	0.296	21.5	B
Overall	**0.325**	**136**	**F**	**1**	**3747**	**F**	**0.346**	**792.4**	**F**

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Table 10-2 Colo Street / Railway Parade

2029 BASE – NO DEVELOPMENT									
	AM Peak			**PM Peak**			**SAT Peak**		
Southern Approach									
Eastern Approach									
Northern Approach									
Overall									
	2029 BASE – M1 TO M4 DEVELOPMENT								
	AM Peak			**PM Peak**			**SAT Peak**		
Southern Approach	0.092	6.3	A	0.137	7.1	A	0.143	6.6	A
Eastern Approach	0.044	6.7	A	0.047	7.6	A	0.107	7.7	A
Northern Approach	0.109	5.6	A	0.206	5.6	A	0.146	5.6	A
Overall	**0.109**	**6.7**	**A**	**0.206**	**7.6**	**A**	**0.146**	**7.7**	**A**
	2029 BASE – M1 TO M6 DEVELOPMENT								
	AM Peak			**PM Peak**			**SAT Peak**		
Southern Approach	0.092	6.3	A	0.139	7.1	A	0.144	6.6	A
Eastern Approach	0.063	6.8	A	0.053	7.6	A	0.114	7.6	A
Northern Approach	0.11	5.6	A	0.211	5.6	A	0.149	5.6	A
Overall	**0.11**	**6.8**	**A**	**0.211**	**7.6**	**A**	**0.149**	**7.6**	**A**

Table 10-3 Colo Street / Railway Parade with Sensitivity

2029 BASE – M1 TO M6 DEVELOPMENT									
	AM Peak			**PM Peak**			**SAT Peak**		
Southern Approach	n.a	n.a	n.a	0.144	7.5	A	0.135	6.7	A
Eastern Approach	n.a	n.a	n.a	0.055	7.8	A	0.147	7.7	A
Northern Approach	n.a	n.a	n.a	0.242	5.6	A	0.165	5.6	A
Overall	n.a	n.a	n.a	**0.242**	**7.5**	**A**	**0.165**	**7.7**	**A**

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Colo Street / Southey Street

	2029 BASE – NO DEVELOPMENT								
	AM Peak			PM Peak			SAT Peak		
Southern Approach									
Eastern Approach									
Northern Approach									
Western Approach									
Overall									
	2029 BASE – M1 TO M4 DEVELOPMENT								
	AM Peak			PM Peak			SAT Peak		
Southern Approach	0.044	8.1	A	0.058	8.5	A	0.037	9.5	A
Eastern Approach	0.05	9.4	A	0.031	8	A	0.033	8.1	A
Northern Approach	0.031	7.9	A	0.026	9.8	A	0.027	8.2	A
Western Approach	0.033	9.4	A	0.094	9.3	A	0.089	7.8	A
Overall	**0.044**	**9.4**	**A**	**0.094**	**9.8**	**A**	**0.089**	**9.5**	**A**
	2029 BASE – M1 TO M6 DEVELOPMENT								
	AM Peak			PM Peak			SAT Peak		
Southern Approach	0.045	8.2	A	0.058	8.5	A	0.038	9.6	A
Eastern Approach	0.052	9.5	A	0.031	8	A	0.034	8.1	A
Northern Approach	0.045	7.9	A	0.029	9.8	A	0.033	8.2	A
Western Approach	0.035	9.4	A	0.029	9.3	A	0.093	7.8	A
Overall	**0.052**	**9.5**	**A**	**0.058**	**9.8**	**A**	**0.038**	**9.6**	**A**

Link to SIDRA Files (expire 22 March 2021)

https://fileshare.cardno.com/wl/?id=AUYSCy5gURy27qVgbnAam0E7dtcXICLC

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Appendix E TfNSW Response (01 April 2021)

Our ref: STH20/00045/05
Contact: Andrew Lissenden 0418 962 703
Your ref: DA20/1400 (CNR-9936)

1 April 2021

Nancy Sample
Wingecarribee Shire Council
BY EMAIL: mail@wsc.nsw.gov.au

DEVELOPMENT APPLICATION 20/1400 (CNR-9936) – LOT 21 DP 1029384 (NO.2) COLO STREET, MITTAGONG – REDEVELOPMENT OF THE MALTINGS SITE AS A MIXED-USE DEVELOPMENT (STAGED CONCEPT DEVELOPMENT APPLICATION)

Dear Nancy,

Transport for NSW (TfNSW) refers to the notification it received on 9 March 2021 regarding the above development application (DA).

TfNSW has completed an assessment of the additional information provided while focusing on the impact to the state road network. TfNSW notes:

- The key state road is the Old Hume Highway to which the development site has access via the local road network (e.g. Fitzroy Street and Ferguson Crescent);
- The last advice it provided on this DA was its letter dated 22 September 2020 which sought the submission of additional information;
- The DA will generate a significant increase in traffic during peak periods. The impact of this extra traffic on the state road network (e.g. at its intersections with its local road connections) needs to be adequately mitigated by the proposed development; and
- No works are currently proposed as part of the DA at the intersections of its local road connections and the Old Hume Highway.

Having regard for the above, the additional information that has been submitted does not provide sufficient detail to enable TfNSW to assess the development. TfNSW requires the matters outlined in **Attachment 1** to be addressed.

If you have any questions, please contact me on 0418 962 703.

Yours faithfully

Andrew Lissenden
Development Case Officer
Community and Place I South Region

Cc: nancy.sample@wsc.nsw.gov.au;

1. *SIDRA modelling:*

   a) *Calibration information:* TfNSW in its letter dated 22 September 2020 requested details on how the SIDRA base models had been calibrated. While TfNSW notes that the 'Technical Memorandum' from Cardno dated 22 December 2020 states "*The SIDRA models were prepared based on traffic survey counts and video footage*", TfNSW seeks the submission of the base data to see how the base models have been calibrated with on-site observations in the AM and PM peaks in relation to queue lengths, delays, etc. TfNSW has been unable to locate the above in the additional information that has been submitted. As such, TfNSW requires the observation data for queue lengths and delays at the intersections of the Old Hume Highway/Fitzroy Street and Louisa Street as well as the intersection of the Old Hume Highway and Ferguson Crescent that has been used to inform the SIDRA base models in the AM and PM peaks.

   b) *Validation information:* Details are required on how the base models have been validated to check the results are representative of the observed situation. Any changes required in order to validate the models are to be provided.

   c) *Defaults:* TfNSW in its letter dated 22 September 2020 requested details on any defaults that have been altered and associated justification for the changes be provided. No details have been provided in the additional information that has been submitted. As such, TfNSW requests the above details.

Appendix F Previous Traffic Analysis – 3 (08 June 2021)

Technical Memorandum

To	Justin Foong Senior Consultant Elton Consulting	**Author**	Hayden Calvey Cardno (NSW/ACT) Pty Ltd
Date	8 June 2021	**Version**	Final | 01
Project	Maltings, Mittagong	**Discipline**	Traffic and Transport
Subject	Response to TfNSW & Wingecarribee Council RFI		

1 Introduction

Cardno has previously prepared the Traffic Impact Assessment for the redevelopment of the historic Maltings, Mittagong (Lot 21 DP 1029384, number 2 Colo Street Mittagong). In general, the application consists of the refurbishment of the heritage item for gallery space and associated uses in the M1/M2 Building, hotel and associated uses within the M3/M4 building, gallery space in the Malsters Cottage. A concept development is also proposed in the M5/M6 building however the land use (likely residential) is subject to further detailed design.

As part of the Development Application (DA 20/1400), the following traffic and transport submissions have been made:

- Traffic impact assessment prepared by Cardno, 12 May 2020
- Correspondence has been received by Wingecarribee Shire Council (WSC, October 2020) and Transport for NSW (TfNSW, 22 September 2020)
- A response was provided by Cardno with regard to the October and September 2020 comments above (Cardno, 22 December 2020)
- Correspondence received by TfNSW dated 1 April 2021
- Meeting held on 29 April 2021 with WSC and TfNSW

The following submission is made in response to the TfNSW correspondence (1 April 2021) and meeting held with WSC and TfNSW (29 April2021). An overview of the scope is as follows:

- Address base model calibration / validation query raised by TfNSW
- Investigate mitigation measures at the intersection of Fitzroy Street / Old Hume Highway intersection to improve intersection performance and safety
- Identify alternate measures to reduce traffic impact at the intersection of Fitzroy Street / Old Hume Highway intersection

2 Fitzroy St / Old Hume Highway Existing Operation

With regard to the existing operation of Fitzroy St / Old Hume Highway intersection, the queue lengths were reviewed on 27 April 2021 during the AM and PM peak hours. Unfortunately, the video files utilised in 2019 for the survey intersection are unavailable.

The observations made on 27 April 2021 noted the following:

- Generally equal proportion of vehicles turning left and right from Fitzroy Street in both peaks
- Very little traffic entering and exiting Louisa Street in both peaks
- Queues in the morning and afternoon fluctuated however on occasions reached up to 10 vehicles.

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- The left turn onto the highway seemed to incur little delay on most occasions
- Observed vehicles accepting relatively small gaps, resulting on occasions driver honking and heavy breaking
- Observed vehicles turning right onto the highway storing in the middle of the carriageway before entering the northbound travel lanes
- Stop watch recordings of vehicles indicated an average delay of 70-80 seconds during the morning and evening peak hours.

It is evident based on site observations that delays incurred at this intersection result in reduced gap acceptance, predominantly for the right turn movement onto Old Hume Highway. The 2019 SIDRA models prepared (Cardno, May 2020) reflect a queue of some 15-17 vehicles in the peak hour however this is largely due to the existing behavior likely accepting gaps well below SIDRA recommendations or Austroads guidelines and not necessarily something the modelling should adopt to demonstrate future development impact.

The existing intersection of Old Hume Highway / Fitzroy Street / Louisa Street has been shown to operate at LOS F during all peak periods in the 2029 scenario with and without M1 to M4 development traffic.

3 Fitzroy St / Old Hume Highway Mitigation Measures

The intersection of Fitzroy St / Old Hume Highway has already been identified as operating at a poor Level of Service (LoS). The upgrade of this intersection has already been identified by WSC contributions plan, being a realignment of Louisa Street and signalization of all approaches.

Based on discussions held on 29 April 2021, the upgrade of this intersection is not within Council's 10-year works plan, however despite this, Council have advised that the operation and safety concern which currently exists needs to be resolved by the proposed redevelopment of the Maltings site.

A number of mitigation measures exist however have financial and operational implications, as discussed:

- Prohibiting right turns from Fitzroy Street onto Old Hume Highway
- Upgrade to Signalized Intersection
- Realign Louisa Street utilizing SP2 Zones land
- Seagull upgrade of the intersection

Of the above options, the signalized arrangement has already been shown to significantly improve operation, however the onerous requirement for the application to fund and deliver the signalized upgrade is considered prohibitive for the application.

The poor performance of Fitzroy Street is largely a result of vehicles turning right onto the Old Hume Highway. Performance along the Old Hume Highway is currently unimpeded and incur little to no delay. Access from Louisa Street is typically delayed by the heavy flows on Old Hume Highway, however based on the relatively low volume of traffic on this approach it is of a minor concern.

The seagull intersection is considered to have merit within the 50km/h speed zone and will provide improve access for Fitzroy St traffic, particularly for the right turn vehicles. For this reason, the seagull intersection has been reviewed in more detail as outlined below.

3.1 Seagull Intersection at Old Hume Highway / Fitzroy Street

The existing intersection of Old Hume Highway / Fitzroy Street / Louisa Street has been shown to operate at LOS F during all peak periods in the 2029 scenario with and without M1 to M4 development traffic. The minor road, Fitzroy Street was identified as the worst performing legs of the intersection. In order to alleviate these delays and safety concerns, a seagull intersection has been considered as an alternate solution.

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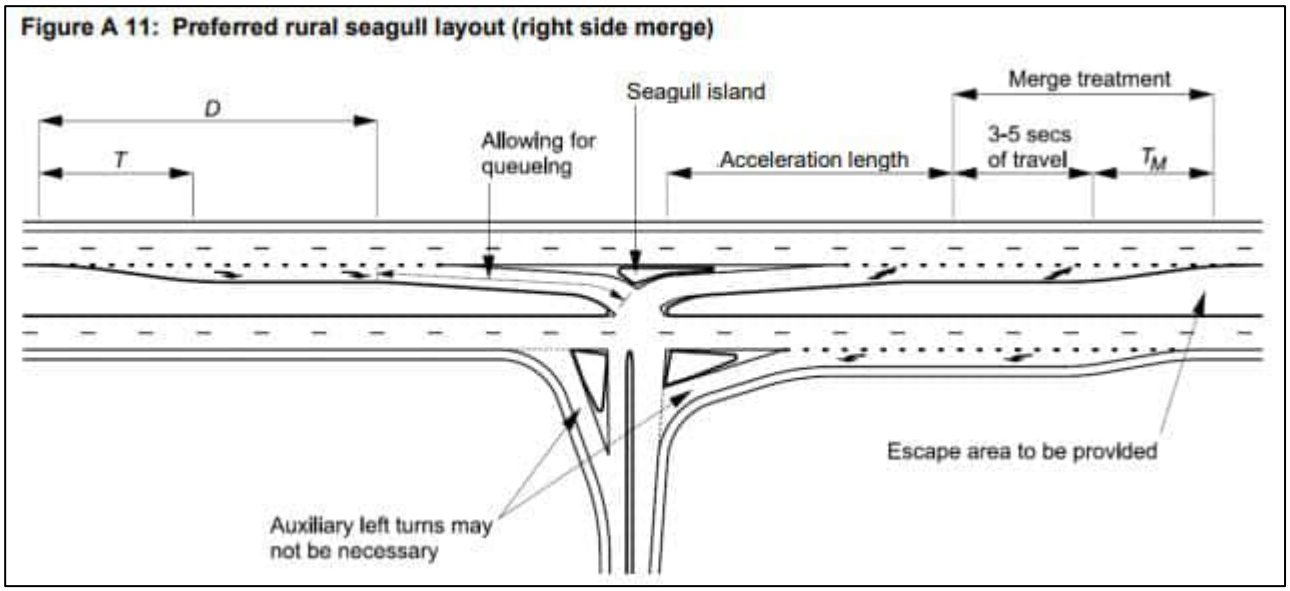
As per Austroads Guide to Road Design Part 4, “a ‘seagull’ is a particular form of channelised layout that is only suitable for T-intersections”. As such, the intersection of Old Hume Highway and Louisa Street has been modelled as a left in-left out scenario, with the right turns into and out of Louisa Street removed.

Figure 3-1 Typical Seagull Intersection Layout



Source: Guide to Road Design Part 4: Intersections and Crossings – General

The SIDRA model was prepared to investigate the performance of the Old Hume Highway / Fitzroy Street intersection under seagull operation during the AM, PM and Weekend peak periods. The geometrical layout of the proposed seagull intersection as modelled in SIDRA is shown below in **Figure 3-2.** The seagull intersection was modelled as a network with three individual sites.

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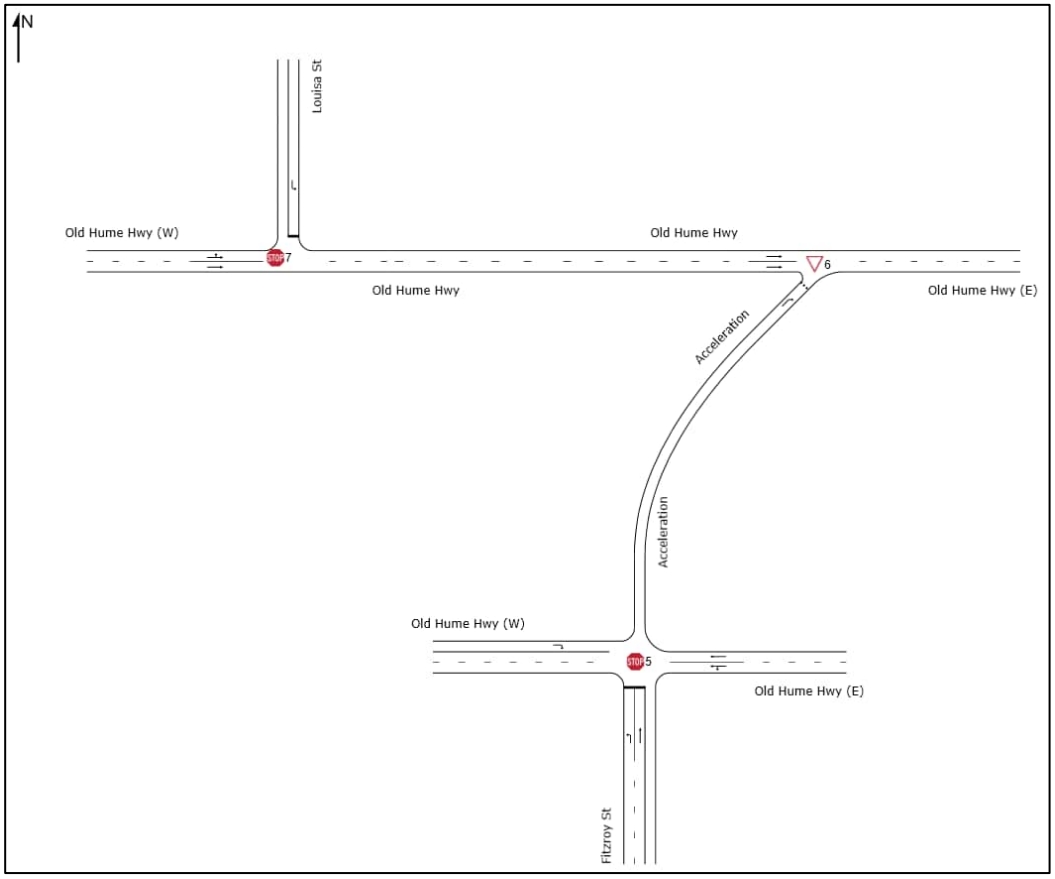
Figure 3-2 SIDRA Layout of Proposed Seagull Intersection at Old Hume Highway / Fitzroy Street



The modelled scenarios are as follows:

- 2019 Base Volumes
- 2029 Future Base Volumes (No Development)
- 2029 Future Base Volumes with M1 to M4 Development

The assessment is based on peak scenario and on worst case assumptions which includes a 400 person event with the M1/M2 building. This type of event is considered to be atypical such that it is more probable o operate at much lower and infrequent levels. The traffic generation associated with the M3/M4 Hotel use is relatively low in comparison.

The intersection results are summarised below in **Table 3-1** with detailed outputs provided in **Appendix A**.

Table 3-1 Intersection Performance of Proposed Seagull Intersection at Old Hume Highway / Fitzroy Street

	2019 BASE								
	AM Peak			PM Peak			SAT Peak		
	DOS (v/c)	Avg. Delay (s)	LOS	DOS (v/c)	Avg. Delay (s)	LOS	DOS (v/c)	Avg. Delay (s)	LOS
Fitzroy St (S)	0.143	23.1	B	0.104	17.5	B	0.325	30.3	C
Fitzroy St (Merge)	0.026	1.1	A	0.052	3.9	A	0.070	2.5	A
Old Hume Hwy (E)	0.294	5.6	A	0.233	5.6	A	0.315	5.6	A

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Louisa St (N)	0.010	9.1	A	0.007	11.1	A	0.012	10.2	A
Old Hume Hwy (W)	0.041	14.6	B	0.064	11.3	A	0.093	17.2	B
Overall	**0.143**	**23.1**	**B**	**0.104**	**17.5**	**B**	**0.325**	**30.3**	**C**
	2029 BASE – NO DEVELOPMENT								
	AM Peak			**PM Peak**			**SAT Peak**		
	DOS (v/c)	**Avg. Delay (s)**	**LOS**	**DOS (v/c)**	**Avg. Delay (s)**	**LOS**	**DOS (v/c)**	**Avg. Delay (s)**	**LOS**
Fitzroy St (S)	0.196	28.3	B	0.132	19.7	B	0.461	41.5	C
Fitzroy St (Merge)	0.030	1.3	A	0.065	4.8	A	0.085	3.0	A
Old Hume Hwy (E)	0.324	5.6	A	0.257	5.6	A	0.347	5.6	A
Louisa St (N)	0.013	9.2	A	0.009	11.6	A	0.014	10.5	A
Old Hume Hwy (W)	0.057	17.0	B	0.082	12.6	A	0.140	21.4	B
Overall	**0.196**	**28.3**	**B**	**0.132**	**19.7**	**B**	**0.461**	**41.5**	**C**
	2029 BASE – WITH M1 TO M4 DEVELOPMENT								
	AM Peak			**PM Peak**			**SAT Peak**		
	DOS (v/c)	**Avg. Delay (s)**	**LOS**	**DOS (v/c)**	**Avg. Delay (s)**	**LOS**	**DOS (v/c)**	**Avg. Delay (s)**	**LOS**
Fitzroy St (S)	0.207	29.8	C	0.145	21.2	B	0.824	73.2	F
Fitzroy St (Merge)	0.030	1.3	A	0.065	4.8	A	0.142	3.1	A
Old Hume Hwy (E)	0.337	5.6	A	0.283	5.6	A	0.360	5.6	A
Louisa St (N)	0.013	9.2	A	0.009	11.6	A	0.014	10.5	A
Old Hume Hwy (W)	0.062	18.2	B	0.095	14.1	A	0.155	23.2	B
Overall	**0.207**	**29.8**	**C**	**0.145**	**21.2**	**B**	**0.824**	**73.2**	**F**

The analysis of the SIDRA modelling demonstrates the following:

- Under existing 2019 volumes, a hypothetical seagull intersection would operate at LOS B during the PM peak and LOS B during the AM and weekend peak. These level of service indicators are governed by the worst performing movement which is Fitzroy Street. The Saturday peak is shown to operate at LOS C which remains satisfactory
- With 1% growth rate applied over 10 years, there is no change to the LOS across the three peak hours
- When the additional trips generated by the M1 to M4 development are added to the 2029 base case, level of service drops from LOS B to LOS C in the AM peak, LOS B maintained in the PM peak and the weekend peak drops from LOS C to F.

For the most part, the LOS C or better performance achieved shows the seagull intersection has sufficient capacity for the additional development traffic. With regard to the weekend peak hour, a test has been undertaken based on M1/M2 patronage of 200 persons. The results for the 2029 future year are demonstrated below.

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Table 3-2 Fitzroy Street Seagull – 200 person sensitivity

	2029 BASE – WITH M1 TO M4 DEVELOPMENT SAT Peak		
	DOS (v/c)	Avg. Delay (s)	LOS
Fitzroy St (S)	0.639	51.5	D
Fitzroy St (Merge)	0.142	3.1	A
Old Hume Hwy (E)	0.354	5.6	A
Louisa St (N)	0.014	10.5	A
Old Hume Hwy (W)	0.148	22.4	B
Overall	**0.639**	**51.5**	**D**

The reduced operation for M1/M2 development to cater for 200 persons during the Saturday peak hour results in LOS D for the intersection. This performance is considered satisfactory for the weekend based on the TfNSW Guide.

4 Alternate Measures

As an alternate to providing improved capacity at the Fitzroy Street / Old Hume Highway intersection, alternate exit routes from the site have been investigated. The peak increase in traffic on the right turn movement associated with the proposed development would be at times where an event within the M1/M2 building has finished at patrons exit. It is relevant to note that the finishing times of an event within M1/,2 is highly unlikely to occur during the AM peak, whilst the PM peak is more likely to be in the opposite direction. However, for the purpose of assessing the outbound traffic load in other locations, it is assumed that the AM, PM and Saturday peak direction for the M1/M2 building is outbound only.

In order for outbound traffic to avoid the Fitzroy St / Old Hume Highway intersection to travel north towards Sydney, the following measures are required:

- Utilise proposed internal access roads to facilitate access to Southey Street (noting crossing of the Nattai River and access to Southey Street is already proposed within the DA);
- During peak hours, Colo Street is restricted to entry only and all vehicles are to exit onto Southey Street;
- Southey Street driveway is designed for left out only, requiring all vehicles to travel northbound on Southey Street;
- Vehicles seeking to travel south on the Old Hume Highway can do so by turning left at the Ferguson Crescent / Old Hume Highway intersection;
- Ferguson Crescent / Old Hume Highway intersection is modified to prohibit right turn movements onto the highway through signage and physical restriction; and
- All vehicles travelling north on the Old Hume Highway would access the highway via the Renwick Drive signalised intersection, guided by signage and other measures as required by WSC / TfNSW to provide a degree of comfort / surety of this strategy.

4.1 On-site Traffic Management

To enable outbound only access to Southey Street for M1/M2 traffic (during the end of an event), access across the Nattai River needs to be provided in conjunction with M1/M2 refurbishment. It is relevant to note that the current DA includes a vehicular bridge over this waterway.

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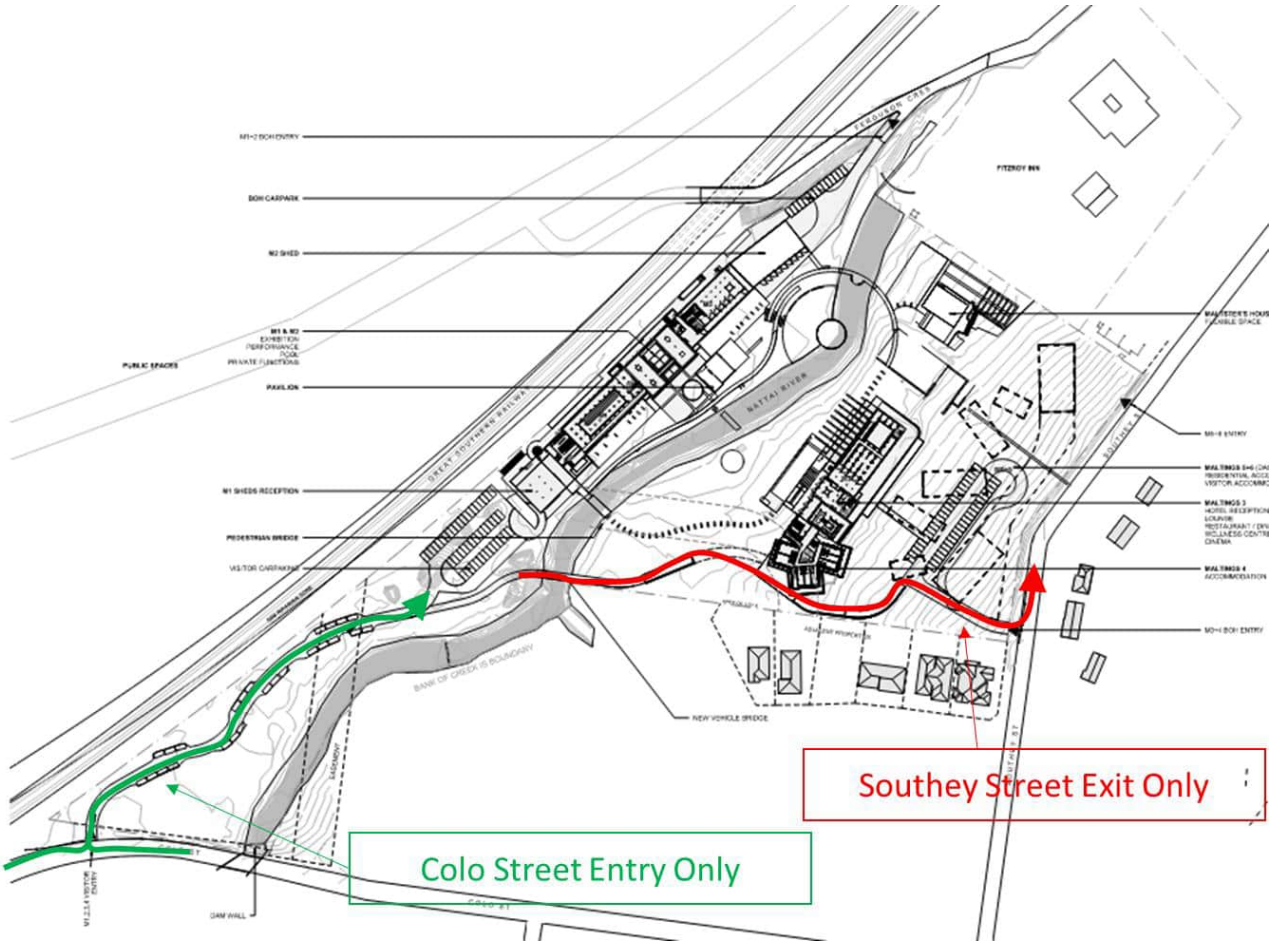
Colo Street access will remain the main access point for vehicular traffic and it is recommended that when the conclusion of an event within M1/M2 occurs during the identified peak hours, Colo Street is managed to be entry only, and Southey Street is managed to be exit only. When the conclusion of an event does not overlap with the peak hours, then Colo Street can remain the main entry and exit access point.

Figure 4-1 Colo St and Southey St Traffic Management



4.2 Old Hume Highway / Ferguson Crescent Modifications

With regard to the Old Hume Highway / Ferguson Crescent intersection, the 2019 traffic surveys show there is little demand for the right turn onto the highway from Ferguson Crescent. The main turning movement is the left turn onto the highway, with 67, 40 and 58 vehicles in the AM, PM and Saturday peak hour respectively. The right turn into Ferguson Crescent is also a key movement with 27 vehicles in the AM peak and 48 vehicles in both the PM and Saturday peak hour. The left turn into Ferguson Crescent is low at less than 5 vehicles in all peaks.

To facilitate safe access to the Old Hume Highway, and encourage vehicles to utilise the signalised intersection of Renwick Drive, it is recommended that right turn movements from Ferguson Crescent to Old Hume Highway is prohibited. Based on the current traffic flows, this would impact 1-2 vehicles in the peak hours which is considered a negligible impact on the road network.

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Figure 4-2 Ferguson Crescent Mitigation Measure

4.3 Old Hume Highway / Renwick Drive Traffic Volumes

SCATS data from Saturday 26 October 2019 and Tuesday 29 October 2019 was obtained at the intersection of Old Hume Highway / Renwick Drive from TfNSW. For analysis purposes, the same AM, PM and Saturday peak hours that were previously used in the initial Traffic Impact Assessment (12 May 2020) for this development were adopted:

- Weekday morning peak period: 8.00am – 9.00am;
- Weekday afternoon peak period: 4.15pm – 5.15pm; and
- Saturday peak period: 11.30am – 12.30pm.

As the SCATS data does not differentiate vehicle class, the percentage of heavy vehicles for each movement at Old Hume Highway / Renwick Drive were assumed to be the same as the heavy vehicle percentages recorded during a previous intersection turning movement survey taken at Old Hume Highway / Louisa Street / Fitzroy Street on 26 and 29 October 2019.

The SCATS traffic movements recorded during the peak times on 26 and 29 October 2019 are shown below in **Figure 4-3**, **Figure 4-4** and **Figure 4-5**.

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Figure 4-3 SCATS data at Old Hume Highway / Renwick Drive on Tuesday 29 October 2019 (8.00am – 9.00am)

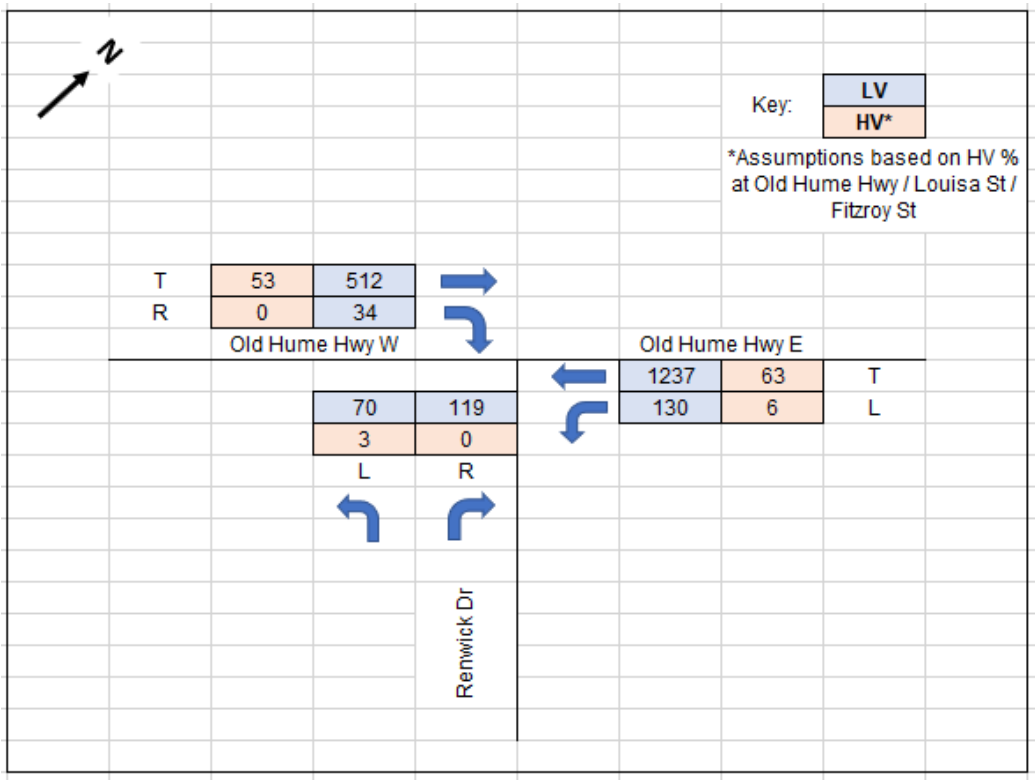

Figure 4-4 SCATS data at Old Hume Highway / Renwick Drive on Tuesday 29 October 2019 (4.15pm – 5.15pm)

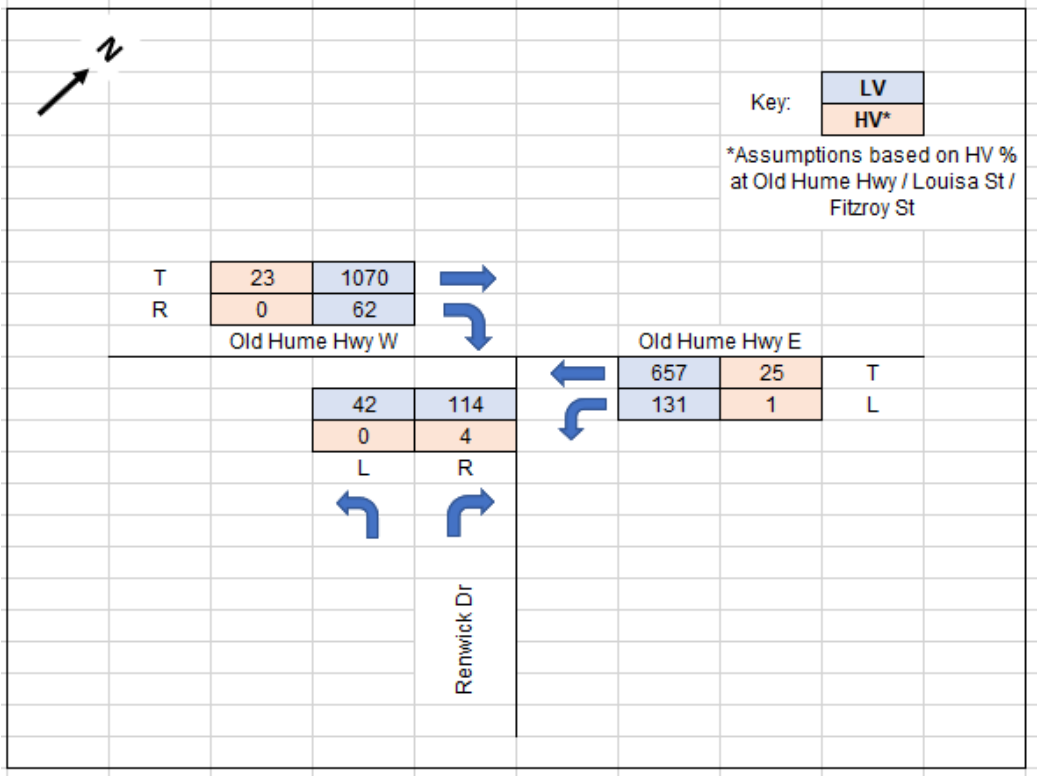

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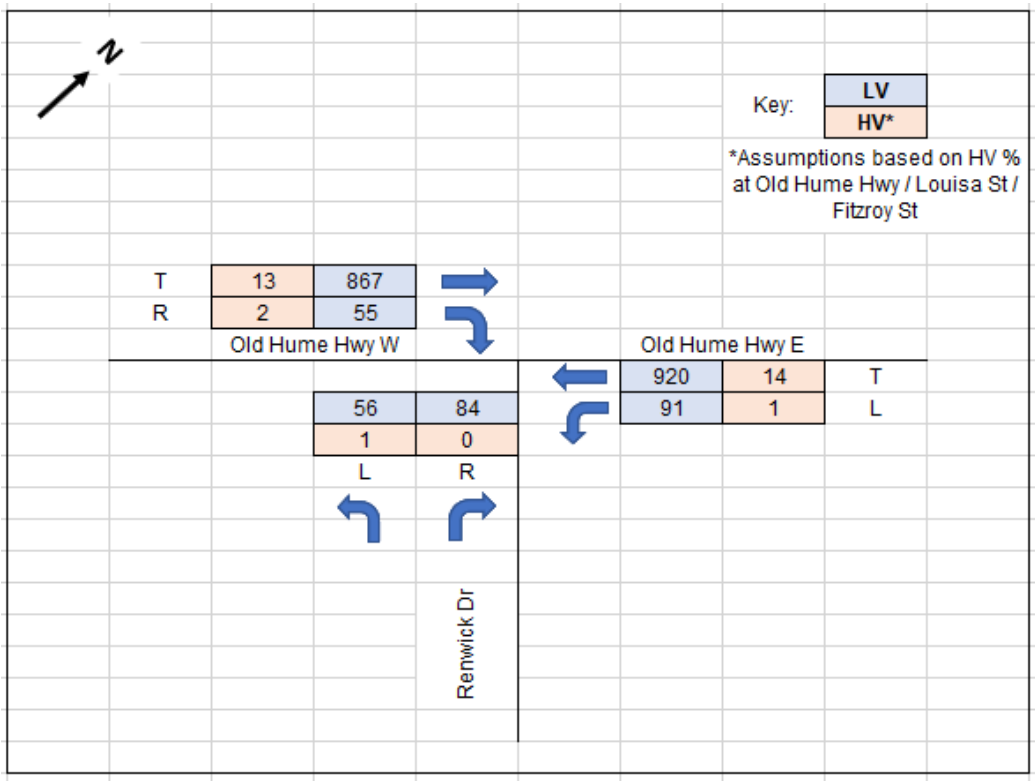
Figure 4-5 SCATS data at Old Hume Highway / Renwick Drive on Saturday 26 October 2019 (11.30am – 12.30pm)



4.4 Traffic Generation

As per the Technical Memorandum dated 22 December 2020, the vehicle generation and trip generation for a future 400-person event at the development site are shown below in **Table 4-1** and **Table 4-2**.

Table 4-1 Vehicle Generation

Breakdown		Colo Street Car Park	Hotel Guests	Non-private car (e.g. taxi)	Non-private car (e.g. Public transport, walking)	Parking On-street	Total
Car Occupancy of 2	Peak Hour Traffic Generation	74 vehicles	0(1)	15 vehicles	0(1)(2)	88 vehicles	177 vehicles
	Persons	148 persons	16 people	30 people	30 people	176 people	400 people

Notes: (1) Does not coincide with peak hour assessment

(2) Assumed to be non-car based transport

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Table 4-2 Trip Generation Summary

Use	Weekday AM		Weekday PM		Weekend	
	TIA	Revision	TIA	Revision	TIA	Revision
M1/M2	37	89	74	177	74	177
M3/M4	n/a	n/a	16	16	16	16
Sub-Total	**37**	**89**	**90**	**193**	**90**	**193**
M5/M6	50	50	50	50	25	25
Total	**87**	**139**	**140**	**243**	**115**	**218**

It is reiterated from previous reports and memos that the 400 person event is considered the maximum patronage and extremely low frequency. The site does not intend to host weddings and events are considered to service the needs of cultural arts, exhibitions and miscellaneous events / functions.

4.5 Traffic Assignment

For the assessment of the Old Hume Highway / Renwick Drive intersection, it will be assumed that 62% (based on the Southern Highlands Destination Strategy 2020-2030) of vehicles leaving the development site are travelling towards Sydney and will be directed towards the Old Hume Highway / Renwick Drive intersection. These vehicles will be directed to use the Southey Street access to leave the development site, and will reach the Old Hume Highway / Renwick Drive intersection via Bong Bong Road and Ferguson Crescent.

A further sensitivity test has also been presented adopting Councils suggested 80% attraction to Sydney (WSC, comments in October 2020).

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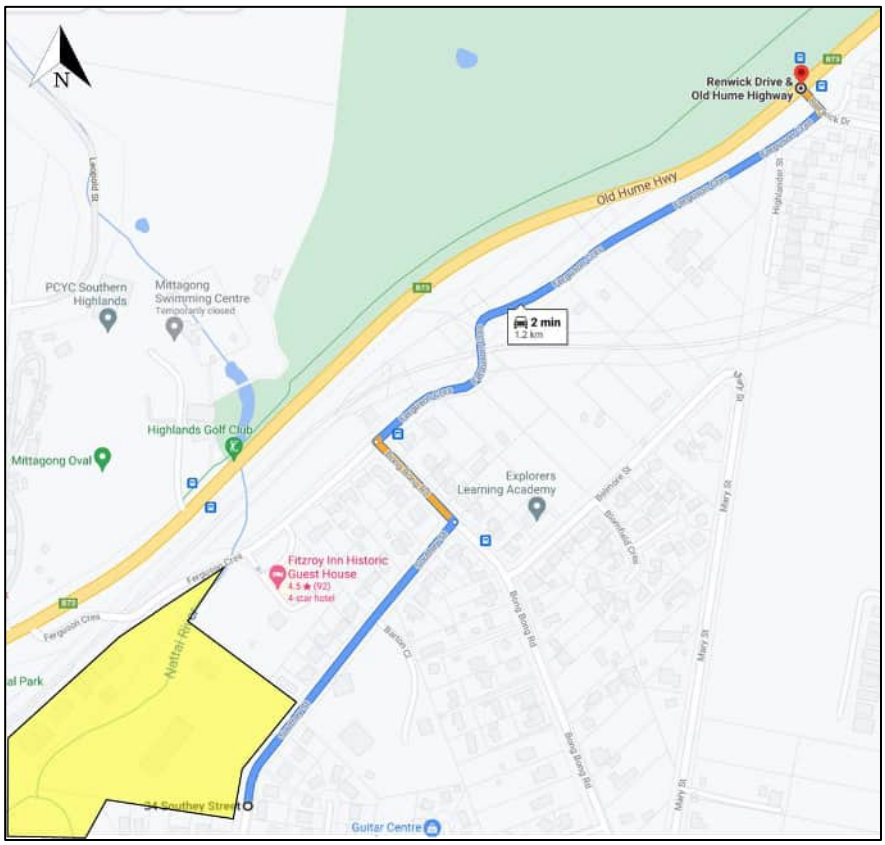
Figure 4-6 Traffic Assignment to Old Hume Highway / Renwick Drive



5 Traffic Analysis

5.1 Assessment Years

As per the Technical Memorandum dated 22 December 2020 (Variation 001), the horizon assessment is based on a 10-year assessment for the year 2029. A background growth rate of 1% on the Old Hume Highway is assumed to account for regional traffic movements along the arterial road network.

5.2 Old Hume Highway / Renwick Drive

A SIDRA model has been prepared to investigate the performance of the Old Hume Highway / Renwick Drive signalised intersection during the AM, PM and Weekend peak periods.

The modelled scenarios are as follows:

- 2019 Base
- 2029 Base (No Development)
- 2029 Base with M1 to M4 Development

The geometrical layout of the signalised intersection as modelled in SIDRA is shown below in **Figure 5-1.**

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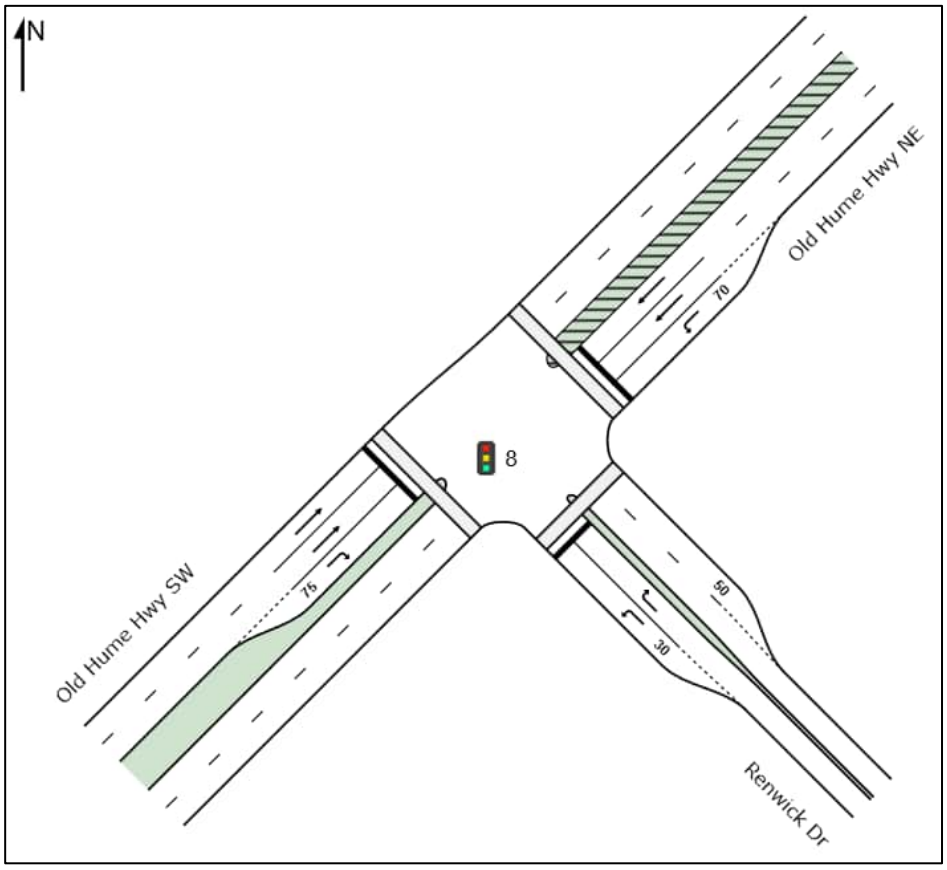
Figure 5-1 SIDRA Layout of Old Hume Highway / Renwick Drive



For modelling purposes, it is assumed that 62% of traffic generated by the M1 to M4 development originated from Sydney, and that at the end of a hypothetical 400-person function, this traffic will be diverted back to Sydney through using the Old Hume Highway / Renwick Drive intersection. All traffic heading towards Sydney will turn right from Renwick Drive onto Old Hume Highway. The number of trips added to the right turn in each peak scenario are outlined below in **Table 5-1**.

Table 5-1 Trips Generated by M1 to M4 Development

	AM trips	PM trips	Saturday trips
M1 to M2 (Parking)	89	177	89
M3 to M4 (Hotel)	0	8	8
M1 to M4 Total Traffic	89	185	97
Additional traffic turning right from Renwick Dr (62% of M1 to M4 Traffic)	**56**	**115**	**60**
Additional traffic turning right from Renwick Dr (80% of M1 to M4 Traffic)	**72**	**148**	**78**

With regard to residential amenity thresholds in Southey Street, the TfNSW Guide prescribes the range of 200 to 300 vehicles per hour for environmental goal and maximum thresholds respectively. There is currently 57,

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64 and 66 two-way vehicles during the AM, PM and Saturday peak hour respectively. The additional traffic added to Southey Street under the scenario where all outbound traffic is pushed to Southey Street results in the following increase.

Table 5-2 Southey Street Residential Amenity

Criteria	AM trips	PM trips	Saturday trips
Existing	57	64	66
M1 to M4 Total Traffic	89	185	97
Total	146	249	163

As shown in the table above, the total traffic volume in Southey Street during the peak hours is well within the TfNSW Guide for residential amenity.

The intersection results are summarised below in **Table 5-3**, with detailed outputs provided in Appendix **A**.

Table 5-3 Intersection Performance at Old Hume Highway / Renwick Drive

	2019 BASE								
	AM Peak			PM Peak			SAT Peak		
	DOS (v/c)	Avg. Delay (s)	LOS	DOS (v/c)	Avg. Delay (s)	LOS	DOS (v/c)	Avg. Delay (s)	LOS
Renwick Dr (SE)	0.540	36.1	C	0.472	28.6	C	0.381	35.1	C
Old Hume Hwy (NE)	0.666	14.0	A	0.433	14.3	A	0.463	12.1	A
Old Hume Hwy (SW)	0.231	5.6	A	0.475	7.1	A	0.343	5.8	A
Overall	**0.666**	**13.6**	**A**	**0.475**	**11.5**	**A**	**0.463**	**10.8**	**A**
	2029 BASE – NO DEVELOPMENT								
	AM Peak			PM Peak			SAT Peak		
	DOS (v/c)	Avg. Delay (s)	LOS	DOS (v/c)	Avg. Delay (s)	LOS	DOS (v/c)	Avg. Delay (s)	LOS
Renwick Dr (SE)	0.594	36.4	C	0.519	28.8	C	0.422	35.2	C
Old Hume Hwy (NE)	0.744	14.8	B	0.478	14.7	B	0.510	12.5	A
Old Hume Hwy (SW)	0.255	5.9	A	0.523	7.4	A	0.377	6.1	A
Overall	**0.744**	**14.3**	**A**	**0.523**	**11.8**	**A**	**0.510**	**11.2**	**A**
	2029 BASE – WITH M1 TO M4 DEVELOPMENT								
	AM Peak			PM Peak			SAT Peak		
	DOS (v/c)	Avg. Delay (s)	LOS	DOS (v/c)	Avg. Delay (s)	LOS	DOS (v/c)	Avg. Delay (s)	LOS
Renwick Dr (SE)	0.707	37.2	C	0.793	32.7	C	0.578	35.7	C
Old Hume Hwy (NE)	0.744	14.8	B	0.478	14.7	B	0.510	12.5	A
Old Hume Hwy (SW)	0.255	5.9	A	0.523	7.4	A	0.377	6.1	A
Overall	**0.744**	**14.9**	**B**	**0.793**	**13.1**	**A**	**0.578**	**11.8**	**A**

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	2029 BASE – WITH M1 TO M4 DEVELOPMENT (80% Northbound)								
	AM Peak			PM Peak			SAT Peak		
	DOS (v/c)	Avg. Delay (s)	LOS	DOS (v/c)	Avg. Delay (s)	LOS	DOS (v/c)	Avg. Delay (s)	LOS
Renwick Dr (SE)	0.795	39.4	C	0.923	42.9	D	0.646	36.8	C
Old Hume Hwy (NE)	0.744	14.8	B	0.478	14.7	B	0.510	12.5	A
Old Hume Hwy (SW)	0.255	5.9	A	0.523	7.4	A	0.377	6.1	A
Overall	**0.795**	**15.2**	**B**	**0.923**	**14.7**	**B**	**0.646**	**12.1**	**A**

With regard to queuing on Renwick Drive, it is acknowledged that the side road of Ferguson Crescent is some 8-16m setback from the Renwick Drive intersection. Therefore, a queue of only 2 to 3 vehicles would be required at the Renwick Drive approach to the highway before it extends to Ferguson Crescent.

The reported queue lengths (number of vehicles) from the modelling are summarised below.

Table 5-4 Renwick Drive Queue Length (no. of vehicles)

Peak Hour	2019	2029	2029 w M1 to M4	2029 w M1 to M4 (80% northbound)
AM	4.8	5.4	7.9	9.0
PM	3.7	4.1	8.5	11.7
Saturday	3.3	3.7	6.1	7.0

The SIDRA modelling showed that:

- Under existing 2019 volumes ascertained from SCATS data, the signalised intersection currently operates at an overall level of LOS A during the AM, PM and weekend peak periods.
- The level of service of the Renwick Drive leg is currently LOS C during AM, PM and weekend peak periods.
- Queuing within Renwick Drive will generally extend across Ferguson Crescent during future conditions, without development traffic
- Queueing within Renwick Drive is shown to increase with the inclusion of development traffic, however in reality this extension of queue is contained to Ferguson Crescent given the increase in traffic (and queue) is predominantly associated with the development. The LOS for Ferguson Crescent is likely to reflect that of Renwick Drive. The queue and LOS for Renwick Drive indicates acceptable performance for what is considered to be a worst case scenario traffic generation.
- With 1% growth rate applied over 10 years, there is no change to the overall Levels of Service.
- With the additional right turn trips generated by the M1 to M4 development added to the 2029 base case, level of service drops to LOS B in the AM and remains at LOS A during the PM and on weekends.
- Minor delays will be experienced during all peak periods coming out of the Renwick Drive leg however will still operate at an acceptable LOS.
- The additional scenario adopting Council's suggestion of 80% in the direction of Sydney shows the intersection performs at LOS A/B during the peak hours which is considered acceptable.

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6 Summary

This memo has explored two potential options for alleviating the concerns expressed by WSC and TfNSW with regard to the intersection of Old Hume Highway / Fitzroy Street. The assessment is based on the M1/M2 400 person event in conjunction with the M3/M4 Hotel use. The 400 person event is considered to be a worst case scenario, where in reality this number scale of event is low frequency throughout the year. The operation and safety issues held predominantly relate to the right turn movement from Fitzroy Street onto the highway.

It has already been demonstrated that the future signalised intersection of this intersection (as identified in Council's contribution plan) will alleviate this issue, however the timing and funding of this upgrade is unknown given it is not within WSC current 10 year works program.

Alternative measures that would prohibit the right turn movement from Fitzroy Street are considered insufficient given there are alternate side road routes to the highway that would still allow the right turn movement and potential push the safety issue elsewhere. It has also been expressed by Council that banning the right turn movement at this intersection would not be acceptable as an isolated treatment.

Therefore, investigations have been made into an interim upgrade of the Old Hume Highway / Fitzroy Street intersection to a seagull junction or adjustments to the on-site traffic management to remove additional outbound traffic generated from the Maltings site travelling through this intersection:

1. The construction of an interim seagull intersection at Old Hume Highway / Fitzroy Street; or
2. The redirection of traffic to the existing signals at Old Hume Highway / Renwick Drive.

At the intersection of Old Hume Highway / Fitzroy Street, it was found that:

- Under existing 2019 volumes, a seagull intersection would operate at LOS B during the AM and PM peak and LOS C during the weekend peak. These level of service indicators are governed by the worst performing approach which is Fitzroy Street.
- With 1% growth rate applied over 10 years, the LOS is maintained for all peaks
- When the additional trips generated by the M1 to M4 development are added to the 2029 base case, level of service drops from LOS B to LOS C in the AM peak, LOS B maintained in the PM peak and the weekend peak drops from LOS C to F.
- Queueing within Renwick Drive is shown to increase with the inclusion of development traffic, however in reality this extension of queue is contained to Ferguson Crescent given the increase in traffic (and queue) is predominantly associated with the development. The LOS for Ferguson Crescent is likely to reflect that of Renwick Drive. The queue and LOS for Renwick Drive indicates acceptable performance for what is considered to be a worst case scenario traffic generation.
- The reduced operation for M1/M2 development to cater for 200 persons during the Saturday peak hour results in LOS D for the intersection. This performance is considered satisfactory for the weekend based on the TfNSW Guide.

At the intersection of Old Hume Highway / Renwick Drive, it was found that:

- Under existing 2019 volumes ascertained from SCATS data, the signalised intersection currently operates at an overall level of LOS A during the AM, PM and weekend peak periods.
- The level of service of the Renwick Drive leg is currently LOS C during AM, PM and weekend peak periods.
- With 1% growth rate applied over 10 years, there is no change to the overall Levels of Service.
- With the additional outbound trips generated by the M1 to M4 development added to the right turn movement rom Renwick Drive in the future year 2029 the level of service achieved of A/B remains satisfactory
- Minor delays will be experienced during all peak periods coming out of the Renwick Drive leg however the LOS remains acceptable.

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- The additional scenario adopting Council's suggestion of 80% in the direction of Sydney shows the intersection performs at LOS A/B during the peak hours which is considered acceptable.

The SIDRA modelling has shown that both alternatives are considered as acceptable mitigation measures.

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APPENDIX

A

SIDRA RESULTS

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MOVEMENT SUMMARY

Site: 5 [AM Old Hume Hwy / Fitzroy St - Seagull Part 1]

Network: N101 [AM Old Hume Hwy / Louisa St / Fitzroy St]

Staged crossing Stage 1 (Minor Road) at three-way intersection with 5-lane major road. Major road turn lane is treated as a full-length lane.
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Fitzroy St														
1	L2	23	4.5	23	4.5	0.029	10.7	LOS A	0.0	0.3	0.49	0.89	0.49	50.5
2	T1	33	0.0	33	0.0	0.143	23.1	LOS B	0.2	1.3	0.83	1.00	0.83	35.4
Approach		56	1.9	56	1.9	0.143	18.0	LOS B	0.2	1.3	0.69	0.95	0.69	42.9
East: Old Hume Hwy (E)														
4	L2	71	4.5	71	4.5	0.294	5.6	LOS A	0.0	0.0	0.00	0.08	0.00	57.4
5	T1	1039	4.9	1039	4.9	0.294	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	59.6
Approach		1109	4.8	1109	4.8	0.294	0.4	NA	0.0	0.0	0.00	0.04	0.00	59.5
West: Old Hume Hwy (W)														
12	R2	15	0.0	15	0.0	0.041	14.6	LOS B	0.0	0.3	0.76	0.90	0.76	47.3
Approach		15	0.0	15	0.0	0.041	14.6	NA	0.0	0.3	0.76	0.90	0.76	47.3
All Vehicles		1180	4.6	1180	4.6	0.294	1.4	NA	0.2	1.3	0.04	0.09	0.04	58.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 6 [AM Old Hume Hwy / Fitzroy St - Seagull Part 2]

Network: N101 [AM Old Hume Hwy / Louisa St / Fitzroy St]

Merge From Right
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
West: Old Hume Hwy														
1	T1	551	9.2	551	9.2	0.150	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach		551	9.2	551	9.2	0.150	0.0	NA	0.0	0.0	0.00	0.00	0.00	60.0
SouthWest: Acceleration														
2	R1	33	0.0	33	0.0	0.026	1.1	LOS A	0.0	0.2	0.38	0.26	0.38	56.1
Approach		33	0.0	33	0.0	0.026	1.1	LOS A	0.0	0.2	0.38	0.26	0.38	56.1
All Vehicles		583	8.7	583	8.7	0.150	0.1	NA	0.0	0.2	0.02	0.01	0.02	59.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 7 [AM Old Hume Hwy / Louisa St - Seagull Part 3]

Network: N101 [AM Old Hume Hwy / Louisa St / Fitzroy St]

New Site
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
North: Louisa St														
7	L2	12	0.0	12	0.0	0.010	9.1	LOS A	0.0	0.1	0.35	0.83	0.35	47.3
Approach		12	0.0	12	0.0	0.010	9.1	LOS A	0.0	0.1	0.35	0.83	0.35	47.3
West: Old Hume Hwy (W)														
10	L2	8	0.0	8	0.0	0.149	5.6	LOS A	0.0	0.0	0.00	0.02	0.00	58.2
11	T1	539	9.4	539	9.4	0.149	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
Approach		547	9.2	547	9.2	0.149	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.7
All Vehicles		559	9.0	559	9.0	0.149	0.3	NA	0.0	0.1	0.01	0.03	0.01	59.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 5 [PM Old Hume Hwy / Fitzroy St - Seagull Part 1]

Network: N101 [PM Old Hume Hwy / Louisa St / Fitzroy St]

Staged crossing Stage 1 (Minor Road) at three-way intersection with 5-lane major road. Major road turn lane is treated as a full-length lane.
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Fitzroy St														
1	L2	26	0.0	26	0.0	0.026	9.5	LOS A	0.0	0.3	0.41	0.86	0.41	51.3
2	T1	35	3.0	35	3.0	0.104	17.5	LOS B	0.1	1.0	0.73	1.00	0.73	39.6
Approach		61	1.7	61	1.7	0.104	14.1	LOS A	0.1	1.0	0.59	0.94	0.59	45.9
East: Old Hume Hwy (E)														
4	L2	96	1.1	96	1.1	0.233	5.6	LOS A	0.0	0.0	0.00	0.13	0.00	57.1
5	T1	789	3.7	789	3.7	0.233	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	59.4
Approach		885	3.4	885	3.4	0.233	0.6	NA	0.0	0.0	0.00	0.06	0.00	59.2
West: Old Hume Hwy (W)														
12	R2	33	0.0	33	0.0	0.064	11.3	LOS A	0.1	0.6	0.66	0.85	0.66	49.4
Approach		33	0.0	33	0.0	0.064	11.3	NA	0.1	0.6	0.66	0.85	0.66	49.4
All Vehicles		979	3.2	979	3.2	0.233	1.8	NA	0.1	1.0	0.06	0.15	0.06	58.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 6 [PM Old Hume Hwy / Fitzroy St - Seagull Part 2]

Network: N101 [PM Old Hume Hwy / Louisa St / Fitzroy St]

Merge From Right
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
West: Old Hume Hwy														
1	T1	1235	2.1	1235	2.1	0.321	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		1235	2.1	1235	2.1	0.321	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
SouthWest: Acceleration														
2	R1	35	3.0	35	3.0	0.052	3.9	LOS A	0.1	0.4	0.64	0.64	0.64	53.0
Approach		35	3.0	35	3.0	0.052	3.9	LOS A	0.1	0.4	0.64	0.64	0.64	53.0
All Vehicles		1269	2.2	1269	2.2	0.321	0.1	NA	0.1	0.4	0.02	0.02	0.02	59.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 7 [PM Old Hume Hwy / Louisa St - Seagull Part 3]

Network: N101 [PM Old Hume Hwy / Louisa St / Fitzroy St]

New Site
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
North: Louisa St														
7	L2	5	0.0	5	0.0	0.007	11.1	LOS A	0.0	0.1	0.54	0.82	0.54	45.4
Approach		5	0.0	5	0.0	0.007	11.1	LOS A	0.0	0.1	0.54	0.82	0.54	45.4
West: Old Hume Hwy (W)														
10	L2	14	0.0	14	0.0	0.323	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	58.2
11	T1	1229	2.1	1229	2.1	0.323	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
Approach		1243	2.1	1243	2.1	0.323	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.8
All Vehicles		1248	2.1	1248	2.1	0.323	0.1	NA	0.0	0.1	0.00	0.01	0.00	59.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 5 [SAT Old Hume Hwy / Fitzroy St - Seagull Part 1]

Network: N101 [SAT Old Hume Hwy / Louisa St / Fitzroy St]

Staged crossing Stage 1 (Minor Road) at three-way intersection with 5-lane major road. Major road turn lane is treated as a full-length lane.
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Fitzroy St														
1	L2	57	1.9	57	1.9	0.073	11.0	LOS A	0.1	0.8	0.52	0.93	0.52	50.4
2	T1	62	0.0	62	0.0	0.325	30.3	LOS C	0.5	3.3	0.88	1.04	1.05	31.2
Approach		119	0.9	119	0.9	0.325	21.1	LOS B	0.5	3.3	0.71	0.99	0.80	41.3
East: Old Hume Hwy (E)														
4	L2	74	1.4	74	1.4	0.315	5.6	LOS A	0.0	0.0	0.00	0.07	0.00	57.6
5	T1	1138	1.5	1138	1.5	0.315	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	59.6
Approach		1212	1.5	1212	1.5	0.315	0.4	NA	0.0	0.0	0.00	0.04	0.00	59.5
West: Old Hume Hwy (W)														
12	R2	27	3.8	27	3.8	0.093	17.2	LOS B	0.1	0.8	0.81	0.92	0.81	45.7
Approach		27	3.8	27	3.8	0.093	17.2	NA	0.1	0.8	0.81	0.92	0.81	45.7
All Vehicles		1358	1.5	1358	1.5	0.325	2.5	NA	0.5	3.3	0.08	0.14	0.09	57.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 6 [SAT Old Hume Hwy / Fitzroy St - Seagull Part 2]

Network: N101 [SAT Old Hume Hwy / Louisa St / Fitzroy St]

Merge From Right
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
West: Old Hume Hwy														
1	T1	980	1.5	980	1.5	0.254	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		980	1.5	980	1.5	0.254	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
SouthWest: Acceleration														
2	R1	62	0.0	62	0.0	0.070	2.5	LOS A	0.1	0.6	0.53	0.51	0.53	54.8
Approach		62	0.0	62	0.0	0.070	2.5	LOS A	0.1	0.6	0.53	0.51	0.53	54.8
All Vehicles		1042	1.4	1042	1.4	0.254	0.2	NA	0.1	0.6	0.03	0.03	0.03	59.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 7 [SAT Old Hume Hwy / Louisa St - Seagull Part 3]

Network: N101 [SAT Old Hume Hwy / Louisa St / Fitzroy St]

New Site
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
North: Louisa St														
7	L2	11	0.0	11	0.0	0.012	10.2	LOS A	0.0	0.1	0.48	0.83	0.48	46.3
Approach		11	0.0	11	0.0	0.012	10.2	LOS A	0.0	0.1	0.48	0.83	0.48	46.3
West: Old Hume Hwy (W)														
10	L2	13	8.3	13	8.3	0.255	5.7	LOS A	0.0	0.0	0.00	0.02	0.00	57.8
11	T1	969	1.5	969	1.5	0.255	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
Approach		982	1.6	982	1.6	0.255	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.8
All Vehicles		993	1.6	993	1.6	0.255	0.2	NA	0.0	0.1	0.01	0.02	0.01	59.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 5 [AM Old Hume Hwy / Fitzroy St - Seagull Part 1]

Network: N101 [AM Old Hume Hwy / Louisa St / Fitzroy St]

Staged crossing Stage 1 (Minor Road) at three-way intersection with 5-lane major road. Major road turn lane is treated as a full-length lane.
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Fitzroy St														
1	L2	27	7.7	27	7.7	0.037	11.4	LOS A	0.1	0.4	0.52	0.91	0.52	50.1
2	T1	36	0.0	36	0.0	0.196	28.3	LOS B	0.3	1.8	0.87	1.01	0.91	32.3
Approach		63	3.3	63	3.3	0.196	21.0	LOS B	0.3	1.8	0.72	0.97	0.74	41.0
East: Old Hume Hwy (E)														
4	L2	79	5.3	79	5.3	0.324	5.6	LOS A	0.0	0.0	0.00	0.08	0.00	57.4
5	T1	1143	4.9	1143	4.9	0.324	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	59.6
Approach		1222	4.9	1222	4.9	0.324	0.4	NA	0.0	0.0	0.00	0.04	0.00	59.4
West: Old Hume Hwy (W)														
12	R2	17	0.0	17	0.0	0.057	17.0	LOS B	0.1	0.5	0.81	0.92	0.81	45.9
Approach		17	0.0	17	0.0	0.057	17.0	NA	0.1	0.5	0.81	0.92	0.81	45.9
All Vehicles		1302	4.8	1302	4.8	0.324	1.6	NA	0.3	1.8	0.05	0.09	0.05	58.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 6 [AM Old Hume Hwy / Fitzroy St - Seagull Part 2]

Network: N101 [AM Old Hume Hwy / Louisa St / Fitzroy St]

Merge From Right
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
West: Old Hume Hwy														
1	T1	606	9.2	606	9.2	0.165	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach		606	9.2	606	9.2	0.165	0.0	NA	0.0	0.0	0.00	0.00	0.00	60.0
SouthWest: Acceleration														
2	R1	36	0.0	36	0.0	0.030	1.3	LOS A	0.0	0.3	0.40	0.30	0.40	56.0
Approach		36	0.0	36	0.0	0.030	1.3	LOS A	0.0	0.3	0.40	0.30	0.40	56.0
All Vehicles		642	8.7	642	8.7	0.165	0.1	NA	0.0	0.3	0.02	0.02	0.02	59.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 7 [AM Old Hume Hwy / Louisa St - Seagull Part 3]

Network: N101 [AM Old Hume Hwy / Louisa St / Fitzroy St]

New Site
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
North: Louisa St														
7	L2	14	0.0	14	0.0	0.013	9.2	LOS A	0.0	0.1	0.37	0.83	0.37	47.1
Approach		14	0.0	14	0.0	0.013	9.2	LOS A	0.0	0.1	0.37	0.83	0.37	47.1
West: Old Hume Hwy (W)														
10	L2	9	0.0	9	0.0	0.164	5.6	LOS A	0.0	0.0	0.00	0.02	0.00	58.2
11	T1	593	9.4	593	9.4	0.164	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
Approach		602	9.3	602	9.3	0.164	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.7
All Vehicles		616	9.1	616	9.1	0.164	0.3	NA	0.0	0.1	0.01	0.03	0.01	59.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 6 [PM Old Hume Hwy / Fitzroy St - Seagull Part 2]

Network: N102 [PM Old Hume Hwy / Louisa St / Fitzroy St]

Merge From Right
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
West: Old Hume Hwy														
1	T1	1359	2.2	1359	2.2	0.353	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		1359	2.2	1359	2.2	0.353	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
SouthWest: Acceleration														
2	R1	38	2.8	38	2.8	0.065	4.8	LOS A	0.1	0.6	0.69	0.69	0.69	51.9
Approach		38	2.8	38	2.8	0.065	4.8	LOS A	0.1	0.6	0.69	0.69	0.69	51.9
All Vehicles		1397	2.2	1397	2.2	0.353	0.1	NA	0.1	0.6	0.02	0.02	0.02	59.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 7 [PM Old Hume Hwy / Louisa St - Seagull Part 3]

Network: N102 [PM Old Hume Hwy / Louisa St / Fitzroy St]

New Site
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
North: Louisa St														
7	L2	6	0.0	6	0.0	0.009	11.6	LOS A	0.0	0.1	0.56	0.84	0.56	44.8
Approach		6	0.0	6	0.0	0.009	11.6	LOS A	0.0	0.1	0.56	0.84	0.56	44.8
West: Old Hume Hwy (W)														
10	L2	16	0.0	16	0.0	0.356	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	58.2
11	T1	1353	2.2	1353	2.2	0.356	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
Approach		1368	2.2	1368	2.2	0.356	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.7
All Vehicles		1375	2.1	1375	2.1	0.356	0.2	NA	0.0	0.1	0.00	0.01	0.00	59.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 5 [PM Old Hume Hwy / Fitzroy St - Seagull Part 1]

Network: N102 [PM Old Hume Hwy / Louisa St / Fitzroy St]

Staged crossing Stage 1 (Minor Road) at three-way intersection with 5-lane major road. Major road turn lane is treated as a full-length lane.
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Fitzroy St														
1	L2	29	0.0	29	0.0	0.031	9.7	LOS A	0.0	0.3	0.43	0.87	0.43	51.2
2	T1	38	2.8	38	2.8	0.132	19.7	LOS B	0.2	1.3	0.77	1.00	0.77	37.9
Approach		67	1.6	67	1.6	0.132	15.3	LOS B	0.2	1.3	0.62	0.94	0.62	45.0
East: Old Hume Hwy (E)														
4	L2	105	1.0	105	1.0	0.257	5.6	LOS A	0.0	0.0	0.00	0.13	0.00	57.1
5	T1	868	3.8	868	3.8	0.257	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	59.4
Approach		974	3.5	974	3.5	0.257	0.6	NA	0.0	0.0	0.00	0.06	0.00	59.2
West: Old Hume Hwy (W)														
12	R2	37	0.0	37	0.0	0.082	12.6	LOS A	0.1	0.7	0.71	0.88	0.71	48.6
Approach		37	0.0	37	0.0	0.082	12.6	NA	0.1	0.7	0.71	0.88	0.71	48.6
All Vehicles		1078	3.2	1078	3.2	0.257	2.0	NA	0.2	1.3	0.06	0.15	0.06	57.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 6 [SAT Old Hume Hwy / Fitzroy St - Seagull Part 2]

Network: N103 [SAT Old Hume Hwy / Louisa St / Fitzroy St]

Merge From Right
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
West: Old Hume Hwy														
1	T1	1078	1.5	1078	1.5	0.279	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		1078	1.5	1078	1.5	0.279	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
SouthWest: Acceleration														
2	R1	68	0.0	68	0.0	0.085	3.0	LOS A	0.1	0.7	0.57	0.57	0.57	54.2
Approach		68	0.0	68	0.0	0.085	3.0	LOS A	0.1	0.7	0.57	0.57	0.57	54.2
All Vehicles		1146	1.4	1146	1.4	0.279	0.2	NA	0.1	0.7	0.03	0.03	0.03	59.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 7 [SAT Old Hume Hwy / Louisa St - Seagull Part 3]

Network: N103 [SAT Old Hume Hwy / Louisa St / Fitzroy St]

New Site
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
North: Louisa St														
7	L2	12	0.0	12	0.0	0.014	10.5	LOS A	0.0	0.2	0.50	0.84	0.50	45.9
Approach		12	0.0	12	0.0	0.014	10.5	LOS A	0.0	0.2	0.50	0.84	0.50	45.9
West: Old Hume Hwy (W)														
10	L2	15	14.3	15	14.3	0.280	5.7	LOS A	0.0	0.0	0.00	0.02	0.00	57.5
11	T1	1066	1.5	1066	1.5	0.280	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
Approach		1081	1.7	1081	1.7	0.280	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.7
All Vehicles		1093	1.6	1093	1.6	0.280	0.2	NA	0.0	0.2	0.01	0.02	0.01	59.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 5 [SAT Old Hume Hwy / Fitzroy St - Seagull Part 1]

Network: N103 [SAT Old Hume Hwy / Louisa St / Fitzroy St]

Staged crossing Stage 1 (Minor Road) at three-way intersection with 5-lane major road. Major road turn lane is treated as a full-length lane.
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Fitzroy St														
1	L2	63	3.3	63	3.3	0.089	11.6	LOS A	0.1	1.0	0.55	0.95	0.55	50.0
2	T1	68	0.0	68	0.0	0.461	41.5	LOS C	0.7	4.8	0.93	1.07	1.21	26.3
Approach		132	1.6	132	1.6	0.461	27.1	LOS B	0.7	4.8	0.75	1.01	0.90	37.9
East: Old Hume Hwy (E)														
4	L2	82	2.6	82	2.6	0.347	5.6	LOS A	0.0	0.0	0.00	0.07	0.00	57.5
5	T1	1253	1.5	1253	1.5	0.347	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	59.6
Approach		1335	1.6	1335	1.6	0.347	0.4	NA	0.0	0.0	0.00	0.04	0.00	59.5
West: Old Hume Hwy (W)														
12	R2	32	6.7	32	6.7	0.140	21.4	LOS B	0.2	1.2	0.86	0.94	0.86	43.3
Approach		32	6.7	32	6.7	0.140	21.4	NA	0.2	1.2	0.86	0.94	0.86	43.3
All Vehicles		1498	1.7	1498	1.7	0.461	3.2	NA	0.7	4.8	0.08	0.14	0.10	56.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 5 [AM Old Hume Hwy / Fitzroy St - Seagull Part 1]

Network: N101 [AM Old Hume Hwy / Louisa St / Fitzroy St]

Staged crossing Stage 1 (Minor Road) at three-way intersection with 5-lane major road. Major road turn lane is treated as a full-length lane.
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Fitzroy St														
1	L2	27	7.7	27	7.7	0.036	11.2	LOS A	0.1	0.4	0.51	0.90	0.51	50.2
2	T1	36	0.0	36	0.0	0.207	29.8	LOS C	0.3	1.9	0.88	1.01	0.93	31.5
Approach		63	3.3	63	3.3	0.207	21.7	LOS B	0.3	1.9	0.72	0.96	0.75	40.6
East: Old Hume Hwy (E)														
4	L2	125	3.4	125	3.4	0.337	5.6	LOS A	0.0	0.0	0.00	0.12	0.00	57.1
5	T1	1143	4.9	1143	4.9	0.337	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	59.4
Approach		1268	4.7	1268	4.7	0.337	0.6	NA	0.0	0.0	0.00	0.06	0.00	59.2
West: Old Hume Hwy (W)														
12	R2	17	0.0	17	0.0	0.062	18.2	LOS B	0.1	0.5	0.82	0.92	0.82	45.2
Approach		17	0.0	17	0.0	0.062	18.2	NA	0.1	0.5	0.82	0.92	0.82	45.2
All Vehicles		1348	4.6	1348	4.6	0.337	1.8	NA	0.3	1.9	0.04	0.11	0.05	58.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 6 [AM Old Hume Hwy / Fitzroy St - Seagull Part 2]

Network: N101 [AM Old Hume Hwy / Louisa St / Fitzroy St]

Merge From Right
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
West: Old Hume Hwy														
1	T1	606	9.2	606	9.2	0.165	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach		606	9.2	606	9.2	0.165	0.0	NA	0.0	0.0	0.00	0.00	0.00	60.0
SouthWest: Acceleration														
2	R1	36	0.0	36	0.0	0.030	1.3	LOS A	0.0	0.3	0.40	0.30	0.40	56.0
Approach		36	0.0	36	0.0	0.030	1.3	LOS A	0.0	0.3	0.40	0.30	0.40	56.0
All Vehicles		642	8.7	642	8.7	0.165	0.1	NA	0.0	0.3	0.02	0.02	0.02	59.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 7 [AM Old Hume Hwy / Louisa St - Seagull Part 3]

Network: N101 [AM Old Hume Hwy / Louisa St / Fitzroy St]

New Site
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
North: Louisa St														
7	L2	14	0.0	14	0.0	0.013	9.2	LOS A	0.0	0.1	0.37	0.83	0.37	47.1
Approach		14	0.0	14	0.0	0.013	9.2	LOS A	0.0	0.1	0.37	0.83	0.37	47.1
West: Old Hume Hwy (W)														
10	L2	9	0.0	9	0.0	0.164	5.6	LOS A	0.0	0.0	0.00	0.02	0.00	58.2
11	T1	593	9.4	593	9.4	0.164	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
Approach		602	9.3	602	9.3	0.164	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.7
All Vehicles		616	9.1	616	9.1	0.164	0.3	NA	0.0	0.1	0.01	0.03	0.01	59.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 6 [PM Old Hume Hwy / Fitzroy St - Seagull Part 2]

Network: N102 [PM Old Hume Hwy / Louisa St / Fitzroy St]

Merge From Right
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
West: Old Hume Hwy														
1	T1	1359	2.2	1359	2.2	0.353	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		1359	2.2	1359	2.2	0.353	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
SouthWest: Acceleration														
2	R1	38	2.8	38	2.8	0.065	4.8	LOS A	0.1	0.6	0.69	0.69	0.69	51.9
Approach		38	2.8	38	2.8	0.065	4.8	LOS A	0.1	0.6	0.69	0.69	0.69	51.9
All Vehicles		1397	2.2	1397	2.2	0.353	0.1	NA	0.1	0.6	0.02	0.02	0.02	59.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 7 [PM Old Hume Hwy / Louisa St - Seagull Part 3]

Network: N102 [PM Old Hume Hwy / Louisa St / Fitzroy St]

New Site
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
North: Louisa St														
7	L2	6	0.0	6	0.0	0.009	11.6	LOS A	0.0	0.1	0.56	0.84	0.56	44.8
Approach		6	0.0	6	0.0	0.009	11.6	LOS A	0.0	0.1	0.56	0.84	0.56	44.8
West: Old Hume Hwy (W)														
10	L2	16	0.0	16	0.0	0.356	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	58.2
11	T1	1353	2.2	1353	2.2	0.356	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
Approach		1368	2.2	1368	2.2	0.356	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.7
All Vehicles		1375	2.1	1375	2.1	0.356	0.2	NA	0.0	0.1	0.00	0.01	0.00	59.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 5 [PM Old Hume Hwy / Fitzroy St - Seagull Part 1]

Network: N102 [PM Old Hume Hwy / Louisa St / Fitzroy St]

Staged crossing Stage 1 (Minor Road) at three-way intersection with 5-lane major road. Major road turn lane is treated as a full-length lane.
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Fitzroy St														
1	L2	29	0.0	29	0.0	0.029	9.4	LOS A	0.0	0.3	0.40	0.86	0.40	51.3
2	T1	38	2.8	38	2.8	0.145	21.2	LOS B	0.2	1.4	0.80	1.00	0.80	36.8
Approach		67	1.6	67	1.6	0.145	16.0	LOS B	0.2	1.4	0.62	0.94	0.62	44.4
East: Old Hume Hwy (E)														
4	L2	203	0.5	203	0.5	0.283	5.6	LOS A	0.0	0.0	0.00	0.23	0.00	56.3
5	T1	868	3.8	868	3.8	0.283	0.0	LOS A	0.0	0.0	0.00	0.09	0.00	59.1
Approach		1072	3.1	1072	3.1	0.283	1.1	NA	0.0	0.0	0.00	0.11	0.00	58.6
West: Old Hume Hwy (W)														
12	R2	37	0.0	37	0.0	0.095	14.1	LOS A	0.1	0.8	0.75	0.89	0.75	47.6
Approach		37	0.0	37	0.0	0.095	14.1	NA	0.1	0.8	0.75	0.89	0.75	47.6
All Vehicles		1176	3.0	1176	3.0	0.283	2.3	NA	0.2	1.4	0.06	0.18	0.06	57.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 5 [SAT Old Hume Hwy / Fitzroy St - Seagull Part 1]

Network: N103 [SAT Old Hume Hwy / Louisa St / Fitzroy St]

Staged crossing Stage 1 (Minor Road) at three-way intersection with 5-lane major road. Major road turn lane is treated as a full-length lane.
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Fitzroy St														
1	L2	63	3.3	63	3.3	0.085	11.4	LOS A	0.1	0.9	0.54	0.94	0.54	50.1
2	T1	115	0.0	115	0.0	0.824	73.2	LOS F	1.8	12.4	0.98	1.28	2.15	18.1
Approach		178	1.2	178	1.2	0.824	51.3	LOS D	1.8	12.4	0.82	1.16	1.58	27.2
East: Old Hume Hwy (E)														
4	L2	133	1.6	133	1.6	0.360	5.6	LOS A	0.0	0.0	0.00	0.11	0.00	57.2
5	T1	1253	1.5	1253	1.5	0.360	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	59.4
Approach		1385	1.5	1385	1.5	0.360	0.6	NA	0.0	0.0	0.00	0.06	0.00	59.2
West: Old Hume Hwy (W)														
12	R2	32	6.7	32	6.7	0.155	23.2	LOS B	0.2	1.3	0.87	0.95	0.87	42.4
Approach		32	6.7	32	6.7	0.155	23.2	NA	0.2	1.3	0.87	0.95	0.87	42.4
All Vehicles		1595	1.6	1595	1.6	0.824	6.7	NA	1.8	12.4	0.11	0.20	0.19	53.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 6 [SAT Old Hume Hwy / Fitzroy St - Seagull Part 2]

Network: N103 [SAT Old Hume Hwy / Louisa St / Fitzroy St]

Merge From Right
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
West: Old Hume Hwy														
1	T1	1078	1.5	1078	1.5	0.279	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		1078	1.5	1078	1.5	0.279	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
SouthWest: Acceleration														
2	R1	115	0.0	115	0.0	0.142	3.1	LOS A	0.2	1.2	0.59	0.59	0.59	54.0
Approach		115	0.0	115	0.0	0.142	3.1	LOS A	0.2	1.2	0.59	0.59	0.59	54.0
All Vehicles		1193	1.3	1193	1.3	0.279	0.3	NA	0.2	1.2	0.06	0.06	0.06	59.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 7 [SAT Old Hume Hwy / Louisa St - Seagull Part 3]

Network: N103 [SAT Old Hume Hwy / Louisa St / Fitzroy St]

New Site
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
North: Louisa St														
7	L2	12	0.0	12	0.0	0.014	10.5	LOS A	0.0	0.2	0.50	0.84	0.50	45.9
Approach		12	0.0	12	0.0	0.014	10.5	LOS A	0.0	0.2	0.50	0.84	0.50	45.9
West: Old Hume Hwy (W)														
10	L2	15	14.3	15	14.3	0.280	5.7	LOS A	0.0	0.0	0.00	0.02	0.00	57.5
11	T1	1066	1.5	1066	1.5	0.280	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
Approach		1081	1.7	1081	1.7	0.280	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.7
All Vehicles		1093	1.6	1093	1.6	0.280	0.2	NA	0.0	0.2	0.01	0.02	0.01	59.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 5 [SAT Old Hume Hwy / Fitzroy St - Seagull Part 1 M1/ M2 200persons]

Network: N103 [SAT Old Hume Hwy / Louisa St / Fitzroy St - M1/M2 200persons]

Staged crossing Stage 1 (Minor Road) at three-way intersection with 5-lane major road. Major road turn lane is treated as a full-length lane.
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Fitzroy St														
1	L2	63	3.3	63	3.3	0.087	11.5	LOS A	0.1	0.9	0.54	0.95	0.54	50.1
2	T1	92	0.0	92	0.0	0.639	51.5	LOS D	1.1	7.5	0.95	1.13	1.50	23.0
Approach		155	1.4	155	1.4	0.639	35.2	LOS C	1.1	7.5	0.79	1.06	1.11	33.4
East: Old Hume Hwy (E)														
4	L2	109	1.9	109	1.9	0.354	5.6	LOS A	0.0	0.0	0.00	0.10	0.00	57.4
5	T1	1253	1.5	1253	1.5	0.354	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	59.5
Approach		1362	1.5	1362	1.5	0.354	0.5	NA	0.0	0.0	0.00	0.05	0.00	59.3
West: Old Hume Hwy (W)														
12	R2	32	6.7	32	6.7	0.148	22.4	LOS B	0.2	1.2	0.87	0.94	0.87	42.9
Approach		32	6.7	32	6.7	0.148	22.4	NA	0.2	1.2	0.87	0.94	0.87	42.9
All Vehicles		1548	1.6	1548	1.6	0.639	4.4	NA	1.1	7.5	0.10	0.17	0.13	55.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 6 [SAT Old Hume Hwy / Fitzroy St - Seagull Part 2 M1/ M2 200persons]

Network: N103 [SAT Old Hume Hwy / Louisa St / Fitzroy St - M1/M2 200persons]

Merge From Right
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
West: Old Hume Hwy														
1	T1	1078	1.5	1078	1.5	0.279	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		1078	1.5	1078	1.5	0.279	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
SouthWest: Acceleration														
2	R1	115	0.0	115	0.0	0.142	3.1	LOS A	0.2	1.2	0.59	0.59	0.59	54.0
Approach		115	0.0	115	0.0	0.142	3.1	LOS A	0.2	1.2	0.59	0.59	0.59	54.0
All Vehicles		1193	1.3	1193	1.3	0.279	0.3	NA	0.2	1.2	0.06	0.06	0.06	59.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 7 [SAT Old Hume Hwy / Louisa St - Seagull Part 3 M1/ M2 200persons]

Network: N103 [SAT Old Hume Hwy / Louisa St / Fitzroy St - M1/M2 200persons]

New Site
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
North: Louisa St														
7	L2	12	0.0	12	0.0	0.014	10.5	LOS A	0.0	0.2	0.50	0.84	0.50	45.9
Approach		12	0.0	12	0.0	0.014	10.5	LOS A	0.0	0.2	0.50	0.84	0.50	45.9
West: Old Hume Hwy (W)														
10	L2	15	14.3	15	14.3	0.280	5.7	LOS A	0.0	0.0	0.00	0.02	0.00	57.5
11	T1	1066	1.5	1066	1.5	0.280	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
Approach		1081	1.7	1081	1.7	0.280	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.7
All Vehicles		1093	1.6	1093	1.6	0.280	0.2	NA	0.0	0.2	0.01	0.02	0.01	59.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 8 [AM Old Hume Hwy / Renwick Dr]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 80 seconds (Site Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Renwick Dr												
21	L2	77	4.1	0.142	26.8	LOS B	2.2	16.0	0.77	0.72	0.77	31.2
23	R2	125	0.0	0.540	41.8	LOS C	4.8	33.8	0.98	0.79	0.98	26.1
Approach		202	1.6	0.540	36.1	LOS C	4.8	33.8	0.90	0.76	0.90	27.8
NorthEast: Old Hume Hwy NE												
24	L2	143	4.4	0.151	17.5	LOS B	2.9	20.8	0.55	0.73	0.55	45.4
25	T1	1368	4.8	0.666	13.7	LOS A	19.2	139.7	0.76	0.69	0.76	61.6
Approach		1512	4.8	0.666	14.0	LOS A	19.2	139.7	0.74	0.69	0.74	60.3
SouthWest: Old Hume Hwy SW												
31	T1	595	9.4	0.231	4.6	LOS A	4.1	31.0	0.38	0.33	0.38	72.7
32	R2	36	0.0	0.124	22.4	LOS B	0.9	6.3	0.70	0.74	0.70	41.4
Approach		631	8.8	0.231	5.6	LOS A	4.1	31.0	0.40	0.35	0.40	70.8
All Vehicles		2344	5.6	0.666	13.6	LOS A	19.2	139.7	0.66	0.61	0.66	58.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P5	SouthEast Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93
P6	NorthEast Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93
P8	SouthWest Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93
All Pedestrians		158	34.3	LOS D			0.93	0.93

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

Site: 8 [AM Old Hume Hwy / Renwick Dr]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 80 seconds (Site Optimum Cycle Time - Minimum Delay)

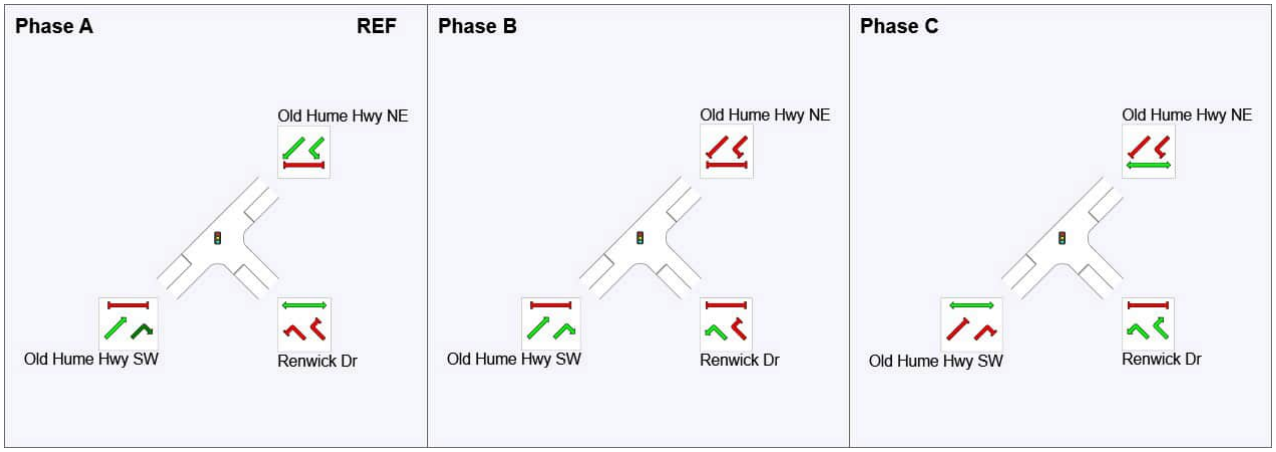
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

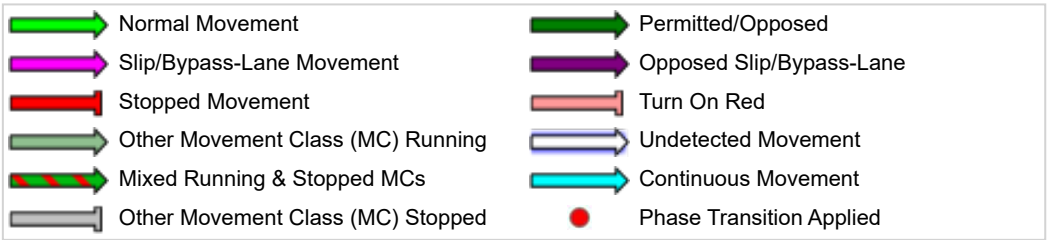
Phase	A	B	C
Phase Change Time (sec)	0	50	62
Green Time (sec)	44	6	12
Phase Time (sec)	50	12	18
Phase Split	63%	15%	23%

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



MOVEMENT SUMMARY

Site: 8 [PM Old Hume Hwy / Renwick Dr]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 62 seconds (Site Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Renwick Dr												
21	L2	44	0.0	0.064	18.1	LOS B	0.9	6.1	0.67	0.68	0.67	35.4
23	R2	124	3.4	0.472	32.4	LOS C	3.7	26.4	0.96	0.78	0.96	29.2
Approach		168	2.5	0.472	28.6	LOS C	3.7	26.4	0.89	0.75	0.89	30.6
NorthEast: Old Hume Hwy NE												
24	L2	139	0.8	0.187	19.9	LOS B	2.7	19.3	0.68	0.75	0.68	43.5
25	T1	718	3.7	0.433	13.3	LOS A	7.6	55.2	0.74	0.64	0.74	62.0
Approach		857	3.2	0.433	14.3	LOS A	7.6	55.2	0.73	0.66	0.73	59.3
SouthWest: Old Hume Hwy SW												
31	T1	1151	2.1	0.475	6.6	LOS A	9.2	65.7	0.57	0.51	0.57	70.0
32	R2	65	0.0	0.146	16.9	LOS B	1.1	7.9	0.67	0.74	0.67	46.1
Approach		1216	2.0	0.475	7.1	LOS A	9.2	65.7	0.57	0.52	0.57	68.7
All Vehicles		2241	2.5	0.475	11.5	LOS A	9.2	65.7	0.66	0.59	0.66	61.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P5	SouthEast Full Crossing	53	25.3	LOS C	0.1	0.1	0.91	0.91
P6	NorthEast Full Crossing	53	25.3	LOS C	0.1	0.1	0.91	0.91
P8	SouthWest Full Crossing	53	25.3	LOS C	0.1	0.1	0.91	0.91
All Pedestrians		158	25.3	LOS C			0.91	0.91

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

Site: 8 [PM Old Hume Hwy / Renwick Dr]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 62 seconds (Site Optimum Cycle Time - Minimum Delay)

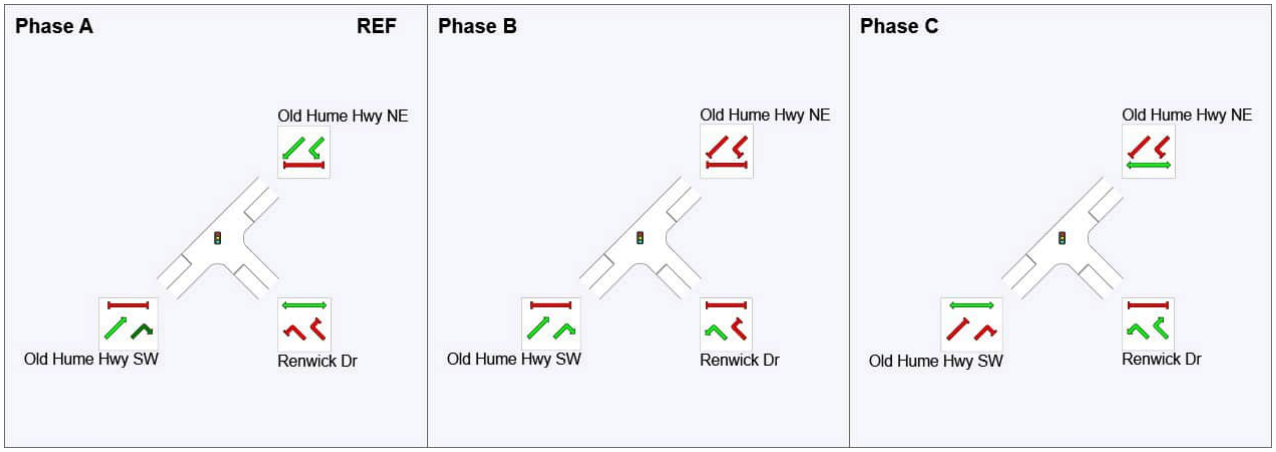
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

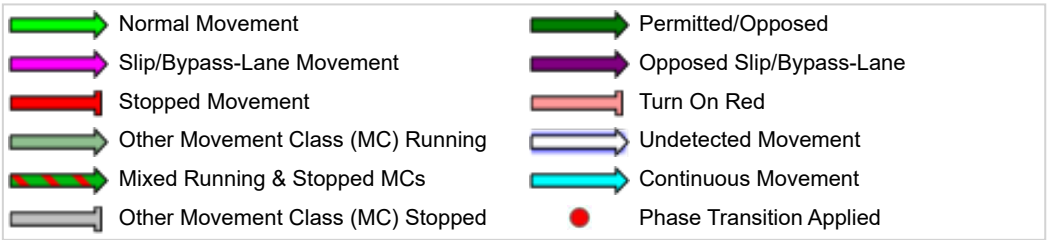
Phase	A	B	C
Phase Change Time (sec)	0	33	45
Green Time (sec)	27	6	11
Phase Time (sec)	33	12	17
Phase Split	53%	19%	27%

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



MOVEMENT SUMMARY

Site: 8 [SAT Old Hume Hwy / Renwick Dr]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 80 seconds (Site Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Renwick Dr												
21	L2	60	1.8	0.109	26.5	LOS B	1.7	12.1	0.76	0.71	0.76	31.3
23	R2	88	0.0	0.381	40.9	LOS C	3.3	23.3	0.96	0.76	0.96	26.3
Approach		148	0.7	0.381	35.1	LOS C	3.3	23.3	0.88	0.74	0.88	28.2
NorthEast: Old Hume Hwy NE												
24	L2	97	1.1	0.100	17.1	LOS B	1.9	13.2	0.53	0.72	0.53	45.9
25	T1	983	1.5	0.463	11.6	LOS A	11.5	81.8	0.65	0.57	0.65	63.8
Approach		1080	1.5	0.463	12.1	LOS A	11.5	81.8	0.64	0.59	0.64	62.4
SouthWest: Old Hume Hwy SW												
31	T1	926	1.5	0.343	5.0	LOS A	7.0	50.0	0.42	0.37	0.42	72.1
32	R2	60	3.5	0.161	17.5	LOS B	1.2	8.9	0.61	0.74	0.61	45.4
Approach		986	1.6	0.343	5.8	LOS A	7.0	50.0	0.43	0.40	0.43	70.5
All Vehicles		2215	1.5	0.463	10.8	LOS A	11.5	81.8	0.56	0.51	0.56	62.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P5	SouthEast Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93
P6	NorthEast Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93
P8	SouthWest Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93
All Pedestrians		158	34.3	LOS D			0.93	0.93

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

Site: 8 [SAT Old Hume Hwy / Renwick Dr]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 80 seconds (Site Optimum Cycle Time - Minimum Delay)

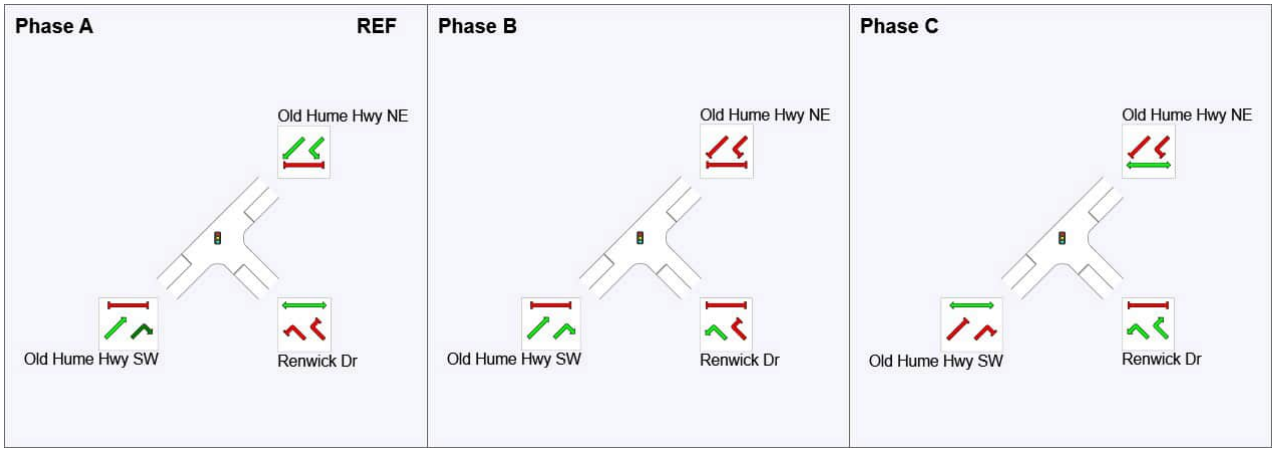
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

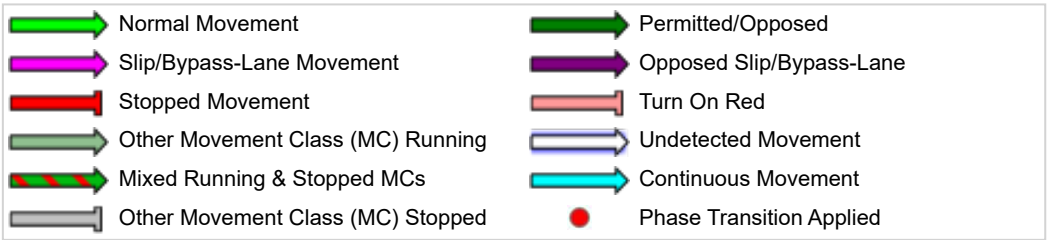
Phase	A	B	C
Phase Change Time (sec)	0	50	62
Green Time (sec)	44	6	12
Phase Time (sec)	50	12	18
Phase Split	63%	15%	23%

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



MOVEMENT SUMMARY

Site: 8 [AM 2029 Old Hume Hwy / Renwick Dr]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 80 seconds (Site Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Renwick Dr												
21	L2	85	4.9	0.158	26.9	LOS B	2.5	18.0	0.77	0.73	0.77	31.1
23	R2	138	0.0	0.594	42.3	LOS C	5.4	37.8	0.99	0.81	1.02	25.9
Approach		223	1.9	0.594	36.4	LOS C	5.4	37.8	0.91	0.78	0.93	27.7
NorthEast: Old Hume Hwy NE												
24	L2	158	4.7	0.167	17.6	LOS B	3.2	23.2	0.55	0.74	0.55	45.3
25	T1	1506	4.9	0.744	14.5	LOS B	23.0	167.5	0.81	0.73	0.81	60.7
Approach		1664	4.9	0.744	14.8	LOS B	23.0	167.5	0.78	0.73	0.78	59.5
SouthWest: Old Hume Hwy SW												
31	T1	656	9.5	0.255	4.7	LOS A	4.6	34.9	0.39	0.34	0.39	72.6
32	R2	40	0.0	0.150	25.7	LOS B	1.1	7.8	0.76	0.75	0.76	39.1
Approach		696	8.9	0.255	5.9	LOS A	4.6	34.9	0.41	0.36	0.41	70.4
All Vehicles		2583	5.7	0.744	14.3	LOS A	23.0	167.5	0.69	0.64	0.70	58.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P5	SouthEast Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93
P6	NorthEast Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93
P8	SouthWest Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93
All Pedestrians		158	34.3	LOS D			0.93	0.93

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

Site: 8 [AM 2029 Old Hume Hwy / Renwick Dr]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 80 seconds (Site Optimum Cycle Time - Minimum Delay)

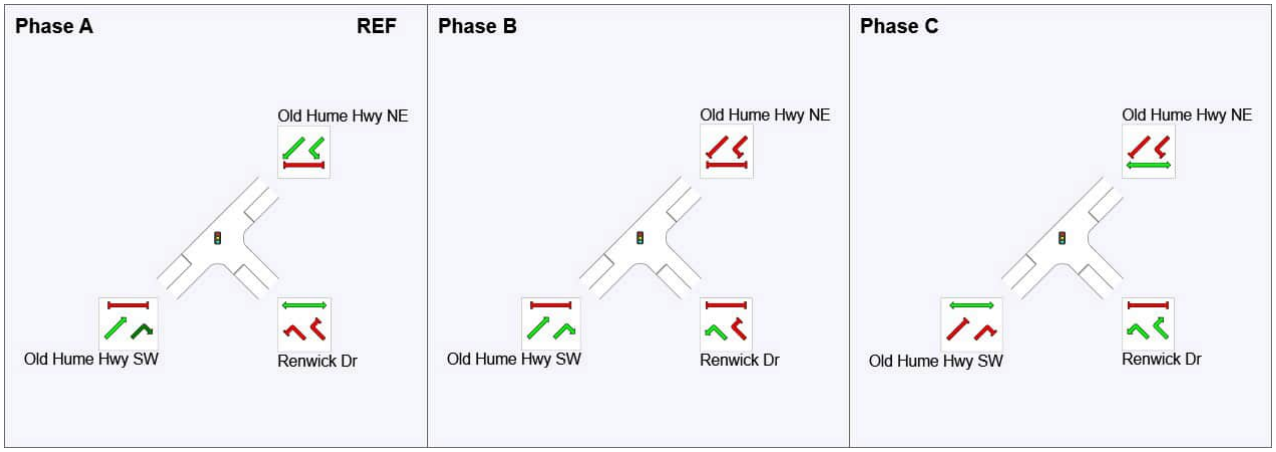
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

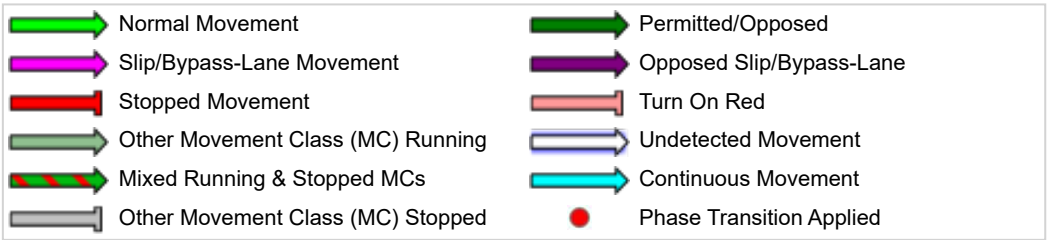
Phase	A	B	C
Phase Change Time (sec)	0	50	62
Green Time (sec)	44	6	12
Phase Time (sec)	50	12	18
Phase Split	63%	15%	23%

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



MOVEMENT SUMMARY

Site: 8 [PM 2029 Old Hume Hwy / Renwick Dr]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 62 seconds (Site Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Renwick Dr												
21	L2	49	0.0	0.072	18.2	LOS B	1.0	6.8	0.67	0.68	0.67	35.4
23	R2	137	3.1	0.519	32.6	LOS C	4.1	29.2	0.97	0.79	0.97	29.1
Approach		186	2.3	0.519	28.8	LOS C	4.1	29.2	0.89	0.76	0.89	30.5
NorthEast: Old Hume Hwy NE												
24	L2	154	1.4	0.207	20.1	LOS B	3.1	21.7	0.69	0.76	0.69	43.3
25	T1	792	3.9	0.478	13.6	LOS A	8.6	62.5	0.76	0.66	0.76	61.7
Approach		945	3.5	0.478	14.7	LOS B	8.6	62.5	0.75	0.67	0.75	59.0
SouthWest: Old Hume Hwy SW												
31	T1	1266	2.2	0.523	6.9	LOS A	10.6	75.7	0.60	0.53	0.60	69.6
32	R2	73	0.0	0.172	17.7	LOS B	1.3	9.3	0.70	0.74	0.70	45.3
Approach		1339	2.0	0.523	7.4	LOS A	10.6	75.7	0.60	0.54	0.60	68.3
All Vehicles		2471	2.6	0.523	11.8	LOS A	10.6	75.7	0.68	0.61	0.68	60.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P5	SouthEast Full Crossing	53	25.3	LOS C	0.1	0.1	0.91	0.91
P6	NorthEast Full Crossing	53	25.3	LOS C	0.1	0.1	0.91	0.91
P8	SouthWest Full Crossing	53	25.3	LOS C	0.1	0.1	0.91	0.91
All Pedestrians		158	25.3	LOS C			0.91	0.91

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

Site: 8 [PM 2029 Old Hume Hwy / Renwick Dr]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 62 seconds (Site Optimum Cycle Time - Minimum Delay)

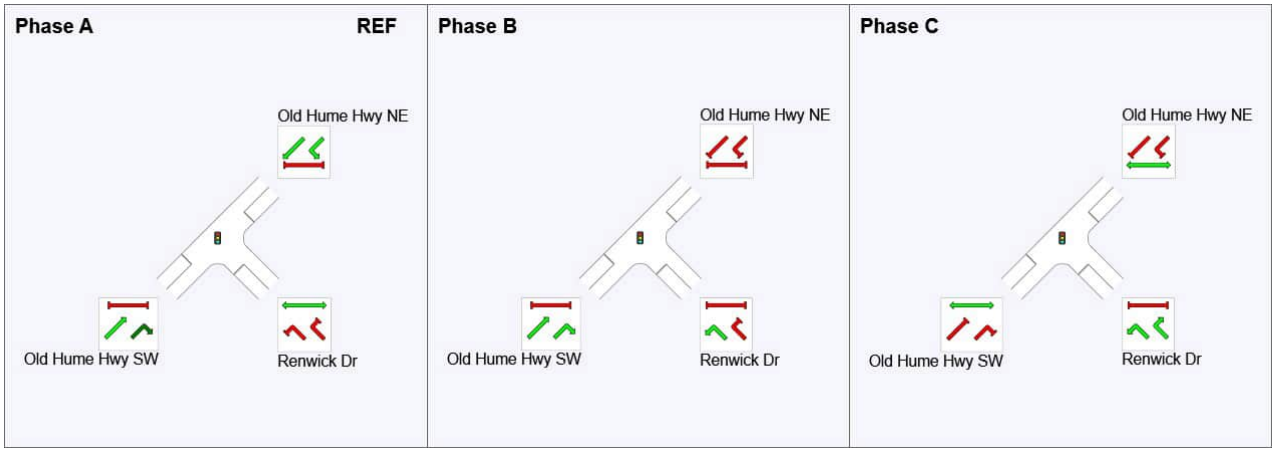
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

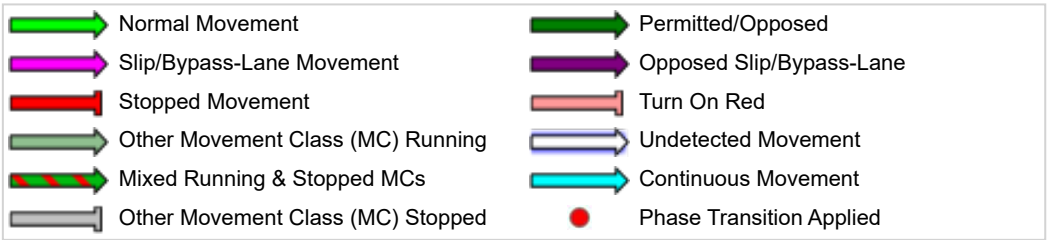
Phase	A	B	C
Phase Change Time (sec)	0	33	45
Green Time (sec)	27	6	11
Phase Time (sec)	33	12	17
Phase Split	53%	19%	27%

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



MOVEMENT SUMMARY

Site: 8 [SAT 2029 Old Hume Hwy / Renwick Dr]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 80 seconds (Site Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Renwick Dr												
21	L2	67	3.1	0.124	26.6	LOS B	1.9	13.8	0.76	0.72	0.76	31.3
23	R2	98	0.0	0.422	41.1	LOS C	3.7	26.0	0.97	0.77	0.97	26.3
Approach		165	1.3	0.422	35.2	LOS C	3.7	26.0	0.88	0.75	0.88	28.1
NorthEast: Old Hume Hwy NE												
24	L2	107	2.0	0.112	17.2	LOS B	2.1	14.9	0.53	0.72	0.53	45.8
25	T1	1083	1.6	0.510	12.1	LOS A	13.2	93.5	0.67	0.60	0.67	63.3
Approach		1191	1.6	0.510	12.5	LOS A	13.2	93.5	0.66	0.61	0.66	61.9
SouthWest: Old Hume Hwy SW												
31	T1	1020	1.5	0.377	5.2	LOS A	8.0	56.9	0.44	0.39	0.44	71.8
32	R2	67	4.7	0.198	19.1	LOS B	1.5	11.1	0.65	0.75	0.65	43.9
Approach		1087	1.7	0.377	6.1	LOS A	8.0	56.9	0.45	0.41	0.45	70.1
All Vehicles		2443	1.6	0.510	11.2	LOS A	13.2	93.5	0.58	0.53	0.58	61.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P5	SouthEast Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93
P6	NorthEast Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93
P8	SouthWest Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93
All Pedestrians		158	34.3	LOS D			0.93	0.93

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

Site: 8 [SAT 2029 Old Hume Hwy / Renwick Dr]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 80 seconds (Site Optimum Cycle Time - Minimum Delay)

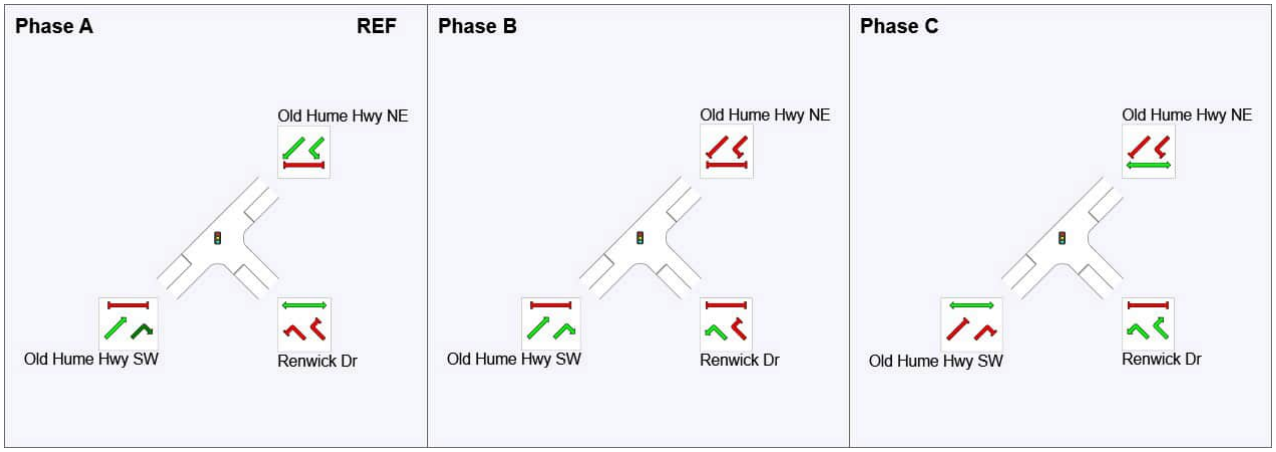
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

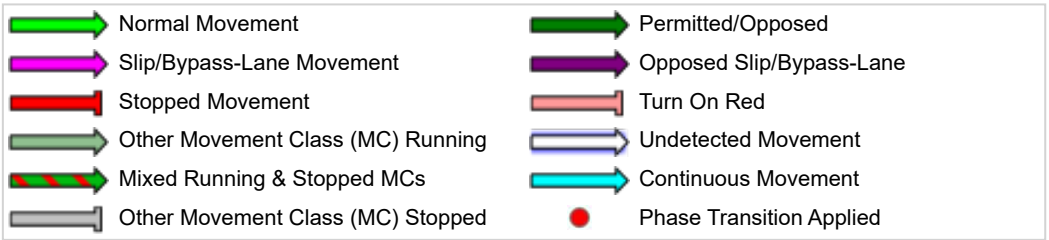
Phase	A	B	C
Phase Change Time (sec)	0	50	62
Green Time (sec)	44	6	12
Phase Time (sec)	50	12	18
Phase Split	63%	15%	23%

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



MOVEMENT SUMMARY

Site: 8 [AM 2029 WITH M1M4 Old Hume Hwy / Renwick Dr (no change to phase times)]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 80 seconds (Site User-Given Phase Times)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Renwick Dr												
21	L2	85	4.9	0.146	25.3	LOS B	2.4	17.3	0.74	0.72	0.74	31.8
23	R2	197	0.0	0.707	42.3	LOS C	7.9	55.1	1.00	0.87	1.11	25.9
Approach		282	1.5	0.707	37.2	LOS C	7.9	55.1	0.92	0.83	1.00	27.5
NorthEast: Old Hume Hwy NE												
24	L2	158	4.7	0.167	17.6	LOS B	3.2	23.2	0.55	0.74	0.55	45.3
25	T1	1506	4.9	0.744	14.5	LOS B	23.0	167.5	0.81	0.73	0.81	60.7
Approach		1664	4.9	0.744	14.8	LOS B	23.0	167.5	0.78	0.73	0.78	59.5
SouthWest: Old Hume Hwy SW												
31	T1	656	9.5	0.255	4.7	LOS A	4.6	34.9	0.39	0.34	0.39	72.6
32	R2	40	0.0	0.150	25.7	LOS B	1.1	7.8	0.76	0.75	0.76	39.1
Approach		696	8.9	0.255	5.9	LOS A	4.6	34.9	0.41	0.36	0.41	70.4
All Vehicles		2642	5.6	0.744	14.9	LOS B	23.0	167.5	0.70	0.65	0.71	57.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P5	SouthEast Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93
P6	NorthEast Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93
P8	SouthWest Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93
All Pedestrians		158	34.3	LOS D			0.93	0.93

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

Site: 8 [AM 2029 WITH M1M4 Old Hume Hwy / Renwick Dr (no change to phase times)]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 80 seconds (Site User-Given Phase Times)

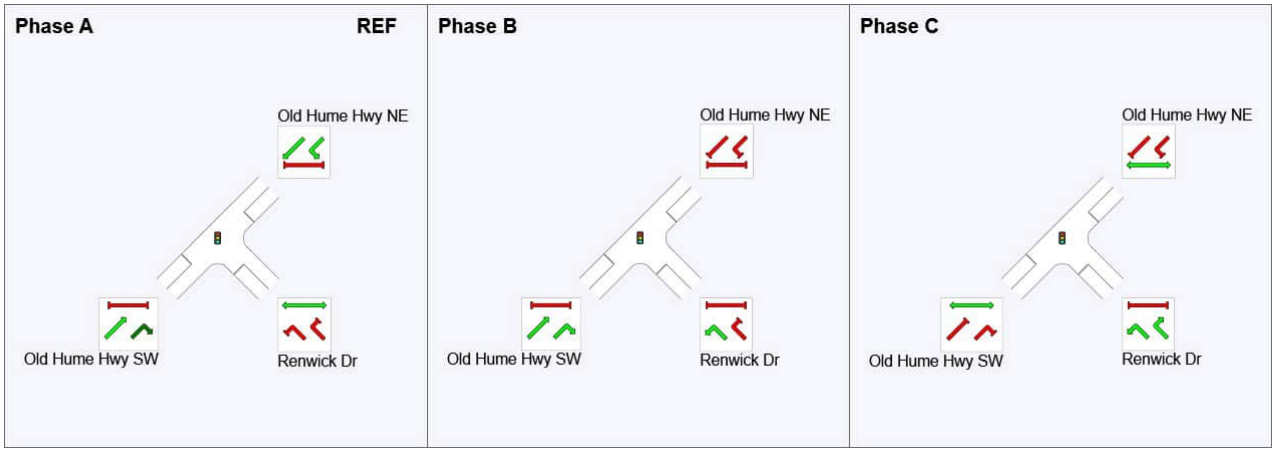
Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

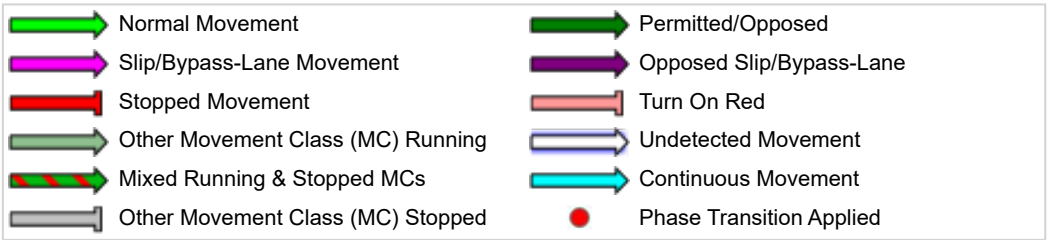
Phase	A	B	C
Phase Change Time (sec)	0	48	60
Green Time (sec)	44	6	14
Phase Time (sec)	50	12	18
Phase Split	63%	15%	23%

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



MOVEMENT SUMMARY

Site: 8 [PM 2029 WITH M1M4 Old Hume Hwy / Renwick Dr (no change to phase times)]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 62 seconds (Site User-Given Phase Times)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Renwick Dr												
21	L2	49	0.0	0.066	16.8	LOS B	0.9	6.4	0.64	0.68	0.64	36.2
23	R2	258	1.6	0.793	35.7	LOS C	8.5	60.6	1.00	0.96	1.26	28.0
Approach		307	1.4	0.793	32.7	LOS C	8.5	60.6	0.94	0.91	1.16	29.0
NorthEast: Old Hume Hwy NE												
24	L2	154	1.4	0.207	20.1	LOS B	3.1	21.7	0.69	0.76	0.69	43.3
25	T1	792	3.9	0.478	13.6	LOS A	8.6	62.5	0.76	0.66	0.76	61.7
Approach		945	3.5	0.478	14.7	LOS B	8.6	62.5	0.75	0.67	0.75	59.0
SouthWest: Old Hume Hwy SW												
31	T1	1266	2.2	0.523	6.9	LOS A	10.6	75.7	0.60	0.53	0.60	69.6
32	R2	73	0.0	0.172	17.7	LOS B	1.3	9.3	0.70	0.74	0.70	45.3
Approach		1339	2.0	0.523	7.4	LOS A	10.6	75.7	0.60	0.54	0.60	68.3
All Vehicles		2592	2.5	0.793	13.1	LOS A	10.6	75.7	0.70	0.63	0.72	58.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P5	SouthEast Full Crossing	53	25.3	LOS C	0.1	0.1	0.91	0.91
P6	NorthEast Full Crossing	53	25.3	LOS C	0.1	0.1	0.91	0.91
P8	SouthWest Full Crossing	53	25.3	LOS C	0.1	0.1	0.91	0.91
All Pedestrians		158	25.3	LOS C			0.91	0.91

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

Site: 8 [PM 2029 WITH M1M4 Old Hume Hwy / Renwick Dr (no change to phase times)]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 62 seconds (Site User-Given Phase Times)

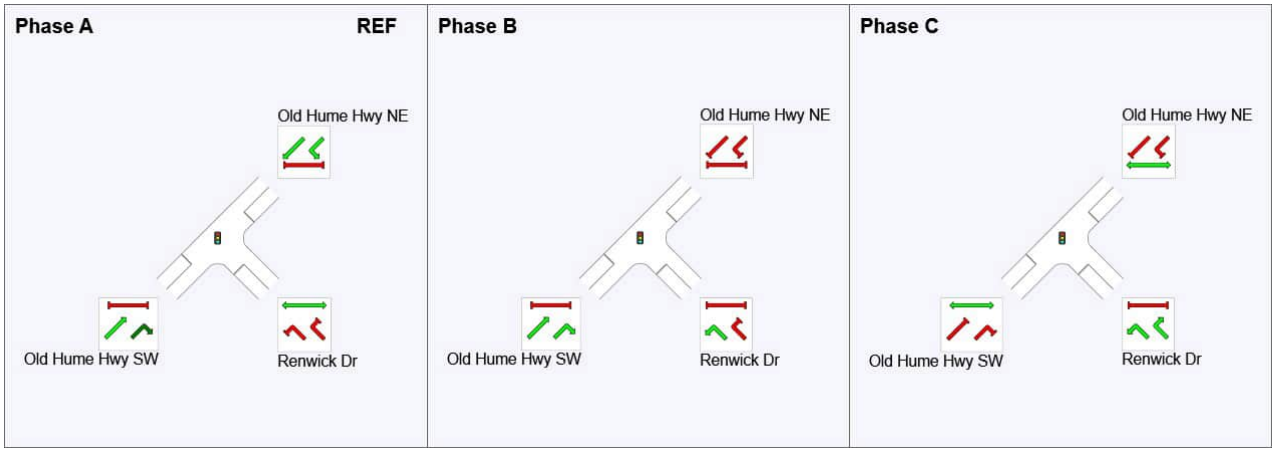
Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	31	43
Green Time (sec)	27	6	13
Phase Time (sec)	33	12	17
Phase Split	53%	19%	27%

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

MOVEMENT SUMMARY

Site: 8 [SAT 2029 WITH M1M4 Old Hume Hwy / Renwick Dr (no change to phase times)]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 80 seconds (Site User-Given Phase Times)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Renwick Dr												
21	L2	67	3.1	0.114	25.0	LOS B	1.8	13.3	0.73	0.71	0.73	32.0
23	R2	161	0.0	0.578	40.2	LOS C	6.1	42.9	0.98	0.80	0.98	26.6
Approach		228	0.9	0.578	35.7	LOS C	6.1	42.9	0.91	0.77	0.91	27.9
NorthEast: Old Hume Hwy NE												
24	L2	107	2.0	0.112	17.2	LOS B	2.1	14.9	0.53	0.72	0.53	45.8
25	T1	1083	1.6	0.510	12.1	LOS A	13.2	93.5	0.67	0.60	0.67	63.3
Approach		1191	1.6	0.510	12.5	LOS A	13.2	93.5	0.66	0.61	0.66	61.9
SouthWest: Old Hume Hwy SW												
31	T1	1020	1.5	0.377	5.2	LOS A	8.0	56.9	0.44	0.39	0.44	71.8
32	R2	67	4.7	0.198	19.1	LOS B	1.5	11.1	0.65	0.75	0.65	43.9
Approach		1087	1.7	0.377	6.1	LOS A	8.0	56.9	0.45	0.41	0.45	70.1
All Vehicles		2506	1.6	0.578	11.8	LOS A	13.2	93.5	0.59	0.54	0.59	60.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P5	SouthEast Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93
P6	NorthEast Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93
P8	SouthWest Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93
All Pedestrians		158	34.3	LOS D			0.93	0.93

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

Site: 8 [SAT 2029 WITH M1M4 Old Hume Hwy / Renwick Dr (no change to phase times)]

New Site
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 80 seconds (Site User-Given Phase Times)

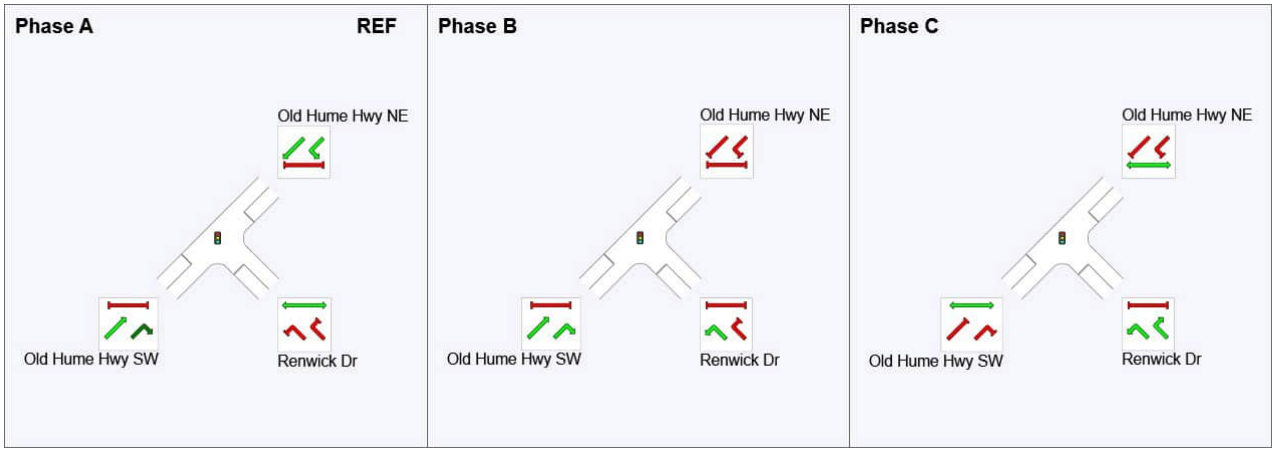
Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Split Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

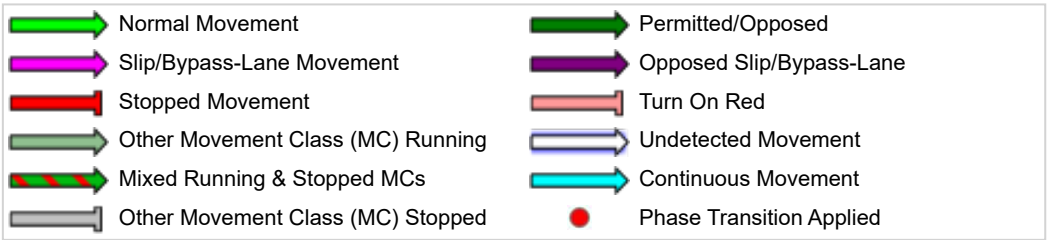
Phase	A	B	C
Phase Change Time (sec)	0	48	60
Green Time (sec)	44	6	14
Phase Time (sec)	50	12	18
Phase Split	63%	15%	23%

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



Appendix G Conditions of Consent (13 May 2022)

Land and Environment Court
of New South Wales

Level 4 225 Macquarie Street SYDNEY NSW 2000
Level 4 GPO Box 3565 SYDNEY NSW 2001
DX 264, Sydney

Telephone: 02 9113 8200
Facsimile:
02 91138208

Email: lecourt@justice.nsw.gov.au
Website: https://www.lec.nsw.gov.au

ABN: 52 659 114 436

Paul Lalich
plalich@hwle.com.au

Your Ref:

D0001KAJUF

13 May 2022

NOTICE OF ORDERS MADE

Case number	2021/00228053
Case title	Halycon Hotels v Wingecarribee Shire Council

On 13 May 2022 the following orders (and/or directions) were made:

The Court orders that:
(1) the Applicant is granted leave to amend its Class 1 Application form in accordance with Annexure 'A' to this judgment, and to rely upon its amended Application in the proceedings including changing the Applicant's name to "Halcyon Hotels Pty Ltd (93 124 421 199)";
(2) the appeal is upheld;
(3) concept development application DA 20/1400 lodged with the Respondent on 10 June 2020 seeking consent for the proposed mixed use re-development at The Maltings, 2 Colo Street, Mittagong 2575 is determined by the grant of consent subject to the conditions set out in Annexure 'B' to this agreement.

For the Registrar

Annexure 'B'

DETERMINATION OF DEVELOPMENT APPLICATION BY GRANT OF CONSENT

Development Application No: 20/1400

Development: Concept development application for the alterations and additions to and the adaptive reuse of the Site for the purposes of a mixed use development together with a development application for consent to stage 1 of the development for the alterations and additions and adaptive re-use of Malthouses M1, M2, M3 and M4.

Site: Lot 21 DP 1029384 and also known as 2 Colo Street, Mittagong.

The above development application has been determined by the granting of consent subject to the conditions specified in this consent.

Date of determination: 13 May 2022

Date from which consent takes effect: Date of determination.

TERMINOLOGY
In this consent:

(a) Any reference to a Construction, Compliance, Occupation or Subdivision Certificate is a reference to such a certificate as defined in the *Environmental Planning and Assessment Act 1979*.

(b) Any reference to the "applicant" means a reference to the applicant for development consent or any person who may be carrying out development from time to time pursuant to this consent.

(c) Any reference to the "site", means the land known as 2 Colo Street, Mittagong NSW 2575.

The conditions of consent are as follows:

SITE REMEDIATION CONDITIONS

1. Contaminated Land Investigation **Requirements** (Stage 2 data gaps)

   The applicant shall engage the services of a suitably qualified contaminated land consultant to undertake investigations and prepare a report to address the data gaps in the Detailed Site Investigation prepared by JKEnvironments dated 22 March 2022. The investigations and report must comply with the NSW EPA statutory guidelines *Consultants Reporting on Contaminated Land: Contaminated Land Guidelines* and to the satisfaction of a NSW EPA Accredited Auditor for Contaminated Land.

   The DSI report shall be provided to Council prior to the commencement of any remediation works.

   Reason: *Compliance and statutory requirements.*

2. **Asbestos Management Plan (AMP)**

The applicant shall engage the services of a suitably qualified contaminated land consultant to prepare an AMP in accordance with section 429 of the Work Health and Safety Regulation 2017 to address the risks associated with friable and bonded asbestos encountered at the site. As part of the AMP, a SafeWork NSW Class A licensed contractor must be engaged to carry out an 'emu pick' to remove all visible ACM from the site surface. A surface clearance certificate shall be obtained by a SafeWork NSW Licensed Asbestos Assess. An interim management strategy for the stockpiles is to be outlined within the AMP.

Reason: *Compliance and statutory requirements.*

3. **Remedial Action Plan (RAP)**

The applicant shall engage the services of a suitably qualified contaminated land consultant to prepare a site Remedial Action Plan (RAP) in compliance with the NSW EPA statutory guidelines *Consultants Reporting on Contaminated Land: Contaminated Land Guidelines* and to the satisfaction of a NSW EPA Accredited Auditor for Contaminated Land.

The RAP shall be provided to Council prior to the commencement of any remediation works.

Reason: *Compliance and statutory requirements.*

4. **Section B5 Site Audit Statement or Interim Audit Advice**

Prior to the commencement of any remediation works the applicant shall engage the services of a NSW EPA Accredited Auditor for Contaminated Land to audit the RAP and issue an Interim Audit Advice or Section B5 Site Audit Statement in a form approved under the NSW Site Auditor Scheme. The Interim Audit Advice or Section B5 Site Audit Statement shall contain a clear declaration by the Auditor that the site can be made suitable for the intended use if the site is remediated in accordance with the RAP.

The Interim Audit Advice or Section B5 Site Audit Statement shall be provided to Council before the commencement of any remediation works.

Reason: *Compliance and statutory requirements.*

5. **Remediation**

The site shall be remediated in accordance with:

(a) the Plan specified in the Section B5 Site Audit Statement issued by a NSW EPA Accredited Auditor for Contaminated Land;

(b) *State Environmental Planning Policy No. 55 Remediation of Land* (SEPP 55);

(c) *Contaminated Land Management Act 1997* (CLM Act)*;* and

(d) the guidelines in force under the CLM Act and SEPP 55.

Within thirty (30) days after the completion of the remediation works, a Notice of Completion of Remediation Work shall be prepared in compliance with clause 18 of SEPP 55 and provided to Council.

Reason: *Compliance and statutory requirements.*

6. **Validation Report**

The applicant shall engage the services of a suitably qualified contaminated land consultant to prepare a site Validation Report in compliance with the NSW EPA statutory guidelines *Consultants Reporting on Contaminated Land: Contaminated Land Guidelines* and to the satisfaction of a NSW EPA Accredited Auditor for Contaminated Land.

The Validation Report shall be provided to Council prior to the issue of any Occupation Certificate for the Stage 1 works approved by this development consent.

Reason: *Compliance and statutory requirements.*

7. **Site Audit Report and Site Audit Statement**

The applicant shall engage the services of a NSW EPA Accredited Auditor for Contaminated Land to prepare a Site Audit Report and Site Audit Statement Section A1 or Section A2 (whichever is applicable) in a form approved under the NSW Site Auditor Scheme. The Site Audit Statement Section A1 or Section A2 shall contain a clear declaration by the Auditor that the site is suitable for the intended use.

The Site Audit Report and Site Audit Statement Section A1 or Section A2 (whichever is applicable) shall be issued prior to issue of any occupation Certificate for the Stage 1 works approved by this development consent., and a copy provided to Council.

Reason*: Compliance and statutory requirements.*

NB: Remediation work may be undertaken at the same time as site development work and associated heritage restoration. No occupation certificate shall be issued before a Site Audit Statement Section A1 or Section A2 meeting the abovementioned requirements is submitted to the satisfaction of Council.

8. **Compliance with Environmental Management Plan**

The applicant shall comply with any Environmental Management Plan (EMP) referred to in Section A2 of the Site Audit Statement during the construction and operation of the development.

Reason: *Compliance and statutory requirements.*

ADMINISTRATION CONDITIONS

9. Development consent is granted to concept development application No.201/1400 that sets out a concept proposal pursuant to section 4.22 of the Environmental Planning and Assessment Act 1979 for the development of the land known as 2 Colo Street Mittagong (Lot 21 SP 1029384) (herein after referred to as **the site**) together with a detailed proposal comprising Stage 1 of the application.

   The detailed works in Stage 1 of the application comprise the Maltings 1 to 4 and redevelopment of Maltster's Cottage.

   As part of the overall concept development application (as set out in the concept development application plans) the future Stage 2 of the development of the site will comprise the Maltings 5 and 6. Development consent is not granted pursuant to this consent for the construction of the Stage 2 works (Maltings 5 and 6), noting that these works are subject to future development applications.

   This development consent does not approve any future use as part of the concept development application for the development of the site and shown as Stage 2 (Maltings 5 and 6).

   Note: *For the avoidance of doubt, nothing in this concept approval prohibits the submission of a future Stage 2 development application for a prohibited purpose in reliance on the heritage conservation provisions in clause 5.10(10) of the LEP*

10. While this consent remains in force, the determination of any further development application in respect of the site cannot be inconsistent with this consent (including all conditions of consent) and the plans and documents referred to in condition 11 of this consent.

11. **Development in Accordance with Plans and Documents**

    The development must be implemented generally in accordance with the approved plans and supporting documents set out in the following table except where modified by any conditions of development consent.

    All ''future'' buildings that are proposed to be erected on the site must be contained wholly within the building envelopes shown in the plans, and all future work on the site must be in accordance with the plans and with the requirements of the following documents, except as amended by the conditions of this consent:

Plan Title / Supporting Document	**Reference / Version**	**Prepared By**	**Dated**
Plan of Detail & Levels at The Maltings, Mittagong		Veris	16-Jan-20
Architectural and Landscape Plans	A000 (G), A002 (E), A030-A031 (G), A040 (I), A200-201 (K), A203 (D), A210 (M), A211-213 (L), A220 (D), A300 (I), A400 (H), A860 (F), A861 (C), A1000	Snøhetta	

	(G), A1001-1002 (F)		
Malthouse 5 + 6	A000, A200-202, A30, A1000 (A)	Snøhetta	14-May-20
Civil & Structural Engineering Report		ARUP	1-May-20
Arboricultural Impact Assessment		Eco Logical Australia	22-May-20
Aboriginal Archaeological Survey Report		Kayandel Archaeological	8-May-20
DA Report - Acoustics		ARUP	12-May-20
Building Code of Australia Summary Report	F	Group DLA	27-Apr-20
Building Code of Australia Capability Statement	A	Group DLA	28-Apr-20
Bushfire Assessment		Peterson Bushfire	30-Apr-20
Access Planning Review		Group DLA	27-Apr-20
Stage 1 Preliminary Site Investigation		JK Environment	17-Apr-20
Sustainability Vision		Atelier Ten	6-May-20
Fire Engineering DA Support		Performance Based Consulting	7-May-20
Flood Level Info from 2014 Flood Study		-	n.d.
Flora and Fauna Assessment Report	1	Eco Logical Australia	30-Apr-20
Geotechnical Assessment		JK Geotechnics	16-Apr-20
The Maltings Koala Assessment Report		Eco Logical Australia	29-Apr-20
SD Illustrative Landscape Plan		Snøhetta	5-May-20
DA Cost Plan		MBM	28-Apr-20
Soil & Water Management Plan & Notes		J. Wyndham Prince	29-Apr-20
Utilities Servicing Assessment		J. Wyndham Prince	23-Apr-20
Landscape Management Plan		Snøhetta	May-20

Conservation Management Plan Vol 2	Draft 2	Paul Davies Architects	12-May-20
Heritage Impact Statement	Draft 2	Paul Davies Architects	May-20
Statement of Environmental Effects	7	Elton Consulting	21-May-20
Archaeology Response		Kayandel	18-Dec-20
Demolition Plans	A122-124, A151-155 (F)	Snøhetta	14-Dec-20
Design Drawings	A310 (J), A410 (I)	Snøhetta	14-Dec-20
Bushfire Response Letter		Peterson Bushfire	16-Dec-20
Vegetation Management Plan	5	Eco Logical Australia	22-Dec-20
Conservation Management Plan		Paul Davies	Dec-20
Heritage Response Letter		Paul Davies	n.d. (Dec 20)
Measured Drawings (Maltster's Cottage)	MD01-MD05 (P1)	Paul Davies	11-Jan-21
Concept Methodology – New Work and Interventions		Paul Davies	Dec-20
Services Response Letter		J. Wyndham Prince	18-Dec-20
Maltster's Cottage Conjectural Form	MD01-MD05 (A)	Paul Davies	20-Jan-21
Render, Imagery Document		Snøhetta	20-Jan-21
Plan of Management		Elton Consulting	17-Feb-21
Landscape Plans	A500 (E), A501 (D), A502 (D), A503 (E), A504 (D), A505 (E), 506 (D)	Snøhetta	
Landscape Plan (Vegetated Riparian Zone)		Snøhetta	n.d. (Dec-20)
Traffic Impact Assessment	2	Cardno	12-May-20
Updated Site Plan	A003 (J)	Snøhetta	19-May-21
Stormwater and Flooding Management Strategy	D	J. Wyndham Prince	May-21

Riparian Corridor Bank Stabilisation Concept Plan		Tooker and Associates	7-Jun-21
Property Report (Crown Lands)		Mark Groll	5-May-21
Traffic Technical Memorandum	2	Cardno	22-Dec-20
Traffic Technical Memorandum	1	Cardno	8-Jun-21
Vehicle Bridge Elevation	SD-A530	Snøhetta	-
Interim Audit Advice Letter No. 1 - Review of Preliminary Site Investigation and Detailed Site Investigation, the Maltings: 2 Colo Street, Mittagong		Rowena Salmon	22 March 2022
Detailed Site Investigation		JKEnvironments	22 March 2022
Memorandum from SLR Consulting Australia Pty Ltd	610.30708-M03-v0.1-20220302.docx	SLR Consulting Australia Pty Ltd	2 March 2022

***Reason**: To ensure the development is carried out in accordance with the approved plans and documentation.*

12. **Staging of development – Concept development consent and Stage 1 DA**

Notwithstanding any other condition of this consent, the consent permits separate Construction Certificates and Occupation Certificates to be issued for the approved development in stages, provided that all conditions of consent relevant to the development incorporated within each stage have been complied with prior to the release of the Construction Certificate or Occupation Certificate for that stage.

The development is to be carried out in the following stages:

- Detailed development application Stage 1 (Maltings 1 to 4 and redevelopment of Maltster's Cottage);
- Stage 2 DA (Maltings 5 and 6) – proposed as part of the concept development application. Any development to be the subject of a development application lodged in the future

***Reason:** To ensure the staging of the development is consistent with legislative requirements*

13. **Inconsistency between documents**

In the event of any inconsistency between the conditions of this consent and the drawings/documents referred to above, the conditions of this consent shall prevail to the extent of the inconsistency.

***Reason**: To ensure that the development is undertaken in accordance with the submitted plans and documents (as amended).*

14. **Erection of Signs**

A sign must be erected in a prominent position on any site on which building work, is being carried out:

(a) Showing the name, address and telephone number of the Principal Certifier (PC) for the work, and

(b) Showing the name of the principal contractor (if any) for any building work and a telephone number on which that person may be contacted outside working hours, and

(c) Stating that unauthorised entry to the work site is prohibited.

Any such sign is to be maintained while the building work, subdivision work or demolition work is being carried out, but must be removed when the work has been completed.

***Reason**: The condition is prescribed under clause 98A of the Environmental Planning and Assessment Regulation 2000.*

15. **Compliance with Disability Discrimination Act 1992**

This approval does not protect or guarantee against a possible claim of discrimination (intentional or unintentional) under the *Disability Discrimination Act 1992*, and the applicant/owner is therefore advised to investigate their liability under this Act.

***Reason**: To inform of relevant access requirements for persons with a disability.*

***Note**: Disability (Access to Premises - Buildings) Standards 2010 -As of 1 May 2011, if access is provided to the extent covered by this Standard, then such access cannot be viewed as unlawful under the Disability Discrimination Act 1992.*

16. **Compliance with Building Code of Australia**

That the work must be carried out in accordance with the requirements of the National Construction Code.

***Reason:** The condition is prescribed under clause 98 of the Environmental Planning and Assessment Regulation 2000.*

CONDITIONS TO BE SATISFIED PRIOR TO THE ISSUE OF THE CONSTRUCTION CERTIFICATE

17. **Traffic Committee**

The proposed construction certificate plans are to be referred to the Council's Traffic Committee prior to the issue of any Construction Certificate.

***Reason**: To ensure relevant referral occurs*

18. **Application for a Construction Certificate (Building Works)**

The applicant shall apply to Council or an Accredited Certifier for a Construction Certificate to carry out the relevant building works in accordance with this consent. The details to be included in the application for a Construction Certificate are:

(a) Architectural plans and building specifications complying with the National Construction Code (NCC) relevant Australian Standards, and the development consent and conditions.

(b) If Council or a Principal Certifier (PC) issues the Construction Certificate, engineering details must be submitted for approval for all structural elements, including but not limited to, piers, footings, reinforced concrete slab, first floor joist layout, roof trusses, steel beams and the like. The details must be prepared by a qualified chartered professional practicing consulting structural engineer. Also a certificate from the engineer must be included certifying that the design fully complies with appropriate SAA Codes and Standards and the Building Code of Australia requirements.

(c) Geotechnical report for the site, prepared by a qualified geotechnical engineer detailing the foundation conditions of the site and solutions for consideration by a structural Engineer.

(d) Essential services plan outlining the existing and proposed fire safety measures.

(e) Plans detailing the layout, extent and location of key components of any required Hydraulic Fire Safety System/s (Fire Hydrant and Fire Hose Reels) including Specifications that describe the basis for the design, installation and construction and identify the provisions of the BCA upon which the design of the system is based. The Plans and Specifications shall both be endorsed by a competent fire safety practitioner (CFSP) as complying with the relevant provisions of the Building Code of Australia (BCA).

(f) Disabled access provisions to common and public areas in accordance with AS1428 Design for Access and Mobility and the Premises Code.

(g) If an alternative solution to the "deemed to satisfy" provisions of National Construction Code is proposed, the following details must be lodged:

- Performance requirements that the alternative solution intends to meet.
- Assessment methods used to determine compliance with the performance requirements, including if and how each performance objective impacts on other requirements of the BCA; and
- A statement about the person who prepared the alternate solution, indicating qualifications, experience, insurance details, and membership of an approved accreditation body.

Reason: *A requirement under the provisions of the Environmental Planning and Assessment Act 1979.*

***Note**: Construction work may only commence upon the issue of a Construction Certificate, appointment of a Principal Certifying Authority (PCA), and lodgement of Notice of Commencement.*

***Note**: Please note that if demolition works forms part of the extent of works approved in the same application, then demolition must not commence prior to the issue of a Construction Certificate.*

19. **Appointment of Principal Certifier (PC)**

No work shall commence in connection with this Development Consent until:

(a) A Construction Certificate for the building work has been issued by:

(i) the consent authority; or

(ii) a Principal Certifier (PC); and

(b) the person having the benefit of the development consent has:

(i) appointed a Principal Certifier (PC) for the building work, and

(ii) notified the Principal Certifier (PC) that the person will carry out the building work as an owner-builder, if that is the case, and

(b1) the Principal Certifier (PC) has, no later than 2 days before the building work commences:

(i) notified the Council of his or her appointment, and

(ii) notified the person having the benefit of the development consent of any critical stage inspections and other inspections that are to be carried out in respect of the building work, and

(b2) the person having the benefit of the development consent, if not carrying out the work as an owner builder, has:

(i) appointed a principal contractor for the building work who must be the holder of a contractor licence if any residential building work is involved, and

(ii) notified the Principal Certifier (PC) of such appointment, and

(iii) unless that person is the principal contractor, notified the principal contractor of any critical stage inspections and other inspections that are to be carried out in respect of the building work, and

(c) the person having the person having the benefit of the development consent has given at least 2 days' notice to the Council of the person's intention to commence the erection of the building.

***Reason**: To ensure that there is certainty as to the consent applying to the land.*

20. **Access for People with Disabilities**

Access for people with disabilities shall be provided in accordance with the requirements of the Building Code of Australia, relevant Australian Standards and with regard to the *Disability Discrimination Act 1992*.
Prior to the issue of a Construction Certificate, the plans shall demonstrate compliance.

***Note**:* *Disability (Access to Premises - Buildings) Standards 2010 - As of 1 May 2011, if access is provided to the extent covered by this Standard, then such access cannot be viewed as unlawful under the Disability Discrimination Act 1992.*

***Reason**:* *To inform of relevant access requirements for persons with a disability*.

21. **Heritage Architect to be Commissioned**

A suitably qualified and experienced heritage consultant must be commissioned for the project.

The nominated heritage consultant must:

- provide input into the detailed design,
- be consulted and provide input on the Interpretation Plan required under Condition 22 below;
- provide heritage information to be imparted to all tradespeople during site inductions,
- oversee the works to minimise impacts to heritage values, and
- be involved in the selection of appropriate tradespersons.

Proof of this engagement must be provided before the release of the construction certificate.

Reason: *To protect heritage values across the site*

22. **Interpretation Plan**

A comprehensive interpretation strategy and plan for the site is to be prepared and submitted to Wingecarribee Council, in accordance with the Heritage NSW publication 'Interpreting Heritage Places and Items Guidelines' (2005), prior to the issue of any Construction Certificate.

The plan shall be developed to integrate:

- interpretive options including tours, displays and visually appropriate signage (entry, wayfinding and interpretive signs),
- events and activities,
- conservation of significant elements including natural, landscape and built components, and
- the inventory of existing significant items of movable heritage associated with The Maltings (opportunities for using these items to interpret the industrial use and history of the site in the redevelopment of the site is to be included in the plan).

The plan must respond to, and convey, significant Aboriginal and non-Aboriginal cultural values of the place as recognised by relevant Conservation Management Plans and listings of the site.

The plan shall identify the types, locations, materials, colours, dimensions, fixings and text of interpretive devices that will be installed as part of this project.

The approved interpretation plan must be implemented prior to the issue of an Occupation Certificate.

Reason: *To protect heritage values across the site.*

23. **Damage Deposit for Council Infrastructure**

A damage deposit in accordance with Councils Bonds Policy shall be paid to Council prior to the issue of the Construction Certificate.

This damage deposit shall be refunded upon completion of all works, on the issue of the Final Occupation Certificate. Any costs associated with works necessary to be carried out to rectify any damages caused by the development, shall be deducted from the damage deposit.

Note*:* *Full panel concrete footpath replacement in areas where connection to all services are required. This includes driveways and road concrete panels. This will stop differential settlement and maintain the integrity of council infrastructure and asset.*

Reason*:* *Protection of Council infrastructure.*

24. **Developer to provide photos of damage to Council property**

The developer must provide Council and the Principal Certifier (PC) with photos of any damage of Council property adjoining the development prior to the issue of the Construction Certificate.

Photos shall include any damage to footpaths, road furniture, landscaping/trees, drainage, water, sewer, kerb and gutter and road pavement and the like.

The construction supervisor is responsible to ensure that all contractors, sub-contractors, and delivery trucks use a designated access point to prevent damage to Council's property. Repairs to damaged Council property as a result of the construction works under this consent are to be carried out by the contractor/builder to Council's specification and supervision prior to issue of any Occupation Certificate at the developer / owners / proponent's expense.

Reason: *To ensure that Councils assets are protected.*

25. **Section 68 *Local Government Act 1993* Approvals**

Prior to the issue of a Construction Certificate, an application under section 68 of the *Local Government Act 1993* shall be made to, and issued by, Wingecarribee Shire Council, for the following approvals:

- Carry out sewerage works
- Carry out water supply
- Carry out stormwater drainage works

Reason: *A requirement under the provisions of the Local Government Act 1993.*

26. **Dilapidation Report**

A Dilapidation Report shall be undertaken on all sewerage infrastructure, which in the opinion of a suitably experienced professional and chartered qualified engineer, could be potentially affected by the construction of the project. The Dilapidation Report shall be carried out taking

into account civil infrastructure and submitted to Council prior to the issue of the Construction Certificate.

The Report shall cover structural and geotechnical factors likely to arise from the development. The person having the benefit of the development consent shall, at their own cost, rectify any damage caused to other properties during the construction of the project to the satisfaction of Council.

***Reason**: To ensure the structural stability of neighbouring buildings.*

27. **Water and Sewer Authority Conditions**

Prior to issue of a Construction Certificate, the developer shall obtain approval from Council (as the Water Supply Authority and/or as required under Section 68 of the *Local Government Act 1993*) for the works to be undertaken by submitting adequate documentation including plans, calculations and specifications which justify that the required works are in accordance with all Council's standards and all other relevant codes and guidelines.

Any sewerage infrastructure closer than 600mm to any proposed structures (or 1.2m for maintenance holes measured from the edge of the lid opening) shall be relocated away from the proposed structures. Details of the relocation as applicable shall be included in the Section 68 application to Council.

***Reason**: To ensure water and sewer reticulation*

28. **Section 138 Roads Act 1993 Approval**

Where works are proposed within the road reserve, the developer must obtain approval from Council (as the Roads Authority and/or as required under Section 138 of the *Roads Act 1993*) before any works are undertaken. Works within the road reserve may include activities such as erect a structure, dig up or disturb the surface of a public road, remove or interfere with a structure, or any other activities as defined within the *Roads Act 1993*.

The following details must be submitted to Council in order to obtain the Section 138 approval:

- A copy of approved design plans related to the development and proposed works to be undertaken.
- Traffic Control Plan (TCP) to provide protection for those within and adjacent to the work site, including the travelling and pedestrian public. The TCP must comply with the Roads and Traffic Authority's manual '"Traffic Control at Work Sites". Warning and protective devices shall comply with the provisions of AS1742.3 - 2002 Traffic Control Devices for Works on Roads. The plan must be prepared and certified by a person holding the appropriate Roads and Traffic Authority accreditation, a copy of which is to be submitted with the plan.
- Insurance details - Public Liability Insurance to an amount of $20 million, to be held by applicant / contractor undertaking the works.

***Advice:** Where works are required within a Classified Road, the Developer must obtain the concurrence and / or the approval of the Roads and Maritime Services for engineering design plans, Traffic Control Plans and approvals under Section*

138 of the Roads Act 1993.

Reason: *Statutory requirement.*

29. **Section 7.11 Contributions (formerly Section 94)**

Under Section 7.11 of the *Environmental Planning and Assessment Act 1979* (as amended), Council has satisfactorily determined that Development Contributions are applicable to this development consent, as the development is likely to require the provision of, or increase the demand for, public amenities and public services within the Wingecarribee Local Government Area.

The following Wingecarribee Shire Council Section 7.11 Developer Contributions Plans are applicable to the development:

- Roads & Traffic Management Facilities
- Resource Recovery Centre 2009
- Central Library Facility
- Section 7.11 Administration 2011 to 2031
- Open Space & Recreation Facilities

The contributions listed in the attached Notices of Payment must be paid prior to the issue of each Construction Certificate for each stage of the works.

All contributions are indexed quarterly in accordance with upward movements in the Consumer Price Index (All Groups, Sydney) as published by the Australian Bureau of Statistics (www.abs.gov.au <http://www.abs.gov.au>); Section 25I of the *Environmental Planning and Assessment Regulation 2000*; and Council's Developer Contributions Plans.

Note*:* *Copies of the Contributions Plans are available at Wingecarribee Shire Council's Administration Building Moss Vale or are available for download from Council's website www.wsc.nsw.gov.au <http://www.wsc.nsw.gov.au>.*

Note: *Payment of the contributions is to be by BANK CHEQUE OR CASH (bank transfer) and is to be accompanied by the attached sheet entitled "Notice of Payment - Developer Charges & Section 7.11". Shall the Applicant pay by personal or company cheque the plans subject to this approval will not be available for collection until the cheque has been honoured (i.e. a minimum of 10 days).*

Reason: *To retain a level of service for the existing population and to provide the same level of service to the population resulting from new developments.*

30. **Water Management Act - Certificate of Compliance**

A Certificate of Compliance under Division 5 of Part 2 of Chapter 6 of the *Water Management Act 2000* shall be obtained **prior to the issue of Construction Certificate.**

Note: *Section 64 of the Local Government Act 1993 authorises Council to issue Certificates of Compliance under Section 306 of the Water Management Act 2000. Section 64 of the Local Government Act 1993 also authorises Council*

to impose pre-conditions to the issuing of Certificates of Compliance.

As a precondition to the issuing of a Certificate of Compliance Council requires the payment of Developer Charges **prior to the issue of Construction Certificate** as prescribed by Wingecarribee Shire Council's Development Servicing Plans:

- Water Supply Development Servicing Plan;
- Sewerage Development Servicing Plan; and
- Stormwater Development Servicing Plan.

A developer Charges - Notice of Payment is attached to the back of this consent and outlines monetary contributions and unit rates applicable at the time of issue of this consent.

The water, sewer and stormwater headworks levies are indexed quarterly in accordance with upward movements in the Consumer Price Index (All Groups, Sydney) as published by the Australian Bureau of Statistics (www.abs.gov.au <http://www.abs.gov.au>); and Council's Development Servicing Plans.

Copies of Development Servicing Plans are available at Wingecarribee Shire Council's Administration Building Moss Vale or are available for download from Council's website www.wsc.nsw.gov.au <http://www.wsc.nsw.gov.au>.

The Water and Sewerage Development Servicing Plans (DSP's) were adopted by Council and came into effect on 15 September 2017. The Stormwater DSP was adopted on 9 November 2010 and came into effect on 8 December 2010. The current charges under these Plans are listed as follows:

CPI Period	**Water DSP**	**Sewer DSP**	**Stormwater DSP**
Please refer to attached sheets at end of consent	Please refer to attached sheets at end of consent	Please refer to attached sheets at end of consent	Please refer to attached sheets at end of consent
Note: The charges shown above are amounts applicable during the stated time period. These amounts will be subject to adjustment quarterly in accordance with upward movements in the Consumer Price Index (CPI) once they become operational. The CPI is published quarterly by the Australian Bureau of Statistics, www.abs.gov.au <http://www.abs.gov.au>.			

Shall new DSP's be prepared, it is possible that the charges may increase significantly. Draft DSP's must be advertised by Council for a period of 30 days prior to adoption.

Note: *Payment of the above charges is to be by BANK CHEQUE OR CASH and is to be accompanied by the attached sheet entitled "Notice of Payment - Developer Charges & Section 94". Shall the Applicant pay by personal or company cheque the plans subject to this approval will not be available for collection until such time as the cheque has been honoured (i.e., a minimum of 10 days).*

31. **Compliance Certificate**

Compliance Certificate fees, in accordance with Council's Revenue Policy are as follows and shall be paid prior to the issue of each construction Certificate: -

Water $ (refer attached sheets) + Sewer $ (refer attached sheets) + Stormwater $ (refer attached sheets) = $ (refer attached sheets)

Prior to final release, you will need to contact Council's Infrastructure Services Division for an inspection to ensure that Council will accept the infrastructure constructed. In response the Manager of Water and Sewer will specify requirements which will have to be met.

In the case of other forms of development, the Construction Certificate will not be issued until the *Water Management Act 2000* charges have been paid and/or secured and the approval of Council has been obtained.

Reason: *To retain a level of service for the existing population and to provide the same level of service to the population resulting from new developments.*

32. **Structural Engineer's Details**

Structural engineering plans are to be prepared by an experienced professional chartered practicing Structural Engineer for the following work shall be lodged with the Principal Certifying Authority and approved prior to commencing the works in accordance with a Construction Certificate:

(a) Pedestrian and vehicle bridges over Nattai River
(b) Retaining walls

Advice*:* *The name, address and qualifications of the practising Structural Engineer certifying the design shall be clearly indicated on the plans and any accompanying documentation. Such engineer is to hold qualifications appropriate to the project as defined in the Building Code of Australia. The design shall relate to the particular site.*

Advice*:* *Any such Certificate is to set forth the extent to which the Engineer has relied on relevant Specifications, Rules, Codes of Practice or Publications in respect of the construction.*

Reason: *To ensure the structural integrity of the building is achieved.*

33. **Structural Adequacy of Existing Structures**

A Certificate of Structural Adequacy prepared and signed by a professional chartered experienced qualified practicing Structural Engineer with suitable professional indemnity cover must be submitted to the Accredited Certifier in respect of the load carrying capabilities of the existing structures to support the proposed additions prior to the issue of Construction Certificates.

Reason*:* *To ensure the structural integrity of the building is not compromised.*

34. **Construction Management Plan**

To undertake development works including demolition, earthworks and construction a Construction Management Plan (CMP) is required to be submitted and approved by Council prior to issue of the Construction Certificate. The CMP shall indicate measures to be implemented to mitigate construction risks in the protection of the environment as well as public health, safety and convenience. The CMP must address the following:

(a) Details of site security;

(b) Off-street parking for employees, contractors and sub-contractors.

(c) Public safety in the use of roads and footpaths where development activities interacts with existing facilities and operations.

(d) The storage and removal, on a regular frequency, of builder's rubble and waste by trade waste contractors.

(e) Provision for loading and unloading materials;

(f) Location of all building materials, structures, plant and equipment to be stored or placed within the construction site;

(g) How materials are to be loaded/unloaded and potential impact on Council infrastructure (including but not limited to footpaths and street trees)

(h) Public risk policies and management for all contractors' employees using or gaining access over public footpaths and roads.

(i) External lighting and security alarms proposed for the construction site.

(j) Firefighting measures to be available on site during development and construction.

(k) Sanitary amenities proposed on site during development and construction.

(l) Ensuring the safety of members of the public and Council staff who may have occasion to enter and be in attendance on the site;

(m) Details of management of storm water run-off and the propose sediment and erosion control measures including the location of any rubble grids;

(n) Details of any air and dust management;

(o) Details of noise and vibration controls;

(p) Anticipated staging and duration of works

(q) Provision of Construction Traffic Management Plan (CTMP) and Traffic Control Plans (TCP) addressing construction related traffic issues including:

- Surrounding traffic environment including roads, public transport and existing parking restrictions
- Truck routes to and from the site
- General site access and egress for construction vehicles and equipment purposes
- Frequency of truck movements
- Sweep paths for trucks entering, circulating and exiting site
- Location of vehicle standing areas to load and unload and any work zones (if required)
- Impact of works on residents, businesses, pedestrians, cyclists, local traffic, emergency services and management of staff parking
- Directional signage for pedestrian and trafficable areas

Reason: *To ensure the safety, amenity and protection of public infrastructure and the environment.*

35. **Stormwater - Control of Peak Discharge**

Adequate and suitable infrastructure shall be provided to ensure the peak discharge from the site is no greater than the pre-developed peak discharge. This infrastructure shall be designed in accordance with Council's Engineering Design Construction Specifications and Drawings. Calculations to demonstrate that the post-development peak discharge will not exceed the pre-development peak discharge shall be provided with the application for a Construction Certificate.

Any stormwater temporarily stored onsite shall be done in a manner that does not jeopardise public safety. In this regard the development shall provide a risk assessment with the Construction Certificate documentation.

Reason*:* *To ensure the peak discharge from the site is no greater than the pre-developed peak discharge.*

36. **Detailed Stormwater Drainage System Design**

Prior to the issue of the Construction Certificate, a detailed storm water hydraulic drainage plan for the disposal of storm water from the site including the management of overland flows from Southey Street, prepared in accordance with Council's Design Standards shall be submitted to Council and approved by Council's Development Engineer.

Shall any changes be required to the approved storm water drainage plan, the amended design shall achieve equivalent performance standards in accordance with Design Specifications.

Where the proposed design extends beyond the property boundary, separate approval under Section 138 of the Roads Act 1993, must be obtained from Council prior to the commencement of works.

The applicant is advised to contact Council for clarification of proposed works for which approval under Section 138 of the Roads Act 1993 applies.

Reason: *To ensure adequate storm water management*.

37. **Accessible Car Parking Spaces**

Sufficient parking for disabled persons must be provided to ensure compliance with any applicable legislation.

These spaces shall be constructed and identified in accordance with Volume 1 of the National Construction Code (NCC) and AS/NZS 2890.6 - Parking Facilities; Off-street parking for people with disabilities.

Details to demonstrate compliance shall be submitted to and approved by the Certifying Authority prior to the issue of the Construction Certificate.

Reason: *To inform of relevant access requirements for persons with a disability.*

38. **Carpark Design and Site Servicing**

The Construction Certificate plans must demonstrate that the car park is designed to accommodate the turning movements of the largest vehicle servicing the development. The car park design shall incorporate the following:

(a) The site shall accommodate the turning movements of applicable service vehicles.
(b) Service vehicles shall manoeuvre into and out of the site in a forward direction.
(c) The front overhang, and swept path made by the service vehicle shall not obstruct car park traffic or encroach onto parking spaces.
(d) The vehicle swept path shall be reflected on the engineering design plans.
(e) Loading and unloading of service vehicles shall be undertaken onsite with no intrusion onto the road system.
(f) The footpath crossing shall be splayed from the property boundary to the kerb line to accommodate the swept path made by the service vehicle.

Reason: *To ensure that the car parking area is constructed to council requirements*

39. **Signage and Line Markings Plan**

Signage and Line Marking Plan for proposed vehicular crossing in Ferguson Crescent prior to the issue of the Construction Certificate. The access through this crossing shall be for the use by staff and service vehicles only.

Reason: *To provide for safety and certainty for pedestrians and vehicles*

40. **Off Street Parking Provision – General**

139 off-street car parking spaces suitably marked in accordance with Site Plan prepared by Snohetta; drawing number SD-A003; revision I; dated 04/05/2020 with minimum dimensions in accordance with Australian Standard AS2890.1 Off Street Car Parking. Details shall be submitted to the Accredited Certifier prior to the issue of a Construction Certificate showing compliance with this condition.

Reason*:* *To ensure adequate parking and access.*

41. **Waste Management Plan - Construction Waste**

A Waste Management Plan shall be completed and submitted to Council for approval, prior to the issue of the Construction Certificate for the development.

Requirements of the approved Waste Management Plan shall be complied with during site preparation and throughout demolition and construction. Waste management and its storage must not pose a threat to public health or the environment.

Reason*:* *To minimise the amount of waste going to landfill.*

42. **Erosion and Sediment Control Plan**

An Erosion and Sediment Control Plan shall be prepared in accordance with “Landcom’s Blue Book” for sedimentation and erosion control plan by a suitably qualified person and approved

by Council prior to issue of the Construction Certificate.

The Erosion and Sediment Control Plan shall include scaled drawings and detailed specifications which can be referred to onsite by project management staff or project construction supervisor. Items to be shown on the Plan shall include:

(a) Locality of the site, a north point and scale.

(b) Existing contours of the site including catchment area boundaries and indications of direction of fall.

(c) Location of and basic description of existing vegetation.

(d) Diversion of uncontaminated up-slope run-off around the disturbed sites.

(e) Location of significant natural areas requiring special planning or management including waters, floodplains, seasonally wet areas, areas prone to ponding/water logging, unstable slopes etc.

(f) Nature and extent of earthworks, including cut and fill roadworks.

(g) Location of all soil and material stockpiles.

(h) Location of site access, proposed roads and other impervious areas.

(i) Existing and proposed drainage patterns.

(j) Location and type of proposed erosion and sediment control measures.

(k) Site rehabilitation proposals, including final contours.

(l) Time of placement of sediment controls.

(m) Staging of works and how the plan is to be implemented for each stage or activity on site.

(n) Maintenance schedule.

***Reason**: To minimise soil erosion and sediment movement during construction.*

43. **Erosion and Sediment Control Plan**

To minimise soil erosion and sediment movement during construction, the following measures shall be implemented:-

(a) Erosion and sediment controls are to be in place before the disturbance of any soils on the site and are to be maintained during the works and for as long as necessary after the completion to prevent sediment and dirty water leaving the site and/or entering the surface water system outside the worksite boundaries.

(b) Topsoil stripped from the construction site shall be stockpiled and protected from erosion until re-use during landscaping. Soil is to be retained within the property.

(c) Stockpiles of construction and landscaping materials, and of site debris shall be located clear of drainage lines and in such a position that they are protected from

erosion and do not encroach upon any footpath, nature strip or roadway.

(d) Final site spoil shall be disposed of to conform to the specifications and standards quoted and to any conditions of approval of those measures and must comply with any relevant NSW Department of Planning and Environment requirements.

(e) Trenches shall be backfilled, capped with topsoil and compacted to a level at least 75mm above adjoining ground level.

(f) Vehicular access shall be controlled so as to prevent tracking of sediment onto adjoining roadways, particularly during wet weather or when the site is muddy. Where sediment is deposited on adjoining roadways the same shall be removed by means other than washing. All material is to be removed as soon as possible and the collected material is to be disposed of in a manner which will prevent its mobilisation.

(g) All disturbed areas shall be progressively stabilised and/or revegetated so that no areas remain exposed to potential erosion damage for more than 14 days or such other period as may be approved after earthworks cease. All driveways and parking areas shall be stabilised with compacted sub-grade as soon as possible after their formation.

(h) Sediment control devices shall be installed prior to any site works being carried out and prior to construction work commencing and remain in position until the disturbed soils are turfed, 70% vegetated or otherwise stabilised.

***Reason**: To minimise soil erosion and sediment movement during construction.*

44. **Pedestrian Safety**

The Contractor shall endeavor to minimise disturbance to pedestrian / vehicle traffic in the vicinity of the site. If required by Council a hoarding shall be erected and consent required in accordance with Section 138 of *Roads Act 1993*.

Details shall be submitted to the Accredited Certifier prior to the issue of a Construction Certificate showing compliance with this condition.

***Reason:** To ensure pedestrian and vehicular safety.*

45. **Water and Sewer Modelling**

The developer shall undertake water and sewer modelling in accordance with Council's Water and Sewer Modelling Fact Sheet and incorporate recommendations made within the report into the engineering design submitted under Section 68 of the *Local Government Act, 1993*.

***Reason**: To ensure the proposed development does not impact on Council's ability to provide minimum level of service to water and sewer customers.*

46. **Energy Service Provider Requirements**

The provision of underground electricity to service the development in accordance with the requirements of the Energy Service Provider. The Developer shall submit to Council documentary evidence from the Energy Service Provider qualifying that the requirements of

that provider have been obtained. The requirements of the supply authority will need to be met prior to the issue of the Occupation Certificate.

***Reason**: To ensure appropriate infrastructure is provided to the development.*

47. **Electricity Substation**

Any required electricity substation shall be located within the boundaries of the site and covered by an appropriate Section 88B instrument or easement under the *Conveyancing Act 1919*.

Documentary evidence of compliance, including correspondence from the energy authority is to be provided to the Accredited Certifier prior to the issue of a Construction Certificate detailing the energy authority's requirements.

***Reason**: To ensure appropriate access to utility is provided.*

48. **Interpretation of the Maltster's Cottage**

Remnants of the 1907 Maltster's Cottage and garden shall be retained and integrated into the new Exhibition Building and its immediate setting to interpret the historical significance and use of the building as part of the former Maltings industrial complex. As the building is severely damaged and unstable, elements to be retained shall be capable of interpretation without reconstruction. Details are to be provided to Wingecarribee Council for approval prior to the release of the construction

***Reason:** To ensure that the historical significance of the site is recognised and preserved for future generations.*

49. **Plan of Management**

An updated plan of management (POM) is to be approved by Council prior to the occupation of any additional hotel rooms or new function venues. The POM is to include, but is not limited to the following:

- Hours of operation for each component of the facility;
- Operational Noise management both indoor and outdoor venues – this is to be consistent with and to reference the recommendations within associated for noise reports in regard to noise limiters, times at which windows shall be closed etcetera;
- Ancillary retail activities –gallery spaces;
- Safety of guests – warning signage for rail line corridor as needed;
- Management of accommodation
- Use of swimming pool;
- Parking and traffic management.

***Reason:** To protect the amenity of hotel patrons and adjoining areas*

50. **Noise from Mechanical Equipment**

The proposed use of the premises and the operation of all plant and equipment shall not give rise to an 'offensive noise' as defined in the *Protection of the Environment Operations Act 1997*.

Prior to the application for a Construction Certificate, the developer must submit to the Council or the accredited certifier a report from a suitably qualified acoustic consultant (who is a member of either the Australian Acoustical Society or the Association of Australian Acoustical Consultants). The report must be submitted with or before the application for a Construction Certificate and must:

- include the measurements and calculations; and
- certify that the method of treating all mechanical equipment will ensure that the noise level, as measured at the most or potentially most affected noise sensitive locations, will not exceed the recommended acceptable project specific noise levels, detailed in the NSW EPA *Noise Policy for Industry.*

If the mechanical equipment is to be operated between 10pm-7am on weekdays and/or 10pm-8am on weekends and public holidays the report must also certify that when operated it will be inaudible from within a habitable room of another residential premises (regardless of whether any door or window is open).

After completion of the works, prior to the issue of the Occupation Certificate, the developer must submit to the Council or the accredited certifier, a report from a suitably qualified acoustic consultant (as above) verifying that the works as installed meet the above design conditions.

***Reason**: To ensure that noise emissions from the development satisfy legislative requirements and prevent loss of amenity to the area.*

51. **Noise Levels at Residential Boundaries**

The LA10 noise level emitted from the use must not exceed the background noise level (LA90) in any Octave Band Centre Frequency (31.5 Hz to 8 kHz inclusive) by more than 5 dB between the hours of 7.00am and 12.00 midnight when assessed at the boundary of any affected residence.

Notwithstanding compliance with the above, the noise from the use must not be audible within any habitable room in any residential property between the hours of 12.00 midnight and 7.00am.

Reason: *To protect the amenity of adjoining properties*

52. **Protection of Existing Trees and Native Vegetation**

Prior to the issue of any Construction Certificate, trees and native vegetation proposed for retention and those approved for removal must be clearly identified on all the final engineering and landscaping plans. All fenced tree protection areas must be clearly marked as "No Go Area" on all plans. The location of any threatened species, endangered populations or ecological communities must also be marked on all plans.

Reason: *To clearly articulate trees and vegetation to be removed and retained.*

53. **Protection of Specific Trees**

Trees 93 and 94 (as identified in the approved Arborist Report) must be retained as part of any approved development on the site in accordance with this consent. The approved plans must be amended to identify the retention of these trees and submitted to and approved by Council prior to the issue of a Construction Certificate.

Tree 35, tree 36, tree 37 and tree 42 (as identified in the approved Arborist Report) must be retained or alternatively can be replaced subject to Council approval with suitable alternatives, to a minimum size of 25 litres. The approved plans must be amended to identify the replacement of these nominated trees where approved by Council, and submitted to and approved by Council prior to the issue of a Construction Certificate. The nominated trees must be replaced (where approved) to the satisfaction of Council prior to the issue of an Occupation Certificate for the Stage 1 works.

Reason: *To clearly articulate trees and vegetation to be removed, replaced, and retained.*

54. **Food premises compliance to be assessed prior to the issue of the Construction Certificate**

Prior to the issue of the Construction Certificate, detailed drawing of the design, construction and fit-out of the proposed food premises shall be submitted to either Council or the nominated Accredited Certifier to be assessed for compliance with the *Food Act*, the *Food Regulations,* the *Food Safety Standards* and the Australian Standard *AS4674 – 2004 Design, Construction and Fit-out of Food Premises*.

Reason: *To ensure compliance with statutory requirements.*

55. **Erection of Nesting Boxes**

Hollows or nest boxes are to be installed on a one for one basis for any natural hollow removed by the development. Nest boxes are to be constructed of appropriate durable materials (e.g. painted marine ply, native hardwood or similar) and fixed to recipient trees with stainless steel screws, wire or similar. All nest boxes are to be erected prior to any clearing occurring on the development site.

The Consulting Ecologist must identify suitable locations to erect hollows/nest boxes that minimise the risk of vandalism and maximise the likelihood of occupation by native fauna. To replace nest hollows lost, at least 1 large nest box per tree removed shall be erected at least 5 metres high within retained vegetation at the rear of the property within the retained native trees.

Reason*:* *To provide an equivalent replacement for any natural hollow to be removed.*

56. **ARTC approval – where required**

Shall any excavations be located within 25m of the rail corridor, the plans must be submitted to the ARTC for approval prior to any works being undertaken. Compliance with any requirements is required.

Reason: *To ensure relevant landowner approval adjoining rail corridor*

CONDITIONS TO BE SATISFIED PRIOR TO THE COMMENCEMENT OF WORK

57. **Prior to the Commencement of Work**

(a) Prior to commencement of any works, the following information shall be forwarded to Council and approved:

1. Plan of Management;
2. Further Details of internal architecture - Details to be included in set of plans for details shown on renderings provided and other visual imagery as provided.
3. Materials and colours to be provided for each internal and external space by construction stage.

(b) Notification of Licensed Builder

Building work shall not commence until the name and licence number of the builder is advised to Council. Notification shall be in writing and shall include the written concurrence of the builder for their licence to be used and a copy of this builders licence.

(c) Certification of Structural Details

Building works shall not commence until the submitted (structural steel/reinforced concrete) details are certified as structurally adequate by a chartered, professional and experienced Structural Engineer.

Note: *The name, address and qualifications of the practicing structural engineer certifying the design shall be clearly indicated on the plans and any accompanying documentation. Such engineer is to hold qualifications sufficient to gain admission to the Institute of Engineers of Australia. The design shall relate to the particular site.*

Any such Certificate is to set forth the extent to which the Engineer has relied on relevant Specifications, Rules, Codes of Practice or Publications in respect of the construction.

(d) Fencing of Building Site

The building site shall be fenced in accordance with Safework NSW guidelines prior to any building works commencing on site.

Additionally, a driveway is to be constructed in accordance with the attached specification prior to any works commencing on the site.

Reason: *To comply with Councils requirements prior to the commencement of works.*

58. **Notice of Commencement**

No work shall commence until a notice of commencement form has been submitted (form will be attached with issue of a Construction Certificate or Subdivision Works Certificate or available from Council's website), giving the Principal Certifier (PC):

(a) Not less than two (2) days' notice of the date on which it is proposed to commence work associated with this Development Consent.
(b) Details of the appointment of a Principal Certifier (PC) (either Wingecarribee Council or another Principal Certifier).

(c) Details of the Principal Contractor or Owner Builder:

- Name
- Builders Licence Number or Owner Builder Permit Number
- Principal Contractor Company Name
- Principal Contractor ABN

- Address of Principal Contractor or Owner Builder
- Email Address

(d) Copy of the HBCF Insurance Certificate (if residential building works exceed $20,000) or Owner Builder Permit.

(e) Details demonstrating compliance with development consent conditions relevant prior to commencement of the development been satisfied.

Reason: *Statutory requirement.*

Advice: *Attached Notice of Commencement form to be completed.*

59. **Principal Certifier (PC) Sign**

Prior to commencement of any work, signage must be erected in a prominent position on the work site identifying:

- The Principal Certifier (PC)by showing the name, address and telephone number of the Principal Certifier (PC);

- The Principal Contractor by showing the Principal Contractor's name, address and telephone number (outside of work hours) for that person.
- The sign must state that unauthorised entry to the work site is prohibited.

Any such sign is to be maintained while the work is being carried out but must be removed when the work has been completed.

This clause does not apply to building work, subdivision work or demolition work that is carried out inside an existing building that does not affect the external walls of the building.

Advice: *Where Council is the PCA, signage is available from Council.*

Reason: *Statutory requirement.*

60. **Construction Certificate**

No work shall commence until a:

(a) Construction Certificate is obtained from either the Wingecarribee Shire Council or an Accredited Certifier; and
(b) Construction Certificate lodged with Council obtained from an Accredited Certifier (together with associated plans and documents) - a fee applies for this service.

Reason *Statutory requirement.*

61. **Food Premises - General**

The construction and operation of the food premises shall comply with all applicable legislation/regulation and standards, including:

- The *Food Act 2003*;

- Food Regulation 2010;
- Food Standards Code, Food Standard 3.2.3;
- Australian Standard AS4674–2004 *Design, Construction and Fit out of Food Premises* and
- Mechanical ventilation - Australian Standard 1668.2-2012.

In the event that the design, construction and/or fit-out of food handling areas is inadequate for the food handling activities carried out on the premises, the Applicant will be required to undertake such works as is necessary to remedy any non-compliance with the above-mentioned legislation and Standards within a period determined by Council.

Reason: *Compliance with legislation and standards.*

62. **Developers Representative during Construction of Works**

A minimum of 48 hours prior to commencement of any construction works on site the Developer shall nominate to Council in writing their representative (Construction Supervisor) who will be responsible for all aspects of construction and site control, including Traffic Control, Sediment and Erosion Control and liaison with Council Officers and all other Authorities.

Details to be submitted include:-

1 Name of Representative:
2 Company:
3 Position:
4 Contact phone:
5 Contact fax:
6 After Hours Contact:
7 Signature of Representative:
8 Signature & Acceptance of representative by the Developer:
9 Council requires that the nominated " Construction Supervisor" either hold qualifications acceptable for Corporate Membership of the Institute of Engineers, Australia, or be Approved by the Director and/or has proven experience and suitable relevant qualifications for the control, supervision and management of civil engineering works as required for carrying land development.

Prior to commencing any works on site, the representative shall:

10 Inform Council in writing of their intention 7 days before entering the site.
11 Submit to Council a proposed Schedule of Works.

The Developer may be required to arrange for Council to peruse all other contract documentation prior to the contractor arriving on site to commence work (Schedule of Works, Specifications Bill of Quantity, traffic control plan and Soil and water management plan).

Failure to comply with the requirements as set out above will result in an immediate stop work order.

Reason: *Statutory requirement.*

63. **Traffic Management Plan**

A minimum of seven (7) days prior to the commencement of work, the developer shall submit to Council a Certified Traffic Management Plan for each activity of work in accordance with the current version of Roads and Maritime Services (RMS) document "Traffic Control at Work Sites". This plan must include each construction activity that involves works on or adjacent to public land. If the work site alters, further plans are to be submitted to Council.
A copy of the plan(s) is to be kept on site at all times.

Reason: *To ensure public safety*

64. **Heritage - Submission of Photographic Survey**

Prior to the commencement of demolition, a photographic survey shall be submitted to Council. The photographic survey shall be prepared in accordance with the guidelines "Archival Recording of Heritage Items Using Film or Digital Capture" published by the NSW Heritage Office. Three copies of the Photographic Survey shall be submitted in an unbound report format. Each copy shall contain:

<u>For Film-based Projects:</u>

- A very brief report or introduction which explains the purposes of the report and gives a brief description of the subject, as well as details of the sequence in which images were taken. The report may also address the limitations of the photographic record and may make recommendations for future work:
- Measured plans of the building at 1: 100 scale;
- A site plan of the building at min 1: 200 scale;
- Plans of the building marked up to indicate where the photographs were taken and the direction of the photograph;
- The report shall include all technical details including camera and lenses, film type, exposure and colour information;
- Catalogue sheets, photographic plan, supplementary maps;
- B&W materials:
- One set of archivally processed and numbered B&W negatives stored in archival sheets or envelopes
- Three sets of archivally processed proof (contact) sheets, labelled and cross-referenced to the catalogue sheets
- Colour materials:
    - Three sets of colour transparencies (either original transparency plus two duplicates or three original images taken concurrently) numbered, labelled and cross-referenced to the catalogue sheets and stored in archival slide sheets.

<u>Digital Projects</u>

- A very brief report or introduction which explains the purposes of the report and gives a brief description of the subject, as well as details of the sequence in which images were taken. The report may also address the limitations of the photographic record and may make recommendations for future work;
- Measured plans of the building at 1: 100 scale;
- A site plan of the building at min 1: 200 scale;
- Plans of the building marked up to indicate where the photographs were taken and the direction of the photograph;
- The report shall include all technical details including camera and lenses, image file size and format, technical metadata associated with the images, and colour information;
- Catalogue sheets, photographic plan, supplementary maps;
- Three sets of colour thumbnail image sheets (e.g. A4 page with six images by six

images) showing images and reference numbers.
- The thumbnail sheets shall be processed with archivally stable inks on archivally acceptable photographic paper and cross referenced to catalogue sheets;
- One full set of 10.5x14.8cm (A6) colour prints OR, if a large project, a representative set of selected images processed with archivally stable inks on archivally acceptable photographic paper.
- A CD or DVD containing electronic image files saved as RAW files with associated metadata, and cross referenced to catalogue sheets.

The report shall be presented on archival quality paper in a suitable archival binder and slipcase, and all storage of individual components must be in archival quality packaging suitable for long term storage.

***Reason**: Heritage record.*

65. **Aboriginal heritage**

(a) *Aboriginal Cultural Heritage Assessment*

An Aboriginal cultural heritage assessment report (ACHAR) must be prepared for the site, adhering to OEH April 2011 (see below) and submitted to and approved by Council prior to the issue of a Construction Certificate and prior to the commencement of any work (including any demolition or excavation work) on-site The ACHAR must investigate and assess the four separate aspects of Aboriginal cultural heritage outlined under OEH April 2011—not just the potential for Aboriginal objects.

(b) *Aboriginal Community Consultation*

Formal Aboriginal community consultation is to be conducted in accordance with Heritage NSW guidelines and the National Parks and Wildlife Regulation 2019. This is undertaken as part of the ACHAR, in line with DECCW April 2010. Aboriginal community consultation must commence before any archaeological test excavation can occur and must be completed prior to the issue of any Construction Certificate and prior to the commencement of any demolition or excavation work onsite.

(c) *Aboriginal Test Excavation*

The Aboriginal heritage assessment has identified four areas where archaeological test excavation is recommended (KAS 2020, pp.56-57). Test excavation must be undertaken at an early stage and must be completed prior to the issue of any Construction Certificate and prior to the commencement of any demolition or excavation work onsite to provide the best opportunity to prevent harm to Aboriginal cultural heritage and avoid delays during the construction process. Archaeological test excavation can occur as part of the ACHAR and adhere with the Code of Practice (DECCW 24 September 2010) without need for an AHIP. With respect to all other works, no harm may occur to Aboriginal objects unless an AHIP has been issued, or the process of Aboriginal test excavation has proven no Aboriginal objects are present and the ACHAR has been prepared to provide a due diligence defence against harm (DECCW 13 September 2010).
No ground disturbance, including for geotechnical investigations, may be conducted in areas of Potential Archaeological Deposit and archaeological sensitivity (KAS 2020, p.47) unless an Aboriginal Heritage Impact Permit (AHIP) has been issued by Heritage NSW or the due diligence defence is in place.

- DECCW Aboriginal cultural heritage consultation requirements for proponents 2010. Part 6 National Parks and Wildlife Act 1974 (April 2010);
- DECCW Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW (13 September 2010);
- DECCW Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (24 September 2010);
- OEH Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (April 2011);

(d) *AHIP application*

Shall the site contain Aboriginal objects, and these will be impacted by the proposed development, an AHIP will be required from Heritage NSW prior to any works commencing on site.

Reason:

1 The LEP listing notes that the site includes remnants of earlier enterprises on the site that pre-date the Maltings.

2 Landscape and other aspects of the Maltings may hold heritage and archaeological significance.

3 All historical archaeological 'relics' with heritage value are protected by s139-140 of the NSW Heritage Act, 1977, and any requirements for archaeological excavation permits shall be known before works on site can commence.

66. **Approval Required for Work within Road Reserve - Section 138 Roads Act 1993**

Prior to any works being undertaken within the road reserve, the Developer must obtain approval from Council (as the Roads Authority and / or as required under Section 138 of the Roads Act 1993). Works within the road reserve may include activities such as erect a structure, dig up or disturb the surface of a public road, remove or interfere with a structure, or any other activities as defined within the Roads Act 1993.

The following details must be submitted to Council in order to obtain the Section 138 approval:

- A copy of the approved development plans and proposed works to be undertaken.
- Plans and adequate documentation which validate that the required works are in accordance with Councils Engineering Plans and Specifications and relevant standards.
- Traffic Control Plan (TCP) to provide protection for those within and adjacent to the work site, including the travelling and pedestrian public. The TCP must comply with the Roads and Traffic Authority's manual '"Traffic Control at Work Sites". Warning and protective devices shall comply with the provisions of AS1742.3 - 2002 Traffic Control Devices for Works on Roads. The plan must be prepared and certified by a person holding the appropriate Roads and Traffic Authority accreditation, a copy of which is to be submitted with the plan.

- Insurance details - Public Liability Insurance to an amount of $20 million, to be held by applicant / contractor undertaking the works.

***Advice**: Where works are required within a Classified Road, the Developer must obtain the concurrence and / or the approval of the Roads and Traffic Authority for engineering design plans, Traffic Control Plans and approvals under Section 138 of the Roads Act 1993.*

***Reason**: Statutory requirement.*

67. **Relocation of Existing Services**

Where existing services including drainage, sewerage and water are required to be relocated as a result of the development, a Section 68 approval is required from Council prior to commencing work. Inspection of these works by Council as the water supply authority is required..

***Reason:** Statutory requirement.*

68. **Fencing of the Construction Site**

A temporary hoarding or temporary construction site fence must be erected between the work site and adjoining lands before the works begin and must be kept in place until after the completion of the works if the works:

(a) could cause a danger, obstruction or inconvenience to pedestrian or vehicular traffic, or

(b) could cause damage to adjoining lands by falling objects, or

(c) involve the enclosure of a public place or part of a public place.

***Reason**: To ensure that the safety of the public is not compromised.*

69. **Erosion and Sediment Control**

Erosion and sediment control measures (as per the approved Erosion and Sediment Control Plan) shall be installed prior to the commencement of works.

***Reason**: To ensure that sediment does not leave the site as a result of the construction of the development.*

70. **Wheel Wash**

A vehicle wheel wash, cattle grid, wheel shaker or other appropriate device, shall be installed in accordance with the approved Erosion and Sediment Control Plan prior to the commencement of any site works, to prevent mud and dirt leaving the site and being tracked.

***Reason:** To minimise soil being trucked off site.*

71. **Tree Protection Measures**

Protective fencing is to be installed around the tree to be retained in line with the Tree Protection Zone or per direction of the site arborist.

This fencing is to be constructed of chain wire mesh 1.8m high, which is supported by steel stakes or piping and braced to resist impacts and as per the requirements detailed in AS4970-2009 "Protection of Trees on Development Sites", the installation of which is carried out under the supervision of the arborist.

***Note**:* *Removal of the protective fencing during construction work will affect bonds and may result in fines or legal proceedings being instigated by Council against the applicant and/or principal contractor.*

***Reason**:* *To ensure the identified tree/s to be retained as appropriately protected.*

72. **Set Out Survey**

The development shall be set out by a Registered Land Surveyor to ensure the correct location on the site in accordance with the approved site plan prior to the commencement of works.

***Reason**:* *To ensure compliance with the approved plans.*

73. **Traffic Control Plan**

A minimum of seven (7) days prior to the commencement of work, the developer shall submit to Council a Certified Traffic Management Plan for each activity of work in accordance with the current version of Roads and Maritime Services (RMS) document "Traffic Control at Work Sites". This plan must include each construction activity that involves works on or adjacent to public land. If the work site alters, further plans are to be submitted to Council. A copy of the plan(s) is to be kept on site at all times.

Reason: *To ensure public safety.*

CONDITIONS TO BE SATISFIED DURING THE CONSTRUCTION PHASE

74. **Compliance and Implementation of Conservation Management Plan**

The Applicant is to ensure the ongoing compliance and implementation of the Conversation Management Plan approved by this consent and referenced in condition 11.

75. **Approved Plans to be available on site**

Endorsed Council approved plans, specifications, documentation and the consent shall be made available on site at all times during construction.

***Reason**:* *To ensure compliance with approved plans.*

76. **Imported 'Waste-derived' Fill Material**

The only waste derived fill material that may be received at the development site is:

- Virgin excavated natural material (VENM) within the meaning of the *Protection of the Environment Operations Act 1997* (POEO); or
- Any other waste-derived material the subject of a resource recovery exemption under clauses 91 & 92 of the *Protection of the Environment Operations (Waste) Regulation 2014* that is permitted to be used as fill material.

***Note**: Any waste-derived fill material the subject of a resource recovery exemption received at the development site must be accompanied by documentation as to the material's compliance with the exemption conditions and must be provided to the Principal Certifying Authority.*

The application of waste-derived material to land is an activity that may require a licence under the *Protection of the Environment Operations Act 1997*. However, a licence is not required if the only material applied to land is virgin excavated natural material or waste-derived material that is the subject of a resource recovery exemption under clauses 91 & 92 of the *Protection of the Environment Operations (Waste) Regulation 2014*.

Resource recovery exemptions are available on the NSW EPA website at http://www.epa.nsw.gov.au/waste/.

***Reason**: To ensure that imported fill is of an acceptable standard for environmental protection purposes.*

77. **Asbestos Containing Material**

Any Asbestos Containing Material (ACM) present at the site shall be managed in compliance with the applicable statutory requirements, standards and guidelines.

***Reason**: Compliance and statutory requirements.*

78. **Engineering Inspections by Council**

24 hours prior to the covering of the following works, Council shall be notified by the licensed builder, owner builder or licensed plumber/drainer that the following works are ready for inspection:

(a) Piers associated with external drainage designed to distribute weight of structure away from sewer main prior to pouring of concrete.
(b) Sewer / water main extensions/augmentations.

***Note**: An accredited certifier may not be substituted for Council in respect of these inspections, as Council remains the sole responsible authority for these matters.*

***Reason:** Statutory requirement.*

79. **Progress Survey - Major Development**

In order to ensure compliance with approved plans, a Survey Certificate (prepared to Australian Height Datum), shall be prepared by a Registered Surveyor showing the following:

(a) At the completion of excavation, prior to the placement of any footings, showing the completed level of the excavation and its relationship to the boundaries;

(b) Prior to placement of concrete, the ground floor level, showing the level of the form work and its relationship to boundaries including relevant footpath and roadway levels;

(c) Prior to placement of concrete at each second-floor level showing the principal level of the formwork and the intended relationship of the completed works to the boundary;

(d) Prior to roofing, or completion of the highest point of the building, showing the anticipated level of the completed work and the relationship to the boundary; and

(e) At completion, works showing the relationship of the building to the boundary.

Progress certificates in response to points (a) through to (e) shall be produced to the Council or the Principal Certifying Authority at the time of carrying out relevant progress inspections. Under no circumstances will work be allowed to proceed shall such survey information be unavailable or reveals discrepancies between the approved plans and the proposed works.

***Reason**: To ensure compliance with approved plans.*

80. **Demolition Requirements**

Any demolition shall be carried out in accordance with the requirements of AS2601-2001 "The Demolition of Structures".

Amongst others, precautions to be taken shall include compliance with the requirements of the SafeWork NSW and Council's Water and Sewer Asset Protection, including:-

(a) Protection of site workers and the general public.

(b) Erection of hoardings where appropriate.

(c) Asbestos removal handling and disposal where applicable by licensed contractors.

(d) Ensuring only licensed demolition contractors are used as required pursuant to Occupational Health and Safety Legislation.

(e) Appropriate precautions are taken in regard to lead based paints.

(f) Water and Sewer Asset Protection

All water and sewer assets on the site or on adjacent road reserve or lands that may be affected by the demolition works are to be clearly identified on site and protected from damage. Those water and sewer protection measures are to be shown on the site plan and are to be approved by Council's Water and Sewer Planning and Development Engineers before any demolition works can commence.

(g) Sewer Assets Temporary Disconnection or Closure

The site sanitary drainage is to be temporarily disconnected or closed off by a suitably qualified Plumber from any of Council's sewer sidelines, sewer junctions and or boundary traps that are to be retained and reused to prevent ingress contaminants into Council's sewer mains. This work shall be sited and approved by Council's Water and Sewer Development Engineer before demolition works can commence.

(h) Removal of Redundant Council Sewer Assets and Water Services

The site sanitary drainage is to be temporarily disconnected or closed off by a suitably qualified Plumber from any of Council's sewer sidelines, sewer junctions and or boundary traps that are to be disconnected by Council to prevent ingress of contaminants into Council's sewer mains. This work shall be sited and approved by Council's Water and Sewer Development Engineer before demolition works can commence.

Make application and pay fees for the removal of redundant sewer assets and or water services. These fees shall be paid before any demolition works can commence.

Redundant water meter shall not be removed to allow for final readings and removal by Council staff.

(i) Temporary Use of Council Sewer Junctions and Water Services

During demolition or building works Council may permit temporary use of sewer junctions and water services. Details of the proposed use shall be shown on the site plan and are to be approved by the Water and Sewer Planning and Development Engineer before any demolition works can commence.

Water services that are to be temporarily retained shall not have the water meter disconnected or removed. An approved backflow prevention device shall be installed. Details shall be shown on the site plan and are to be approved by the Water and Sewer Planning and Development Engineer before any demolition works can commence.

The disposal of refuse is to occur at an approved location. Council will require documentary proof of destination for hazardous materials such as asbestos and contaminated soils and may request evidence on disposal of other demolition materials - refer approved Waste Management Plan.

Reason: *To comply with statutory requirements.*

81. **Unexpected Finds Protocol - Notification of discovery of an archaeological relict**

A person who is aware or believes that he or she has discovered or located a relic (in any circumstances, and whether or not the person has been issued with a permit) shall:

(a) within a reasonable time after a person first becomes aware or believes that the person has discovered or located that relic, notify the Office of Heritage of the location of the relic, unless the person believes on reasonable grounds that the Office of Heritage is aware of the location of the relic, and

(b) within the period required by the Office of Heritage, furnish the Office of Heritage with such information concerning the relic as the Heritage Council may reasonably require.

Reason: *To comply with the provisions of the Heritage Act 1977.*

Note: *The relevant application form can be found at following website:*
www.environment.nsw.gov.au/resources/heritagebranch/heritage/S139-S146Frm2013.pdf

and mailed to:

The Heritage Council

C/- The Conservation Manager
Heritage Division
Office of Environment and Heritage
Locked Bag 5020
PARRAMATTA NSW 2124

or emailed to: heritage@heritage.nsw.gov.au

82. **Structure Not To Be Built Over Easements/Infrastructure**

No portion of any structure shall be erected over any existing sullage or stormwater disposal drains, easements, sewer mains, or proposed sewer mains.

Reason: *To protect infrastructure.*

83. **Ground Levels**

Natural ground levels shall not be altered or adjusted other than shown on the approved plans or where varied by the conditions of consent without the prior consent of Council.

Finished ground levels shall be graded away from the buildings and adjoining properties must achieve natural drainage. The concentrated flows are to be dispersed down slope or collected and discharged to an approved storm water drainage system.

Reason: *To ensure that natural drainage of the property and adjoining properties is not affected.*

84. **Excavations and Backfilling**

All excavations and backfilling associated with the erection or demolition of a building shall be executed safely and in accordance with appropriate professional standards properly guarded and protected to prevent them from being dangerous to life or property.

Reason: *To ensure the safety of life and property.*

85. **Support for Neighbouring Buildings**

If an excavation associated with the erection or demolition of a building extends below the level of the base of the footings of a building on an adjoining allotment of land, the person causing the excavation to be made:

a) must preserve and protect the building from damage, and

b) if necessary, must underpin and support the building in an approved manner (under guidance / instruction of a structural engineer), and

c) must, at least 7 days before excavating below the level of the base of the footings of a building on an adjoining allotment of land, give notice of intention to do so to the owner of the adjoining allotment of land and furnish particulars of the excavation to the owner

of the building being erected or demolished.

The owner of the adjoining allotment of land is not liable for any part of the cost of work to be carried out for the purposes of this clause, whether carried out on the allotment of land.

In this case, allotment of land includes a public road and any other public place.

Reason: *To preserve and protect neighbouring buildings.*

86. **Vehicular Access Point - Construction and Delivery Vehicles**

A suitable entry point shall be nominated on site and utilised by construction and delivery vehicles. This entry point is to be located so that the possibility of damage to Council's property is minimised during construction. The access point shall be surfaced with all-weather materials of a minimum of 4m (wide) in size. Ballast or crushed gravel (minimum of 40mm rock) for the full width of the kerb from the edge of the road to the property boundary.

Reason: *To reduce the possibility of damage to public property.*

87. **Vehicular Crossings**

Vehicular crossings for access to the development as per Council's Standard Drawings SD107, SD108 and SD123 prior to the issue of the Occupation Certificate.

Reason: *To comply with Council's Engineering Specifications and Drawings.*

88. **Engineering Inspections by Council**

24 hours prior to the covering of the following works, Council shall be notified by the licensed builder, owner builder or licensed plumber/drainer that the following works are ready for inspection:

(a) Works in relation to road reserves, footpath, kerb and gutter, road shaller and drainage within public lands or road reserves.

(b) Final inspection of footpath, driveway, stormwater and utility construction works within the road reserve.

Note*:* *The subject building is not to be occupied until an Interim or Final Occupation Certificate is issued.*

Note*:* *An accredited certifier may not be substituted for Council in respect of these inspections, as Council remains the sole responsible authority for these matters.*

Reason: *Statutory requirement.*

89. **Stormwater - Construction**

The applicant shall provide adequate storm water drainage infrastructure (pits/pipes/open channels/detention storage) for the conveyance of storm water passing through the site from upstream and sourced from the development to a discharge outlet to be approved by Council.

The point of discharge shall be clearly depicted and the legal right to discharge at that point to be justified. Status of the point of discharge is to be made clear (i.e. provision of drainage easements).

***Reason**: To assist in the prevention of erosion of the site from storm water.*

90. **Stormwater - Discharge**

All stormwater runoff from the development shall be collected within the property and discharged to an approved stormwater management system.

***Reason:** To ensure that stormwater is appropriately disposed of.*

91. **Earthworks, Retaining Walls And Structural Support**

Any earthworks (including any structural support or other related structure for the purposes of the development):

(a) must not cause a danger to life or property or damage to any adjoining building or structure on the lot or to any building or structure on any adjoining lot, and

(b) must not redirect the flow of any surface or ground water or cause sediment to be transported onto an adjoining property, and

(c) that is fill brought to the site-must contain only virgin excavated natural material (VENM) as defined in Part 3 of Schedule 1 to the *Protection of the Environment Operations Act 1997*, and

(d) that is excavated soil to be removed from the site-must be disposed of in accordance with any requirements under the *Protection of the Environment Operations (Waste) Regulation 2005*.

Any excavation must be carried out in accordance with Excavation Work: Code of Practice (ISBN 978-0-642-785442), published in October 2013 by Safe Work Australia.

***Reason:** Structural safety.*

92. **Damage to Adjoining Properties**

All precautions shall be taken to prevent any damage likely to be sustained to adjoining properties. Where damage occurs to adjoining property all necessary repair or suitable agreement for necessary repairs shall be undertaken by the applicant in consultation with, and with the consent of, the affected property owner.

***Reason**: Structural safety.*

93. **Erosion and Sediment Control Plan Compliance**

All site works shall be carried out in accordance with the approved Erosion and Sediment Control Plan. Implementation of the Erosion and Sediment Control Plan shall be supervised by personnel with appropriate qualification and experience in erosion and sediment control.

***Note**: In the event of non-compliance with the approved plan, Council Officers have the ability to issue Penalty Notices, being an on the spot fine and/ or orders.*

Reason: *To ensure that the environment is protected.*

94. **Prevention of Nuisance**

All possible and practical steps shall be taken to prevent nuisance to the inhabitants of the surrounding neighbourhood from windblown dust, debris and noise during the carrying out of works in the development.

Reason*:* *Health and amenity.*

95. **Approved hours of Construction/Demolition**

Construction/demolition activities shall be limited to the following hours:

DAY	HOURS
Monday to Saturday	7:00am to 5:00pm
Sunday	Nil
Public Holidays	Nil

Reason*:* *To ensure that the amenity of the surrounding area is not compromised as a result of the construction of the proposal.*

Note: *Any variation to these hours shall require Council consent via the lodgment of an application under section 4.55 of the Environmental Planning and Assessment Act 1979.*

96. **Construction Management Plan**

All development activities and traffic movements shall be carried out in accordance with the approved Construction Management Plan.

All controls in the Plan shall be maintained at all times. A copy of the Plan must be kept on site at all times and made available to the Accredited Certifier and Council on request.

Reason*:* *Compliance with condition of consent.*

97. **Building Operations**

Building operations such as brick cutting, washing tools or brushes and mixing mortar are not permitted on public roadways or footways or in any other locations which could lead to the discharge of materials into the storm water drainage system.

Reason: *To ensure that building materials are not washed into storm water drains.*

98. **Disruption of Traffic**

During any construction works on the public road that is associated with this approval, the Applicant shall provide appropriate signage and traffic control facilities as per the requirements of AS 1742.3-2009 Manual of uniform traffic control devices - Traffic control for works on roads and the RMS “Traffic Control at Works Sites” manual.

***Reason**: Safety and information.*

99. **Maintenance Of The Site**

All materials and equipment shall be stored wholly within the work site.

Waste materials (including excavation, demolition and construction waste materials) shall be managed on the site and then disposed of at a waste management facility.

Any run-off and erosion control measures required shall be maintained within their operating capacity until the completion of the works to prevent debris escaping from the site into drainage systems, waterways, adjoining properties and roads.
During construction:

(a) all vehicles entering or leaving the site shall have their loads covered, and

(b) all vehicles, before leaving the site, shall be cleaned of dirt, sand and other materials, to avoid tracking these materials onto public roads.

At the completion of the works, the work site shall be left clear of waste and debris.

***Reason**: Environmental amenity.*

100. **Temporary Onsite Toilet**

Toilet facilities shall be available or provided at the work site prior to the commencement of works and must be maintained until the works are completed at a ratio of one toilet plus one additional toilet for every 20 persons employed at the site.

Each toilet shall:

(a) be a standard flushing toilet connected to a public sewer, or

(b) have an on-site effluent disposal system approved under the *Local Government Act 1993*, or

(c) be a temporary chemical closet approved under the *Local Government Act 1993*.

***Reason:** To ensure that there are appropriate facilities on-site for construction workers.*

101. **Waste Management**

The provision of a metal waste skip with self-closing lid or secure covering on-site for the duration of the construction to ensure that all wastes are contained on the site. The receptacle shall be emptied periodically to reduce the potential for rubbish to leave the site.

Sorting of waste materials shall occur on site in accordance with the approved Waste Management Plan.

***Reason:** To ensure that all wastes generated from the construction of the development are contained on the site.*

102. **Vegetation Management**

A person must not ringbark, cut down, top, lop, remove, injure or wilfully destroy any tree or other vegetation without the prior consent of Council (unless considered exempt development). Any vegetation removed with Council consent and any other vegetation cleared in association of the approved development shall be disposed of in accordance with the approved Waste Management Plan.

For minor development, vegetation shall be either mulched for reuse on site or transported to an approved waste/recycling facility.

***Reason**: To ensure compliance with State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017 by preserving the amenity of the area, including biodiversity values, through the preservation of trees and other vegetation.*

***Note**: Failure to comply with this condition may result in prosecution by Council.*

***Note**: No vegetation shall be burnt except with an approval issued by Council pursuant to the Protection of the Environment Operations (Clean Air) Regulation 2010. Failure to comply may result in a penalty of up to $500 for an individual or up to $1,000 for a corporation.*

***Advice**: Tree removal shall be carried out by a competent person to avoid any risk to life or damage to property. This person shall have adequate public liability insurance cover.*

103. **Compliance with AS 4373 Pruning of Amenity Trees**

All pruning of amenity trees must be undertaken in accordance with the provisions of *AS 4373 - Pruning of Amenity Trees*.

***Reason:** Statutory requirement.*

104. **Council Reserve / Street Tree Retention**

All trees in public road reserves shall be preserved unless removal is permitted by the consent.

***Advice:** Reference shall be made to Council's Urban Street Tree Master Plan.*

***Reason**: To ensure the continued amenity of the streetscape and to retain the ecological integrity of the roadside area.*

105. **Disposal of Vegetation**

Any trees removed with Council consent and any other vegetation cleared in association with this development shall be disposed of in accordance with the Waste Management Plan approved with this development application.

***Reason**: Environmental amenity.*

106. **Tree Removal/Tree Preservation**

No trees shall be pruned, removed, damaged or destroyed without the prior written consent of Council. Failure to comply with this requirement will result in prosecution by Council in accordance with the provisions of State Environmental Planning Policy (Vegetation in Non-

Rural Areas) 2017.

***Advice**:* *Tree removal shall be carried out by a level 3 and above professional arborist to avoid any risk to life or damage to property. This person shall have adequate public liability insurance cover.*

Reason: *To comply with the State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017.*

107. **Supervising Arborist**

An arborist qualified to at least Australian Qualifications Framework (AQF) Certificate Level 4 shall be retained throughout all construction work to ensure to proper protection and management of the trees required to be retained and that any necessary pruning/root pruning is carried out in accordance with AS4973-1996 "Pruning of Amenity Trees" and AS4970-2009 "protection of Trees on Development Sites". This includes on site supervision of the erection of tree protection measures and, where approved, any works that are required within the Tree Protection Zone (TPZ) or Structural Root Zone (SRZ).

***Reason**:* *To ensure to proper protection and management of the trees required to be retained and that any necessary pruning/root pruning is carried out in accordance with the relevant Australian Standards.*

108. **Protection of Fauna**

Prior to the removal of any Hollow Bearing Tree (HBT), the following matters MUST be addressed:

a) Ensure that a suitably qualified and licensed Ecologist (who is vaccinated for Australian Bat Lyyssavirus) is engaged to supervise the removal of the HBTs in order to rescue or relocate any fauna displaced during the clearing process.

b) Check for fauna in the zone of disturbance before clearing and scare off or remove them before commencing clearing works.

c) Remove any non-HBTs prior to the removal of the HBTs.

d) Leave HBTs standing for at least one night after other non-HBT clearing to allow any fauna the opportunity to remove themselves after site disturbance.

e) After clearing, re-check the site to ensure no fauna have become trapped or injured during clearing operations. Any fauna found shall be moved to adjacent habitat.

f) Before felling the HBTs, tap trunk using heavy machinery to scare fauna from the hollows. Repeat several times. The aim is to 'substantially' shake the tree and encourage fauna to exit.

g) Carefully fell the HBT by gently lowering the tree to the ground using an excavator arm fitted with grapples. Alternatively, arrange for qualified tree surgeons to fell the HBT using chainsaws and pulleys.

h) After felling the tree, thoroughly check the tree for fauna in the case that any have become trapped or injured during clearing operations. Any fauna shall be safely moved into adjacent habitat.

i) If taking the tree down in stages, the non-hollow bearing branches shall be removed

before the hollow bearing branches are removed.

j) Fell trees into the already disturbed areas to avoid damaging adjacent vegetation.

k) Take care when moving equipment near vegetation to be retained.

l) Logs from felled trees shall be distributed into areas of vegetation so that they can continue to provide habitat for fauna such as terrestrial reptiles and mammals.

m) Relocate woody debris to areas where they will not contribute a fire hazard.

n) Provide written evidence to Council in order to document that a suitably qualified person was engaged for the specific tasks listed above.

***Reason**: To ensure that the removal is undertaken in an environmentally responsible manner.*

109. **Protection of Trees**

The trees identified on the endorsed plans and identified in these conditions of consent as being retained shall be protected against damage throughout the construction process in accordance with AS4970-2009 “Protection of Tree on Development Sites” and the approved arborist’s report.

***Reason**: To protect trees identified to be retained.*

110. **Arborist Progression Reports**

A 3 monthly report is to be prepared and submitted to Council by the arborist engaged to supervise all works pertaining to protection and approved pruning and root pruning activities that:

a) Sets out maintenance work carried out on the trees; and

b) Assesses the health and condition of the trees.

The report shall also provide documentary evidence that the tree protection conditions are being complied with in the form of site notes and photographs.

***Reason**: To ensure that the tree protection conditions are being complied with.*

CONDITIONS TO BE SATISFIED PRIOR TO THE ISSUE OF AN OCCUPATION CERTIFICATE

111. **Occupation Certificate**

In accordance with Section 6.9 of the *Environmental Planning and Assessment Act 1979,* an application for an Occupation Certificate, shall be made on completion of the works and the relevant application fee paid. All works specified in the development consent and approved Construction Certificate plans shall be completed and all development consent conditions complied with prior to the issue of the Occupation Certificate.

The Principal Certifier (PC) is required to be satisfied, amongst other things, that:

- All required inspections (including each applicable mandatory critical stage inspection) have been carried out; and
- Any preconditions to the issue of the certificate required by a development consent have been met.

Reason: *To comply with the provisions of the Environmental Planning and Assessment Act 1979.*

Note*:* *A person must not commence occupation or use (or change of use where an existing building) of the whole or any part of a new building (within the meaning of Section 6.10 of the Environmental Planning and Assessment Act 1979 unless an Occupation Certificate has been issued in relation to the building or part.*

Note*:* *The applicant is to ensure that works associated with the Section 138 (Roads Act) approval and Section 68 (Local Government Act) approval are completed and inspected by Council.*

112. **Traffic Management Plan (TMP)**

The applicant shall prepare a TMP that includes, for events where the occupancy of the M1 and M2 buildings combined exceed 200 persons, details on the on-site traffic management measures to be implemented to preclude significant traffic (more than 50% of the site occupants of the M1 and M2 buildings) exiting the site between 3pm and 6pm on a weekday (excluding public holidays). The TMP shall be provided to Council for approval prior to the issue of an Occupation Certificate.

Reason: To comply with the general terms of approval issued by TfNSW

113. **Registration of Environmental Management Plan on title of land**

If an Environmental Management Plan (EMP) is required by Section A2 of the Site Audit Statement then, prior to the issue of an Occupation Certificate, the Council must be provided with evidence of its registration on title under 88E of the *Conveyancing Act 1919*.

Reason: *Compliance and statutory requirements.*

114. **Section 138 Roads Act Final**

The applicant is to ensure that the works associated with the Section 138 approval for this development be completed and inspected by Council prior to the issue of any Occupation Certificate.

Reason: *To ensure that the development is completed as per this consent and the approved plans.*

115. **Heritage Architect (as engaged for project) – approval**

Prior to release of the Occupation Certificate, the Heritage Architect must provide written confirmation that all work has been carried out in accordance with the heritage conditions of this consent.

Reason: *To provide for consistency throughout development*

116. **Section 68 Local Government Act Final**

The applicant is to ensure that the works associated with the Section 68 approval for this development be completed and inspected by Council prior to the issue of any Occupation Certificate.

Reason: *To ensure that the development is completed as per this consent and the approved plans.*

117. **Council Property**

The applicant shall rectify any damage to Council property (including footpaths, road furniture, landscaping/trees, drainage, water, sewer, kerb and gutter, road pavement and the like) as a result of the development, prior to the issue of any Occupation Certificate at no cost to Council.

Reason: *To ensure that Councils assets are protected.*

118. **Food Shop Requirements**

Prior to the issue of the Occupation Certificate, the premise shall be set up and operated in accordance with the *Food Act*, the *Food Regulations* and the *Food Safety Standards*. The premise shall be fitted out in accordance with the Australian Standard AS4674 - 2004.

Reason: *Statutory requirement.*

119. **Works as Executed Plans - Building Works**

Prior to the issue of the Occupation Certificate, one full set of work-as-executed drawings shall be submitted to and retained by Council. Sufficient details including locations and levels of the below ground infrastructure are required in order to enable a complete check of the work as executed as compared to the original approved design. Any deviation from the approved engineering plans shall be shown on the work-as-executed drawings. Each sheet of the drawings shall carry the certification of the developers supervising engineer.

Reason*:* *To ensure that there is a record of final works carried out on the site.*

120. **Civil Engineering works and services**

All civil engineering works and services are to be constructed in accordance with the Wingecarribee Shire Council Engineering Plans and Specifications, relevant Standards and approved engineering plans prior to the issue of the Occupation Certificate.

Reason: *To ensure that the works and services are constructed in accordance with the approved plans.*

121. **Certification of Engineering Works**

Prior to issue of the Occupation Certificate, the following documents shall be submitted to the Principal Certifier. These documents are:

a) A Certificate from a Professional Engineer who meets the criteria for registration on the National Engineering Register (NER) and has appropriate experience and competence in the relevant registered area of practice, and

b) A "Works - As - Executed" (WAE) plans of the engineering and/or drainage works.

The abovementioned Certificate shall certify that:

(i) the stormwater drainage system including OSD detention, and/or
(ii) the car parking arrangement and area, and/or
(iii) any related footpath crossing works, and/or
(iv) the proposed basement pump and well system, and/or
(v) the proposed driveway and layback, and/or
(vi) water and sewer infrastructure, and/or
(vii) other civil works have been constructed in accordance with the approved plans and details, satisfies the design intent and complies with Wingecarribee Shire Council Engineering Design and Construction Specifications, Drawings and relevant Standards.

Where Council is not the Principal Certifier, two (2) copies of the above documents are to be provided to Council prior to the issue of any Occupation Certificate. These documents are to be retained on Council's file.

***Reason**: Asset management.*

122. **Certification of Internal Civil Works**

On completion of the works and prior to the issue of the Occupation Certificate, certification from a professional engineer who has appropriate experience and competence in the relevant registered area of practice, shall be submitted to Council detailing that all the internal civil works (i.e. internal driveways, paths and stormwater drainage system, including any onsite detention) are in accordance with the approved plans and specifications.

***Reason**: Asset management.*

123. **Flood Compatible Development**

Prior to issue of the Occupation Certificate, any proposed development to occur within the area identified as inundated by the 1:100 year ARI event, shall ensure compliance with the following:

(a) Requirements of Council's Development Control Plan for Mittagong.

(b) Requirements of Wingecarribee Local Environment Plan 2010, Clause 5.21.

***Reason:** To ensure the development complies with flood standards.*

124. **Flooding - Finished Surface Level Work as Executed**

Where any part of any allotment created is within the 1% AEP flood an appropriate Restriction as to User shall be created on the title of that lot prior to issue of the Occupation Certificate. The works as executed plans and title document shall state the 1% AEP flood level and the minimum finished floor level for that allotment. The finished floor level is to be a minimum of

500mm above the 1% AEP flood level.

Reason: *To ensure appropriate flood protection to property.*

125. **Landscaping Plan**

Landscaping as per the approved Landscaping Plan shall be established prior to the issue of the Occupation Certificate.

Reason: *To ensure that the landscaping is completed prior to occupation.*

126. **Disposal of Fill/Waste**

Prior to issue of the Occupation Certificate, the applicant shall submit to Council any dockets relating to the disposal of fill/waste from a licensed waste facility.

Reason: *To protect the environment.*

127. **Geotechnical Risk Assessment Report Compliance**

The proposed development shall be carried out in accordance with the recommendations set down in the Geotechnical Risk Assessment Report set out below.

The implementation of the recommendations of the Geotechnical Risk Assessment Report shall be carried out to the satisfaction of the Council's Building Surveyor and/or Development Control Engineer, prior to the issue of the Occupation Certificate.

GEOTECHNICAL RISK ASSESSMENT REPORT:

Report Reference:	**33051PHrpt**
Prepared By:	**JK Geotechnics**
Date of Report:	**16 April 2020**

Reason: *To ensure development complies with geotechnical risk assessment undertaken.*

128. **Fire Safety Certificate**

A final Fire Safety Certificate shall be obtained in accordance with Part 9, Division 4 of the *Environmental Planning and Assessment (Amendment) Regulation 2000*, prior to the issue of the Occupation Certificate for the building.

A copy of the Fire Safety Certificate and Fire Safety Schedule shall be:

- Forwarded to Wingecarribee Shire Council;
- Forwarded to the Fire Commissioner; and
- Prominently displayed in the building.

Reason: *To ensure the safety of the building.*

129. **Private Fire Service Backflow Prevention**

As this development has a Private Fire Service line connected to Councils reticulated water supply, Council will require prior to the issue of the Occupation Certificate:

a) A testable backflow prevention device to be installed by a licensed plumber to the fire service line, in accordance with *AS/NZ 3500 Part 1: Water Services* and the Plumbing Code of Australia.

b) When the device is installed the commissioning / test results shall be submitted to Council for registration prior to the issue of any Occupation Certificate or the Final Section 68.

c) The backflow prevention device must be maintained and tested annually by an accredited backflow prevention plumber. The plumber must complete and submit the maintenance and test reports for each device installed and pay the appropriate registration fees to Council in accordance with Councils adopted Backflow Prevention Policy and Schedule of Fees and Charges.

Reason: *To protect the water supply.*

130. **Schedule of Conservation Works**

A detailed schedule of conservation works for the significant buildings and landscape components of the site must be prepared by a suitably qualified heritage consultant. The Schedule is to be in accordance with the Burra Charter guidelines and guided by the Conservation Management Plan.

The schedule of conservation works is to be submitted to Council for approval prior to the release of the construction certificate.

The works are to be implemented prior to the issue of an Occupation Certificate, to ensure that significant features and fabric are restored and conserved.

Reason: *To protect heritage values across the site.*

131. **Construction of Water Service**

A water service shall be installed to the development by Council at the applicant's cost prior to the issue of the Occupation Certificate.

Council's application form shall be completed by the Developer and the appropriate fee paid.

Advice: *A water meter shall be installed prior to construction commencing.*

Reason: *To ensure that the development is serviced.*

132. **Defects and Liability Bond for Public Assets - Building Works**

Prior to the issue of any Occupation Certificate the developer shall lodge a cash bond to cover the defects liability period of 24 months for any public infrastructure constructed by them which will handed over to council. The liability period will commence from the date of issue of the Occupation Certificate.

The security bond will be in an amount equal to 10% of the value of the total building works with a minimum value of $10,000 based on the building costs supported by written evidence in accordance with Council's Bond Policy. The bond shall be assessed by Council for release after the 24-month period on formal request from the developer.

Reason: *To ensure appropriate warranty periods apply for defect liability.*

133. **Food Shop Notification Requirement**

Occupation of the premises shall not occur until a notification form has been submitted to Council for the food business conducted on the premises.

Evidence of compliance of the above shall be submitted to Council prior to the issue of the Occupation Certificate and commencement of business.

***Reason**: Registration and notification to relevant authorities*

CONDITIONS TO BE SATISFIED DURING THE OPERATION AND USE OF THE DEVELOPMENT

134. **Emergency Flood Evacuation Plan**

A Flood Emergency Management and Evacuation Plan must be prepared and shall include planning for the early relocation of occupants.

Note: A copy of the Flood Emergency Management and Evacuation Plan shall be provided to the State Emergency Service for its information prior to occupation of the development.

***Reason:** To provide suitable emergency and evacuation arrangements for occupants of developments.*

135. **Hours of operation**

The approved hours of operation are:

Maltings 1 and Maltings 2

DAY	HOURS
Sunday to Thursday	8am to midnight
Fridays and Saturdays	8am to 1am the following morning

In addition, up to ten times in any 12-month period the premises will operate until 2am (the following morning) including on New Year's Eve.

Maltings 3 and Maltings 4

24 hours a day every day of the week.

***Reason**: To ensure that the amenity of the surrounding area is not compromised as a result of the operation of the development.*

***Note:** Any variation to these hours will require Council consent via the lodgement of an application under Section 4.55 of the Environmental Planning and Assessment Act 1979.*

136. **Lighting**

All external lighting shall:

(a) Comply with AS 4282-1997 Control of the obtrusive effects of outdoor lighting, and

(b) Be mounted, screened and directed in a way that it does not create a nuisance or light

spill on to buildings on adjoining lots or public places.

Lighting at vehicle access points to the development must be provided in accordance with AS/NZS 1158 Set: 2010 Lighting for roads and public spaces Set.

Reason: *To ensure that the amenity of neighbouring properties is not compromised.*

137. **Annual Fire Safety Statement**

Each year, the owner of a building to which an essential fire safety measure is applicable shall cause the Council to be given an annual fire safety statement for the building. Such a fire safety statement:

(a) shall deal with each essential fire safety measure in the building premises; and

(b) shall be given within twelve months after the last such statement was given, or it no such statement was given, within twelve months after a final fire safety certificate was first issued for the building.

As soon as practicable after a final fire safety certificate is issued, the owner of the building to which it relates:

(a) shall cause a copy of the certificate (together with a copy of the current fire safety schedule) to be given to the Commissioner of New South Wales Fire Brigades; and

(b) shall cause a further copy of the certificate (together with a copy of the current fire safety schedule) to be permanently displayed in the building.

Reason: *To ensure compliance with fire safety requirements.*

138. **Ongoing Implementation of the Plan of Management**

The plan of management as approved by Council is be implemented at all times during the operation of the hotel and other uses across the site.

The patron numbers referred to within the Plan of Management are not to be exceeded and noise management measures in the associated noise impact assessment reports report.

Reason: *To effectively manage the impacts from the development*

CONCURRENCE CONDITIONS

139. **RFS s100B Bushfire Authority**

Asset Protection Zones

1 At the beginning of building works, and in perpetuity to ensure ongoing protection from the impact of bush fires, Asset Protection Zones must be provided to the site as detailed in the Vegetation Management Plan prepared by Eco Logical Australia titled The Maltings – Vegetation Management Plan (Project Number 14198, Version Number V3, dated 19 May 2020) and the Landscape Management Plan prepared by Snohetta and Medich titled The Maltings Landscape Management Plan (Dated May 2020).

When establishing and maintaining the required site areas to an Inner Protection Area (IPA), the following requirements apply in accordance with the requirements of Appendix 4 of Planning for Bush Fire Protection 2019:

- tree canopy cover should be less than 15% at maturity;
- trees at maturity shall not touch or overhang the building;
- lower limbs shall be removed up to a height of 2m above the ground;
- tree canopies shall be separated by 2 to 5m;
- preference shall be given to smooth barked and evergreen trees;
- large discontinuities or gaps in vegetation shall be provided to slow down or break the progress of fire towards buildings;
- shrubs shall not be located under trees;
- shrubs should not form more than 10% ground cover; and
- clumps of shrubs shall be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.
- grass shall be kept mown (as a guide grass shall be kept to no more than 100mm in height); and
- leaves and vegetation debris shall be removed.

When establishing and maintaining the required site areas as an Outer Protection Area (OPA) the following requirements apply:

- tree canopy cover should be less than 30%;
- canopies shall be separated by 2 to 5m.
- shrubs shall not form a continuous canopy;
- shrubs should form no more than 20% of ground cover;
- grass shall be kept mown to a height of less than 100mm; and
- leaf and other debris shall be removed.

Reason: to provide suitable building design, construction and sufficient space to ensure that radiant heat levels do not exceed critical limits for firefighters and other emergency services personnel undertaking operations, including supporting or evacuating occupants.

Construction Standards

2 New construction on buildings either wholly or partially identified as being exposed to BAL 12.5 requirements in the map titled Figure 5: Bushfire Attack Level within the report prepared by Peterson Bushfire (dated 30 April 2020, Ref: 19127) must comply with Sections 3 and 5 (BAL 12.5) Australian Standard AS3959-2018 Construction of buildings in bush fire-prone areas or NASH Standard (1.7.14 updated) National Standard Steel Framed Construction in Bushfire Areas – 2014 as appropriate and Section 7.5 of Planning for Bush Fire Protection 2019.

3 Existing buildings that are identified as being wholly or partially within BAL 12.5 requirements as shown in the map given in Figure 5: Bushfire Attack Level in the report prepared by Peterson Bushfire (dated 30 April 2020, Ref: 19127), where not affected by new construction requirements, must be upgraded to improve ember protection. This is achieved by enclosing all openings (excluding roof tile spaces) or covering openings with a non-corrosive metal screen mesh with a maximum aperture of 2mm. Where applicable, this includes any sub floor areas, openable windows, vents, weepholes and eaves. External doors are to be fitted with draft excluders.

Reason: to provide suitable building design, construction and sufficient space to ensure that radiant heat levels do not exceed critical limits for firefighters and other emergency services personnel undertaking operations, including supporting or evacuating occupants.

Access Internal Roads

4 Access roads for Special Fire Protection Purpose (SFPP) developments must comply with the acceptable solutions given in Table 6.8b of *Planning for Bush Fire Protection 2019.*

Reason: to provide safe operational access for emergency services personnel in suppressing a bush fire, while residents are accessing or egressing an area.

Water and Utility Services

5 The provision of water, electricity and gas must comply the following in accordance with Table 6.8c of Planning for Bush Fire Protection 2019:

- reticulated water is to be provided to the development where available;
- fire hydrant, spacing, design and sizing complies with the relevant clauses of Australian Standard AS2419.1:2005;
- hydrants are and not located within any road carriageway;
- fire hydrant flows, and pressures comply with the relevant clauses of AS 2419.1:2005;
- all above-ground water service pipes are metal, including and up to any taps;
- where practicable, electrical transmission lines are underground;
- where overhead, electrical transmission lines are proposed as follows:
  a) lines are installed with short pole spacing (30m), unless crossing gullies, gorges or riparian areas; and
  b) no part of a tree is closer to a power line than the distance set out in accordance with the specifications in ISSC3 Guideline for Managing Vegetation Near Power Lines.
- reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 and the requirements of relevant authorities, and metal piping is used;
- reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014-The storage and handling of LP Gas, the requirements of relevant authorities, and metal piping is used;
- all fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side;
- connections to and from gas cylinders are metal; polymer-sheathed flexible gas supply lines are not used; and
- above-ground gas service pipes are metal, including and up to any outlets.

Reason: to provide adequate services of water for the protection of buildings during and after the passage of a bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building.

Emergency and Evacuation Planning Assessment

6 A Bush Fire Emergency Management and Evacuation Plan must be prepared and be consistent with the NSW Rural Fire Service document '*A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan*'. The Bush Fire Emergency Management and Evacuation Plan shall include planning for the early relocation of occupants.

Note: A copy of the Bush Fire Emergency Management and Evacuation Plan shall be provided to the Local Emergency Management Committee for its information prior to occupation of the development.

Reason: to provide suitable emergency and evacuation arrangements for occupants of SFPP developments.

140. **Water NSW Requirements**

1. The site layout and works shall be as specified in the Statement of Environmental Effects (dated 21 May 2020) prepared by Elton Consulting and shown on the Site Plan (Dwg. No. SD-A003, Rev. I, dated 04.05.2020) prepared by Snøhetta. No revised site layout, staging or external works that will have impact on water quality, shall be permitted without the agreement of Water NSW.

Reason for Condition 1 - Water NSW has based its assessment under the State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011 on this version of the development.

Stormwater Management

2. All stormwater treatment and management measures as specified in Section 7.1.3 and shown on the Figures 6.4 (Issue A, dated 4/12/20) and 7.1 to 7.3 (Issue C, dated 21/05/2021) in Appendix B of the Stormwater & Flood Management Strategy Report (dated 31 May 2021) prepared by J. Wyndham Prince shall be incorporated in a final stormwater drainage plan in consultation with Water NSW prior to the issuance of a Construction Certificate. The final stormwater drainage plan shall:
    - show all stormwater management measures including:
        - pits and pipes
        - rainwater tanks
        - permeable paving
        - grassed swales, and
        - bioretention basins and a bioretention swale
    - include cross-sections of:
        - permeable paving
        - bioretention basins and bioretention swale, and
    - include measures to protect the stormwater management structure/s from flood waters.

    The final stormwater drainage plan shall be implemented.

3. Car parking areas as shown on the Figure 7.3 (Issue C, dated 21/05/2021) in Appendix B of the Stormwater & Flood Management Strategy Report (dated 31 May 2021) prepared by J. Wyndham Prince shall be constructed with permeable paving. The permeable paving shall have:
    - pavers with a minimum open to closed void ratio of 40%, and
    - the drainage and surface runoff from the car parking areas directed to Nattai River via armoured discharge points.

4. Two bioretention basins and a bioretention swale shall be located and constructed as specified in Table C3, Appendix C and shown on the Figure 7.3 (Issue C, dated 21/05/2021) in Appendix B of the Stormwater & Flood Management Strategy Report (dated 31 May 2021) prepared by J. Wyndham Prince. Each bioretention basin shall also:
    - be designed consistent with Adoption Guidelines for Stormwater Biofiltration Systems Version 2 (Payne *et al*, 2015, Melbourne, CRC for Water Sensitive Cities);
    - be planted with appropriate deep-rooted, moisture-tolerant vegetation protected by rock mulch (grass and turf are not appropriate vegetation and organic mulch is not suitable);
    - ensure to direct all discharge and overflow to Nattai River with the armoured discharge outlets that are consistent with the requirements of any Controlled Activity Approval under the *Water Management Act* (*2000*) from the Natural Resources Access Regulator (NRAR);

- be accessible from the internal roads by machinery to facilitate cleaning, monitoring and maintenance of the structures;
- be permanently protected from vehicular damage by bollards, fences, castellated kerbs, or similar structures, with a sign to be erected to advise of its nature and purpose in water quality management;
- be protected by sediment and erosion control measures during any construction and post-construction phase until the ground surface is revegetated or stabilised, and
- be constructed after all hardstand areas have been paved or sealed and all ground surfaces have been stabilised.

5. A rainwater collection and reuse system for the building roof shall be installed that:
   - have rainwater tanks with a minimum total capacity of 40,000 litres above any volume required for mains top-up;
   - ensure roofs and gutters are designed to maximise the capture of rainwater in the tanks;
   - ensure the tanks are plumbed to toilets, and other areas for non-potable use including landscape watering, and
   - ensure all rainwater tank overflow is directed to the swales on the site.
6. No variation to stormwater treatment or management that will have any impact on water quality shall be permitted without the agreement of Water NSW.
7. A suitably qualified stormwater consultant or engineer shall certify in writing to Water NSW and Council prior to the issuance of an Occupation Certificate that all stormwater management structures have been installed as per these conditions of consent and are in a functional state.

Operational Environmental Management Plan

8. An Operational Environmental Management Plan shall be prepared by a person with knowledge and experience in the preparation of such plans. The Plan shall:
   - be prepared in consultation with Water NSW prior to the issuance of an Occupation Certificate;
   - include the details on the location and nature of stormwater management structures such as pits, pipes, grassed swales, bioretention swale and basins, permeable paving, and rainwater collection system;
   - outline the responsibilities and detailed requirements for the inspection, monitoring and maintenance of all stormwater management structures, including the frequency of such activities;
   - identify the individuals or positions responsible for inspection and maintenance activities including a reporting protocol and hierarchy, and include checklists for recording inspections and maintenance activities, particularly bioretention swale and basins.

5. All stormwater treatment devices shall be monitored, maintained, and managed as per the Operational Environmental Management Plan.

Reason for Conditions 2 to 9 – To ensure appropriate stormwater treatment and quality control measures are designed, implemented, and maintained to achieve a sustainable neutral or beneficial impact on water quality, particularly during wet weather, over the longer term.

Construction Activities

6. Soil and Water Management Plan based on the Soil & Water Management Plan & Notes (Project No. 110608-02, Plan Nos: 110608-02-DA600 and 110608-02-DA601, Issue 1, dated 29/04/2020) prepared by J. Wyndham Prince shall be prepared by a person with knowledge and experience in the preparation of such plans. The Plan shall:

- meet the requirements outlined in Chapter 2 of NSW Landcom's Soils and Construction: Managing Urban Stormwater (2004);
- be prepared prior to issuance of a Construction Certificate and be to the satisfaction of Council, and
- include controls to prevent sediment or polluted water leaving the construction area or entering any stormwater drain or natural drainage system.

7. The Soil and Water Management Plan shall be implemented, and no works shall commence until effective erosion and sediment controls have been installed. The controls shall be regularly inspected, maintained, and retained until works have been completed and ground surface stabilised or groundcover re-established.

Reason for Conditions 10 & 11 - To manage adverse environmental and water quality impacts during the construction phase of the development and to minimise the risk of erosion, sedimentation, and pollution within or from the site during this construction phase.

141. **Natural Resources Access Regulator requirements**

GT0009	Before commencing any proposed controlled activity on waterfront land, an application must be submitted to Natural Resources Access Regulator, and obtained, for a controlled activity approval under the Water Management Act 2000.
GT0002	A This General Terms of Approval (GTA) only applies to the proposed controlled activity described in the plans and associated documents found in Schedule 1, relating to Development Application DA20/1400 provided by Council to Natural Resources Access Regulator. B Any amendments or modifications to the proposed controlled activity may render the GTA invalid. If the proposed controlled activity is amended or modified, Natural Resources Access Regulator, Parramatta Office, must be notified in writing to determine if any variations to the GTA will be required.
GT0005	A The application for a controlled activity approval must include the following plan(s): (a) Site plans indicating the demarcation of waterfront land, designated riparian corridors and identifying any areas of encroachments and offsets; (b) Detailed civil construction plans including watercourse crossings and bank revetment work; (c) Erosion and sediment control plans; (d) Vegetation Management Plan (VMP) including costings; (e) Stormwater management plans including details on the bioretention basins, stormwater outlets and swales. B The plan(s) must be prepared in accordance with Natural Resources Access Regulator's guidelines located on the website: https://www.industry.nsw.gov.au/water/licensing trade/approvals/controlled-activities.

GT0004-00003	A. A security deposit must be provided, if required by Natural Resources AccessRegulator. B. The deposit must be: i. a bank guarantee, cash deposit or equivalent, and ii. equal to the amount required by the Natural Access Regulator for that controlled activity approval.

SCHEDULE 1

The plans and associated documentation listed in this schedule are referred to in general terms of approval (GTA) issued by NRAR for integrated development associated with IDAS1126800 as provided by Council:

- Statement of Environmental Effects – The Maltings – 2 Colo Street, Mittagong, prepared by Elton Consulting and dated 21 May 2020.
- Drawing No. SD-A003 Site Plan Rev J, prepared by Snohetta and dated 19.05.2021.
- The Maltings - Vegetation Management Plan Version 5, prepared by Ecological and dated 22 December 2020.
- Concept Bank Stabilisation Plan prepared by Elton Consulting and dated 7 June 2021.
- The Maltings, Mittagong Stormwater & Flood Management Strategy Issue D, prepared by J. Wyndham Price and dated May 2021.

CONDITIONS FROM OTHER AGENCIES

142. **Transport for New South Wales (Attachments 1 & 2 from referral) (see Transport for NSW correspondence dated 24 March 2022)**

Attachment 1:

1. **Prior to the issuing of the Construction Certificate for Stage 1 (M1, M2, M3 and M4 buildings), the developer must:**

(a) Amend the plans to ensure compliance with the following:

(i) The Colo Street access point is to be designed as a two-way driveway (entry and exit) facilitating left turns in and out and right turns in and out. Directional signage to be provided (on-site) to direct exiting traffic (northbound towards Sydney) to use Southey Street northbound when exiting.

(ii) The Southey Street access point is to be designed as a two-way driveway (entry and exit) facilitating left turns in and out and right turns in and out. Directional signage to be provided (on-site) to direct exiting traffic (northbound towards Sydney) to use Southey Street northbound when exiting.

(iii) The Ferguson Crescent access point is to be used only for staff and service vehicles, and is to be designed as a two-way driveway (entry and exit) facilitating left turns in and out and right turns in and out. Directional signage to be provided (on-site) to direct exiting traffic (northbound towards Sydney) to use Ferguson Crescent northbound when exiting (i,e turn right).

(b) Apply for Section 138 consent under the Roads Act 1993 from Council for all works required:

(i) At the intersection of the Old Hume Highway, Fitzroy Street and Louisa Street. These works shall be generally in accordance with the 'Fitzroy St/Old Hume Hwy Line Marking Concept', Figure SK01 dated 16 February 2022 as prepared by SLR Consulting (refer to Attachment 2).

(ii) At the intersection of Ferguson Crescent and the Old Hume Highway to prohibit the right turn movement of vehicles from Ferguson Crescent onto the Old Hume Highway to Councils satisfaction (i.e. either a painted or raised median/barrier, associated signage, etc).

The design/works provided must

- Demonstrate that an Austroads Guide to Road Design compliant design can be constructed within the road reserve. This includes, but is not limited to, setbacks from the kerbside travel lane on the Old Hume Highway.
- Be to scale and include, but not be limited to, details on legal property boundaries including the existing road reserve boundaries, existing and proposed lane configurations, existing and proposed lane widths at several locations along the length of the proposed works, conceptual drainage details for any changes required.
- Include a swept path assessment in accordance with Austroad turning templates to demonstrate that the largest vehicle likely to utilise this intersection can undertake both the entry and exit manoeuvre as well as maintain required clearances.
- Ensure all pavement marking and signage complies with the TfNSW delineation guidelines, AS1742.2 and other relevant standards.
- Be prepared by a suitably qualified person (i.e. civil design engineer).

2. **Prior to commencing works within the Old Hume Highway road reserve, the developer must:**

   (a) Obtain Section 138 consent under the Roads Act 1993 for the works from Council.

   Notes:

   - Provided Council is satisfied the works have been designed in accordance with the applicable requirements in Austroads Guide to Road Design, relevant Council standards, and comply with the requirements in Conditions 1b) TfNSW issues its concurrence under Section 138 of the Roads Act 1993.

   (b) Apply for and obtain a Road Occupancy Licence (ROL) from the TfNSW Traffic Operations Unit (TOU) before commencing roadworks or any other works that impact a travel lane of the Old Hume Highway.

   Notes:

   - *For information on the ROL process and to lodge an ROL application, please visit https://myrta.com/oplinc2/pages/security/oplincLogin.jsf*
   - *The applicant will need to create an account (this may take a few days to register), before submitting the ROL application. The applicant must submit the ROL application 10 business days before commencing work. It shall be noted that receiving approval for the ROL within this 10 business day period is dependent upon TfNSW receiving an accurate and compliant TMP.*
   - *The application will require a Traffic Management Plan (TMP) to be prepared by a person who is certified to prepare Traffic Control Plans. Shall the TMP require a reduction of the speed limit, a Speed Zone Authorisation will also be required from the TOU.*
   - *An approved ROL does not constitute an approval to commence works until an authorisation letter for the works has been issued by TfNSW Project Manager.*

3. **Prior to issuing the Occupation Certificate for the Stage 1 buildings (M1, M2, M3 and M4), the developer must:**

   (a) Design and construct the works at the intersection of:

      (i) the Old Hume Highway and Ferguson Crescent to the satisfaction of the Council and in accordance with any approvals issued (i.e. issued Section 138 approval).

      (ii) the Old Hume Highway, Fitzroy Street and Louisa Street to the satisfaction of the Council and in accordance with any approvals issued (i.e. issued Section 138 approval).

   Notes:

   - Any pavement design on the Old Hume Highway must be in accordance with Austroads standards

   - All works need to be completed at no cost to TfNSW.

   (b) Provide on-road signage at the Southey Street/Bong Bong Road intersection (facing northbound traffic on Southey Street) to ensure traffic leaving the development is directed towards the Bong Bong Road /Ferguson Crescent intersection for those vehicles wishing to go to the Old Hume Highway. Signage is also to be placed at the Bong Road/Ferguson Crescent intersection to ensure traffic leaving the development is directed to the signalised intersection of the Old Hume Highway and Renwick Drive for those vehicles wishing to go north and Bong Bong Road/Ferguson Crescent for those vehicles wishing to go south.

   (c) Prepare a Traffic Management Plan (TMP) that includes, for events where the occupancy of the M1 and M2 buildings combined exceed 200 persons, details on the on-site traffic

management measures to be implemented to preclude significant traffic (more than 50% of the site occupants of the M1 and M2 buildings) exiting the site between 3pm and 6pm on a weekday (excluding public holidays). The TMP shall be provided to Council for approval.

4. **For the life of the development:**

   (a) No events are to finish between 3pm to 6pm on a weekday (excluding public holidays) where the total attendance numbers associated with the use of the M1 and M2 buildings combined are greater than 200 persons.

   (b) The owner/operator shall keep records of the maximum number of patrons within the M1 and M2 building for each day the buildings are operating/open for business. This information must be provided to either Council or TfNSW upon request.

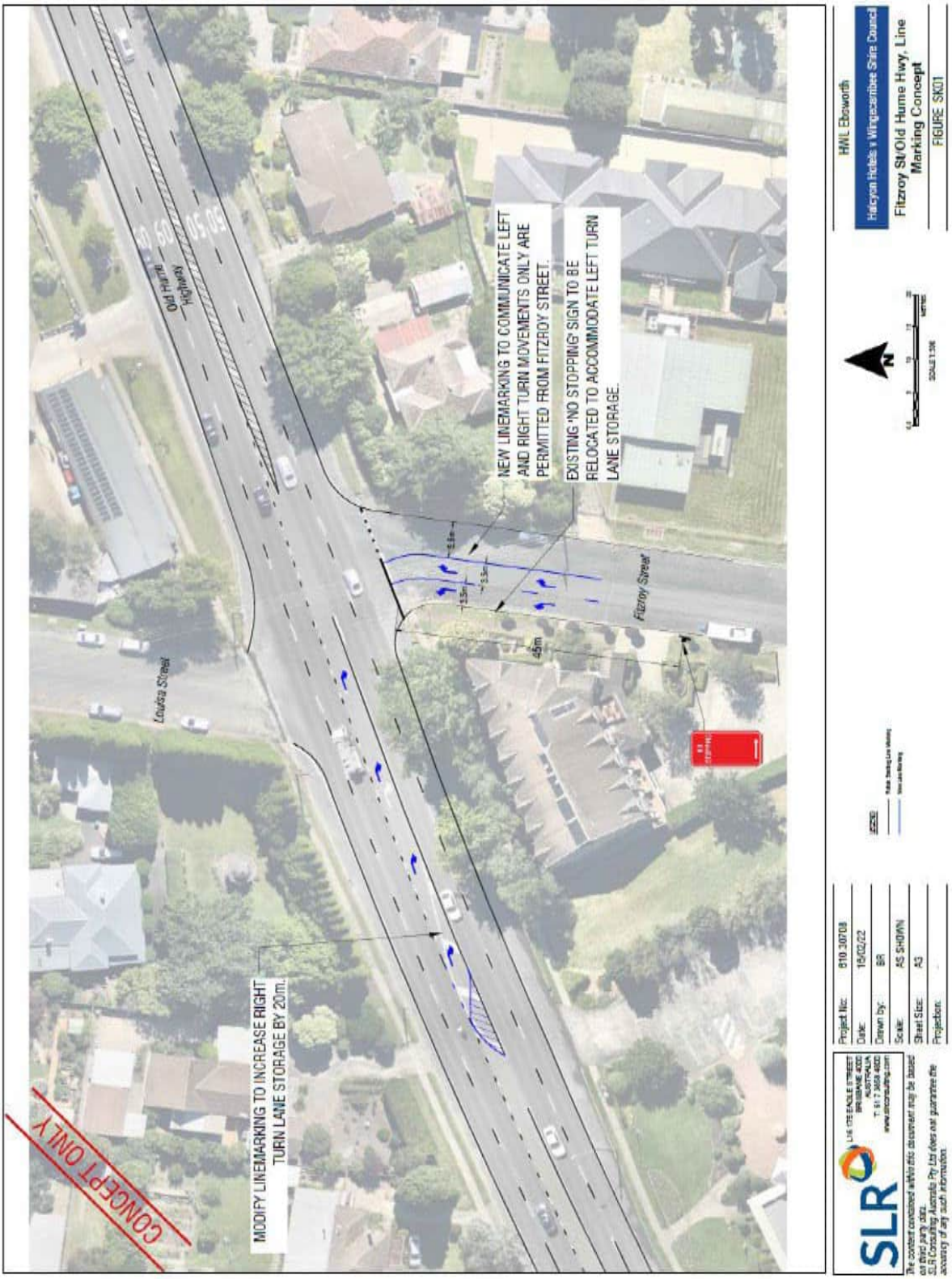
   (c) The requirements of the approved TMP shall be implemented.

   (d) Directional signage required by these conditions (both within the site and external to the site) shall be maintained by the site owner/operator for the life of the development.

5. A future DA for Stage 2 (M5 and M6 buildings) shall be accompanied by a Traffic Impact Study (TIS) that examines any potential transport related implications of the development. As a guide, Table 2.1 of the RTA's Guide to Traffic Generating Developments outlines the key issues that shall be considered in preparing a TIS. In addition, regard shall be had for the Austroads publications, particularly the Austroads Guide to Traffic Management Part 12: Integrated Transport Assessments for Developments and Part 3: Traffic Studies and Analysis Methods.

   As part of preparing the TIS discussions shall be had with TfNSW and Council to determine what specific concerns and intersections need to be considered/assessed, etc.

Attachment 2:



143. **NSW Police**

1. Authorised trading hours of the premises be restricted to no later than 3.00am.

2. The business owner must engage a suitably qualified noise consultant to determine whether the licensed premises comply with standard (LA10) noise conditions. The business owner must comply with the consultant's recommendations, and within six (6) weeks implement all noise abatement recommendations made by the consultant. When all noise abatement measures have been put in place and the premises has been tested, the business owner shall lodge a certification certificate issued by the noise consultant to indicate if the premises complies with the standard LA10 noise conditions.

3. The Licensee shall maintain a CCTV system that meets the following minimum requirements:

   A camera must be located at each entrance and exit door to the venue and positioned to record any person entering or exiting through this entrance. In addition, a camera must be located outside each door to record any person standing within five (5) metres of each door. The CCTV recordings of this camera must be enough to enable the identity of an individual to be established beyond reasonable doubt when:

   a) the person represents 100% of screen height, and

   b) there is an unobstructed view of the persons face Recording shall be retained for a period of 30 days before being reused or destroyed. Immediate access to the CCTV system and the ability to review recordings on the system is to be granted to NSW Police, OLGR Inspectors or other regulatory officer upon request. When the venue is trading, at least one person shall be at the venue who can access the CCTV system and is able to immediately review recordings and produce copies. The CCTV system shall be able to reproduce a copy of the recordings on CD, DVD or USB memory stick and must be provided within 1 working day to NSW Police, OLGR Inspector or other regulatory officer upon request.

4. The licensee must ensure that, immediately after the licensee or a staff member or agent becomes aware of an incident involving an act of violence causing an injury to a person on the licensed premises or in the immediate vicinity and that:

   (a) All reasonable steps are taken to preserve and keep intact the area where the incident occurred, and that any implement or other thing associated with the act of violence is retained in accordance with the Crime Scene Preservation Guidelines issued by the NSW Police Force; and

   (b) The Hume District Commander or his/her delegate, is advised by the licensee or a staff member or agent of the incident as soon as practicable; and

   (c) The licensee or staff member complies with any directions given by the Commander or delegate to preserve or keep intact the area where the violence occurred. In this condition, "staff member" means any person employed by or acting on behalf of the licensee of the licensed premises and it includes any person who is employed to carry on the security activities on or about the premises.

5. The licensee is to be an active member of the Southern Highlands Liquor Accord.

144. **Australian Rail and Track Corporation**

Prior to a Construction Certificate being issued, the applicant must submit details of stormwater disposal to Council for approval. The flow of stormwater toward the rail corridor must not be increased by the proposed development. All approved details for the disposal of stormwater and drainage are to be implemented in the development

145. **Parking Assessment Report**

Any Future Development Application for components M5 and M6 of the development shall be accompanied by a detailed parking assessment report identifying the on-site parking demand and supply in accordance with Mittagong Township Development Control Plan.

146. **Carpark Design – Site Servicing**

Car parks shall be designed to accommodate the turning movements of the largest vehicle servicing the development. The car park design shall incorporate the following:

(a) Staff car park off Ferguson Crescent shall accommodate the turning movements of a 12.5m service vehicle.
(b) Visitor car park off Colo Street shall accommodate the turning movement of a 12.5m bus.
(c) Service vehicles shall manouevre into and out of the site in a forward direction.
(d) The front overhang, and swept path made by the service vehicle shall not obstruct car park traffic or encroach onto parking spaces.
(e) The vehicle swept path shall be reflected on the engineering design plans.
(f) Loading and unloading of service vehicles shall be undertaken onsite with no intrusion onto the road system.
(g) The footpath crossing shall be splayed from the property boundary to the kerb line to accommodate the swept path made by the service vehicle.

Reason: *To ensure that the car parking area is constructed to Council requirements.*

147. **Flood Compliance**

The Applicant must demonstrate that the development complies with the prescriptive flood controls as per Section 5 of Mittagong Township Development Control Plan prior to the issue of the Construction Certificate.

Reason: *To protect people and assets from inundation by flood and reduce risk of harm*

148. **Construction of a Pedestrian Crossing**

Prior to the issue of any future Occupation Certificate for the first development consent approved on the site in accordance with this concept development application (after this development consent) a pedestrian crossing in Colo Road must connect the development to the existing shared use path in Colo Street.

Reason: *To enhance safety for pedestrians and vehicles*

S7.11 Contributions Sheets Follow:-

WINGECARRIBEE SHIRE COUNCIL
Civic Centre, Elizabeth St. Moss Vale, NSW 2577.
PO Box 141, Moss Vale. DX: 4961 Bowral.
Ph: (02) 4868 0888 Fax: (02) 4869 1203
wscmail@wsc.nsw.gov.au www.wsc.nsw.gov.au
Office Hours: Mon-Fri 8.30am - 4.30pm

Notice of Payment – Developer Charges & Section 7.11

20/1400

10 December 2021

ELTON CONSULTING
C/- HALCYON HOTELS
LEVEL 6 332-342 OXFORD ST
BONDI JUNCTION NSW 2022

Re: *20/1400*
Lot 21 DP 1029384
2 COLO STREET MITTAGONG NSW 2575

Development Description: *Nominated Integrated Staged Concept Development Application under s5.10(10) of the Wingecarribee Local Environmental Plan 2010 for redevelopment of The Maltings site (Draft State Heritage Item) as a Mixed Use development. (Stage 1 – M1 and M2)*

Water, Sewerage and Stormwater Headworks charges are levied under Section 64 of the Local Government Act and Section 306 of the Water Management Act 2000. Other contributions are levied under Section 7.11 of the Environmental Planning and Assessment Act 1979 and Council's Contributions Plans.

Contributions Levy	Units	Rate	Amount Payable
S64 Sewerage (Shirewide)	33.29	$11,137.60	$370,770.73
S64 Sewer Compliance Certificate	1.00	$255.00	$255.00
S64 Water Compliance Certificate	1.00	$255.00	$255.00
S64 Water (Shirewide)	33.29	$11,488.41	$382,449.11
Total			$753,729.84

Payments must be either in the form of cash, bank cheque or credit card (credit cards subject to 1% surcharge. Amex and Diners not accepted).

IMPORTANT – The charges shown above are valid for payment until the date given below. After this period the charge will be indexed in accordance with the relevant Plan.

DATE CHARGES ARE VALID TO – 31 Jan 2022

Prepared by – *Michael Park*

Cashier Receipt No: _____

Total Paid: _____

Date Paid: _____

A COPY OF THIS NOTICE MUST BE PRESENTED WHEN MAKING PAYMENT

WINGECARRIBEE SHIRE COUNCIL
Ph: (02) 4868 0888 Fax: (02) 4869 1203
wscmail@wsc.nsw.gov.au www.wsc.nsw.gov.au
Office Hours: Mon-Fri 8.30am - 4.30pm

Notice of Payment – Developer Charges & Section 7.11

20/1400.01

31 March 2022

ELTON CONSULTING
C/- HALCYON HOTELS
LEVEL 6 332-342 OXFORD ST
BONDI JUNCTION NSW 2022

Re: *20/1400.01*
Lot 21 DP 1029384
2 COLO STREET MITTAGONG NSW 2575

Development Description: *Nominated Integrated Staged Concept Development Application under s5.10(10) of the Wingecarribee Local Environmental Plan 2010 for redevelopment of The Maltings site (Draft State Heritage Item) as a Mixed Use development. (Sage 2 - M3 and M4)*

Water, Sewerage and Stormwater Headworks charges are levied under Section 64 of the Local Government Act and Section 306 of the Water Management Act 2000. Other contributions are levied under Section 7.11 of the Environmental Planning and Assessment Act 1979 and Council's Contributions Plans.

Contributions Levy	Units	Rate	Amount Payable
Open Space & Community (Future Works)	14.50	$1,595.05	$23,128.29
Administration (Shirewide)	14.50	$513.10	$7,439.95
Roads & Traffic (Shirewide - Future)	14.50	$2,868.11	$41,587.65
S64 Sewer Compliance Certificate	1.00	$255.00	$255.00
Roads &Traffic (Mittagong)	14.50	$681.88	$9,887.25
S64 Sewerage (Shirewide)	19.67	$11,267.32	$221,628.25
Open Space & Community (Recoup)	14.50	$792.34	$11,488.87
S64 Water (Shirewide)	19.67	$11,622.22	$228,609.00
Open Space & Community (Acquisition)	14.50	$94.62	$1,371.93
Central Library (Shirewide)	14.50	$453.38	$6,574.03
Resource Recovery Centre (Shirewide)	14.50	$269.10	$3,901.99
Roads & Traffic (Shirewide - Recoup)	14.50	$16.57	$240.22
S64 Water Compliance Certificate	1.00	$255.00	$255.00
Total			$556,367.43

Payments must be either in the form of cash, bank cheque or credit card (credit cards subject to 1% surcharge. Amex and Diners not accepted).

IMPORTANT – The charges shown above are valid for payment until the date given below. After this period the charge will be indexed in accordance with the relevant Plan.

DATE CHARGES ARE VALID TO – 30 Apr 2022

Prepared by – *Michael Park*

Cashier Receipt No: _____

Total Paid: _____

Date Paid: _____

A COPY OF THIS NOTICE MUST BE PRESENTED WHEN MAKING PAYMENT

END OF CONDITIONS

Annexure 'A'

Form B (version 2)
LECR 3.2

APPLICATION CLASS 1

COURT DETAILS

Court	Land and Environment Court of New South Wales
Class	1
Case number	

TITLE OF PROCEEDINGS

Applicant	**HALCYON HOTELS PTY LTD (93 124 421 199)**
Respondent	**WINGECARRIBEE SHIRE COUNCIL (49 546 344 354)**

FILING DETAILS

Filed for	**Halcyon Hotels**, applicant
Legal representative	Paul Lalich HWL Ebsworth Lawyers
Legal representative reference	PCN: 24847 Ref: PNL:947021
Contact name and telephone	Kara Mezinec Tel. +61 2 9334 8555
Contact email	plalich@hwle.com.au

HEARING DETAILS

This application is listed at am/pm on at Level 4, 225 Macquarie Street, Windeyer Chambers, Sydney.

TYPE OF CLAIM

Planning Law - appeal against deemed refusal of application for development consent (s8.17(1) *Environment Planning and Assessment Act 1979*)

DETAILS OF APPLICATION

Date or other identification of the decision, or other matter appealed against, objected to, complained of or referred or remitted to the court	Appeal against the Respondent's deemed refusal of Development Application 20/1400 lodged on 10 June 2020 seeking consent for the proposed mixed use re-development at The Maltings, 2 Colo Street, Mittagong 2575.
Act or instrument under which the proceedings are brought	s8.17(1) *Environment Planning and Assessment Act 1979*

ORDERS SOUGHT

1. The appeal is upheld.

2. Consent is granted to Development Application no. 20/1400 for the:

   (a) mixed-use redevelopment of buildings M1 to M4 to accommodate uses including a bar, pool area, multi-purpose spaces suitable for exhibitions, functions, recreation activities and performances, as well as a hotel with associated ancillary uses, and ground improvements including landscaping, parking and vehicular access.

   (b) demolition of the Maltster's Cottage and construction of a new studio/exhibition space; and

   (c) concept approval for buildings M5 and M6 to accommodate residential, tourist and/or seniors living,

   at 2 Colo Street, Mittagong NSW 2575.

3. Any other Orders that the Court sees fit.

SIGNATURE

Signature of legal representative _____

Capacity Solicitor on record

Date of signature 14/04/2021

NOTICE TO RESPONDENT

If your solicitor, barrister, authorised agent or you do not attend the hearing, the court may give judgment or make orders against you in your absence. The judgment may be for the relief claimed in the application and for the applicant's costs of bringing these proceedings.

You must enter an appearance before you can appear before the court.

HOW TO RESPOND

Please read this application very carefully. If you have any trouble understanding it or require assistance on how to respond to the application you should get legal advice as soon as possible.

You can get further information about what you need to do to respond to the application from:

- The court registry.
- A legal practitioner.

- LawAccess NSW on 1300 888 529 or at www.lawaccess.nsw.gov.au.

Court forms are available on the LEC website at www.lawlink.nsw.gov.au/lec.

REGISTRY ADDRESS

Street address	Level 4, 225 Macquarie Street, Windeyer Chambers, Sydney
Postal address	GPO Box 3565, Sydney NSW 2001
Telephone	(02) 9113 8200

FURTHER DETAILS ABOUT Applicant

Applicant:

Name:	**HALCYON HOTELS** PTY LTD ABN: 93 124 421 199
Address:	36 Campbell Parade, Bondi Beach NSW 2026

Legal representative for applicant:

Name:	Paul Lalich
Practising certificate number:	24847
Firm:	HWL Ebsworth Lawyers
Contact solicitor:	Kara Mezinec
Address:	Level 14, Australia Square, 264-278 George Street Sydney NSW 2000
DX address:	
Telephone:	+61 2 9334 8555
Fax:	1300 369 656
Email:	plalich@hwle.com.au
Electronic service address:	kmezinec@hwle.com.au

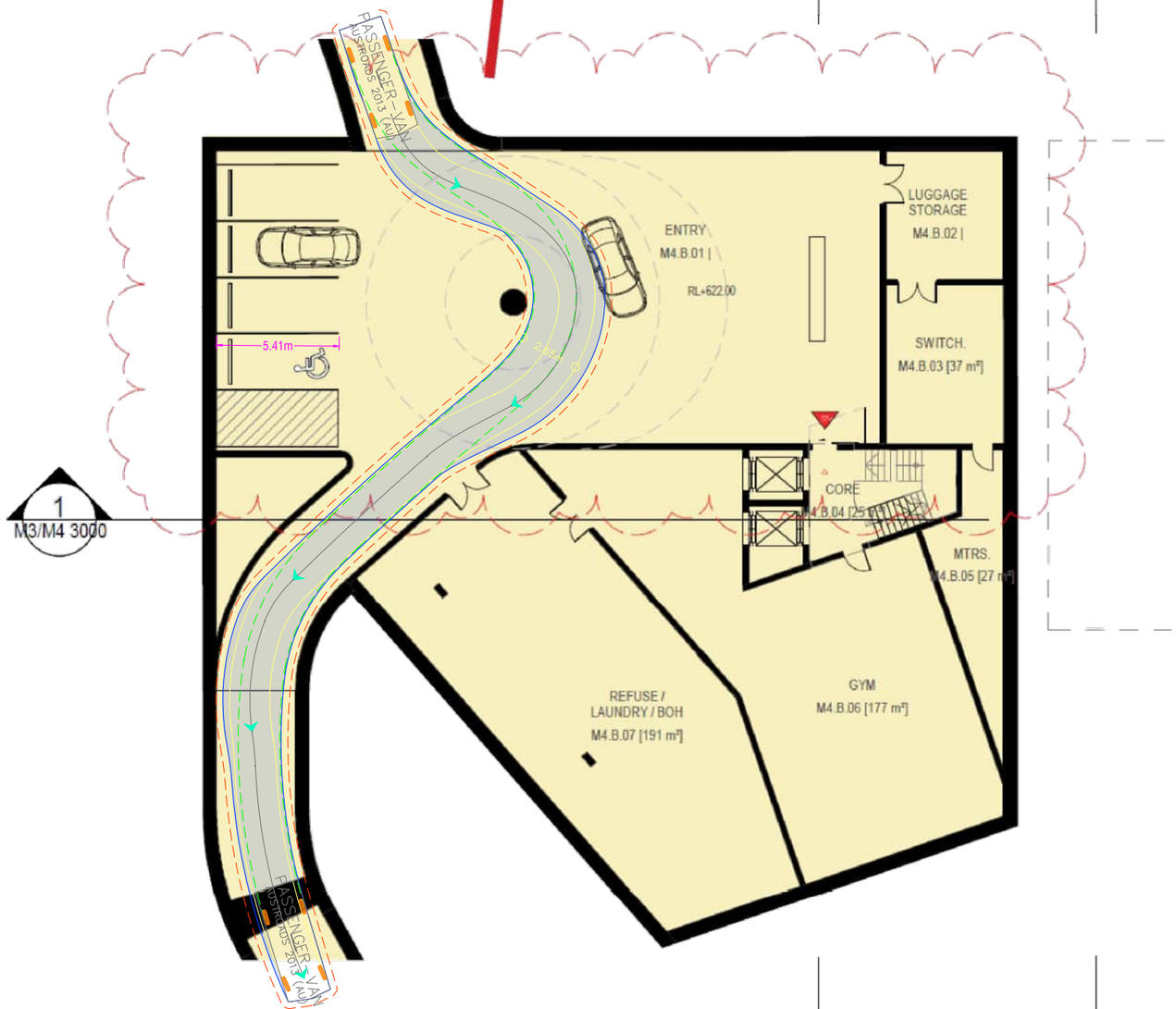
DETAILS ABOUT RESPONDENT

Respondent:

Name:	**WINGECARRIBEE SHIRE COUNCIL** ABN: 49 546 344 354
Address:	Civic Centre, 68 Elizabeth Street, Moss Vale NSW 2577

Appendix H Swept Path Assessments

CONCEPT ONLY

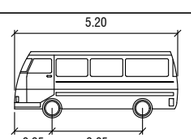


1 M3+M4 BASEMENT
--- 1 : 250

SLR
LEVEL 16, 175 EAGLE ST
BRISBANE
QUEENSLAND 4000
AUSTRALIA
T: 61 7 3858 4800
www.slrconsulting.com

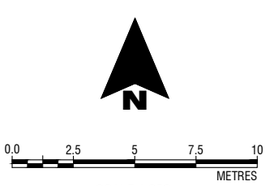
Project No:	610.31093
Date:	24/01/2023
Drawn by:	Charlie Seventekin
Certified by:	-
Sheet Size:	A3
Projection:	-

SWEPT PATH LEGEND
- Vehicle Path
- Vehicle Body
- Body Clearance
- Front Wheels



PASSENGER-VAN

	meters
Width	: 1.94
Track	: 1.84
Lock to Lock Time	: 6.0
Steering Angle	: 33.6



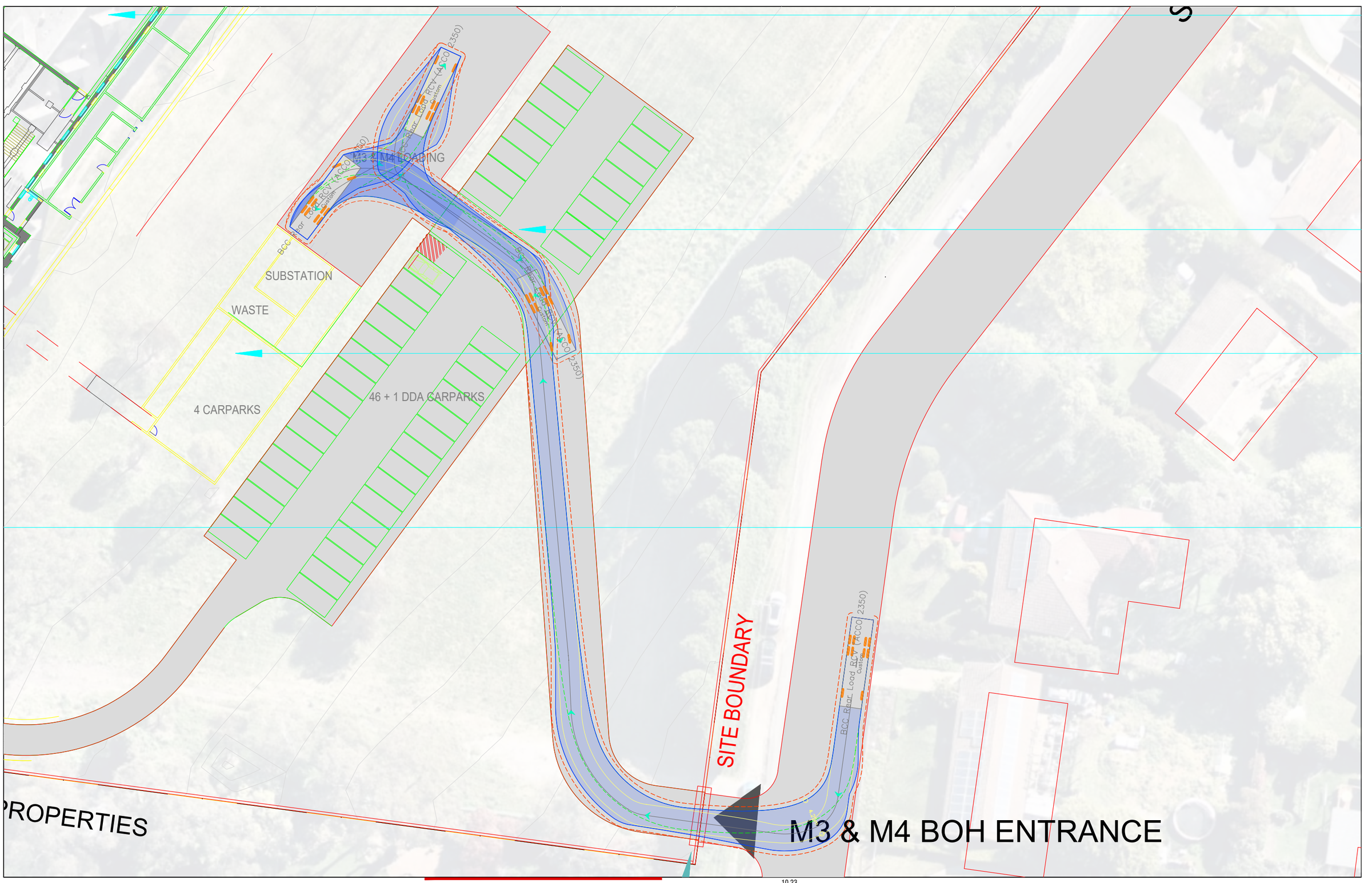
SCALE 1:250

Colliers

The Maltings, Mittagong

B99 Design Vehicle Basement Swept Path Assessment

FIGURE SK-01

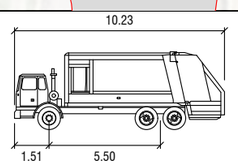


SLR
L16 175 EAGLE STREET
BRISBANE CITY 4000
AUSTRALIA
T: 61 7 3858 4800
www.slrconsulting.com

Project No:	610.31093
Date:	01/02/2024
Drawn by:	Charlie Seventekin
Scale:	AS SHOWN
Sheet Size:	A3
Projection:	GDA2020 MGA Zone 56

CONCEPT ONLY

SWEPT PATH LEGEND
- Vehicle Path
- Vehicle Body
- Body Clearance
- Front Wheels



BCC Rear Load RCV (ACCO 2350)

meters

Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 40.3

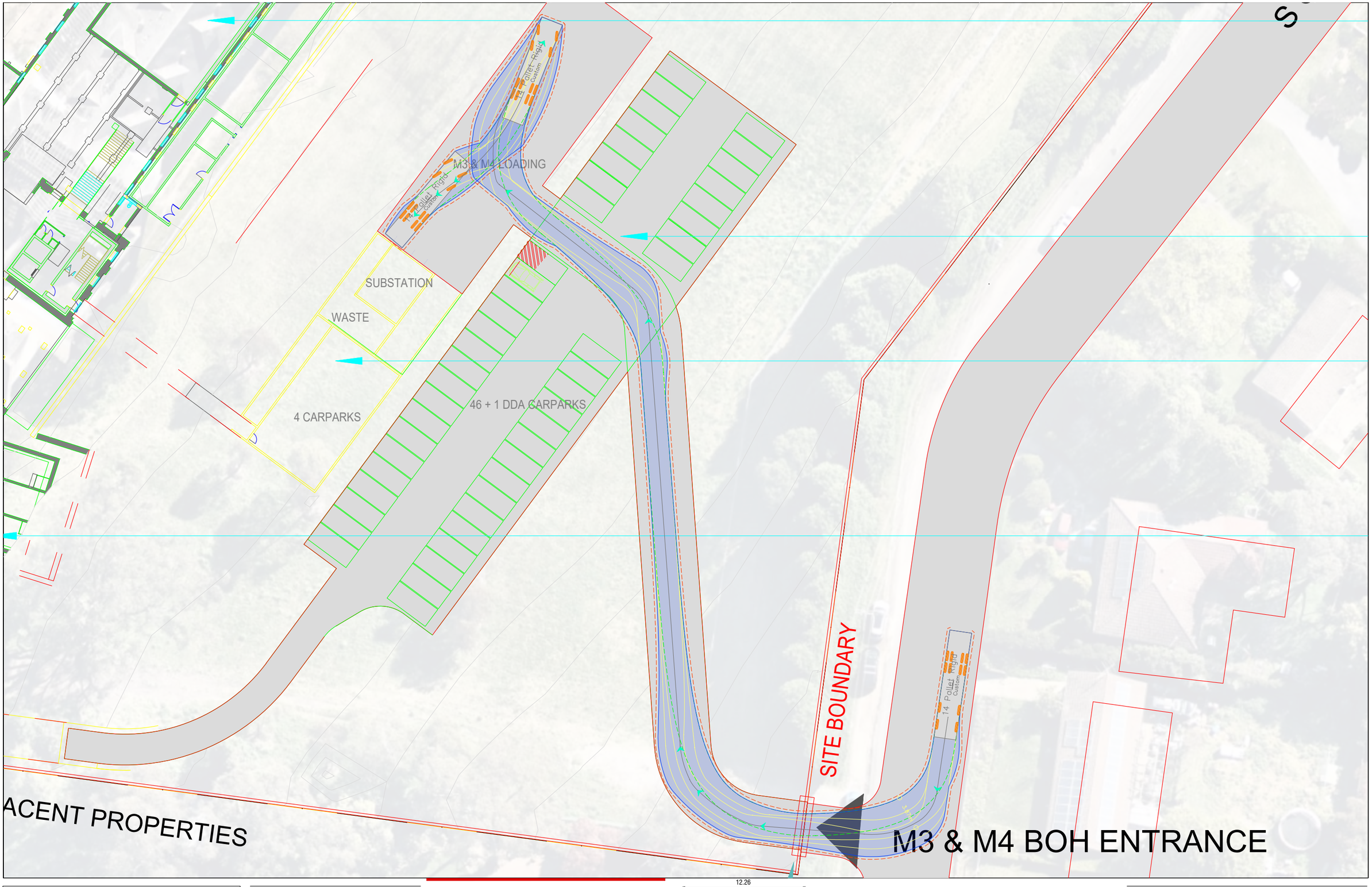
SCALE 1:400

Colliers

The Maltings, Mittagong

10.2m long Refuse Collection Vehicle Swept Path Assessment

FIGURE SK-03



SLR
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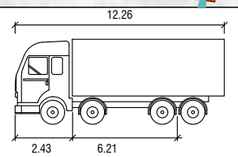
Project No:	610.31093
Date:	01/02/2024
Drawn by:	Charlie Seventekin
Scale:	AS SHOWN
Sheet Size:	A3
Projection:	GDA2020 MGA Zone 56

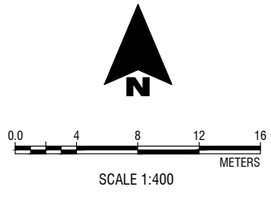
CONCEPT ONLY

SWEPT PATH LEGEND
- Vehicle Path
- Vehicle Body
- Body Clearance
- Front Wheels



14 Pallet Rigid

meters			
Truck Width	: 2.50	Trailer Width	: WD2
Truck Track	: 2.50	Trailer Track	: TR2
Lock to Lock Time	: 6.0	Articulating Angle	: AA
Steering Angle	: 37.7		



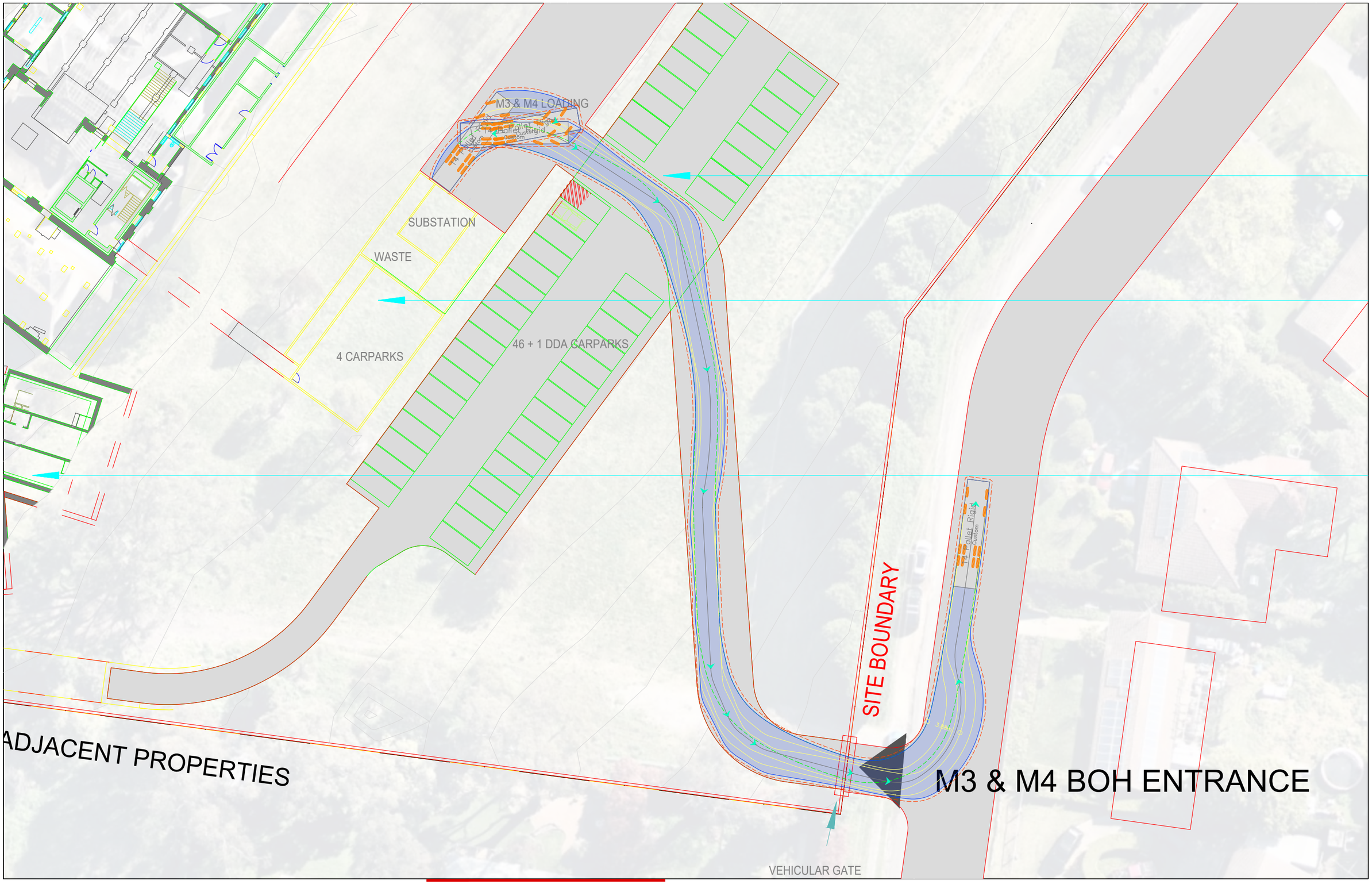
SCALE 1:400

Colliers

The Maltings, Mittagong

12.26m long Rigid Vehicle (Substation Delivery) Swept Path Assessment

FIGURE SK-04A



SLR
L16 175 EAGLE STREET
BRISBANE CITY 4000
AUSTRALIA
T: 61 7 3858 4800
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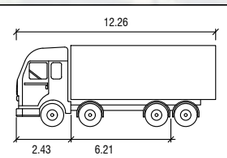
Project No:	610.31093
Date:	01/02/2024
Drawn by:	Charlie Seventekin
Scale:	AS SHOWN
Sheet Size:	A3
Projection:	GDA2020 MGA Zone 56

CONCEPT ONLY

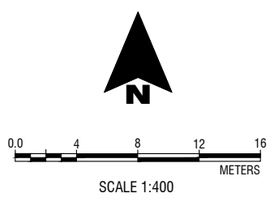
SWEPT PATH LEGEND

- Vehicle Path
- Vehicle Body
- Body Clearance
- Front Wheels



14 Pallet Rigid — meters

Truck Width	: 2.50	Trailer Width	: WD2
Truck Track	: 2.50	Trailer Track	: TR2
Lock to Lock Time	: 6.0	Articulating Angle	: AA
Steering Angle	: 37.7		



SCALE 1:400

Colliers

The Maltings, Mittagong

12.26m long Rigid Vehicle (Substation Delivery) Swept Path Assessment

FIGURE SK-04B

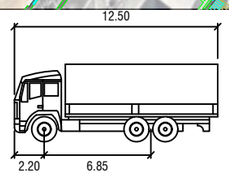
SLR
L16 175 EAGLE STREET
BRISBANE CITY 4000
AUSTRALIA
T: 61 7 3858 4800
www.slrconsulting.com

Project No:	610.31093
Date:	23/01/2024
Drawn by:	Charlie Seventekin
Scale:	AS SHOWN
Sheet Size:	A3
Projection:	GDA2020 MGA Zone 56

CONCEPT ONLY

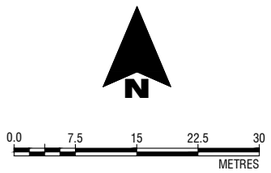
SWEPT PATH LEGEND

- Vehicle Path
- Vehicle Body
- Body Clearance
- Front Wheels



HRV

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 36.7



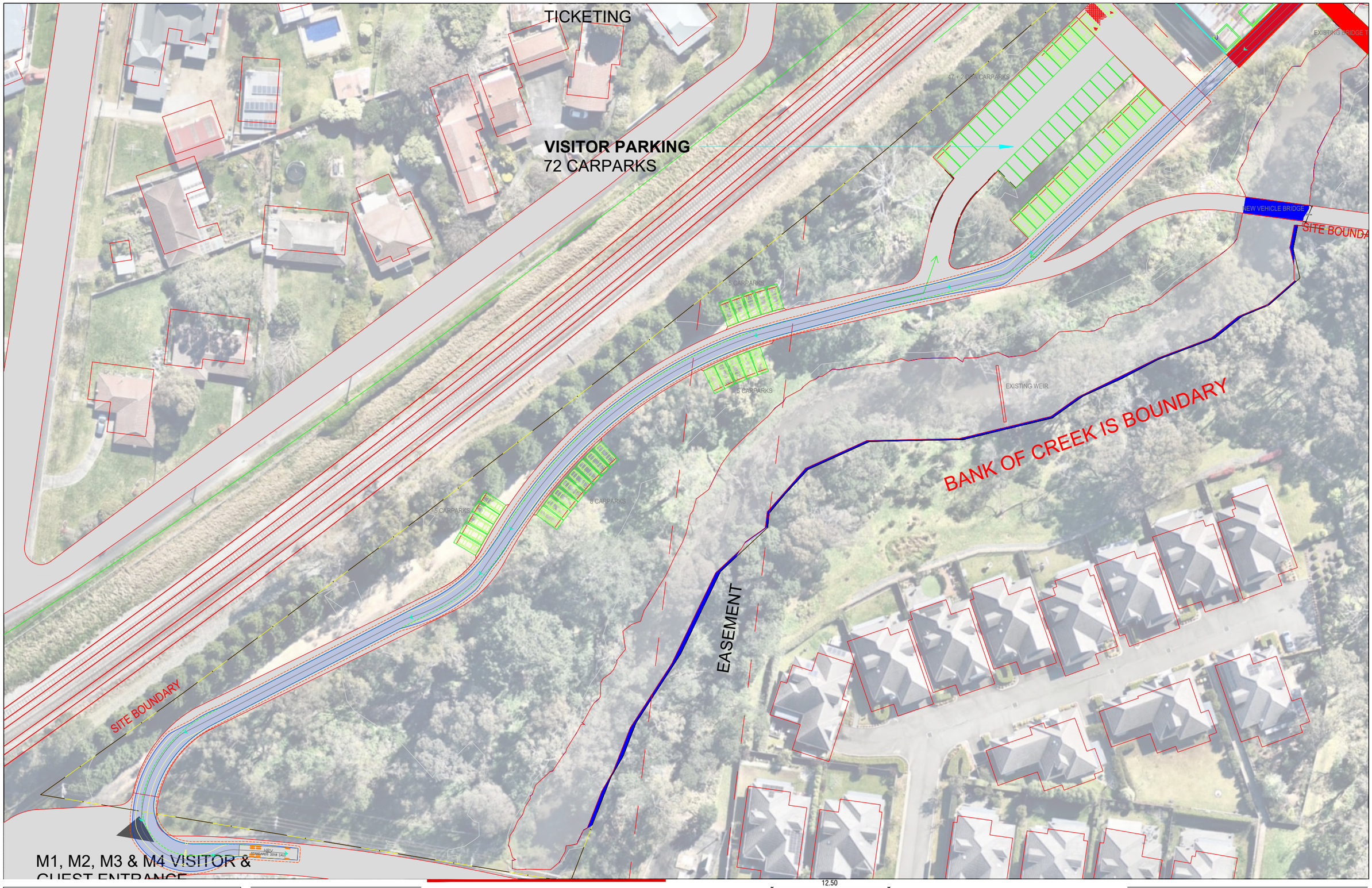
SCALE 1:750

Colliers

The Maltings, Mittagong

12.5m long Fire Truck (HRV) Swept Path Assessment

FIGURE SK-06A



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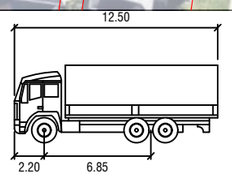
Date:	23/01/2024
Drawn by:	Charlie Seventekin
Scale:	AS SHOWN
Sheet Size:	A3
Projection:	GDA2020 MGA Zone 56

CONCEPT ONLY

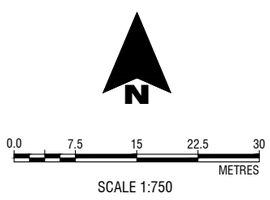
SWEPT PATH LEGEND

- Vehicle Path
- Vehicle Body
- Body Clearance
- Front Wheels



HRV

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 36.7



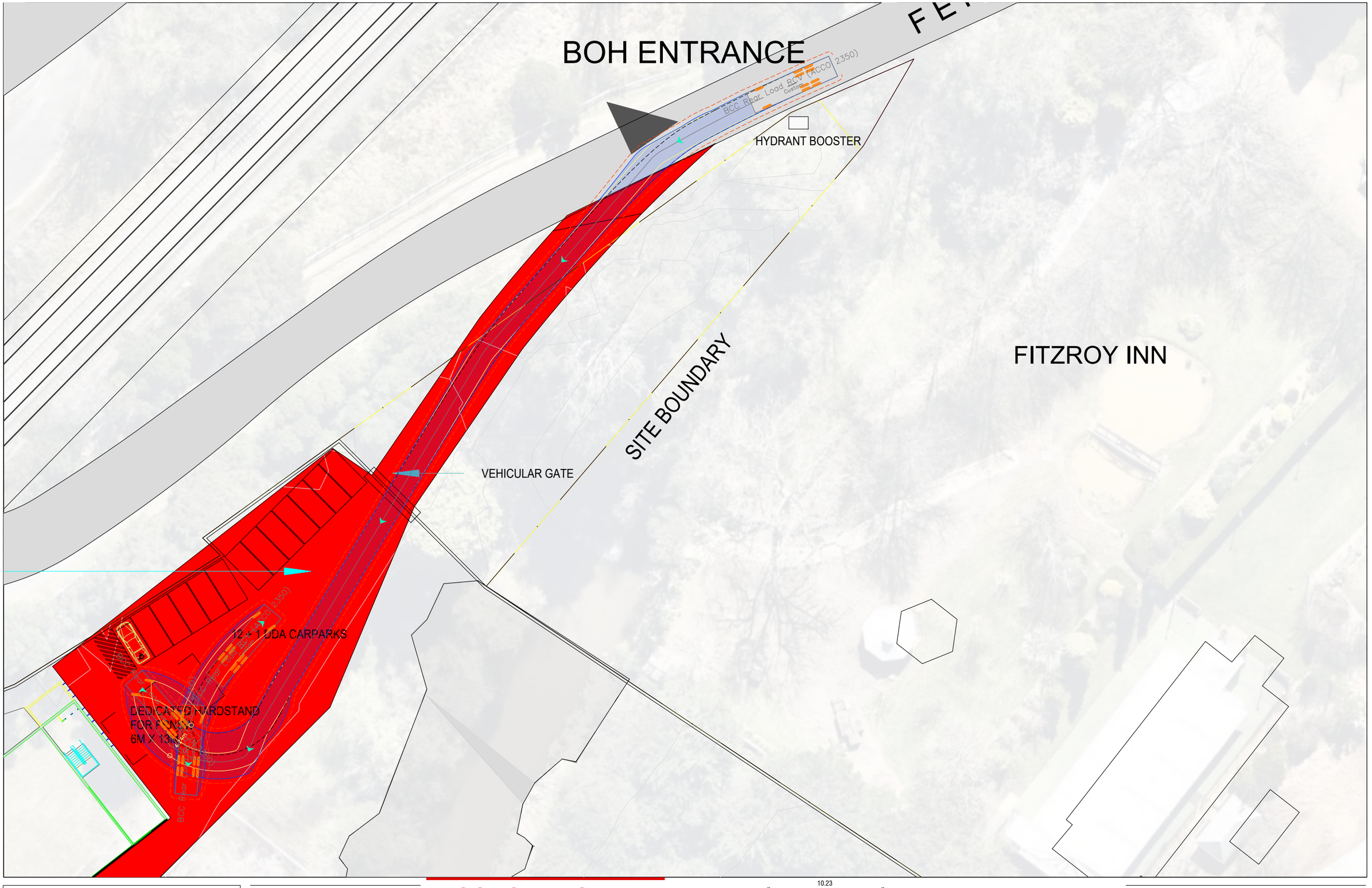
SCALE 1:750

Colliers

The Maltings, Mittagong

12.5m long Fire Truck (HRV) Swept Path Assessment

FIGURE SK-06B



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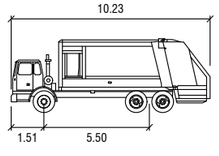
Projection:	GDA2020 MGA Zone 56

CONCEPT ONLY

SWEPT PATH LEGEND

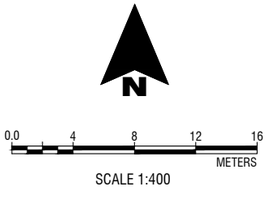
- Vehicle Path
- Vehicle Body
- Body Clearance
- Front Wheels



BCC Rear Load RCV (ACCO 2350)

meters

Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 40.3



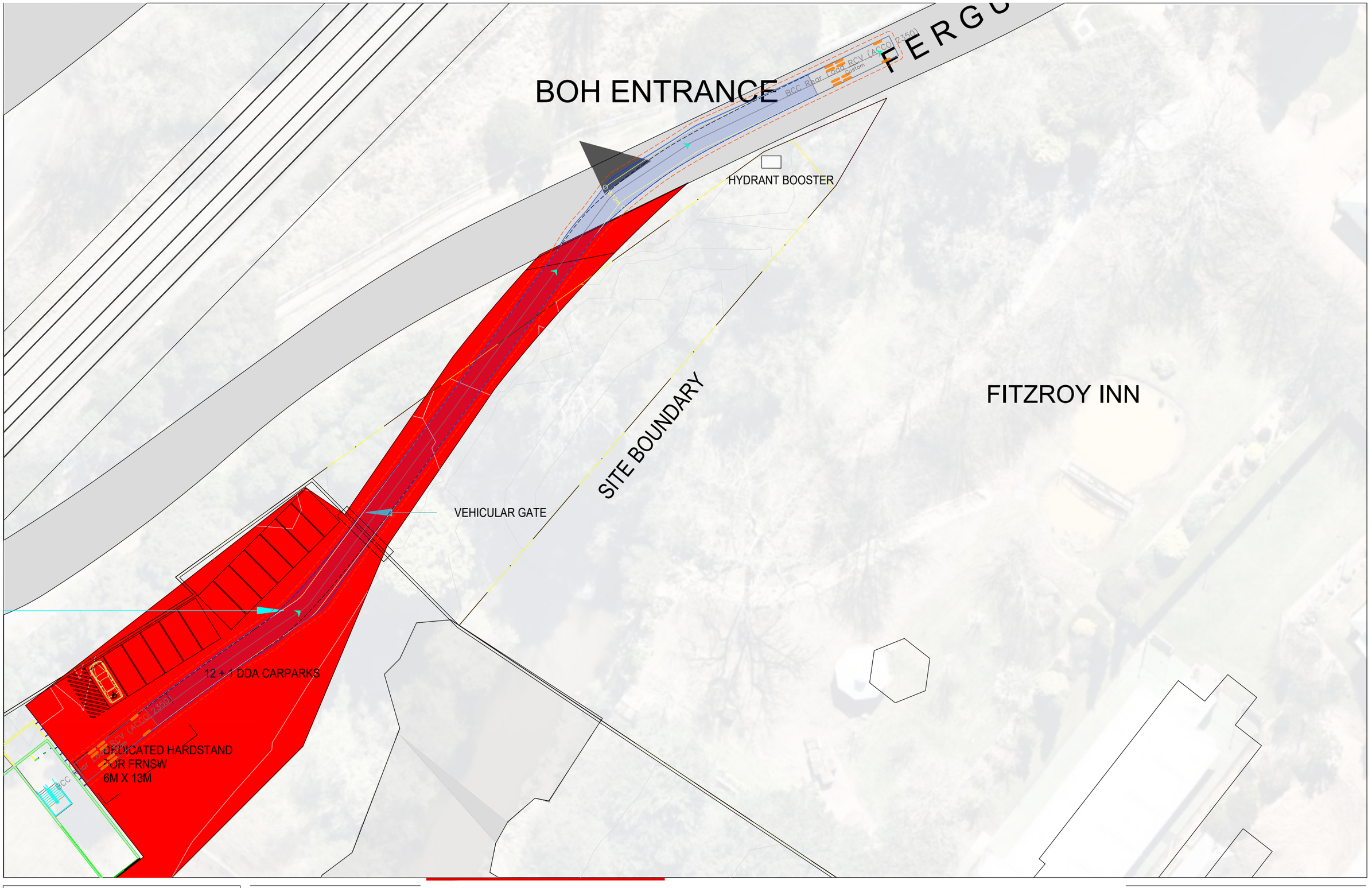
SCALE 1:400

Colliers

The Maltings, Mittagong

10.2m long Refuse Collection Vehicle Swept Path Assessment (inbound)

FIGURE SK-09A



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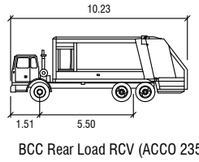
Sheet Size:	A3
Projection:	GDA2020 MGA Zone 56

CONCEPT ONLY

SWEPT PATH LEGEND

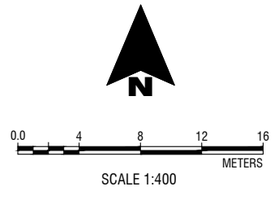
- Vehicle Path
- Vehicle Body
- Body Clearance
- Front Wheels



BCC Rear Load RCV (ACCO 2350)

meters

Width	:	2.50
Track	:	2.50
Lock to Lock Time	:	6.0
Steering Angle	:	40.3



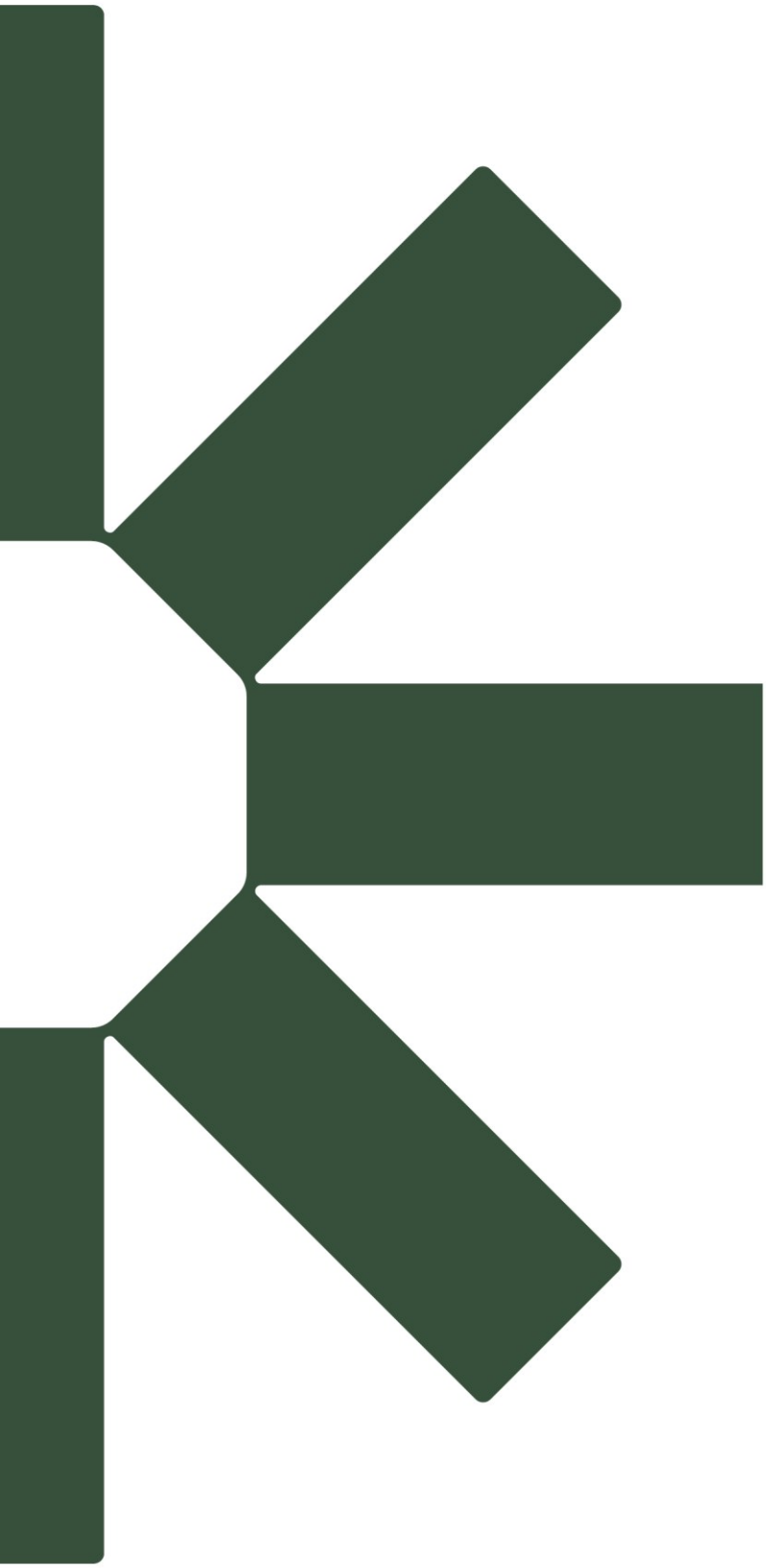
SCALE 1:400

Colliers

The Maltings, Mittagong

10.2m long Refuse Collection Vehicle Swept Path Assessment (outbound)

FIGURE SK-09B



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