



# 50 Morisset Street, Queanbeyan

## Noise Assessment for DA Purposes

### Lockbridge Pty Ltd

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Turner ACT 2612

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## Revision Record

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## Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Lockbridge Pty Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.



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## 1.0 Introduction

SLR Consulting Australia Pty Ltd (SLR) has undertaken a noise assessment of a proposed mixed-use and residential development to be located on land known as 50 Morisset Street, Queanbeyan in New South Wales (the Project).

The assessment forms a part of a Development Application (DA) to the Queanbeyan-Palerang Regional Council (QPRC).

This report details the results of ambient noise measurements, which were used to establish project noise limits, and the prediction and assessment of noise intrusion to sensitive areas within the Project and noise emissions from the Project at nearby sensitive receptors.

## 2.0 Project Description and Surrounds

### 2.1 Site Location

The project site and surrounds, including the nearest sensitive receptors, are shown in **Figure 1**.

The land surrounding the Project is a combination of residential use (primarily to the east and north) and commercial/retail (primarily to the west and south).

### 2.2 Project Description

The Project site is currently used as a carpark for the adjacent shopping centre. Layout plans and elevation drawings are shown in **Appendix A**.

The Project will comprise two residential towers of the following:

- Ground level –
  - Up to eight retail spaces; six facing Collett Street and two facing Morisset Street;
  - Carparking with access via Morisset Street;
  - Lift lobbies; and
  - Ancillary spaces including storage, waste storage and amenities.
- First level – carparking and lift lobbies.
- Level 2 – residential apartments and internal communal open space with landscaping.
- Level 3 to Level 9 – residential apartments.

Access to the loading/waste collection area will also be via Morisset Street. The turn-around bay will be relatively close to 69 Morisset Street (refer to “Res 8” in **Figure 1**).

With regard to noise emissions, the most significant sources of noise would be:

- Noise associated with mechanical plant, eg carpark exhaust system, air-handling.
- Noise from the ground floor retail spaces.
- Noise from the loading/waste collection area activities.
- Noise from traffic associated with the Project.



**Figure 1 Site Location and Surrounds**



### 3.0 Existing Noise Environment

Continuous noise monitoring was undertaken between Friday 10 November 2023 and Wednesday 15 November 2023. The purpose of the monitoring was to:

- Measure the existing representative ambient background noise level of the area; and
- Measure existing road noise levels.

The monitoring was undertaken at 72 Collett Street (refer to “Res 2” in **Figure 1**) and the results assist in establishing the level of noise likely to be received at the Project and also suitable limits for noise emissions from the project.

That location was selected due to SLR being unable to contact the occupant of the nearest sensitive receptor to the Project, 68 Collett Street (“Res 8”), and access and security issues prevented locating monitoring equipment on public land or in the carpark area.

The monitoring location was deemed to be representative of all residential locations in the vicinity of the Project and the noise levels expected at facades exposed to road traffic noise at the Project site.



The results of the monitoring are summarised in **Table 1**. Daily results for the monitoring period are presented as graphs in **Appendix B**.

**Table 1 Existing Ambient Noise Levels – 72 Morisset Steet**

Period	Rating Background Level (RBL), dBA	Ambient Noise Level, dBA
Day (7:00 am – 6:00 pm)	45	63 LAeq(period)
Day (7:00 am – 10:00 pm) <sup>1</sup>	--	62 LAeq(15 hour)
Evening (6:00 pm – 10:00 pm)	39	61 LAeq(period)
Night (10:00 pm – 7:00)	32	54 LAeq(period) 54 LAeq(9 hour)

1. For the assessment of road traffic noise.

**Table 2** shows the items of acoustic instrumentation used for the noise monitoring.

**Table 2 Acoustic Instrumentation**

Instrument	Serial Number
ARL Type 316 Environmental Noise “Logger”	16-306-040
SVAN Type SV30A Acoustic calibrator	24604

The calibration of the acoustic instrumentation was confirmed prior to, and at the conclusion of, the measurements. The signal level of the sound level meter and noise logger was found to be within an acceptable margin of  $\pm 1.0$  dBA of the reference signal.

All items of acoustic instrumentation were designed to comply with Australian Standard (AS) IEC 61672.1 2019 *Electroacoustics – Sound Level Meters* and AS IEC 60942 2017 *Electroacoustics – Sound calibrators*, and carried current NATA certificates.

## 4.0 Assessment Criteria

### 4.1 Queanbeyan-Palerang Regional Council

The Project will be required to satisfy the requirements of the QPRC *Queanbeyan Development Control Plan 2012* (QDCP).

Section 2.3.6 “Noise and Vibration” of the QDCP, which is applicable to all developments in all zones, states the following objectives:

- “1). To ensure development provides for effective management of noise and vibration through effective siting, building design, materials and layout, construction and engineering techniques, operational management.
- 2) Where a proposed development includes an activity which may generate unreasonable noise or which may be affected by an existing noise source, an acoustic study is to be undertaken to establish noise levels and provide a mitigation strategy demonstrating the measures to be taken to effectively mitigate noise.
- 3) Noise sensitive developments such as dwellings should be designed to reasonably protect the proposed development from noise sources such as arterial roads, entertainment venues and the like.”

The controls relevant to the Project to achieve the objectives are highlighted below:



- a) **Development should be designed to minimise the potential for offensive noise.**
- b) *Noise buffering should not be provided by high fences, garages or blank walls to public streets. Where screening by these or similar methods is the only practical solution, the screen should be no greater than 50% of the street frontage. Such screening should have visual interest and retain some surveillance from the building behind the screen's entries, windows or balconies when practical.*
- c) *Where proposed noise sensitive development may be affected by existing noise generators the development should be designed to incorporate adequate shielding from those noise sources.*
- d) **Entertainment venues, hotels, clubs, cinemas and the like, either licensed or unlicensed, should prepare a plan of management including provisions to:**
  - i) **Ensure patrons enter and leave the premises in a quiet and orderly manner whenever the premises are open to the public.**
  - ii) **Manage noise levels within the premises to prevent an unreasonable effect on the amenity of the locality.**
- e) **Commercial and retail developments, or mixed-use developments, should have suitably located and designed goods delivery and garbage collection areas, vehicle entry and exits and other noise sources so that amenity of residents both within the development and in nearby buildings is reasonably protected.**
- f) **To ensure development is designed so noise and vibration from new businesses, light industrial and leisure/cultural/entertainment venues and other noise generating activities do not unacceptably affect the amenity of nearby residential and other noise or vibration sensitive uses.**
- g) *Home based businesses should not generate unreasonable levels of noise beyond their property boundary."*

In addition, Part 3C of the QDCP relates to Multi-Dwelling Housing and in Section 3C.5.8 "Visual And Acoustic Privacy" stipulates:

#### **"Objectives**

- 1). *To ensure development provides for effective management of noise and vibration through effective siting, building design, materials and layout, construction and engineering techniques, operational management.*

#### **Controls**

##### Performance Criteria

- a) *The transmission of noise may be minimised by:*
  - i) *Locating living rooms or garages of dwellings to not abut bedrooms of adjacent dwellings.*
  - ii) *Separating plumbing for each dwelling and containing them to prevent transmission of noise between dwellings.*
  - iii) *Using appropriate noise-resistant wall, ceiling and floor materials to the requirements of the Building Code of Australia.*



- b) *Dwellings abutting major roads or other uses that emit high levels of noise shall be designed to locate noise sensitive uses away from the source and are protected by appropriate noise-shielding techniques. This may be achieved by:*
- i) *Locating bedroom and other noise-sensitive rooms away from the road;*
  - ii) *Using thick glass panes or double glazing to windows fronting the road;*
  - iii) *Using solid-core doors and other appropriate seals to vents and other openings;*
  - iv) *Mounding (within landscape setback); or*
  - v) *Using solid wall construction.*
- c) Noise sources from new development may be controlled by locating active recreation areas (eg swimming pools and barbecue areas); services such as garbage collection, pumps and air conditioners; and access ways, garages and parking areas away from bedrooms of adjacent dwellings.
- d) Driveways and parking areas shall be located away from bedroom windows of neighbouring dwellings.
- e) Maximum noise levels from plant and equipment:
- i) No electrical, mechanical or hydraulic plant or equipment shall generate a noise level greater than 5 dBA above the ambient L<sub>90</sub> sound level at the boundaries of any allotment at any time of day.

Based on the requirements of the QDCP, the noise limits applicable to noise from the Project to nearby receptors have been summarised in **Table 3**.

Performance Criteria a) relates to the National Construction Code. Compliance with the requirements is considered during the detailed design of the project and confirmed by the certifier during the Occupancy Certification stage. It is not required to be addressed in this report.

**Table 3 Project Noise Limits**

Noise Source	Project Noise Limit, dBA LAeq(15min)		
	Day	Evening	Night
Mechanical Plant	50	44	37
Waste Collection	50	44	37
Commercial/Retail Activity	50	44	N/A

## 4.2 Road Traffic Noise Intrusion Design Objectives

The QDCP requires consideration of road traffic noise within dwellings and noise sensitive areas. Acoustic amenity design objectives are recommended in Australian Standard (AS) 2107:2016 “Acoustics — Recommended design sound levels and reverberation times for building interiors” (AS 2107).

The objectives applicable to Apartments in inner city areas or entertainment districts or near major roads have been described in **Table 4**.





**Table 4 AS 2107 Recommended Interior Design Sound Levels**

Occupancy	Design Sound Level Range, dBA LAeq
Retail spaces	< 50
Within Apartments:	
Sleeping areas (night time <sup>1</sup> )	35 – 40
Habitable areas <sup>2</sup>	35 – 45

1. 10:00 pm – 7:00 am
2. At any time

It is recommended that a mid-range value for habitable rooms, ie 40 dBA, and the lower value of the recommended range for bedrooms is appropriate when considering road traffic noise intrusion within residential premises.

### 4.3 Noise from Vehicles Associated with the Project

When Project-related traffic moves onto the public road network, vehicle movements are regarded as ‘additional road traffic’ and are assessed under the NSW *Road Noise Policy* (RNP) prepared by the Department of Environment, Climate Change and Water (DECCW) in 2011.

The RNP requires an initial screening test by evaluating whether noise levels would increase by more than 2 dB (which equates to an increase in traffic volumes of approximately 60%) due to construction or operational traffic.

Where noise levels increase by more than 2 dB (ie 2.1 dB or greater) further assessment is required using the criteria presented in the RNP, as shown in **Table 5**.

**Table 5 RNP Criteria for Assessing Project-related Vehicles on Public Roads**

Road Category	Type of Project/Land Use	Assessment Criteria, dBA	
		Daytime (7:00 am – 10:00 pm)	Night-time (10:00 pm – 7:00 am)
Freeway/arterial/ sub-arterial roads	Existing residences affected by additional traffic on existing freeways/arterial/sub-arterial roads generated by land use developments	LAeq(15hour) 60 (external)	LAeq(9hour) 55 (external)

In relation to noise from occupant’s vehicles accessing the basement carpark via the western accessway, there are no specific criteria applicable at dwellings within the same complex. It is a common situation in a multi-unit apartment complex for vehicles to pass in close proximity to dwellings within the development.

Acoustic amenity is generally maintained through responsible driver behaviour and ensuring speed bumps, drainage grates and automatic gates do not generate excessive noise.

## 5.0 Noise Assessments

### 5.1 Road Traffic Noise

#### 5.1.1 Road Traffic Generated by the Project

The existing volume of vehicles on Morisset and Collett Streets are shown in **Table 6** together with the number of vehicles on those roads expected post-development. The percentage increase has also been shown.



**Table 6 Existing and Post-development Traffic**

Road Name	Existing Traffic Volume <sup>1</sup>		Post-development Traffic Volume <sup>1</sup>		Percentage Change	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Collett Street	646	786	646	786	0	0
Morisset Street	703	992	745	1021	6	3

1. Traffic data obtained from “*Traffic Impact Assessment Report, 50 Morisset Street, Queanbeyan, Proposed Mixed-Use Development*” prepared by Quantum Traffic, dated 29 November 2023.

It can be seen in **Table 6** that the Project is expected to have a very minor impact on the traffic volumes on Morisset Street and no impact on Collett Street.

Consequently, the Project would not increase the traffic volume on the surrounding road network by at least 60%, so the RNP +2 dB criterion would not be exceeded.

### 5.1.2 Road Traffic Noise Levels at the Development

A 3D noise model was established based on the noise levels measured at 72 Morisset Street (Res 2). The model incorporated the layout design of the Project.

**Table 7** shows the predicted road traffic noise levels at the future facades most exposed to road traffic noise.

**Table 7 Facade Road Traffic Noise Levels**

Facade Location	Road Traffic Noise Levels <sup>1</sup> , dBA	
	Daytime, LAeq(15hour)	Night-time, LAeq(9hour)
East (facing Collett Street)	63 – 65	56 – 57
South (facing Morisset Street)	64 – 65	56 – 57
North	58 – 62	50 – 55
Ground Level Retail Areas	64	N/A

1. Including reflections from the future building facades

### 5.1.3 Road Traffic Noise Intrusion

Australian Standard (AS) 3671:1989 *Acoustics — Road Noise Intrusion—Building siting and construction* (AS 3671) provides a methodology to determine the level of noise reduction required and the minimum sound insulation performance to be achieved by the external building envelope.

The required noise reductions to be achieved by the building facade have been calculated using the highest noise levels expected to be received at the building facades in **Table 7** and are shown in **Table 8**.



**Table 8 Required Noise Reductions**

Facade	Occuancy	Time of Day	Maximum External Noise Level, dBA LAeq	Internal Objective, dBA LAeq	Required Noise Reduction, dBA
East	Habitable Room	Day	65 (15 hour)	40	25
	Bedroom	Night	57 (9 hour)	35	22
		Day	64 (15 hour)	40	25
	Retail	Day	64 (15 hour)	50	14
North	Habitable Room	Day	62 (15 hour)	40	22
	Bedroom	Night	55 (9 hour)	35	20
		Day	62 (15 hour)	40	22
South	Habitable Room	Day	65 (15 hour)	40	25
	Bedroom	Night	57 (9 hour)	35	22
		Day	65 (15 hour)	40	25
	Retail	Day	64 (15 hour)	50	14

1. Day = 7:00 am – 10:00 pm
2. Night = 10:00 pm – 7:00 am

### 5.1.4 Facade Sound Insulation and Constructions

Calculations in accordance with the methodology contained within AS 3671 were undertaken to determine the minimum sound insulation performance of building constructions.

The apartment facades will feature large areas of glass and in some instances the facade will be entirely glass. Consequently, the glazing will be the controlling element of the building facade with regard to road noise intrusion.

The size of the glazed elements (as shown in the project drawings provided) and likely acoustic characteristics of the bedrooms and habitable rooms have been considered. It is anticipated that the floor covering to the bedrooms would be carpet and the habitable areas (ie dining/lounge, entry, etc) would be hard-floored (ie timber, vinyl and/or tiled), with all rooms furnished.

Based on the proposed design of the dwellings, the future road traffic noise levels expected at the site, and the AS 3671 methodology, the minimum sound insulation ratings required to meet the project criteria are described in **Table 9**.





**Table 9 Minimum Sound Insulation Performance Requirements**

Unit	Occupancy	Facade	Required Sound Insulation ( $R_w$ )
Ground Floor	Retail	East, south	$\geq 25$
201, 301, 401, 501, 601, 701, 801, 901	Living/dining/kitchen	South	30
	Bedrooms	South, east, west	30
202, 302, 402, 502, 602, 702, 802, 902	Living/dining/kitchen	East, south	32
	Bedrooms	South	30
203, 303, 403, 503, 603, 703, 803, 903, 213, 313, 413, 513, 613, 713, 813, 913	Living/dining/kitchen	East, north	32
	Bedroom	East	32
204, 304, 404, 504, 604, 704, 804, 904, 214, 314, 414, 514, 614, 714, 814, 914	Living/dining/kitchen	East, north	32
	Bedrooms	East	32
205, 305, 405, 505, 605, 705, 805, 905, 215, 315, 415, 515, 615, 715, 815, 915	Living/dining/kitchen	East, north	32
	Bedroom	North	30
206, 306, 406, 506, 606, 706, 806, 906, 216, 316, 416, 516, 616, 716, 816, 916	Living/dining/kitchen	North, west	30
	Bedroom	North, west	28
207, 307, 407, 507, 607, 707, 807, 907, 217, 317, 417, 517, 617, 717, 817, 917	Living/dining/kitchen	North, west	28
	Bedroom	North	28
208, 308, 408, 508, 608, 708, 808, 908	Living/dining/kitchen	North, west	28
	Bedroom	North, west	28
	Bedroom	West	25
209, 309, 409, 509, 609, 709, 809, 909	Living/dining/kitchen	North, west	25
	Bedroom	West	25
210, 310, 410, 510, 610, 710, 810, 910	Living/dining/kitchen	South, west	25
	Bedroom	West	25
211, 311, 411, 511, 611, 711, 811, 911	Living/dining/kitchen	South	32
	Bedrooms	South, east, west	32
212, 312, 412, 512, 612, 712, 812, 912	Living/dining/kitchen	East, south	32
	Bedrooms	South	32
218, 318, 418, 518, 618, 718, 818, 918	Living/dining/kitchen	North, west	28
	Bedroom	North, west	28
	Bedroom	West	28
219, 319, 419, 519, 619, 719, 819, 919	Living/dining/kitchen	North, west	30
	Bedroom	West	28
220, 320, 420, 520, 620, 720, 820, 920	Living/dining/kitchen	South, west	32
	Bedroom	West	32



The glazed elements of other facades/occupancies not described in **Table 9** do not require specific acoustic controls.

Example glazing configurations capable of achieving the nominated sound insulation performances are provided in **Table 10**. It is noted that a range of proprietary window style and glazing options and configurations would be available to achieve the specified minimum acoustic performance shown in **Table 9**.

**Table 10 Example Glazing Systems**

Sound insulation Performance, $R_w$	Window Size	Example
25	$>1.8 \text{ m}^2$	6 mm thick float glass with standard seals
28	$\leq 1.8 \text{ m}^2$	6 mm thick float glass with standard seals
	$>1.8 \text{ m}^2$	6.38 mm thick laminated glass with acoustic perimeter seals
30	$\leq 1.8 \text{ m}^2$	6.38 mm thick laminated glass with acoustic perimeter seals
	$>1.8 \text{ m}^2$	10 mm thick float glass with acoustic perimeter seals
32	$\leq 1.8 \text{ m}^2$	10 mm thick float glass with acoustic perimeter seals
	$>1.8 \text{ m}^2$	10.38 mm thick laminated glass with perimeter seals

The supplier/manufacturer will be responsible for ensuring satisfactory performance of window/glazing systems (ie glass + frame + seals). The builder will be responsible for ensuring the correct glazing is installed appropriately and effectively to each location.

Windows and doors are required to be closed to achieve compliance with the indoor noise objectives and an alternative means of ventilation may be required as per the NCC. This does not preclude the use of natural ventilation however, where natural ventilation is to be provided, the ventilation opening must be selected such that the overall composite sound insulation of the facade is not compromised.

## 5.2 External Mechanical Plant

External components of the carpark exhaust and air-handling systems may emit significant levels of noise.

The external mechanical plant details have not been finalised. The selection and positioning of outdoor plant items generally occur during the detailed design or Building Application phase of a project.

Nonetheless, consideration of the possible allowable noise output can inform the design process and provide proof of concept in relation to compliance with the QDCP requirements.

It is expected that air-handling plant (condenser units) would be located on the building rooftops. Assuming a central rooftop location, the nearest offsite receptor would be approximately 40 m away. The building edge and parapet would provide noise reduction shielding.

Carpark exhaust plant will be located within a designated plant room on the north perimeter of the ground floor. That location will be approximately 20 m from 69 Morisset Street (Res 8). It is expected that ventilation would be obtained from facades not directly facing that receptor.



Based on the possible plant locations and the most stringent night-time noise limit, the following maximum sound power levels (SWLs) would apply to all plant items:

- Rooftop plant – 92 dBA L<sub>w</sub>
- Carpark exhaust plant – 86 dBA L<sub>w</sub>

It will be the night-time period that will be the most-stringent period in relation to mechanical plant noise emissions. Noise that is compliant at that time, when the limit will be lowest, will also be compliant at other times when limits will be higher. Consequently, restricting use to the daytime only, for example, would allow selection of 'noisier' plant items.

It is anticipated that plant with the nominated sound output level or lower would be available. Nonetheless, a detailed review should be undertaken when mechanical plant selection, locations, design and operating conditions have been finalised to determine if additional acoustic controls, eg specific acoustic screening, judicious positioning, daytime operations only etc, would be required.

### 5.3 Waste Collection and Loading Activity

Commercial and residential waste rooms and a loading area have been positioned at the ground floor level near the western boundary.

Waste collection would occur infrequently and would be relatively short in duration, but the vehicle manoeuvring occurs in close proximity to sensitive receptors, including those within the complex. Consequently the potential for disruption or annoyance does exist, however the opportunity to control associated noise emissions is not readily available.

It is expected that relatively small vans and trucks only would service the loading area and unloading of goods would be undertaken with hand operated trolleys during business hours. Consequently noise from waste collection would be the more substantial source of noise.

Noise associated with the waste collection would be of the order of 25 dBA L<sub>Aeq,15min</sub> at the nearest offsite receptor (Res 8), which would be compliant with the Project noise limits at all times.

Noise levels at receptors within the development would be of the order of 50 dBA L<sub>Aeq,15min</sub>, which would be compliant with the daytime PNTL, but not the evening and night-time PNTLs.

In addition, short-term maxima noise events, including vehicle reverse alarms would be likely to exceed sleep disturbance thresholds applicable during the night-time period.

Therefore, to minimise intrusive noise to the future occupants of the development, it is recommended that waste collection occur only between 7:00 am and 6:00 pm Monday – Saturday.

Consideration has also been given to the cumulative noise level in the event that waste collection at the development were to occur at the same time as unloading activity at the nearby Woolworths loading dock.

It is unlikely that noise from the Woolworths loading dock would approach the PNTLs when observed at the proposed development, as such noise would exceed the PNTLs at the existing residential receptors much nearer to the Woolworths loading dock. In any event, the development waste collection noise would be significantly less than Woolworths loading dock noise at the nearest offsite receptor (Res 8) and would not contribute to a cumulative exceedance of the PNTL at any time.



## 5.4 Retail Premises

The tenants and operations of the retail spaces are not known at this stage. It is likely that the 'noisiest' use would be a café/restaurant and operations during the night-time period (10:00 pm – 7:00 am) would not be expected.

SLR has previously undertaken noise assessments of café/restaurants and has established an internal sound pressure level of 75 dBA LAeq,15min as common for venues for up to 30 people.

Based on the separation distance between the retail spaces and the nearest offsite residences, and assuming the glazing as recommended above (refer to **Table 9**) noise from a café/restaurant in a retail space would not exceed 25dBA LAeq,15min.

Therefore it is expected that noise from the retail spaces would comply with the QDCP requirements at all times, including for operations during the night period if desired.

Other uses that may generate more noise may be feasible for the retail spaces but would be required to prepare a separate and specific noise assessment to demonstrate the objectives of the QDCP can be achieved.

## 6.0 Closure

SLR has undertaken a noise assessment for DA purposes for a proposed mixed-use development at 50 Morisset Street, Queanbeyan.

The project would be required to satisfy the objectives relating to noise of the *Queanbeyan Development Control Plan 2012*, which aim to protect the acoustic amenity of the surrounds and ensure adequate acoustic amenity is provided to future occupants of the development.

The assessment considered noise from external mechanical plant and waste collection/loading bay activities at the Project to nearby residential receptors.

Noise from mechanical plant would comply with the most-stringent night-time limit, or other operating times, provided the condensers are judiciously selected and positioned during the detailed design stage.

It is recommended to restrict waste collection and loading bay activities to the daytime period only in order to minimise the likelihood of disruption or disturbance to occupants of the development and nearby residences.

Noise from the retail component of the dwelling would also be unlikely to affect nearby residents. Specific consideration and assessment of potentially 'noise' uses (eg gymnasium) is recommended to ensure the objectives of the QDCP would be achieved.

In addition, road traffic noise levels at the most exposed facades of the development, based on existing road noise levels established as part of the DA noise assessment, were also considered.

Road traffic noise intrusion was assessed in accordance with methodology contained within AS 3671 to determine the minimum sound insulation rating of building elements to achieve the internal noise objectives recommended in Australian Standard (AS) 2107:2016 "Acoustics — Recommended design sound levels and reverberation times for building interiors".

Calculations show that standard proprietary glazing would be acoustically suitable to achieve acceptable noise levels within all habitable areas within the apartments and the ground floor retail areas. The required sound insulation ratings are not onerous and would be achieved with a range of glazing configurations.





# Appendix A    Project Plans and Elevations

**50 Morisset Street, Queanbeyan**

**Noise Assessment for DA Purposes**

**Lockbridge Pty Ltd**

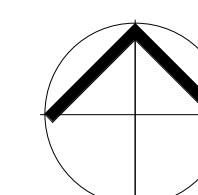
SLR Project No.: 670.030176.00002

4 November 2024

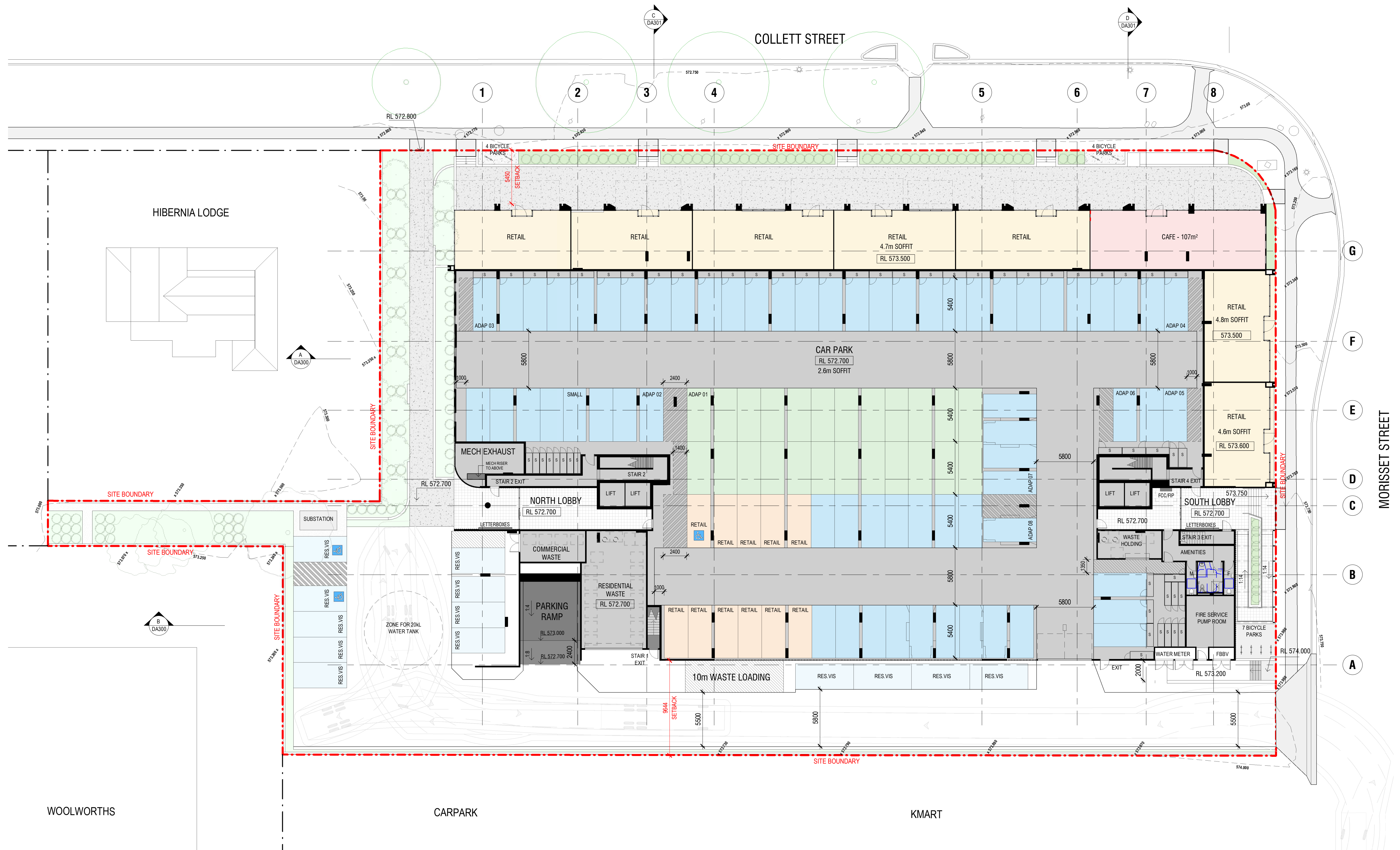


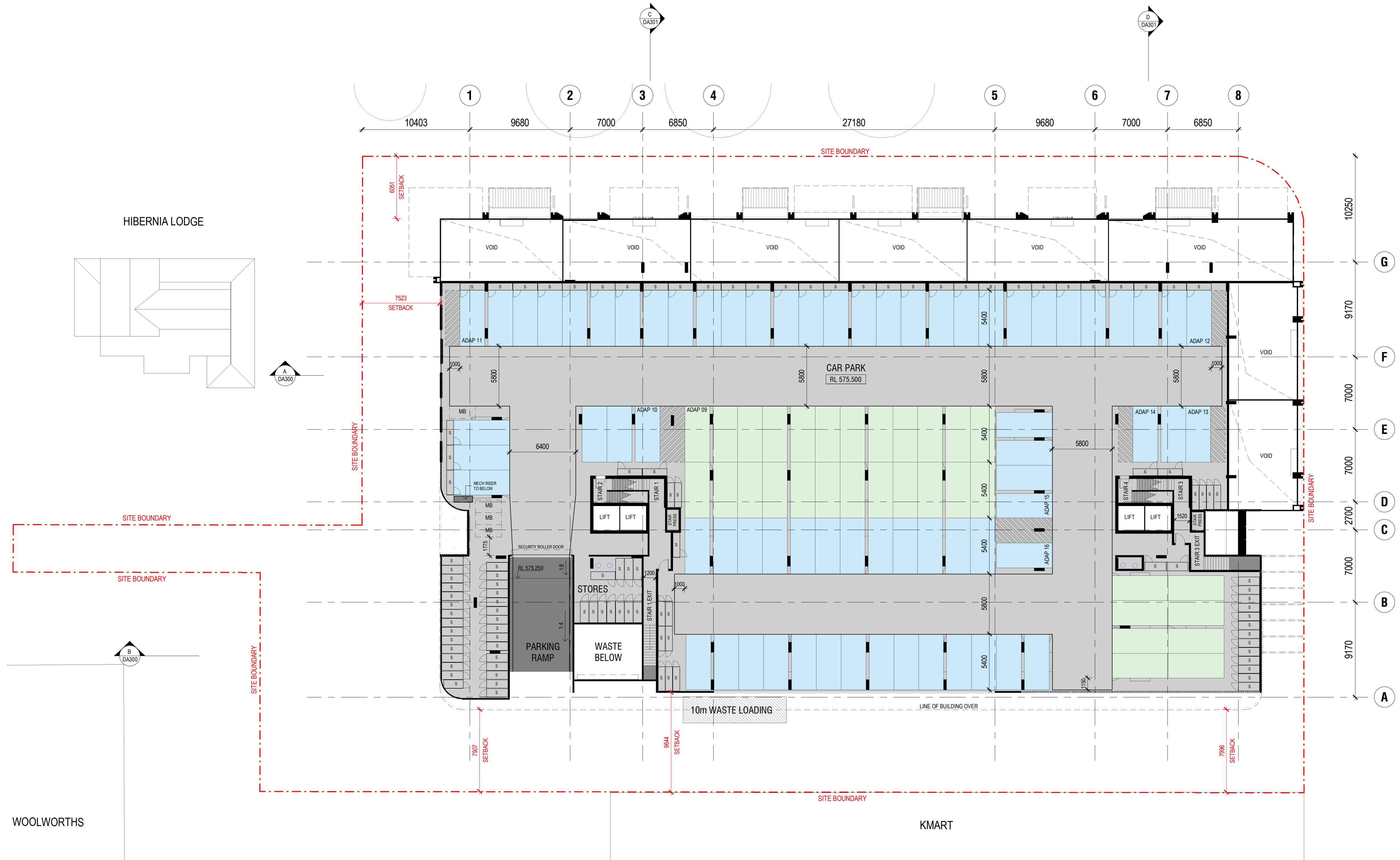


LOCATION CONTEXT PLAN









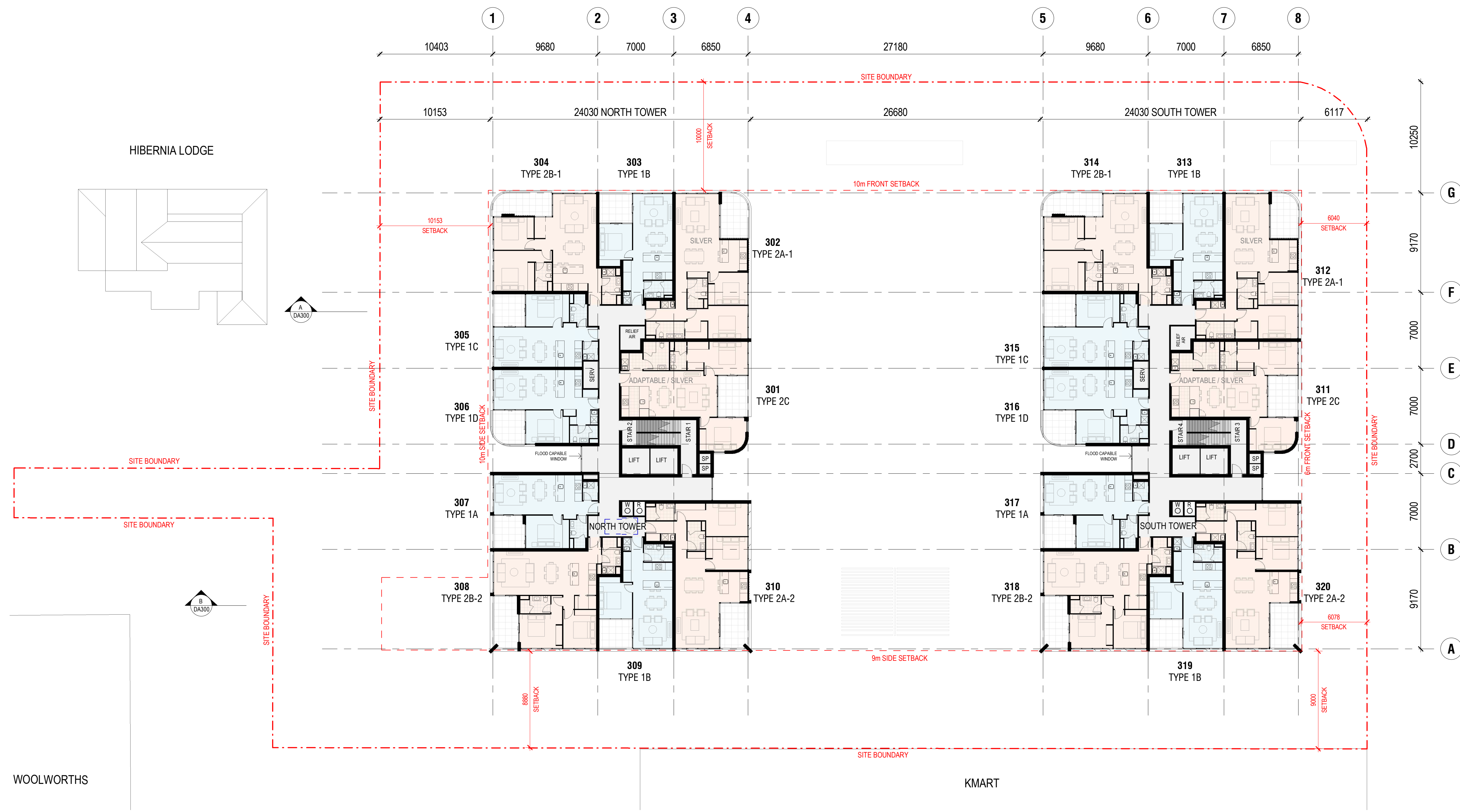






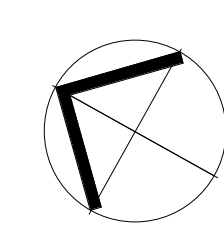
C  
DA301

D  
DA301



PROPOSED MIXED USE  
DEVELOPMENT  
50 MORISSET STREET  
QUEANBEYAN

### LEVEL 3 FLOOR PLAN

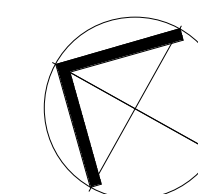


DA01	29/11/23	ISSUED FOR DA APPROVAL
04	24/11/23	ISSUED FOR INFORMATION
03	10/11/23	ISSUED FOR INFORMATION
02	03/11/23	ISSUED FOR INFORMATION
rev	date	description

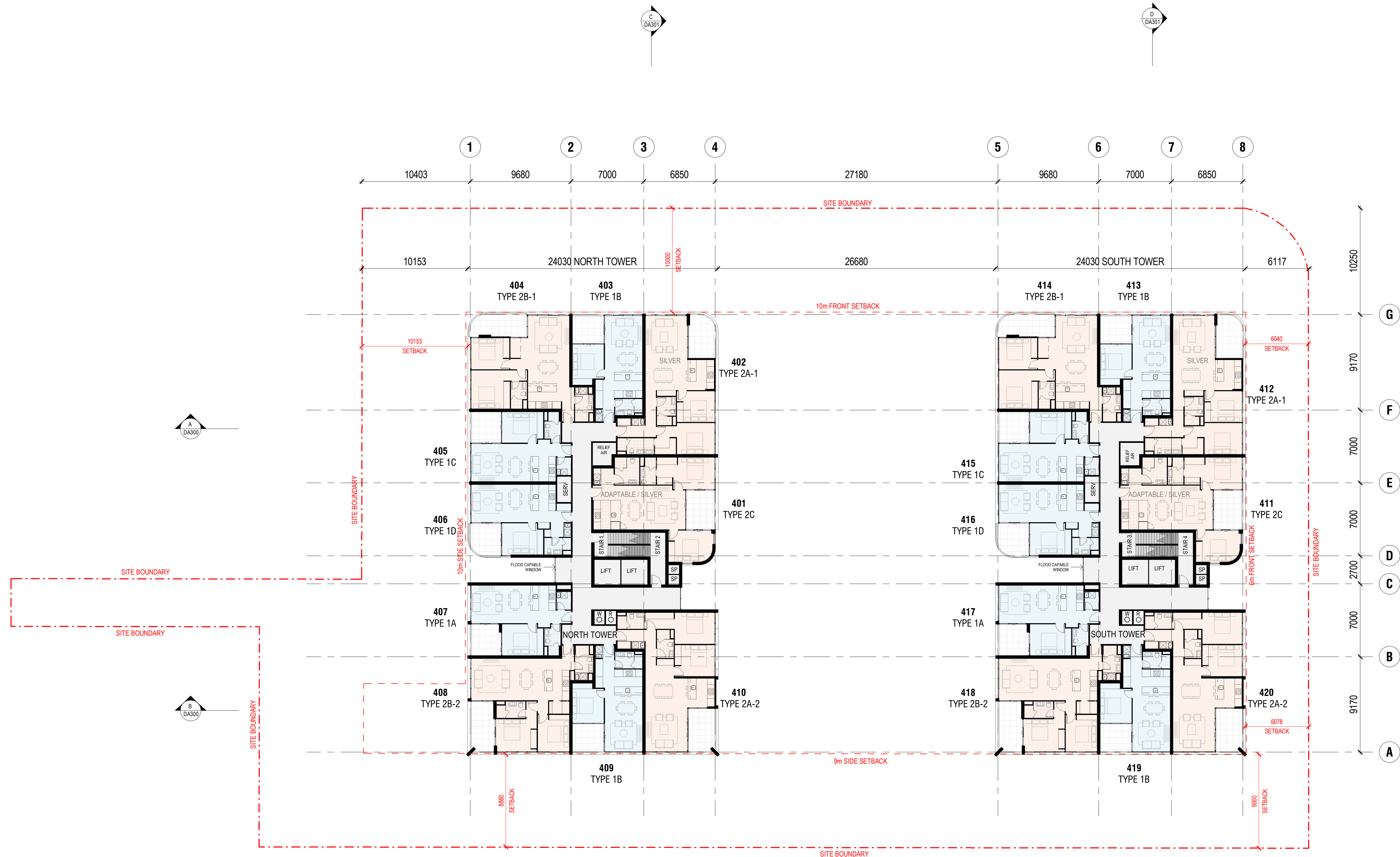
scale 1:200 @ A1

sheet number **DA105**  
revision **DA01** date **29/11/23**

## LEVEL 4 FLOOR PLAN

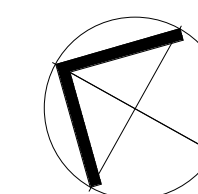


DA01	29/11/23	ISSUED FOR DA APPROVAL
04	24/11/23	ISSUED FOR INFORMATION
03	10/11/23	ISSUED FOR INFORMATION
02	03/11/23	ISSUED FOR INFORMATION
rev	date	description

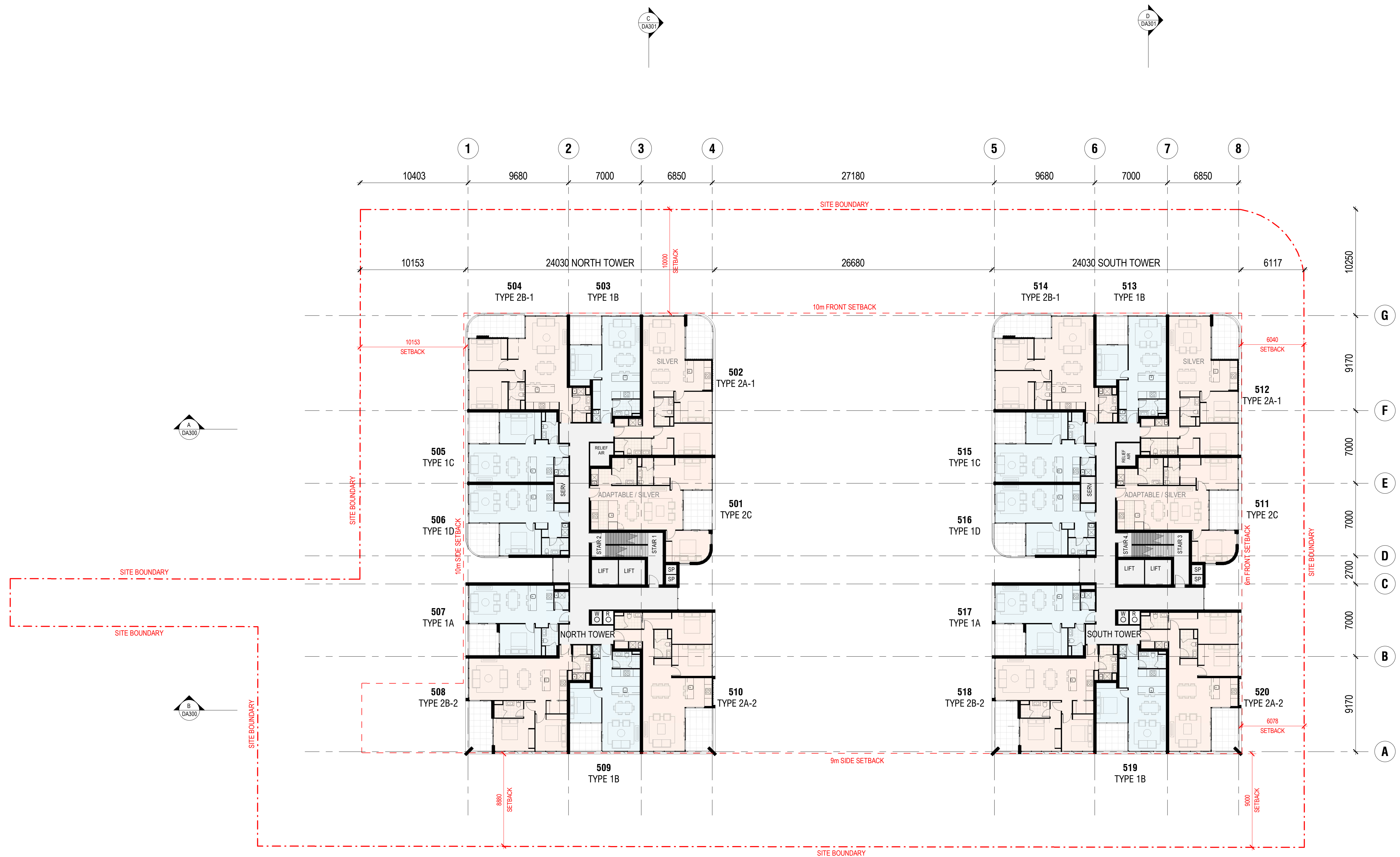




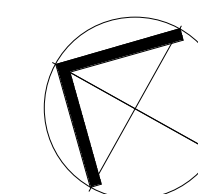
## LEVEL 5 FLOOR PLAN



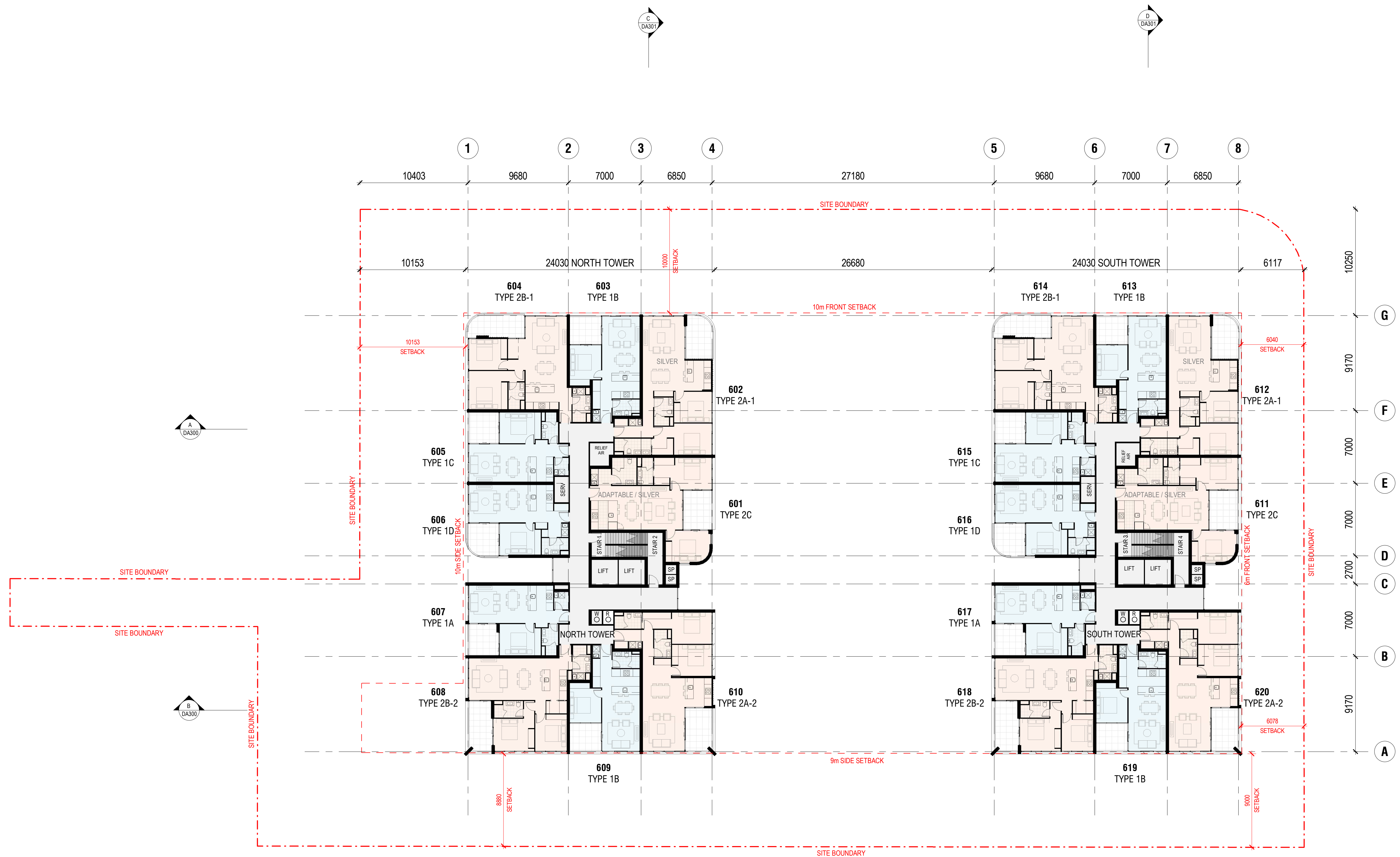
DA01	29/11/23	ISSUED FOR DA APPROVAL
03	10/11/23	ISSUED FOR INFORMATION
02	03/11/23	ISSUED FOR INFORMATION
01	27/10/23	ISSUED FOR INFORMATION
rev	date	description



## LEVEL 6 FLOOR PLAN

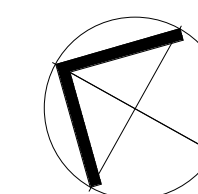


DA01	29/11/23	ISSUED FOR DA APPROVAL
03	10/11/23	ISSUED FOR INFORMATION
02	03/11/23	ISSUED FOR INFORMATION
01	27/10/23	ISSUED FOR INFORMATION
rev	date	description

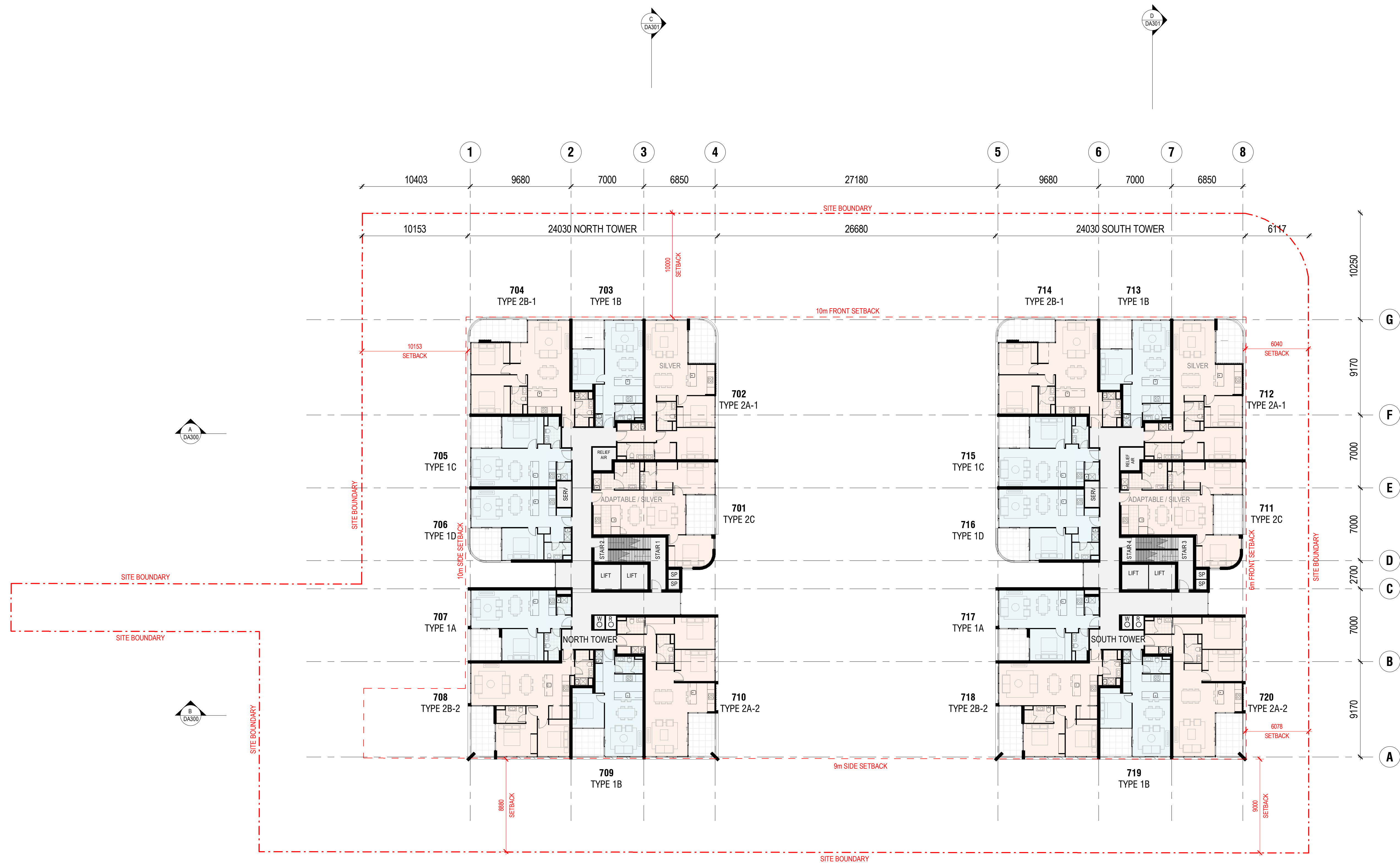




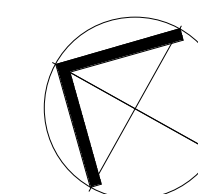
## LEVEL 7 FLOOR PLAN



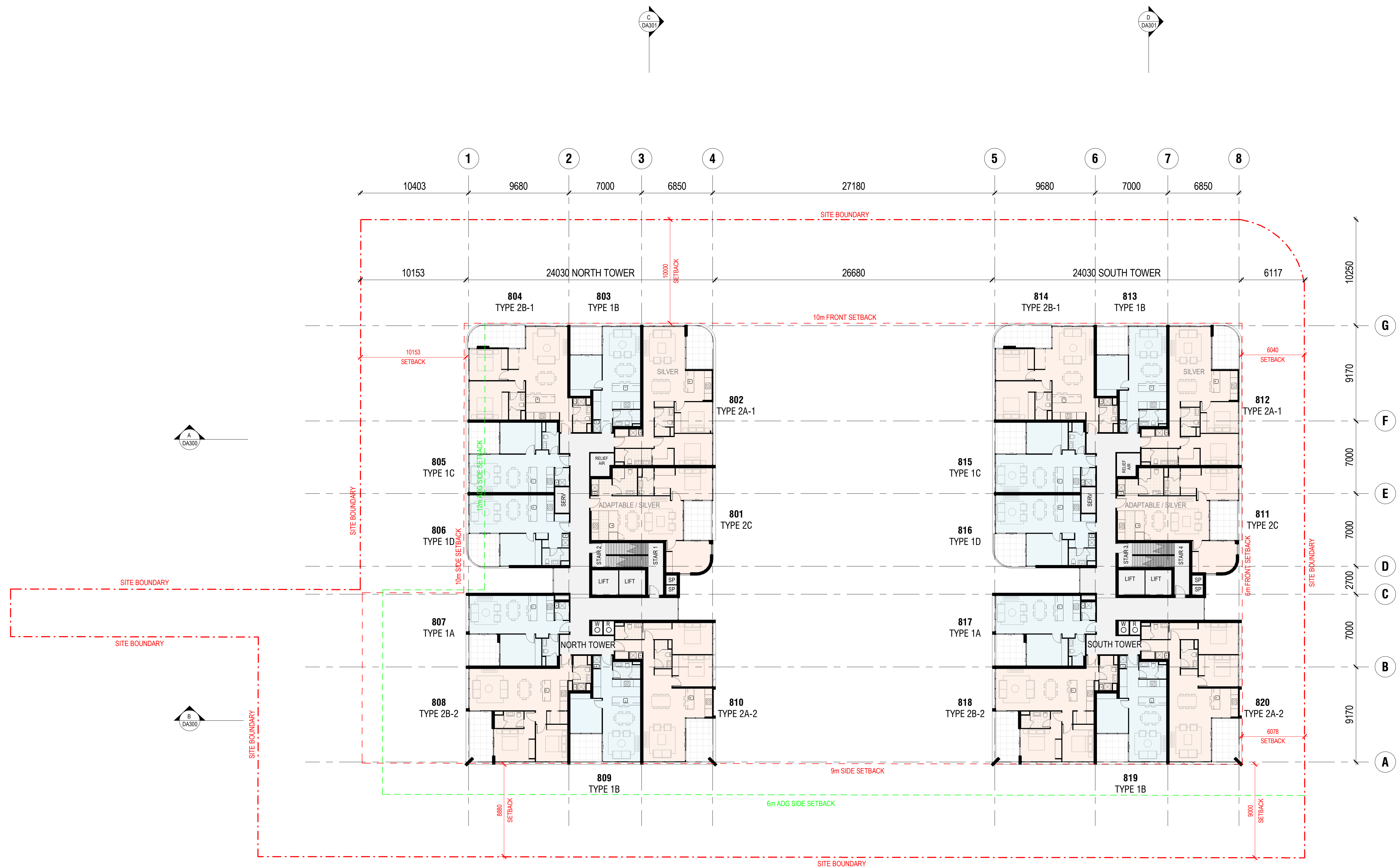
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03	10/11/23	ISSUED FOR INFORMATION
02	03/11/23	ISSUED FOR INFORMATION
01	27/10/23	ISSUED FOR INFORMATION
rev	date	description



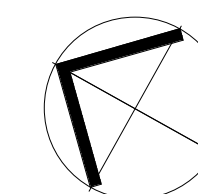
## LEVEL 8 FLOOR PLAN



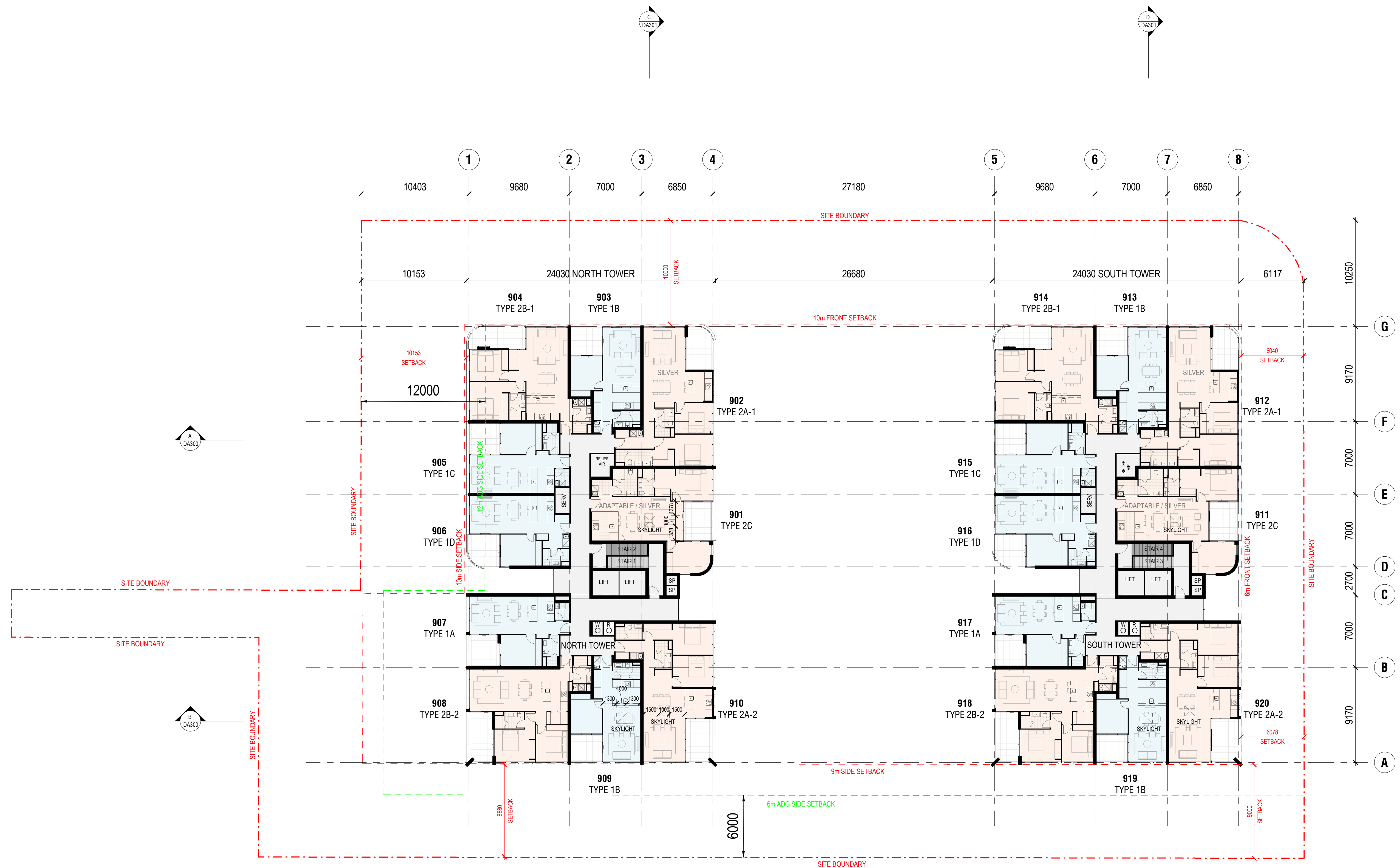
DA01	29/11/23	ISSUED FOR DA APPROVAL
03	10/11/23	ISSUED FOR INFORMATION
02	03/11/23	ISSUED FOR INFORMATION
01	27/10/23	ISSUED FOR INFORMATION
rev	date	description



## LEVEL 9 FLOOR PLAN

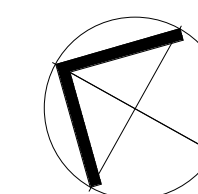


DA01	29/11/23	ISSUED FOR DA APPROVAL
03	10/11/23	ISSUED FOR INFORMATION
02	03/11/23	ISSUED FOR INFORMATION
01	27/10/23	ISSUED FOR INFORMATION
rev	date	description

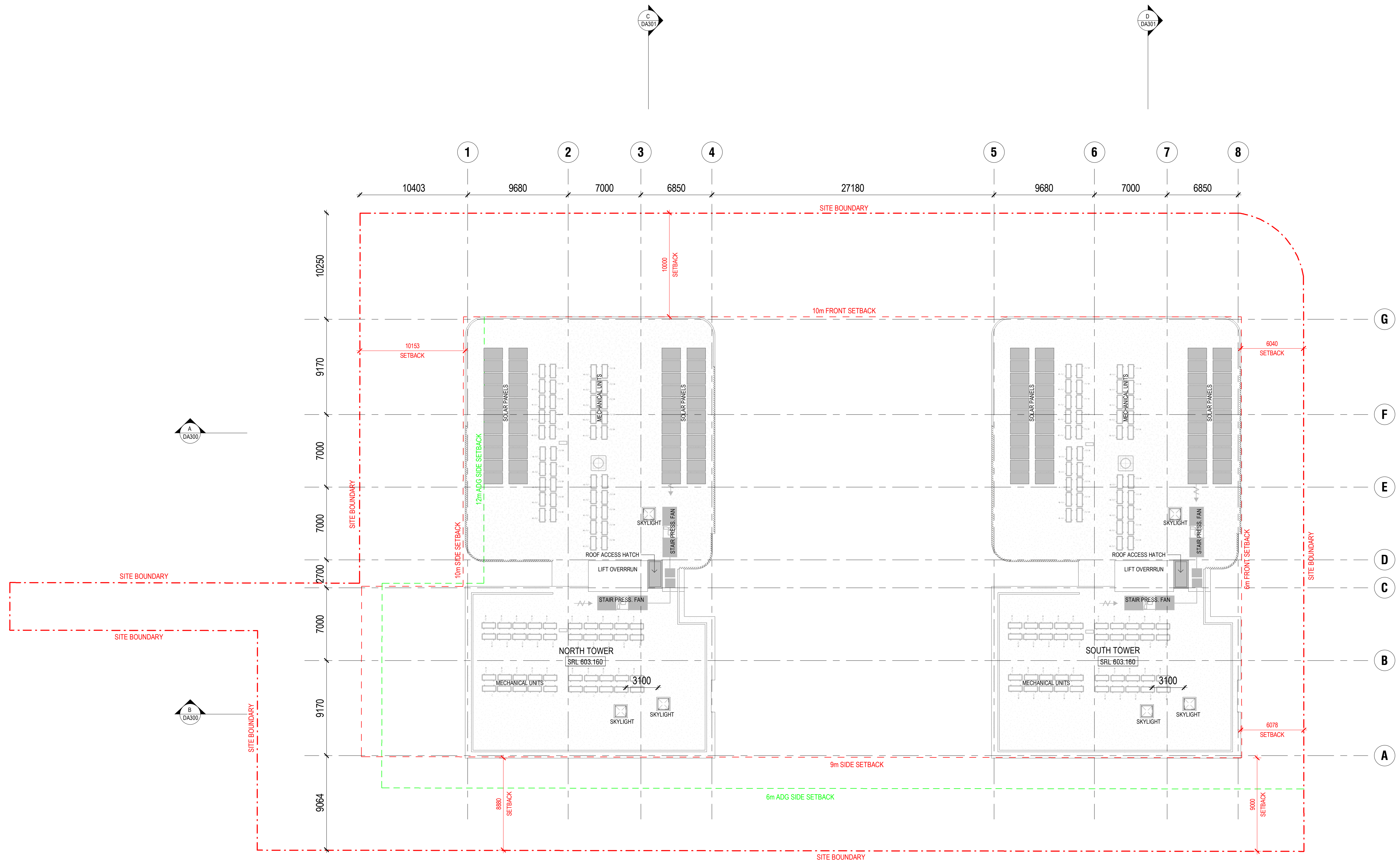




## ROOF PLAN



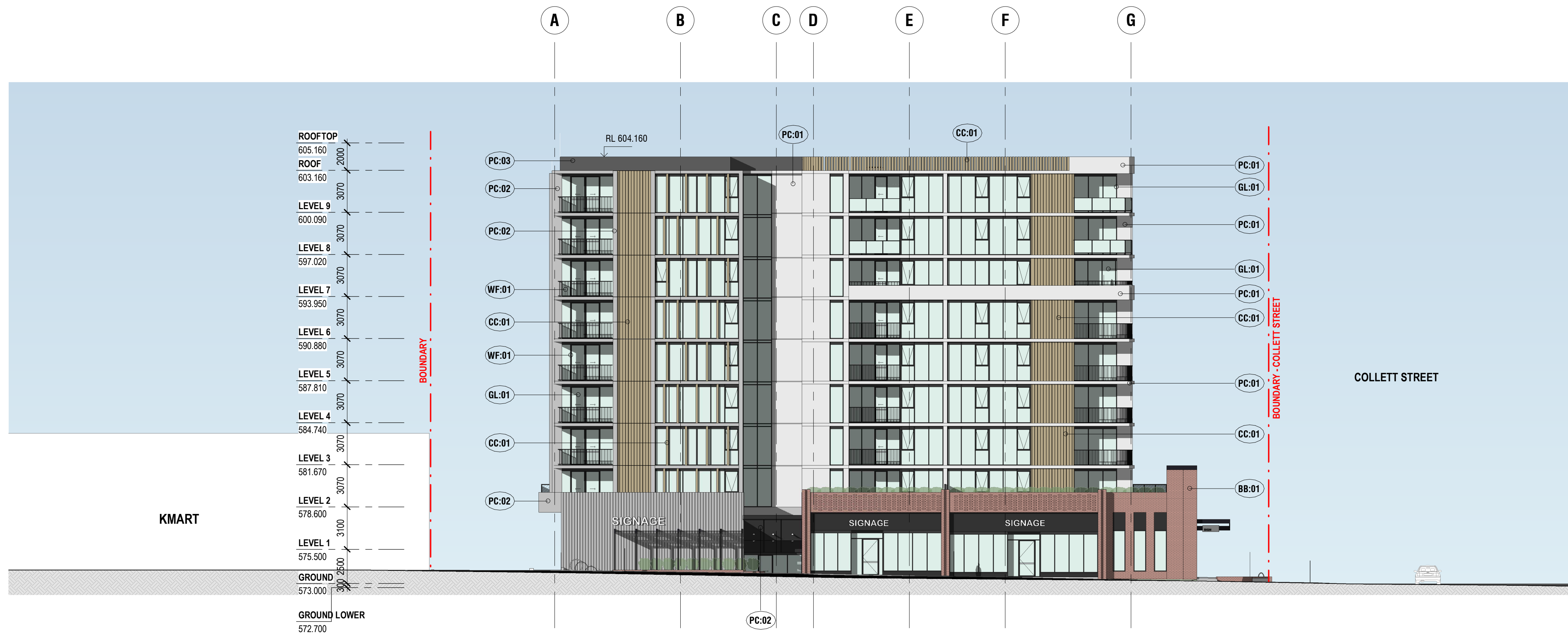
DA01	29/11/23	ISSUED FOR DA APPROVAL
04	24/11/23	ISSUED FOR INFORMATION
03	10/11/23	ISSUED FOR INFORMATION
02	03/11/23	ISSUED FOR INFORMATION
rev	date	description





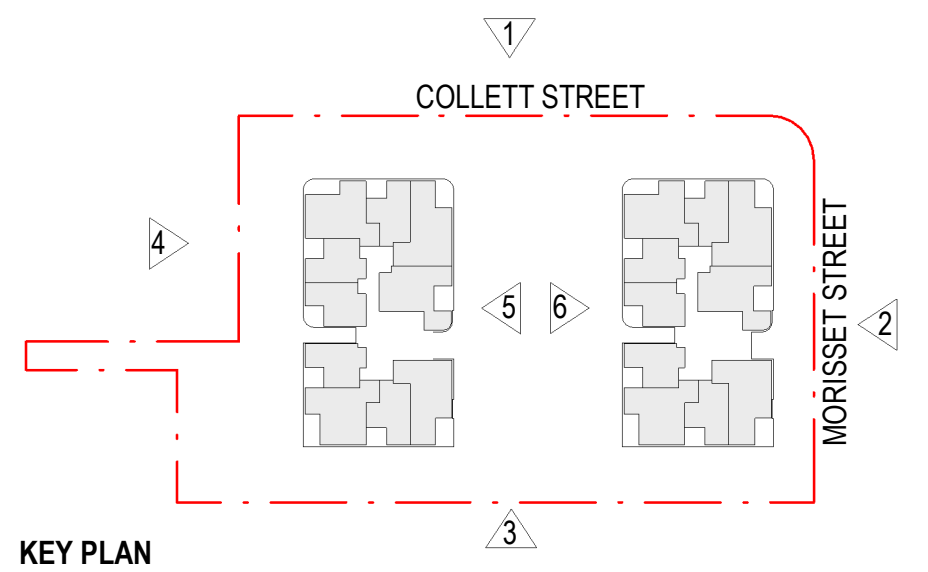


1 EAST ELEVATION - COLLETT STREET  
SCALE 1:200 @A1



2 SOUTH ELEVATION - MORISSET STREET  
SCALE 1:200 @A1

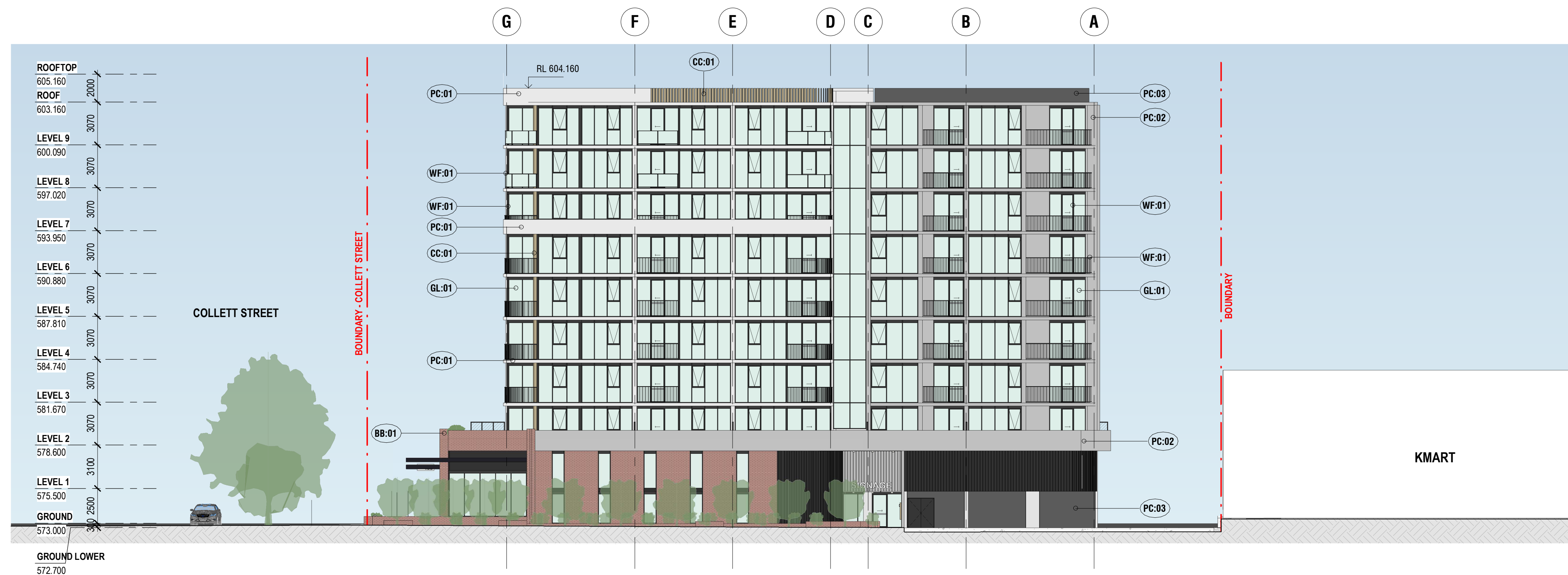
NOTE:  
REFER DA900 FOR MATERIALS





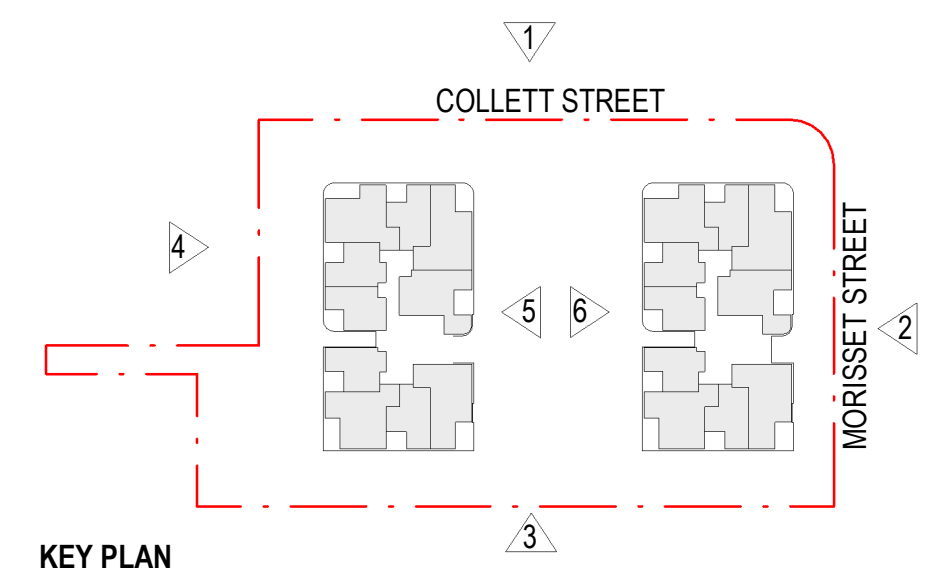


3 WEST ELEVATION  
SCALE 1:200 @A1

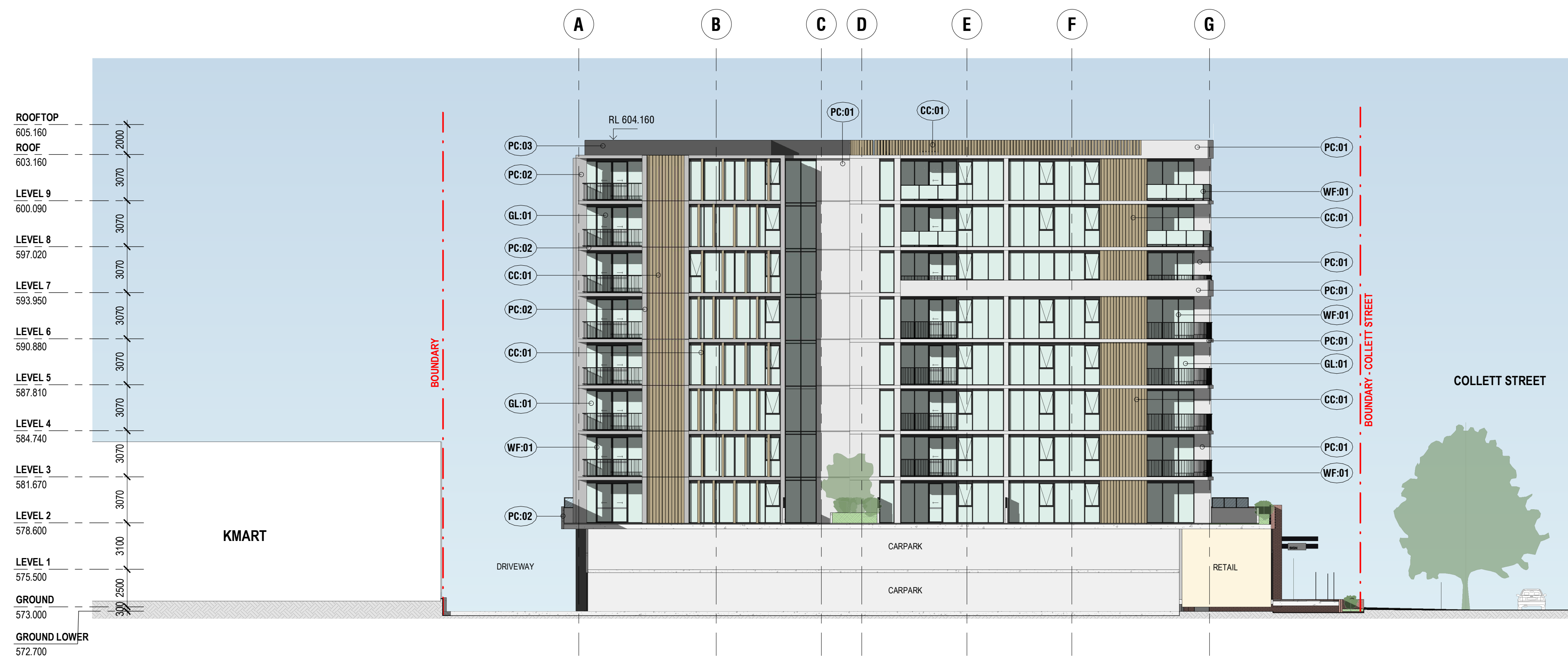


4 NORTH ELEVATION  
SCALE 1:200 @A1

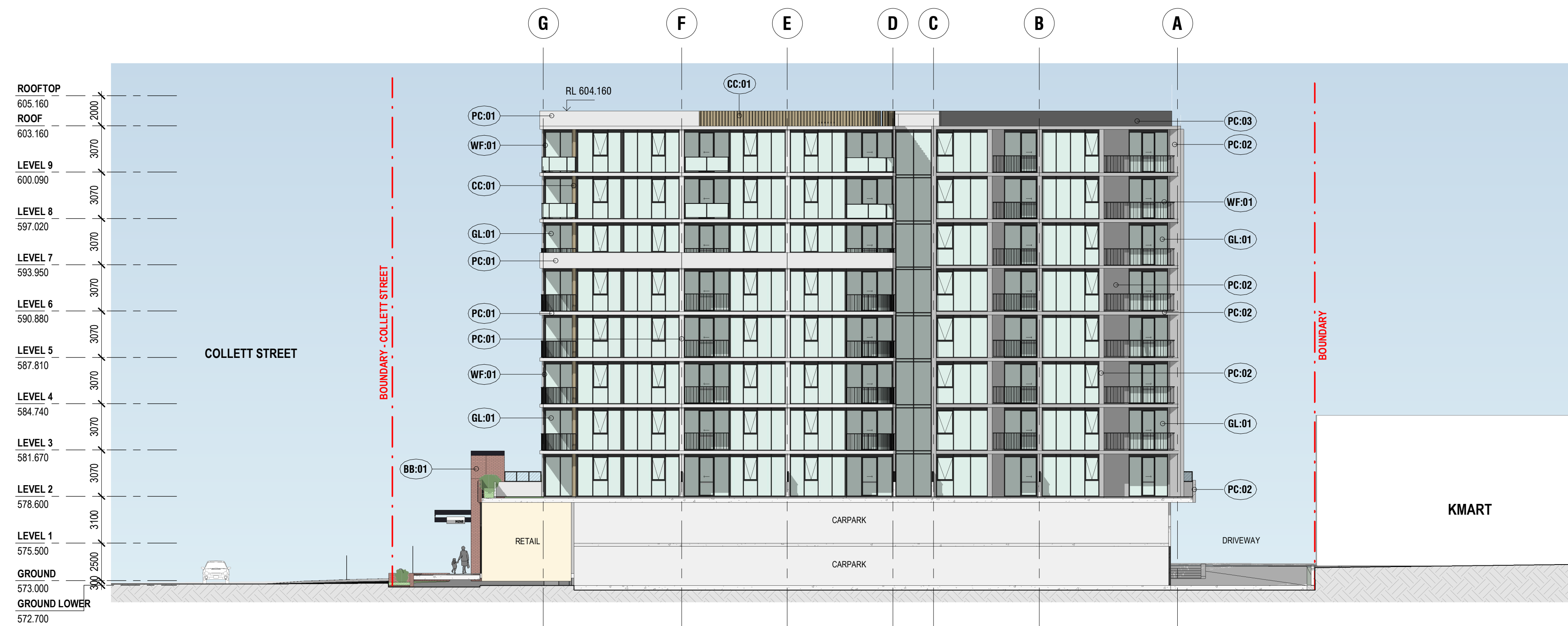
NOTE:  
REFER DA900 FOR MATERIALS





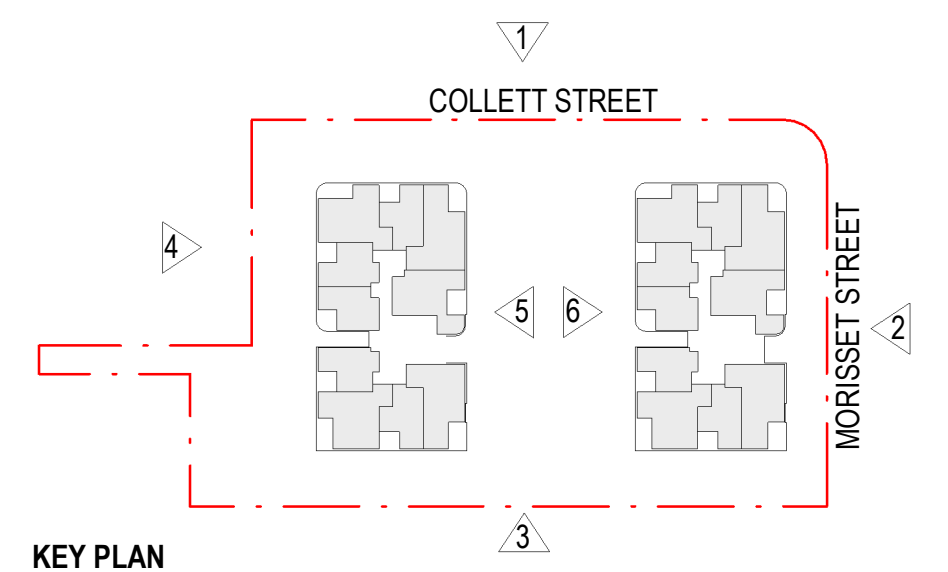


5 SOUTH ELEVATION - NORTH TOWER  
SCALE 1:200 @A1



6 NORTH ELEVATION - SOUTH TOWER  
SCALE 1:200 @A1

NOTE:  
REFER DA900 FOR MATERIALS



KEY PLAN



# **Appendix B    Noise Monitoring Results**

**50 Morisset Street, Queanbeyan**

**Noise Assessment for DA Purposes**

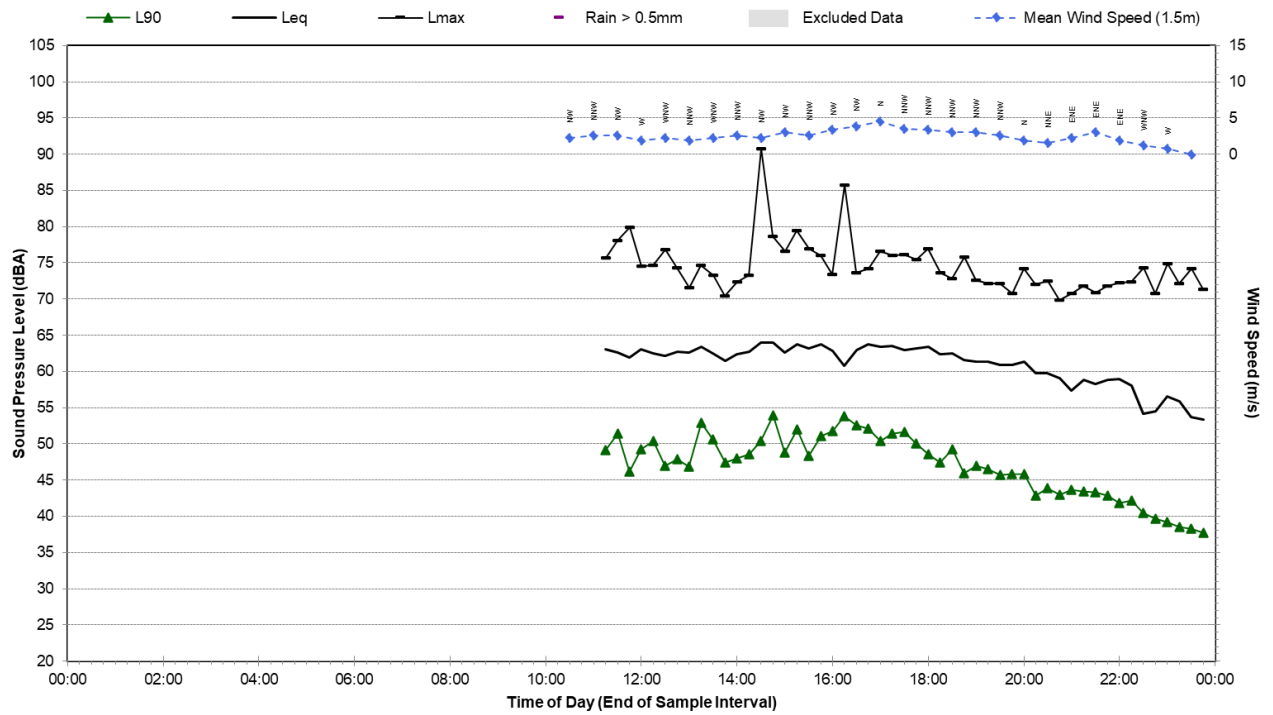
**Lockbridge Pty Ltd**

SLR Project No.: 670.030176.00002

4 November 2024

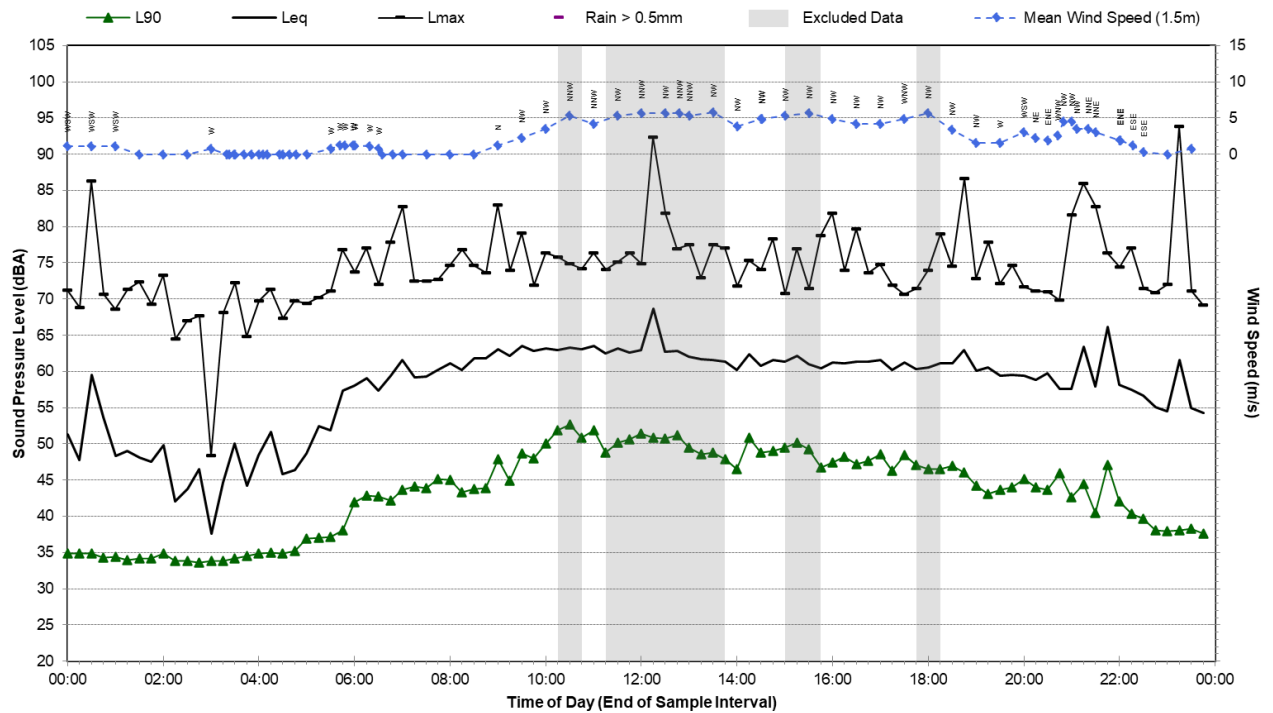
### Statistical Ambient Noise Levels

72 Morisset St Queanbeyan - Friday, 10 November 2023



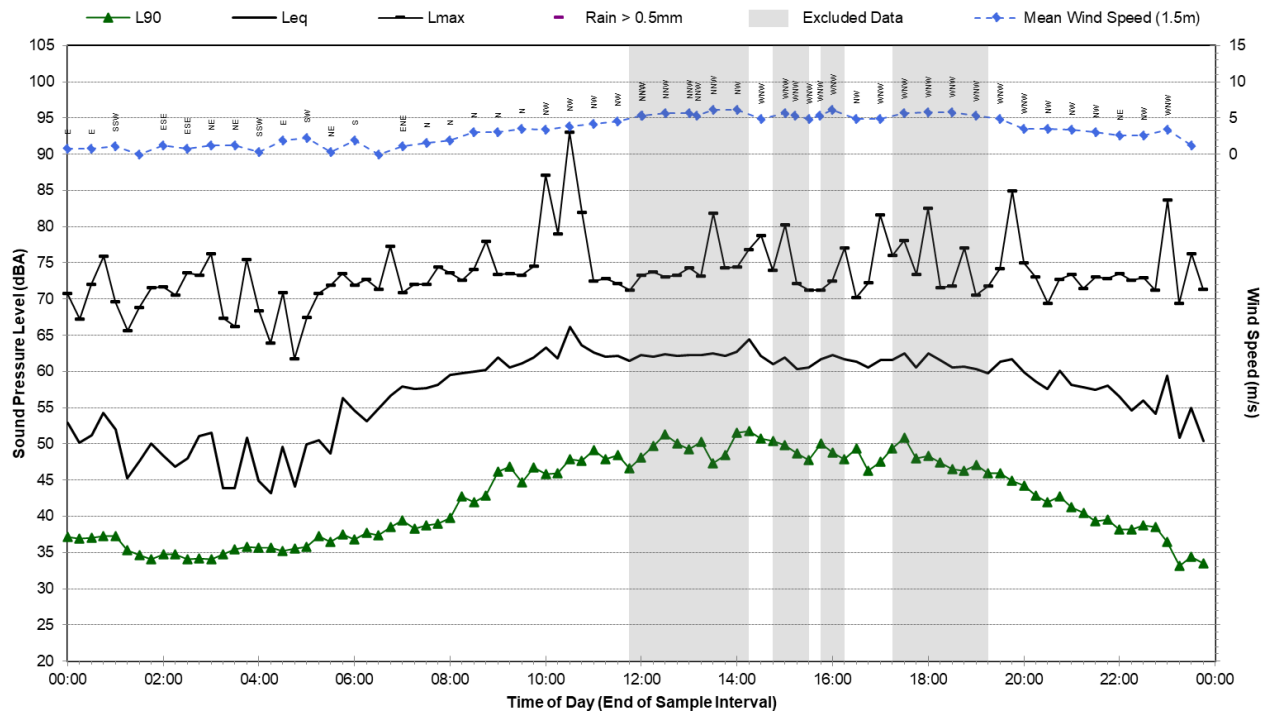
### Statistical Ambient Noise Levels

72 Morisset St Queanbeyan - Saturday, 11 November 2023



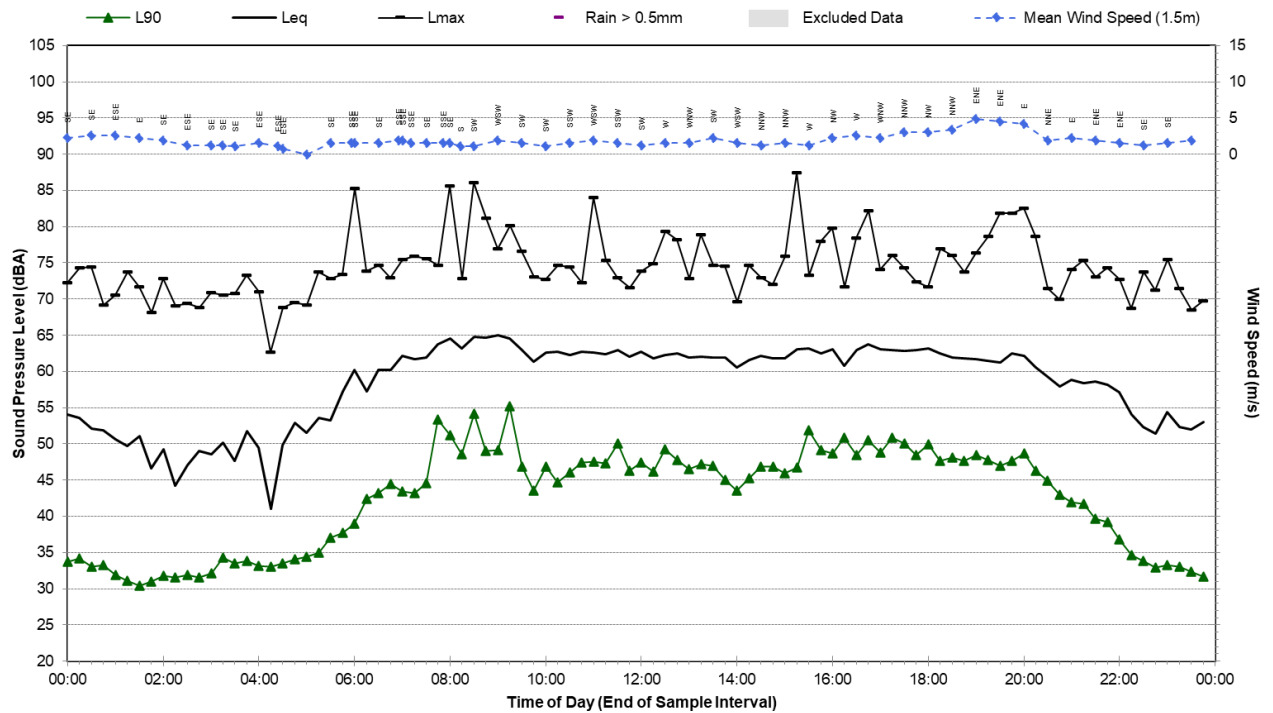
### Statistical Ambient Noise Levels

72 Morisset St Queanbeyan - Sunday, 12 November 2023



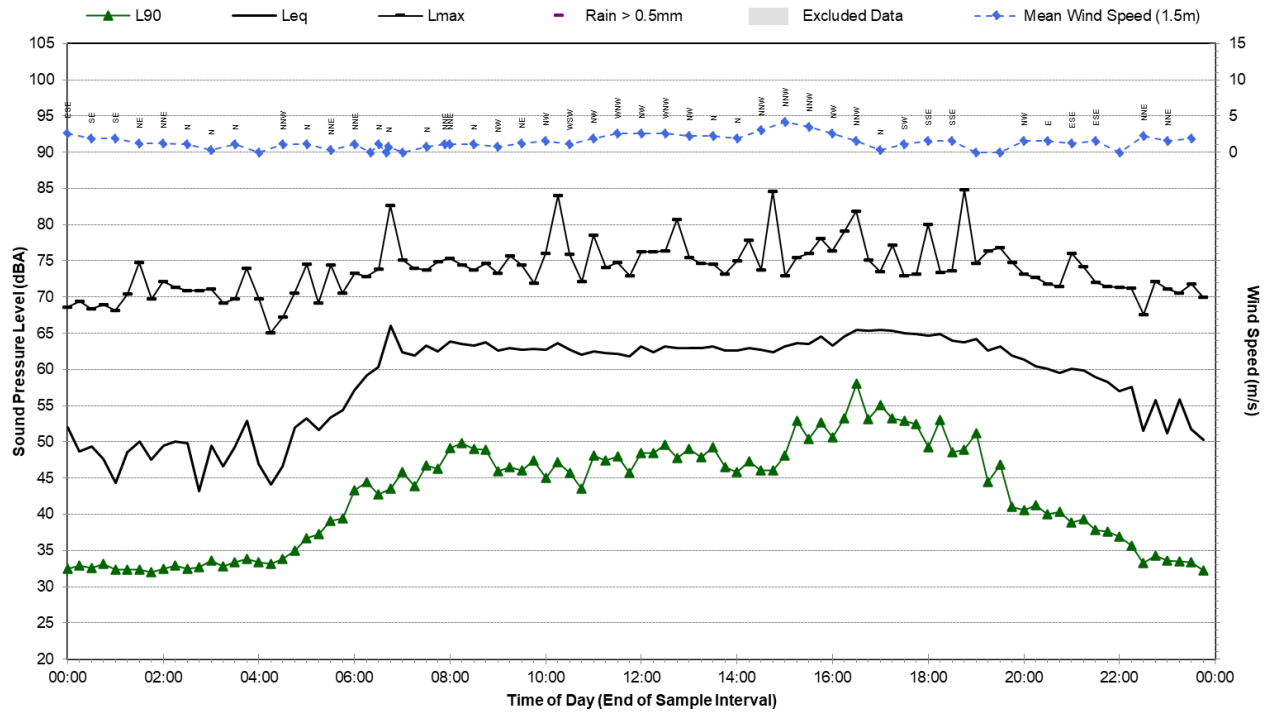
### Statistical Ambient Noise Levels

72 Morisset St Queanbeyan - Monday, 13 November 2023



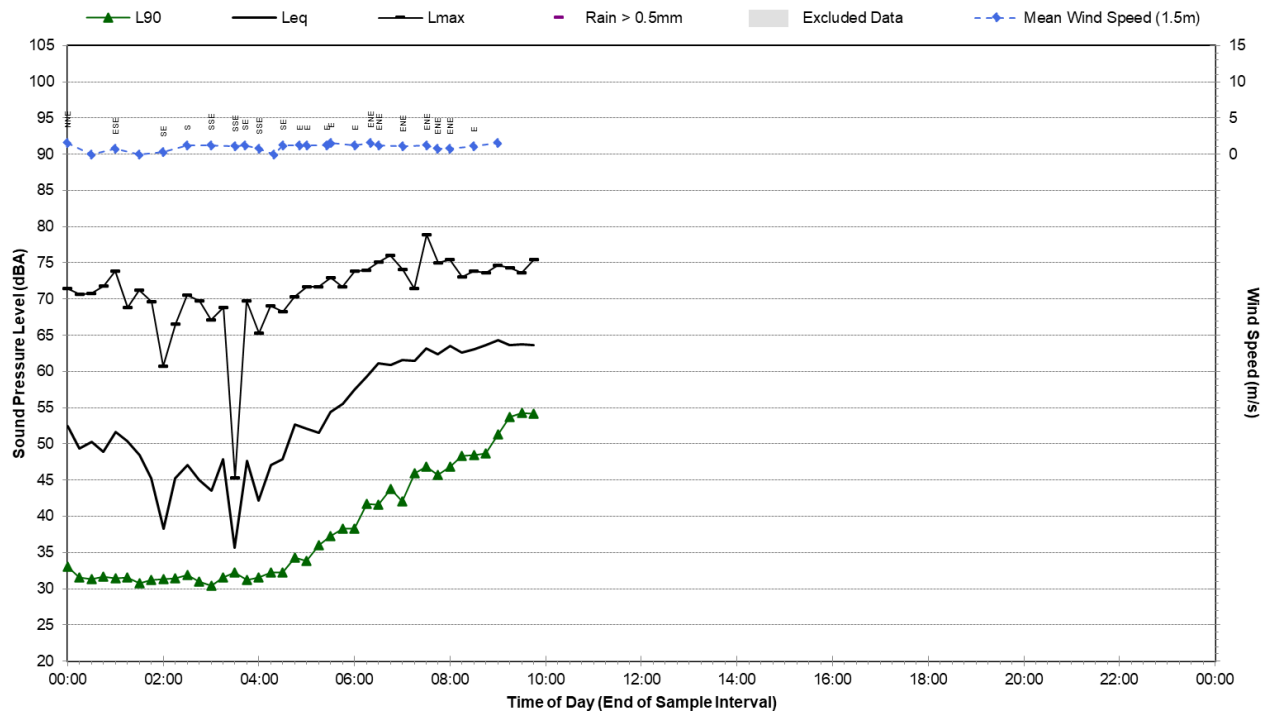
### Statistical Ambient Noise Levels

72 Morisset St Queanbeyan - Tuesday, 14 November 2023

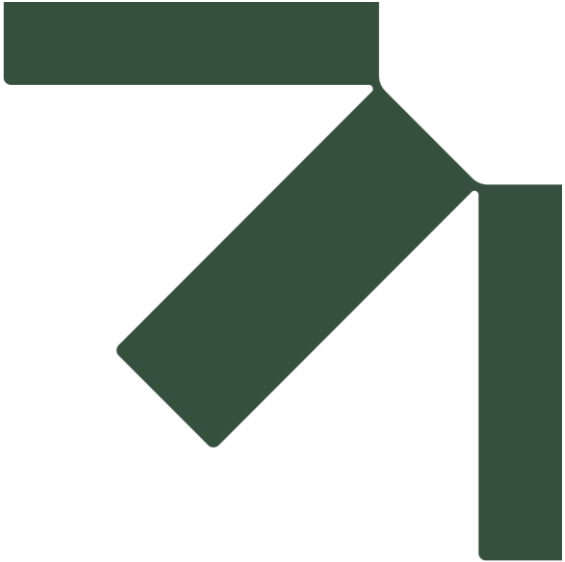


### Statistical Ambient Noise Levels

72 Morisset St Queanbeyan - Wednesday, 15 November 2023







# Appendix C    Example AS 3671 Calculations

**50 Morisset Street, Queanbeyan**

**Noise Assessment for DA Purposes**

**Lockbridge Pty Ltd**

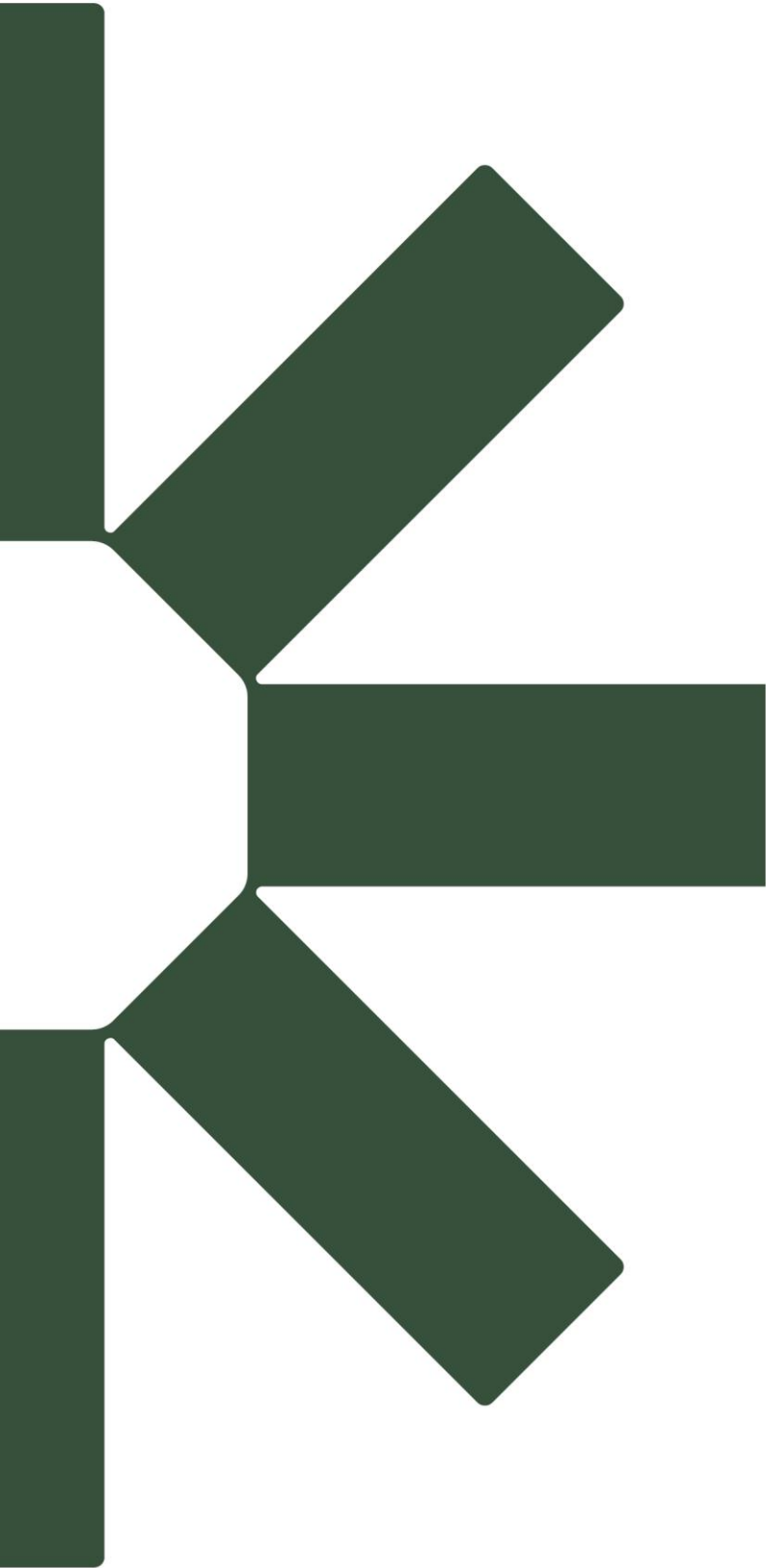
SLR Project No.: 670.030176.00002

4 November 2024

AS3671 Calculation of Insulation Requirements for Building Elements												
Project Number	670.030176											
Room Description	East - Living Room											
Maximum Design External Exposure (dBA)	65 dBA LAeq(5hour) - daytime											
Design Internal Level (dBA)	40											
Façade reflection included?	Yes											
Floor Area (sq.m)	36.0											
Room height (m)	3.07											
Reverberation Time (T60)	1											
Number of Components	1											
Component Name	Outside Noise Level, dBA	Area (sq.m)	TNR	Sc/Sf	TNAc	Rw	Contribution	Alternative Selection				
Windows	65	23.0	25	0.6	26	32	40	Rw	TNAc	Contribution		
			0	0.0	0	0	0	32	26	40		
			0	0.0	0	0	0		0	0		
			0	0.0	0	0	0		0	0		
			0	0.0	0	0	0		0	0		
			0	0.0	0	0	0		0	0		
			0	0.0	0	0	0		0	0		
			0	0.0	0	0	0		0	0		
			0	0.0	0	0	0		0	0		
			0	0.0	0	0	0		0	0		
Overall Internal Noise							40	Overall Internal Noise Level: 40				
Internal Noise Level is										0	equivalent with proposed system	

AS3671 Calculation of Insulation Requirements for Building Elements													
Project Number	670.030176												
Room Description	East - Bed Room												
Maximum Design External Exposure (dBA)	64 dBA LAeq(5hour) - daytime												
Design Internal Level (dBA)	40												
Façade reflection included?	Yes												
Floor Area (sq.m)	11.1												
Room height (m)	3.07												
Reverberation Time (T60)	0.7												
Number of Components	1												
								Alternative Selection					
Component Name	Outside Noise Level, dBA	Area (sq.m)	TNR	Sc/Sf	TNAc	Rw	Contribution	Rw	TNAc	Contribution			
Windows	64	12.3	24	1.1	26	32	40	32	26	40			
			0	0.0	0	0	0				0	0	0
			0	0.0	0	0	0				0	0	0
			0	0.0	0	0	0				0	0	0
			0	0.0	0	0	0				0	0	0
			0	0.0	0	0	0				0	0	0
			0	0.0	0	0	0				0	0	0
			0	0.0	0	0	0				0	0	0
			0	0.0	0	0	0				0	0	0
			0	0.0	0	0	0				0	0	0
Overall Internal Noise							40	Overall Internal Noise Level: 40					
Internal Noise Level is 0 better with proposed system													





Making Sustainability Happen