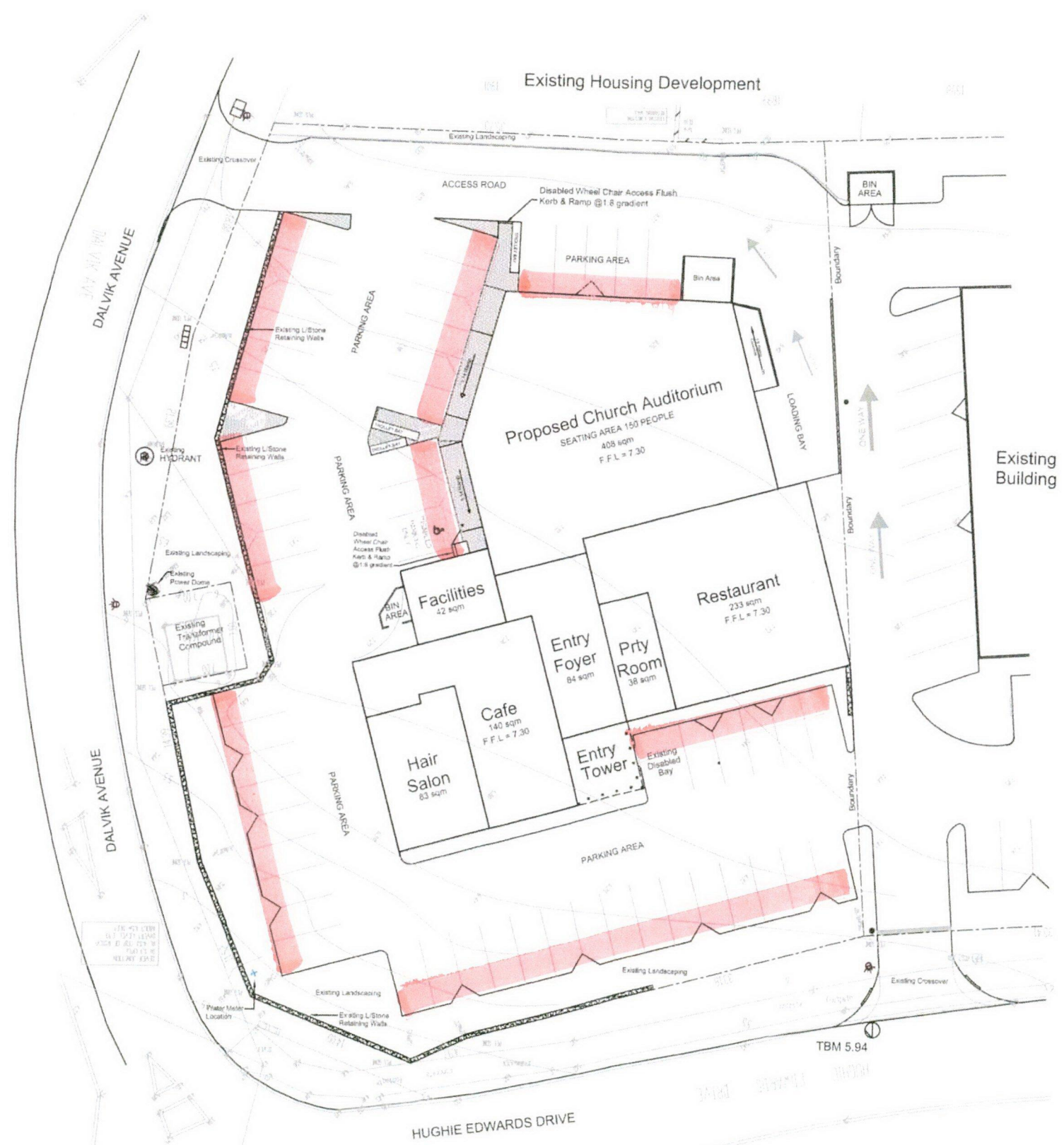


**LEGEND**

- T.B.M.
- HYDRANT
- STOP VALVE
- TELSTRA
- POWER DOME
- GRATED DRAIN
- STREET LAMP
- WAWA PRE-LAY
- S/W MANHOLE



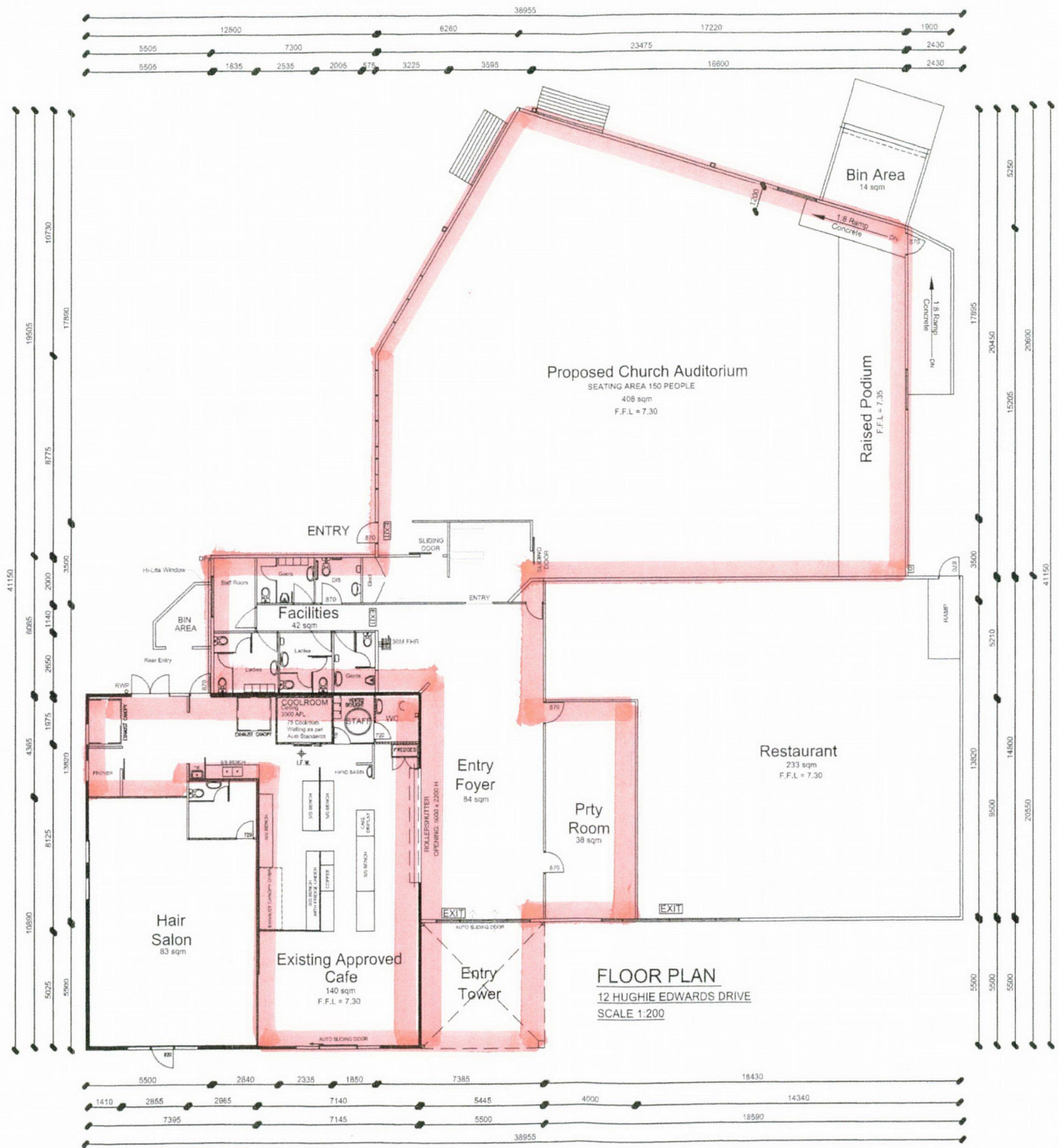
**SITE PLAN**  
SCALE 1:400

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PROJECT	CHURCH INTERNAL TENANCY
LOCATION	LOT 6, 12 HUGHIE EDWARDS DRIVE MERRIWA

DWG TITLE	
SITE PLAN	
DATE	SCALE
02/11/23	1:400
SHEET	JOB No.
A01	12-240
DRAWN	REV.
B.C.	A

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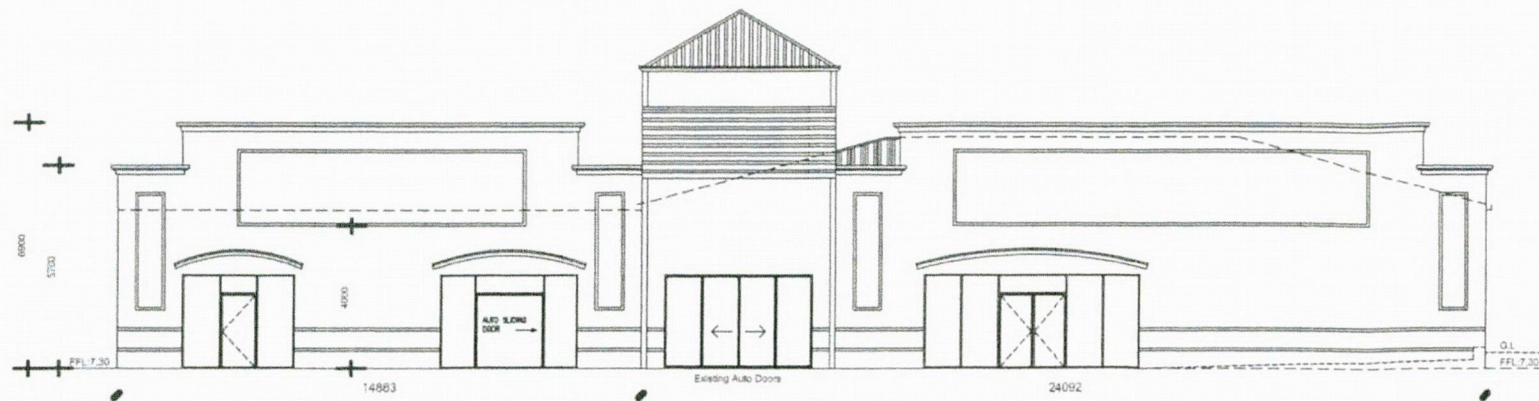
FLOOR PLAN  
SCALE 1:200

FLOOR PLAN  
12 HUGHIE EDWARDS DRIVE  
SCALE 1:200

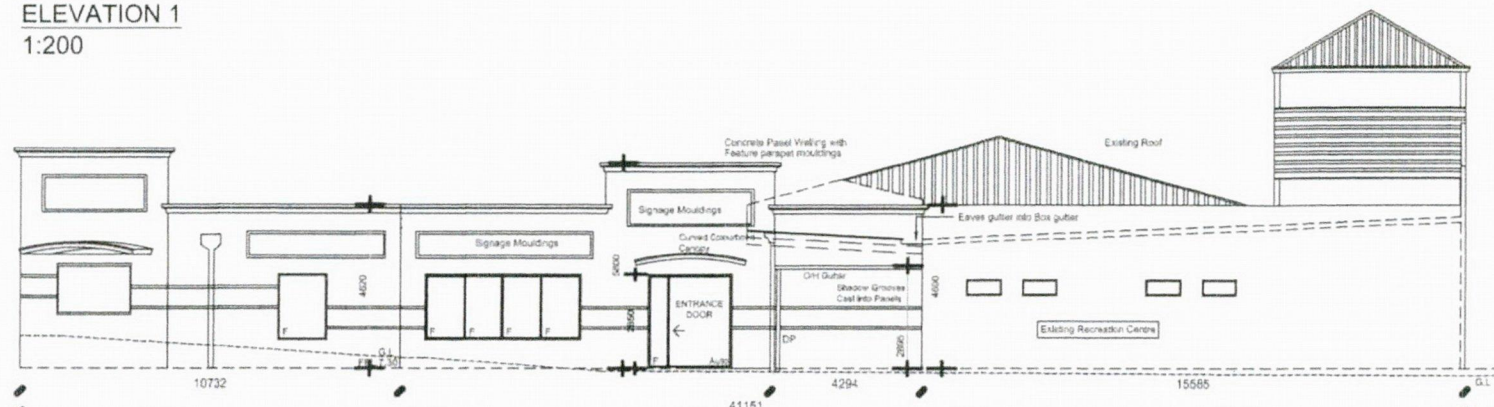
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PROJECT	CHURCH INTERNAL TENANCY
LOCATION	LOT 6, 12 HUGHIE EDWARDS DRIVE MERRIWA

DWG TITLE	
FLOOR PLAN	
DATE	SCALE
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SHEET	JOB No.
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DRAWN	REV.
B.C.	A



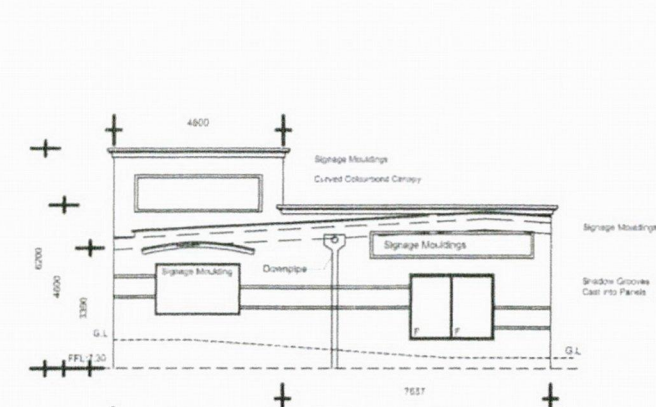


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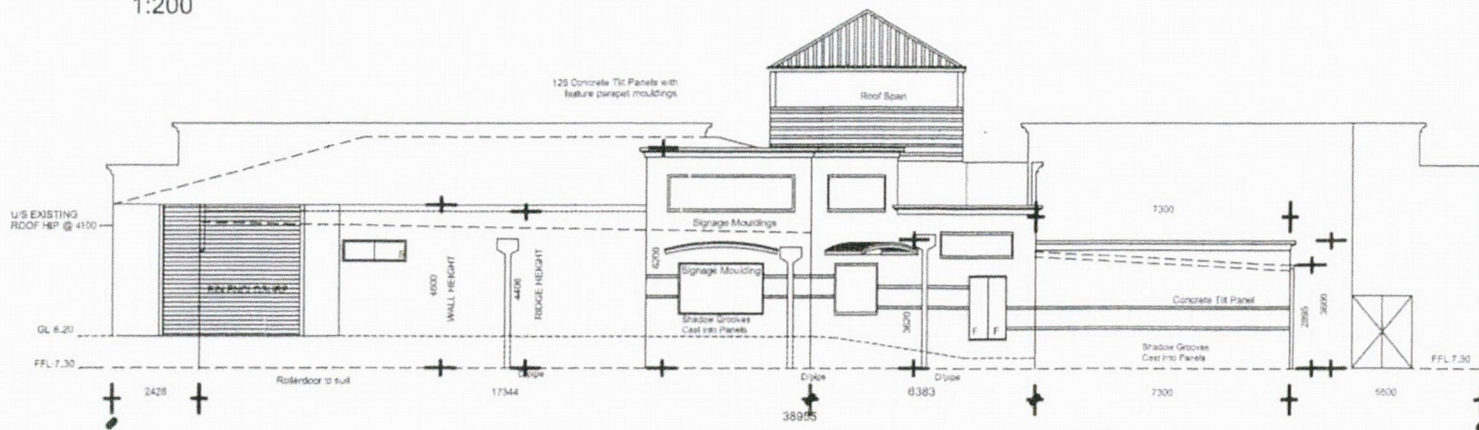


ELEVATION 2  
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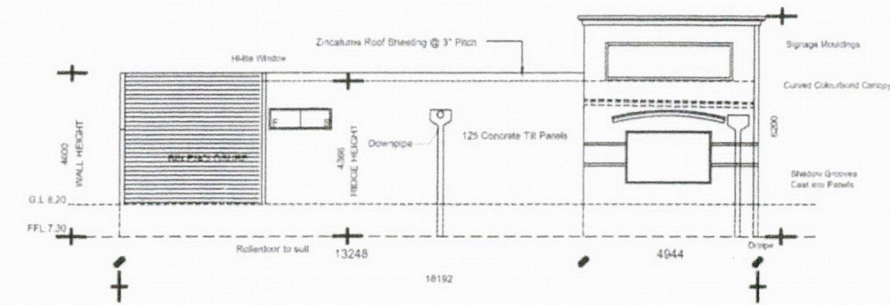
ELEVATION 2



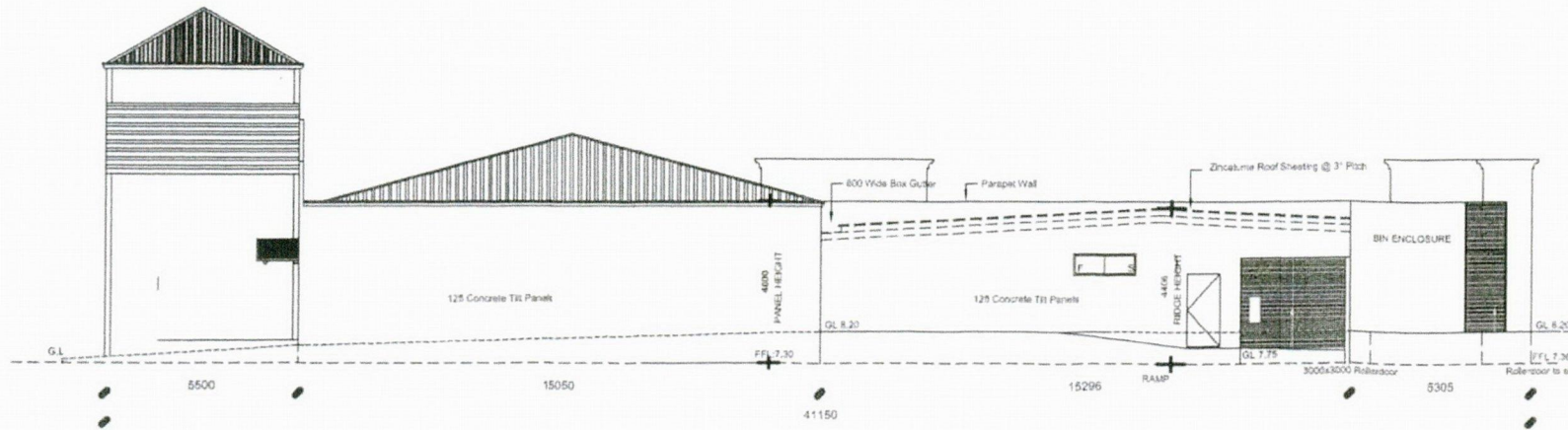
ELEVATION 2b  
1:200



ELEVATION 3  
1:200



ELEVATION 3b



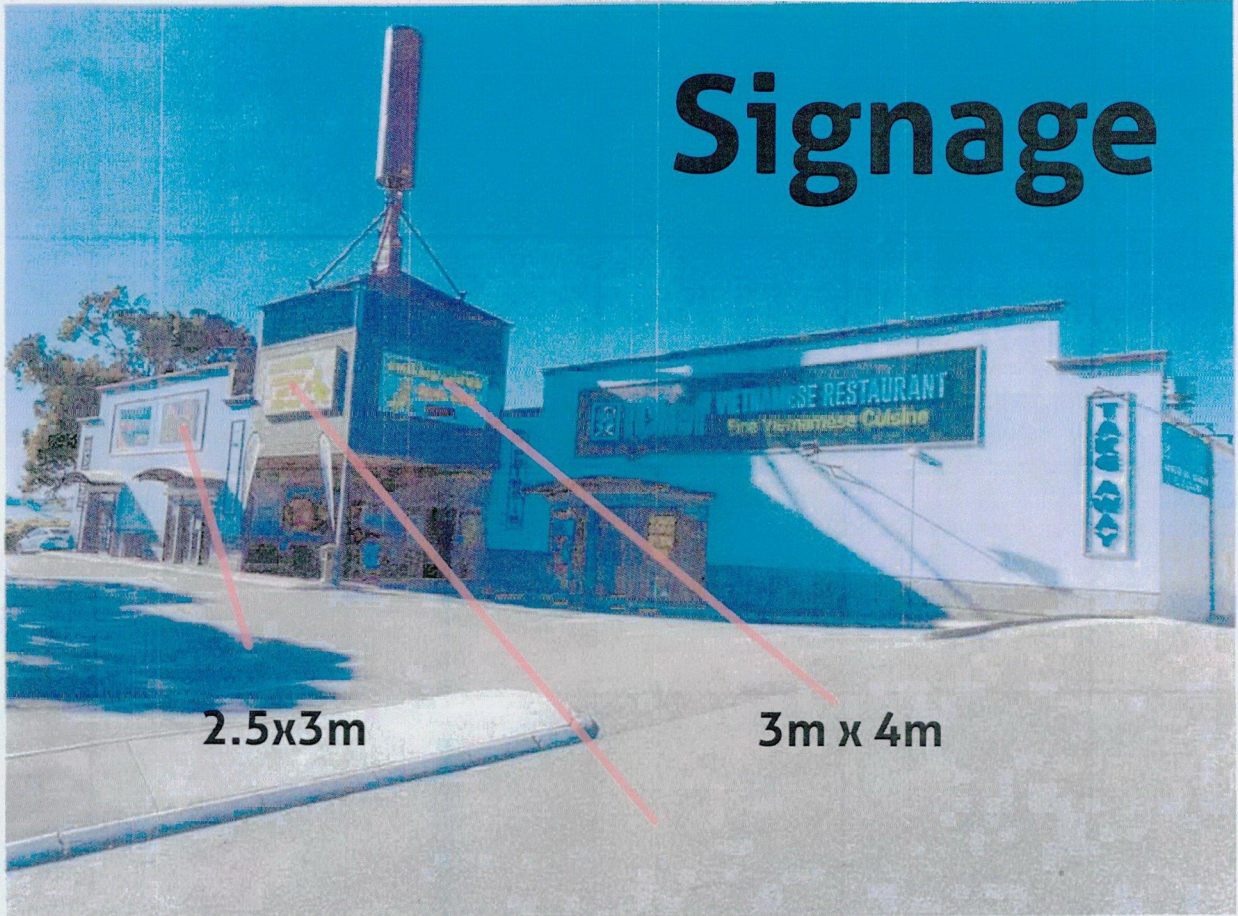
ELEVATION 4  
1:200

CLIENT	CHISHOLM HOLDINGS PTY LTD
PROJECT	CHURCH INTERNAL TENANCY
LOCATION	LOT 6, 12 HUGHIE EDWARDS DRIVE MERRIWA

DWG TITLE ELEVATIONS	
DATE 02/11/23	SCALE 1:200
SHEET A03	JOB No. 12-240
DRAWN B.C.	REV. A



# Signage



12 Hughie Edwards Dr, Merriwa WA 6030





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www.acoustics-ap.com.au*

*Dated: 25<sup>th</sup> January 2024*

*ACOUSTIC REPORT*

*ENVIRONMENTAL NOISE ASSESSMENT*

*PROPOSED CHANGE OF USE TO 'PLACE OF WORSHIP'*

*LOT 6, #12 HUGHIE EDWARDS DRIVE, MERRIWA WA 6030*

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## INTRODUCTION

Acoustics & Audio Production was engaged to provide an acoustic report for the proposed change of use to 'Place of Worship' located at Lot 6, #12 Hughie Edward Drive, MERRIWA WA 6030. The following acoustic assessment was compiled to determine the potential noise impact the proposed place of worship will have on the surrounding receivers, and also to ensure that compliance to the Environmental Protection (Noise) Regulations 1997 is achievable at all times during its intended operations.

This assessment was requested to form part of, and in support of, a change of use application to the City of Wanneroo, in order to ensure that the site complies with the applicable Environmental Protection (Noise) Regulations 1997 assigned outdoor noise levels while in operation.

## OBJECTIVES

The objectives of this acoustical report are as follows:

- To ensure compliance to the Environmental Protection (Noise) Regulations 1997 is achieved at all times during its operation;
- To protect the reasonable acoustic privacy of both adjacent business and nearby residents in their dwellings and open private spaces;
- To provide noise goals and noise control recommendations to ensure the place of worship does not generate unacceptable noise levels which would potentially adversely impact upon the amenity of the surrounding businesses and residences.

## SUMMARY

Based on our assessment, the calculated noise level emission associated with the proposed Place of Worship has been found that compiling with the Environmental Protection (Noise) Regulations 1997 during all hours of operation achievable, with the following recommendations implemented:

- A total maximum of 200 patrons are allowed in the premises at any one time;
- External doors and windows are to be closed at all times during operation.
- Live music is not to occur before 9am on Sunday.
- External doors to achieve a minimum certified  $R_w + C_{tr}$  31 for example 40mm solid core door including frames, with compressible silicon-based rubber seals to the full perimeter of the door and a drop-down seal to provide an airtight seal when closed;
- Implement the recommendations put forth within this report.
- To ensure compliance to the EPR 1997 is achieved, an assessment of noise emissions is recommended to be conducted by a qualified acoustical consultant once the site is in full operation.

## PROJECT DESCRIPTION

The proposed Place of Worship is intending to public gatherings of worship to the surrounding community. As part of the service, live music is intended to be performed for the patrons on Sunday service with a maximum of 200 patrons. A two (2) hour evening service is also intended to be provided on Wednesdays where it is expected that around 20 patrons will utilise the facility; no live music is intended on this day. Parking bays for both patrons and staff are provided at the proposed site.

The planned operating hours of the proposed 'Place of Worship' is shown in Table 1 below.

**Table 1: Intended operating hours of proposed place of worship**

Days	Time Period
Wednesday	7pm to 9pm
Sunday	8:30am to 1:00pm



**Figure 1: Proposed Place of Worship Site Location**  
(Source: City of Wanneroo – Intramaps)



## ACOUSTIC ENVIRONMENT

The proposed site is identified by the City of Wanneroo District Planning Scheme No.2 as R20, Commercially Zoned and under the Metropolitan Region Scheme as Urban zoned. The commercial properties directly adjacent to the site also similarly zoned. The surrounding noise sensitive residential receivers are located to the South, East and North of the proposed site with the closest residential property being situated approximately 12m South, 40m East and 45m North of the proposed place of worship. The nearest major road is identified as Marmion Avenue, which is located to the West of the proposed place of worship.

## RECEIVERS & NOISE MONITORING PROCEDURES

The nearest receiver locations were identified as the following:

1. (R1) 37 Adelong Circuit, MERRIWA;
2. (R2) 39 Adelong Circuit, MERRIWA;
3. (R3) 87 Dalvik Avenue, MERRIWA;
4. (R4) 88 Dalvik Avenue, MERRIWA;
5. (R5) 3 Tomaga Way, MERRIWA;
6. (R6) 19 Hughie Edwards Drive, MERRIWA
7. (C1) Hair Salon - 12 Hughie Edwards Drive, MERRIWA;
8. (C2) Café - 12 Hughie Edwards Drive, MERRIWA; and
9. (C3) Restaurant - 12 Hughie Edwards Drive, MERRIWA

The locations identified above, have been chosen as they are considered to be representative of the nearest receivers. Refer to Figure 2 below for the proposed site, receivers (both residential / commercial) and the onsite measurement locations that have been conducted to compile this report.





Figure 2: Proposed place of worship, nearest receivers and the ambient noise measurement locations  
(Source: City of Wanneroo – Intramaps)

## EQUIPMENT

The following equipment was used to record existing ambient noise levels:

- Cirrus CR171 Type 1 Sound Level Meter
- Cirrus CR515 Acoustic Calibrator

Both the Cirrus Sound Level Meter and Acoustical Calibrator hold current NATA Laboratory Certification and had been field calibrated before and after the noise-monitoring period. No significant drift from the reference signal was recorded. Laboratory certificates may be provided upon request.



## NOISE MONITORING

A Cirrus CR171 Type 1 Sound Level Meter was used to measure ambient noise levels. The monitor was located in a free field position with the microphone approximately 1.4m above the ground surface level.

The sound level meter was set to record in “A” Weighting, fast response using 15-minute statistical intervals in the following measurement types;  $L_{Aeq}$ ,  $L_{A10}$ ,  $L_{A1}$ ,  $L_{A90}$  and  $L_{Amax}$ . Ambient noise monitoring was conducted generally in accordance with Australian Standard AS1055:1997 Acoustics- Description and measurement of environmental noise.

## EXISTING AMBIENT SOUND LEVELS

Sound Level measurements were conducted on Wednesday 10<sup>th</sup> January 2024 between the hours of 11am to 12pm at the property boundary of the nearest noise sensitive residential receiver identified as 87 Dalvik Avenue, MERRIWA. The purpose of conducting this onsite noise monitoring is to determine the existing ambient noise environment experienced at the surrounding premises.

**Table 2 – Measured Existing Ambient Sound Levels,  $L_{Aslow}$  dB(A) – Wednesday 10<sup>th</sup> January 2024**

Location	Measured Sound Levels			
	$L_{Aeq}$	$L_{A10}$	$L_{A1}$	$L_{Amax}$
M1 (see figure 2)	50.4	49.2	62.6	71.7

## METEOROLOGICAL DATA

The following meteorological conditions (shown in table 3 below) were present during the onsite monitoring conducted on Wednesday 10<sup>th</sup> January 2024.

**Table 3 – Meteorological Conditions**

Parameter	Result
Temperature (°C)	30°C
Wind Speed (m/s)	4.44m/s
Wind Direction	East
Humidity (%)	46%



## NOISE CRITERIA

The allowable noise levels at the surrounding noise sensitive areas are determined by the Environmental Protection (Noise) Regulations 1997. Regulations 7 & 8 stipulate the allowable external noise levels determined by the calculation of an influencing factor, which is then added to the base levels shown below. As the site is intending to operate on Wednesday between 7pm and 9pm and Sunday between the hours of 8:30am to 1:00pm, our assessment will be based on the assigned outdoor noise levels for both the weekday 'evening' and the Sunday 'daytime' assessment criterions.

**Table 4.1 – Baseline Assigned Outdoor Noise Level**

Description	Time of Day	Assigned Level (dB)		
		L <sub>A10</sub>	L <sub>A1</sub>	L <sub>A(max)</sub>
Noise Sensitive	1900 – 2200 hours all days	40 + IF	50 + IF	55 + IF
Premises	0900 – 1900 hours Sunday and Public Holidays	40 + IF	50 + IF	65 + IF
Commercial Premises	All hours	60	75	80

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

**Table 4.2 – Influencing Factor Calculation**

Description	450m Radius	100m Radius	Influencing Factors
Commercial	8%	36%	2.2dB
Industrial	0%	0%	0dB
Major Roads	Nil	Yes – Marmion Avenue	6dB
Secondary Roads	Yes – Lukin Drive	Nil	
Sports Venues	Nil	Nil	0dB
<b>Total Influencing Factor = 8.2dB i.e. 8dB</b>			

Based on the information in Table 4.2, an influencing factor of 8 is applied to the base line assigned noise levels for all of the nearest noise sensitive receivers identified, with the applicable assigned outdoor noise levels identified in Table 4.3 below.

**Table 4.3 – Applicable Assigned Outdoor Noise Level**

Description	Time of Day	Assigned Level (dB)		
		L <sub>A10</sub>	L <sub>A1</sub>	L <sub>A(max)</sub>
Noise Sensitive	1900 – 2200 hours all days	48	58	63
Premises	0900 – 1900 hours Sunday and Public Holidays	48	58	73
Commercial Premises	All hours	60	75	80

## CALCULATED NOISE LEVELS

Calculations have been made to determine the sound levels expected to be received by the nearest noise sensitive premises, associated with the proposed place of worship operations. These calculations are based on both the sound power levels provided in Table 5 below, and under the assumption that all recommendations put forth, are implemented.

The noise types being used within the assessment include: vehicle access / parking associated noise within the parking bays provided, conversational noise under maximum capacity, live and/or pre-recorded music, and mechanical plant within the proposed place of worship; all occurring simultaneously.

Mechanical Plant (exhaust fans, HVAC system) associated noise calculations have been based on both the site plans of the proposed restaurant and the typical range of sound power levels for the mechanical plants.

Traffic noise from cars and vans arriving and departing the site have been based on the typical Sound Power Levels of traffic (30 seconds  $L_{Aeq}$ ).

The data used for the calculation of the noise levels expected to be received by the nearest noise sensitive premises from the site under a ‘worst case scenario’ of a maximum capacity of 200 patrons, have been based on researched Sound Power Levels ( $L_w$ ) of each potential noise source. All noise sources, receivers, boundaries and structures have been plotted with acoustical modelling software to provide reliable data, by which this assessment is based.

## SOUND POWER LEVELS

The effective sound power level ( $L_w$ ) of the various noise sources expected to occur at the site and used in our modelling of a ‘worst case scenario’ of noise emission are identified in Table 5 below.

**Table 5 – Source Sound Power Levels, dB**

Description	Sound Power levels (dB) at Octave Band Centre Frequencies (Hz)								
	dB(A)	63	125	250	500	1k	2k	4k	8k
Speech – Relaxed Voice	92	75	86	90	92	85	82	79	68
Speech – Amplified Speech	98	81	92	96	98	91	88	85	74
Live Music	96	103	97	95	92	90	85	82	76
A/C Condenser	80	77	75	65	66	75	75	73	70
$L_{Aeq, 30 \text{ second}}$ one car passing at approximately 10km/h	84	90	81	81	85	78	73	69	63
$L_{Aeq, 30 \text{ second}}$ car door slam, ignition and drive away	77	89	81	74	72	71	68	66	60
Waste Collection	112	115	117	112	107	105	104	103	--

## METHODOLOGY

Computer modelling SoundPlan 8 was used with the algorithms CONCAWE selected to predict the noise emissions. Input data used within the model are:

- Meteorological Information; and
- Topographical Data; and
- Ground Absorption Data; and
- Source Sound Levels.



## METEOROLOGICAL INFORMATION

Meteorological information used in the table below is considered to represent the ‘worst case’ conditions for sound propagation. With wind speeds greater than those shown, noise levels may be further enhanced; however, it is likely that wind, vegetation and traffic noise will become the dominant noise source at those levels.

**Table 6 – Meteorological Conditions**

Parameter	Day (0700 -1900)	Night (1900 – 0700)
Temperature (°C)	20	15
Wind Speed (m/s)	4	3
Wind Direction	All	All
Humidity (%)	50	50
Pasquil Stability Factor	E	F

Note: The acoustical modelling software allows for simultaneous modelling of wind in all directions.

## TOPOGRAPHICAL DATA

Topographical data was adapted from Google Earth, site photographs and proposed plans. Existing buildings have also been included as these can provide barrier attenuation when located between a source and receiver.

## GROUND ABSORPTION

Ground absorption varies from a value of 0 to 1, 0 representing an acoustically reflective ground (e.g. water and bitumen) and 1 representing acoustically absorbing surface such as grass. In this case, a ground absorption value of 0.1 is used.

## ASSESSMENT – PREDICTED OUTDOOR NOISE EMISSIONS

Table 7 below shows the predicted sound levels expected to be received by the nearest noise sensitive premises, attributable to the standard operations of the proposed restaurant under a ‘worst case scenario’ of 200 patrons and all potential noise sources occurring simultaneously, including the recommendations provided within this report being implemented.

The predicted levels are based on both the information provided by the applicant and researched acoustical technical information relating to the application. This data has been compiled and used to calculate the level of noise expected to be received at the surrounding noise sensitive premises under a ‘worst case scenario’ of all potential noise sources occurring simultaneously, with which includes the following:

### **Scenario 1 – Wednesday Evening Service**

#### **Standard Service – No Live Music**

- a) Maximum number of 20 patrons with 50% conversing simultaneously with ‘raised voices’;
- b) Amplified speech for pastor SPL 80dB(A) @1m from the source;
- c) Vehicle access within the adjacent carpark ie: Car ignition, door slam, car pass-by @ 10km/h;
- d) Mechanical Plant i.e.
  - i. A/C Condenser
- e) Recommendations within this report, implemented.

**Scenario 2 – Sunday Service**  
**Live band service**

- a) Maximum number of 250 patrons with 50% conversing simultaneously with ‘raised voices’;
- b) Live music within the site at 85dB(A) (@ 1m from the source);
- c) Vehicle access within the adjacent carpark ie: Car ignition, door slam, car pass-by @ 10km/h;
- d) Mechanical Plant i.e.
  - i. A/C Condenser
- e) Recommendations within this report, implemented.

The predicted sound levels expected to be received under a ‘worst case scenario’, from the scenarios identified above, have been assessed against the relevant assigned outdoor noise levels; with the results shown in Tables 7.1 and 7.2 below.

As part of our assessment the following was taken into consideration; buildings design layout, topographical data, attenuation over distance, acoustic screening between source and receiver, noting that all South and East facing external windows are covered and sealed for noise mitigation and the existing ambient noise levels currently experienced at the receivers identified at times typical to the proposed sites intended operational hours.

Modelling has been conducted with the source all sound sources expected from the place of worship intended operations under a maximum capacity ‘worst-case scenario’ for noise emissions expected from the site. The ‘worst-case scenario’ for noise emissions has been modelled with the site under maximum capacity of 200 patrons with 50% talking, live music and vehicle arrival/departure all occurring simultaneously and assume that all the acoustic recommendations put forth within this acoustic report are implemented during its operations.

**Table 7.1 – Assessment of Sound Levels Under Scenario 1 at the Nearest Receivers dB(A)**

Assessment Scenario	Location	Time of Day	Predicted Noise Level, LA10 dB(A)	Adjustment for intrusive characteristics	Assessable Noise Level, LA10 dB(A)	Assigned Level, LA10 dB(A)	Compliance to Assigned Noise Level dB(A)
Scenario 1 ‘Worst case scenario’ for noise emissions Wednesday service	R1	Wednesday Evening Service 1900 to 2100	30	N/A	30	48	Yes
	R2		33		33		Yes
	R3		34		34		Yes
	R4		31		31	60	Yes
	R5		30		30		Yes
	R6		32		32		Yes
	C1		30		30	60	Yes
	C2		30		30		Yes
	C3		32		32		Yes



**Table 7.2 – Assessment of Sound Levels Received Under Scenario 1 at the Nearest Receivers dB(A)**

Assessment Scenario	Location	Time of Day	Predicted Noise Level, L <sub>A10</sub> dB(A)	Adjustment for intrusive characteristics	Assessable Noise Level, L <sub>A10</sub> dB(A)	Assigned Level, L <sub>A10</sub> dB(A)	Compliance to Assigned Noise Level dB(A)
Scenario 2 'Worst case scenario' for noise emissions Sunday Service	R1	Sunday Service daytime	33	+10	43	48	Yes
	R2		36		46		Yes
	R3		37		47		Yes
	R4		34		44	60	Yes
	R5		33		43		Yes
	R6		29		39		Yes
	C1		33		43	60	Yes
	C2		35		45		Yes
	C3		35		45		Yes

As shown in tables 7.1 and 7.2 above, received sound level emissions attributable to the proposed Place of Worship intended operations were found that compliance to the Environmental Protection (Noise) Regulations 1997 assigned outdoor levels is achievable provided the recommendations within this report are implemented.

As compliance to the EPR is expected to be achieved at the receivers closest to the proposed site, we also expect compliance to be achieved at the receivers further away.

## ASSESSMENT – PREDICTED NOISE TRANSMISSION WITHIN ADJACENT BUSINESSES

As the proposed site is situated within a commercial block, with a café, restaurant and hair salon directly adjacent to the proposed site, consideration has been given to the potential noise transmission into this area while the proposed site is in operation, under a 'worst case (noise emission) scenario' and to determine if the predicted noise levels received fall within the relevant standards and regulations. It is noted that live music is intended to be utilised on Sunday only

The Australian Standard 2107:2016 'Acoustics - Recommended design sound levels and reverberation times for building interiors' provides design sound level ranges for various building interiors. As the adjacent business is a bicycle repair and retail store, we believe the following indoor noise criteria is applicable for this assessment.

**Table 8 – Recommended design sound levels and reverberation times for the adjacent business**

Type of occupancy / activity	Design Sound Level Range
Restaurant	40 to 50
Café	40 to 50
Hair Salon	40 to 50

Based on table 8 above, we have used a  $L_{Aeq}$  50dB(A) as the target criterion for the indoor noise level to allowed to be received within the adjacent commercial tenants (C1, C2 and C3). Table 9 below provides the results of our modelling which has been conducted under a 'worst-case scenario' for noise emissions expected to be received within the adjacent business via the dividing party wall.

**Table 9.1 – Assessment of the predicted noise transmission under a 'worst case scenario' Scenario 2**

Scenario 1	Location	Time of Day	Predicted Noise Level, $L_{Aeq}$ dB(A)	Adjustment for intrusive characteristics	Assessable Noise Level, $L_{A10}$ dB(A)	Recommended Design Sound level, $L_{A1eq}$ dB(A)	Compliance to the Recommended Design Sound level
'Worst case scenario' for noise emissions from within proposed site	C1	Anytime	29	N/A	29	50	Yes
	C2	Anytime	31	N/A	31		Yes
	C3	Anytime	35	N/A	35		Yes

**Table 9.2 – Assessment of the predicted noise transmission under a 'worst case scenario' Scenario 2**

Scenario 1	Location	Time of Day	Predicted Noise Level, $L_{Aeq}$ dB(A)	Adjustment for intrusive characteristics	Assessable Noise Level, $L_{A10}$ dB(A)	Recommended Design Sound level, $L_{A1eq}$ dB(A)	Compliance to the Recommended Design Sound level
'Worst case scenario' for noise emissions from within proposed site	C1	Anytime	33	N/A	33	50	Yes
	C2	Anytime	35	+10	45		Yes
	C3	Anytime	39	+10	39		Yes

As shown in Tables 9.1 and 9.2 above, the noise levels received within the adjacent commercial businesses via transmission through the dividing wall, is calculated to fall within the recommended design sound level identified, as stipulated by the Australian Standard '*Acoustics - Recommended design sound levels and reverberation times for building interiors*'. Based on these findings we believe the operations of the proposed restaurant will likely be inaudible within the adjacent commercial properties identified, provided the recommendations with this report are adhered to.

## NOISE CONTROL RECOMMENDATIONS

To ensure compliance to the Environmental Protection (Noise) Regulations 1997, the following noise control recommendations are given.

### EXTERNAL DOORS

All external doors must have compressible silicon-based rubber seals to the full perimeter and a drop-down seal and provide an airtight seal when closed as to not compromise the acoustic performance of the system. All external doors are to be a minimum 40mm thick solid core and a achieve a minimum acoustic performance rating of  $R_w$  32.



## NOISE MANAGEMENT PLAN

One of the most effective measures that should be implemented in conjunction with the physical noise control measures recommended within this report is the Noise Management Plan (NMP). The NMP should be incorporated within the restaurant's overall management plan.

- All external doors and windows are to be closed during the proposed sites operation.
- Live music is to not occur before 9am.
- All speakers, PA equipment is to be pointing in an East / North Easterly direction. away from both the adjacent commercial and residential (See figure 3 below).
  - Utilising a speaker array with ceiling mounted speakers in conjunction with stage speakers is also recommended (see figure 3 for speaker location guide).
- A noise limiter is to be installed within the Front of House mixer to ensure that noise levels do not exceed the 87dB(A) at 1m from the source.
- It is recommended that the drum kit location is fitted with a screening barrier on the southern side and northern side, to reflect sound away from the nearest noise sensitive residential and commercial receivers.
  - Note: electric drum kits can also be beneficial to control noise breakout as the output level can be controlled via the sound mixer Front of House.
- Not permitting more than the proposed maximum number of 200 patrons to be present on the premises at any given time;
- Ensure loudspeakers are installed with appropriate resilient mounts to stop vibration or resonances being transmitted to the building structure;
- The applicant is to ensure that all reasonable and practical measures are taken in order to minimize the overall sound level and low frequency noise received at the nearest noise sensitive residential receivers to the South of the proposed site;
- Staff closing procedures are to be designed in order to minimize the risk of noise disturbance being caused to the surrounding noise sensitive receivers;
- Appropriate signage requesting patrons be mindful of the neighbourhood in leaving the premises and area quietly;
- Adequate lighting in external areas to discourage loitering when patrons leave the premises;
- Maintain a compliant register and train staff in the use of handling complaints;
- A complaints file is to be available to all staff to record any complaints received in person or by any other means. This insures complaints can be addressed at the time and ensures the applicant can review any complaints over time to identify problems and address issues;
- Waste Collection is to occur within the hours of 7am to 7pm Monday to Saturday;

## PATRONS

In order to minimise antisocial behaviour including excessive noise, the following is proposed:

- Create and maintain a high-quality premise in all respects, both physically and operationally as studies conducted have indicated that poorly lit, badly maintained premises have a greater likelihood of violence, trouble and antisocial behaviour;
- Provide more than ample seating for patrons;
- Background music is to be at low levels for ambience and to not promote the raising of voices, when live music is not being utilised.
- Create a warm, relaxed and inviting atmosphere to minimise the risk of antisocial behaviour.

## WASTE COLLECTION VEHICLES


Regulation 14A of the Environmental Protection (Noise) Regulations 1997 addresses the noise emissions associated with waste collection. Fundamentally, waste collection activities are exempt from complying with the 'Assigned Levels', provided the collection only occurs between the hours of 7 am and 7 pm Monday to Saturday.

## CONCLUSION

Based on the results of this assessment, noise levels calculated under a 'worst case scenario' have been found to fall within the respective assigned outdoor noise criterion for the entirety of its intended operational hours; provided the recommendations put forth within this report are implemented.

I trust the above meets your requirements on the matter. Should you have any queries do not hesitate to contact our office.

Regards,



**Ian Burman**

**(A.A.A.S)**

**Noise Officer: 14009**

**ACOUSTICS & AUDIO PRODUCTION**



**APPENDIX A -  
LIVE MUSIC NOISE CONTROL GUIDE**

## LIVE MUSIC – NOISE CONTROL SOLUTIONS

In order to mitigate breakout noise from live music to both the residential receivers and the adjacent commercial premises, the following guide is provided.

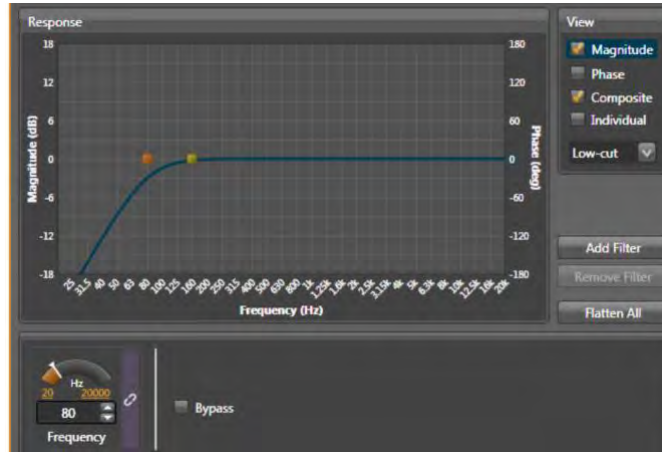
### SPEAKER POSITIONING

Utilising a distributive array of supplemental ceiling speakers in the bac of the room (as shown in figure 3 below) allows for a reduction of the main stage speakers, which also reduces audio “hot spots” and reduces the amount of low frequency energy through the space. Ceiling speakers are recommended to be added in the locations illustrated below. It is also important for the front of house sound mixer to have a speaker directly above them to aid in achieving an accurate mix. Delay compensation is to be used based on the distance from the stage speakers to the ceiling speakers in order to achieve a uniform sound.



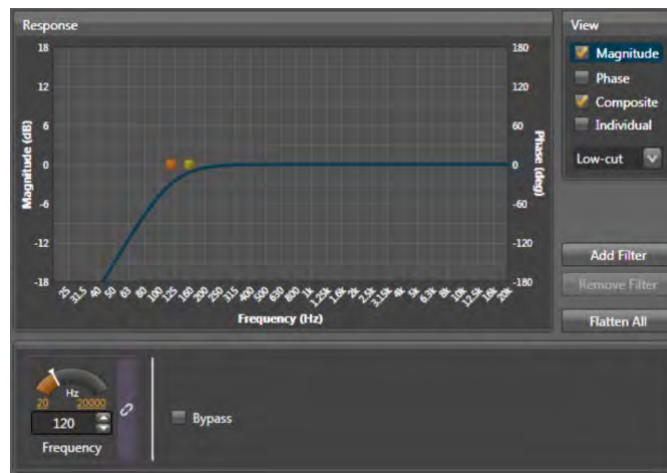
### INPUT LOW CUT FILTER

It is recommended that a low-cut filter set to ~80Hz be applied after the input stage to minimise the effects of low frequency noises like bumps and thumps that come from handling the mic and pops from speaking to close to the microphone.



### INPUT LOW CUT FILTER – SIDE CHAIN

There should also be low-cut filter in line with the side chain input of the of the audio gain control. This filter can be set to around 120Hz to improve the overall performance of the audio gain control by rejecting the effects of low frequency noises.



### AUTO MIXER

An auto mixer can be beneficial when there is more than one microphone. Gain sharing auto-mixers combine the signals from multiple mixers and automatically produces a constant gain from all inputs to the output with minimal feedback. It is common that the pulpit mic will have priority if multiple microphones are utilised.





## AUTOMATIC GAIN CONTROL

It is essential to use a compressor within the signal chain in order to prevent large dynamic differences between the loud and soft sections of both preaching and live music. An example is provided in the image below.



## FEEDBACK SUPPRESSOR

A feedback suppressor can aid can be of assistance if the if the speaker is untrained in the proper use of the microphone, such as cupping the hand around the head of the microphone, so the potential for feedback in significantly minimised.

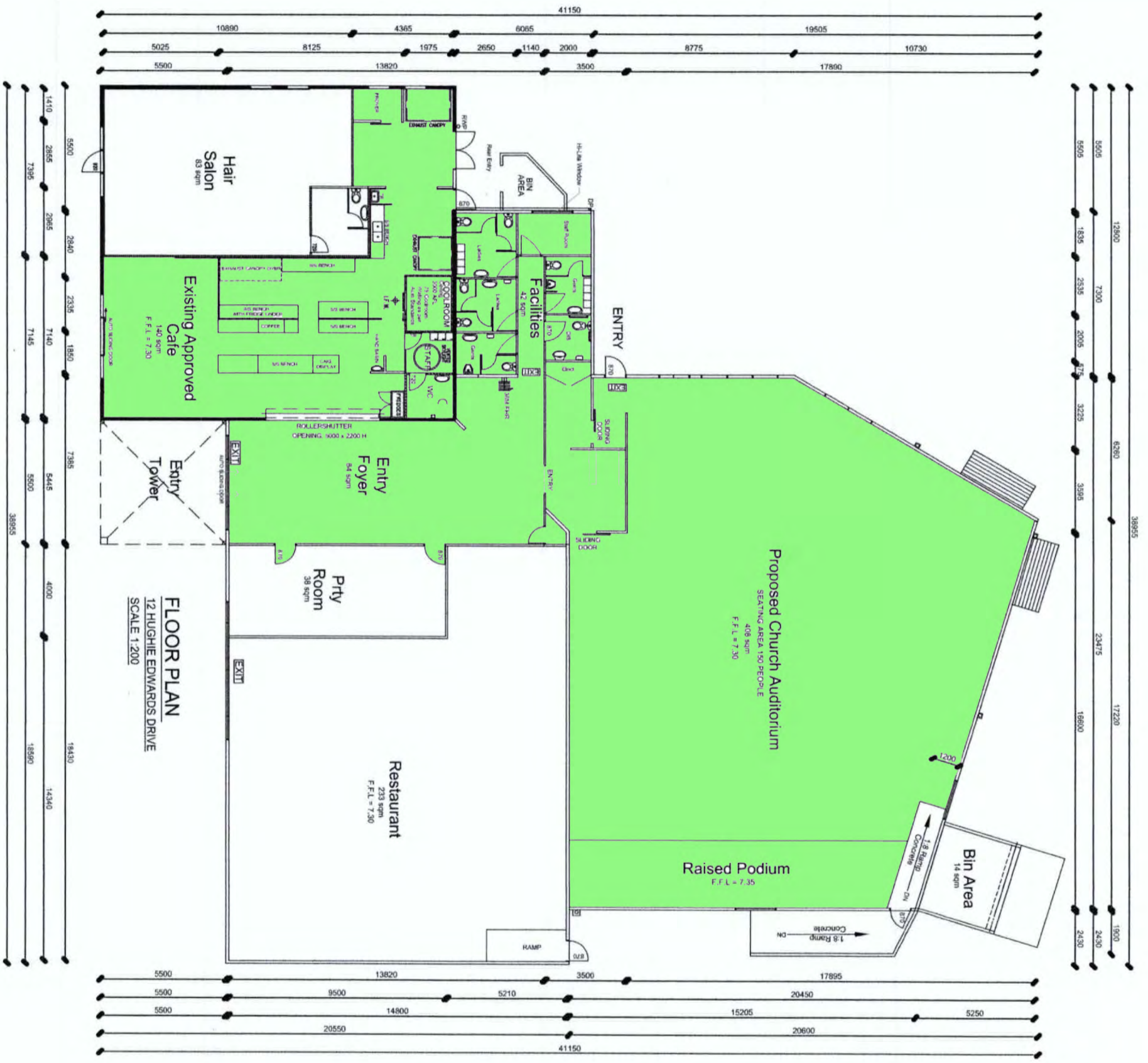
## PARAMETRIC EQUALIZATION

Parametric equalization is used for both narrow and wide band correction. After the room is set up and a flat response is achieved within the space while empty, it is recommended to boost some high frequency energy in order to compensate for the sound absorption provided when the room is full of people.



Narrow band filters are also useful in controlling room modes. At low frequencies can cause bass to sound indistinct, with the mid to mid-high range commonly be perceived as increased reverberation.

**APPENDIX B -  
SITE PLANS**



**FLOOR PLAN**  
SCALE 1:200

**FLOOR PLAN**  
12 HUGHIE EDWARDS DRIVE  
SCALE 1:200

CLIENT		CHISHOLM HOLDINGS PTY LTD	
PROJECT		CHURCH INTERNAL TENANCY	
LOCATION LOT 6, 12 HUGHIE EDWARDS DRIVE MERRIWA			
DWG TITLE		FLOOR PLAN	
DATE	02/11/23	SCALE	1:200
SHEET	A02	JOB NO.	12-240
DRAWN	B.C.	REV.	A



LEGEND	
	T.B.M.
	HYDRANT
	STOP VALVE
	TELSTRA
	POWER DOME
	GRADED DRAIN
	STREET LAMP
	WAWA PRE-LAY
	S/W MANHOLE



**SITE PLAN**
  
 SCALE 1:400

CLIENT	CHISHOLM HOLDINGS PTY LTD
PROJECT	CHURCH INTERNAL TENANCY
LOCATION	LOT 6, 12 HUGHIE EDWARDS DRIVE
	MERRIWA

DATE	02/11/23	SCALE	1:400
SHEET	A01	JOB NO.	12-240
DRAWN	B.C.	REV.	A

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## DOCUMENT ISSUE AUTHORISATION

Issue	Rev	Date	Description	Checked	Approved
1	0	12/01/2024	FINAL	HH	HH

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# 1. INTRODUCTION

## 1.1 OVERVIEW

This Transport Impact and Car Parking Assessment has been prepared by Move Consultants on behalf of the Open Foundation with regard to a proposed Change of Use Application to locate a Place of Worship within the existing Chillisaurus Mini Golf tenancy within the existing commercial development located at 12 Hughie Edwards Drive, Merriwa in the City of Wanneroo. The site is broadly located in close proximity to the Ridgewood, Bulter and Quinns Rocks Activity Centre, east of Marmion Avenue and south of Lukin Drive within the south-west corner of Hughie Edwards Drive and Dalvik Avenue. The subject site houses a large building with four (4) existing tenancies inclusive of a restaurant, café, the subject tenancy (the mini golf tenancy) and a hair salon. This assessment has been prepared following receipt of a request sent to the Applicant in December 2023.

This assessment has been prepared with regard to the requirements set out by the City of Wanneroo and the WAPC *Transport Impact Assessment Guidelines – Volume 4: Individual Developments* as well as Council-endorsed strategies and guidelines, Australian Standards and Austroads guidelines.

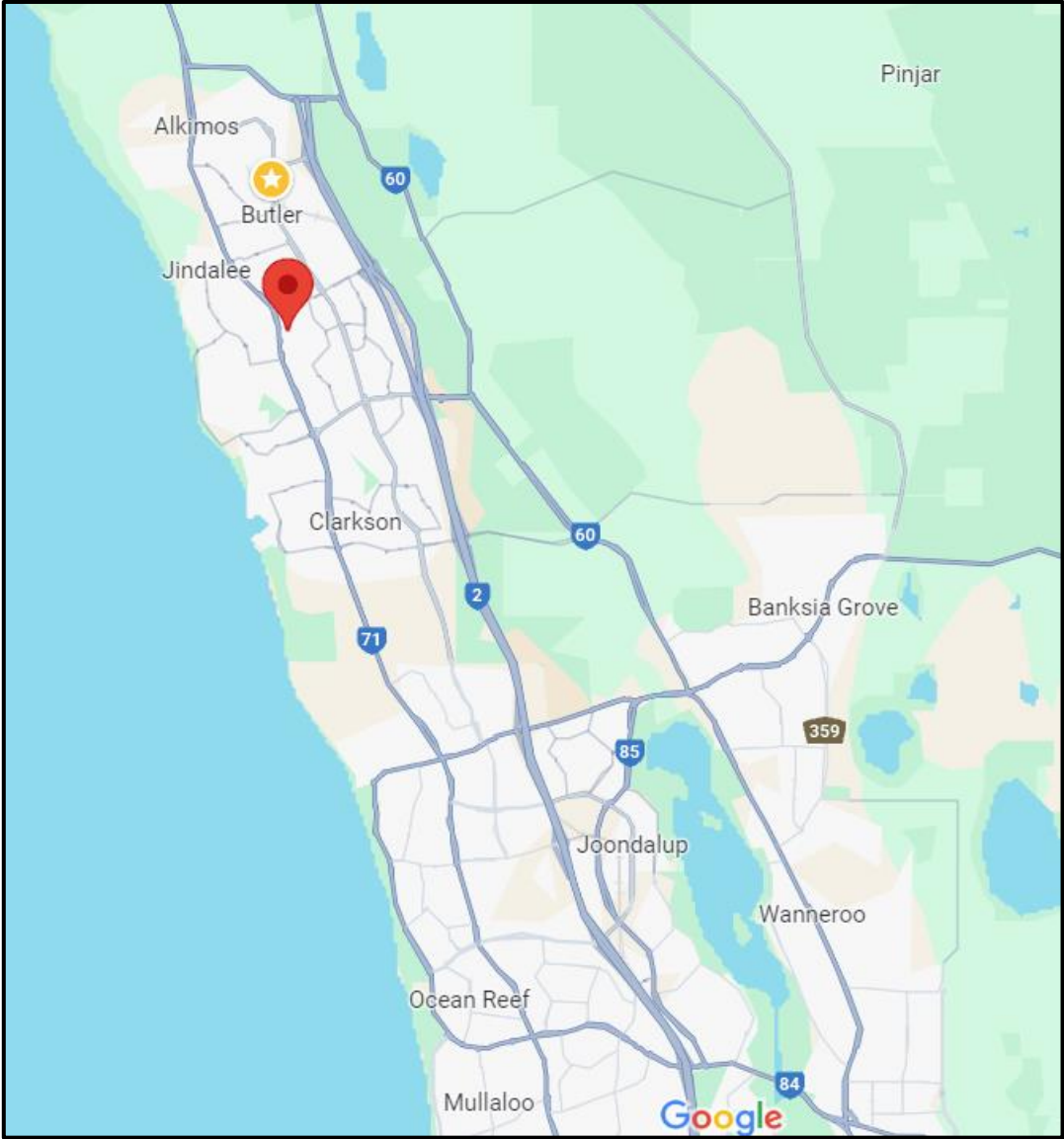
## 1.2 SITE LOCATION

The site is broadly located in close proximity to the Ridgewood, Bulter and Quinns Rocks Activity Centre, east of Marmion Avenue and south of Lukin Drive within the south-west corner of Hughie Edwards Drive and Dalvik Avenue. The subject site houses a large building with four (4) existing tenancies inclusive of a restaurant, café, the subject tenancy (the mini golf tenancy) and a hair salon. Existing uses in place in the vicinity of the site are commercial uses immediately opposite the site on the east side of Dalvik Avenue, south of Hughie Edwards Drive and immediately west of the site abutting the east side of Marmion Avenue. Residential uses are in place broadly north of Hughie Edwards Drive to the immediate south- east and east of the site. The location of the site is shown in **Figure 1**.



**Figure 1: Site Location**

The general metropolitan context is shown in **Figure 2**.



**Figure 2: Metropolitan Context**

### 1.3 SCOPE OF ASSESSMENT

This report has been prepared in accordance with the Western Australian Planning Commission's *Transport Assessment Guidelines: Volume 4 – Individual Developments* (2016).

Specifically, this report aims to assess the impacts of the proposed development on the boundary road network, namely within the local area to identify any modifications, to site or road layout, which may be required to serve the proposed site. In addition, an updated review of the anticipated on-site car parking requirements in relation to the Change of Use has also been undertaken and has been included in this updated assessment.

For this purpose, the traffic operations in the vicinity of the site crossovers have been considered and assessed under both existing and future proposed traffic conditions with regard to the potential impacts from changes in traffic generation associated with the Change of Use application.

## 2. EXISTING SITUATION

### 2.1 ROAD INFRASTRUCTURE

The site is located within the south-west corner of Hughie Edwards Drive and Dalvik Avenue, east of Marmion Avenue and south of Lukin Drive and approximately 140m east of the unsignalised T-intersection of Marmion Avenue and Hughie Edwards Drive. Existing uses in place in the vicinity of the site are commercial uses immediately opposite the site on the east side of Dalvik Avenue, south of Hughie Edwards Drive and immediately west of the site abutting the east side of Marmion Avenue. Residential uses are in place broadly north of Hughie Edwards Drive to the immediate south- east and east of the site.

Marmion Avenue, located to the west of the site, is a primary north-south connecting road providing direct access into the Quinns Rocks, Merriwa and Ridgewood activity centres and functions as a parallel high order reliever road to Connolly Drive and the Mitchell Freeway to the east of the site. It has been constructed as a dual divided carriageway to the west of the site with a raised central fixed median. It has been classified as a *Primary Distributor* road under the Main Roads WA *Functional Road Hierarchy* which are roads which “...provide for major regional and inter-regional traffic movement and carry large volumes of generally fast moving traffic with some as strategic freight routes and all are National or State roads.” The existing speed zoning on Marmion Avenue is 60 to 70kph to the west of the site and the road is owned, operated and maintained by Main Roads WA.

Lukin Drive, to the north of the site, is a major east-west connecting road between Marmion Avenue and Connolly Drive and functions as a primary route into and out of the Ridgewood and Quinns Rocks activity centres. It will eventually connect directly to the Mitchell Freeway via a full movements interchange which is currently under construction. It has been constructed as a dual divided carriageway north of the site. Connolly Drive, to the east of the site, functions as a parallel north-south reliever road to both Marmion Avenue to the west and the Mitchell Freeway to the east and provides direct access into the Butler Activity Centre. It has been constructed as a dual divided carriageway to the east of the site. Both roads have been classified as *District Distributor A* roads under the Main Roads WA *Functional Road Hierarchy* which are roads which “... carry traffic between industrial, commercial and residential areas and generally connect to Primary Distributors. These are likely to be truck routes and provide only limited access to adjoining property and are managed by Local Government.” The existing speed zoning on Lukin Drive is 60kph with the existing speed zoning on Connolly Drive set to 60kph north of Lukin Drive



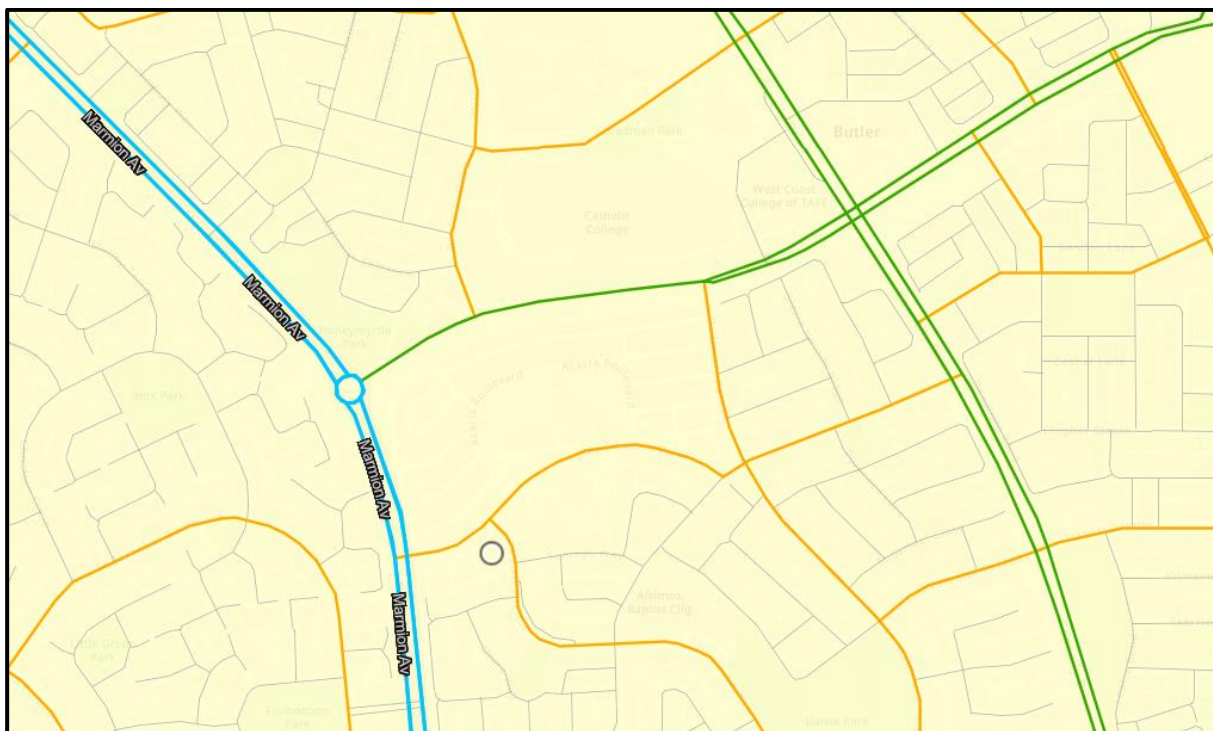
and 70kph south of Lukin Drive. Both roads have also been designated as *Other Regional Roads* or *Blue Roads* under the *Metropolitan Region Scheme* and are owned, operated and maintained by the City of Wanneroo.

Hughie Edwards Drive, along the northern boundary of the site, and Dalvik Avenue, along the eastern boundary of the site, are secondary roads which provide transitional access from higher roads into the local road network in the area. Both roads have been roads which have been constructed as single undivided carriageways in the vicinity of the site and have been classified as *Local Distributor* roads under the *Main Roads Functional Road Hierarchy* which are roads which “...carry traffic within a cell and link *District Distributors* at the boundary to access roads with the route of the *Local Distributor* discouraging through traffic so that the cell formed by the grid of *District Distributors* only carries traffic belonging to or serving the area. These roads should accommodate buses but discourage trucks and are managed by *Local Government*.” Both roads operate under speed zoning of 50kph and are owned, operated and maintained by the City of Wanneroo.

The intersections of Marmion Avenue/Lukin Drive and Connolly Drive/Lukin Drive operate under signal control. The intersection of Marmion Avenue/Hughie Edwards Drive operates under unsignalised T-intersection full movements control with priority assigned to Marmion Avenue. The intersection of Hughie Edwards Drive/Dalvik Avenue is controlled by a 3-way single circulating roundabout.

**Figure 3** shows the road hierarchy in the vicinity of the site.

A detailed site visit was conducted on Sunday 7<sup>th</sup> January 2024, Monday 8<sup>th</sup> January and Tuesday 9<sup>th</sup> January 2024 to collect information relating to existing road geometry, speed limits, and sightlines and to observe existing traffic operations on the adjacent boundary road network.



**Figure 3: MRWA Functional Road Hierarchy – Local Road Network**

Existing traffic volumes were obtained via data from Main Roads Western Australia for the road network in the vicinity of the site as well as derivation of volumes for both Hughie Edwards Drive and Dalvik Avenue based upon 'spot' surveys during peak period and a review of existing traffic patterns. **Table 1** shows the existing daily traffic volumes.

**Table 1: Existing Traffic Volumes**

Road Section	Daily Volume (vpd)	Source	Practical Capacity (vpd)
Marmion Avenue (North of Lukin Drive)	34,600 vpd	Main Roads WA (2022)	40,000 to 50,000 vpd
Lukin Drive (West of Connolly Drive)	10,300 vpd	Main Roads WA (2021)	25,000 vpd
Connolly Drive (North of Lukin Drive)	22,800 vpd	Main Roads WA (2022)	40,000 vpd
Connolly Drive (South of Lukin Drive)	27,100 vpd	Main Roads WA (2022)	40,000 vpd
Hughie Edwards Drive (East of Marmion Avenue)	Approx.. 6,000 vpd	N.A. (derived from 'spot' surveys and review of travel patterns)	7,000 to 10,000 vpd
Dalvik Avenue (South of Hughie Edwards Drive)	Approx.. 2,500 to 3,000 vpd	N.A. (derived from 'spot' surveys and review of travel patterns)	5,000 to 7,000 vpd

## 2.2 PUBLIC TRANSPORT, PEDESTRIAN, AND CYCLIST FACILITIES

The site is located approximately 200m due north-east of line haul bus services along Marmion Avenue to the west of the site with stops in place on both sides of the road south of Lukin Drive. Route 480 (Clarkson Station-Butler Station via Marmion Avenue) provides direct access to both Clarkson and Butler Railway Stations located to the south-east and north-east of the site, respectively with frequencies of 10 to 20-minutes during typical weekday peak periods and hourly service on Sundays and off-peak evening periods. Clarkson Station is located approximately

4.5m due south-east of the site and Butler Station is located 2.5km north of the site with service along the Joondalup Line providing 5 to 15-minute service frequencies during a typical weekday and 15 to 30-minute services on weekends and evenings.

Figure 4 show the existing public transport services in the area.

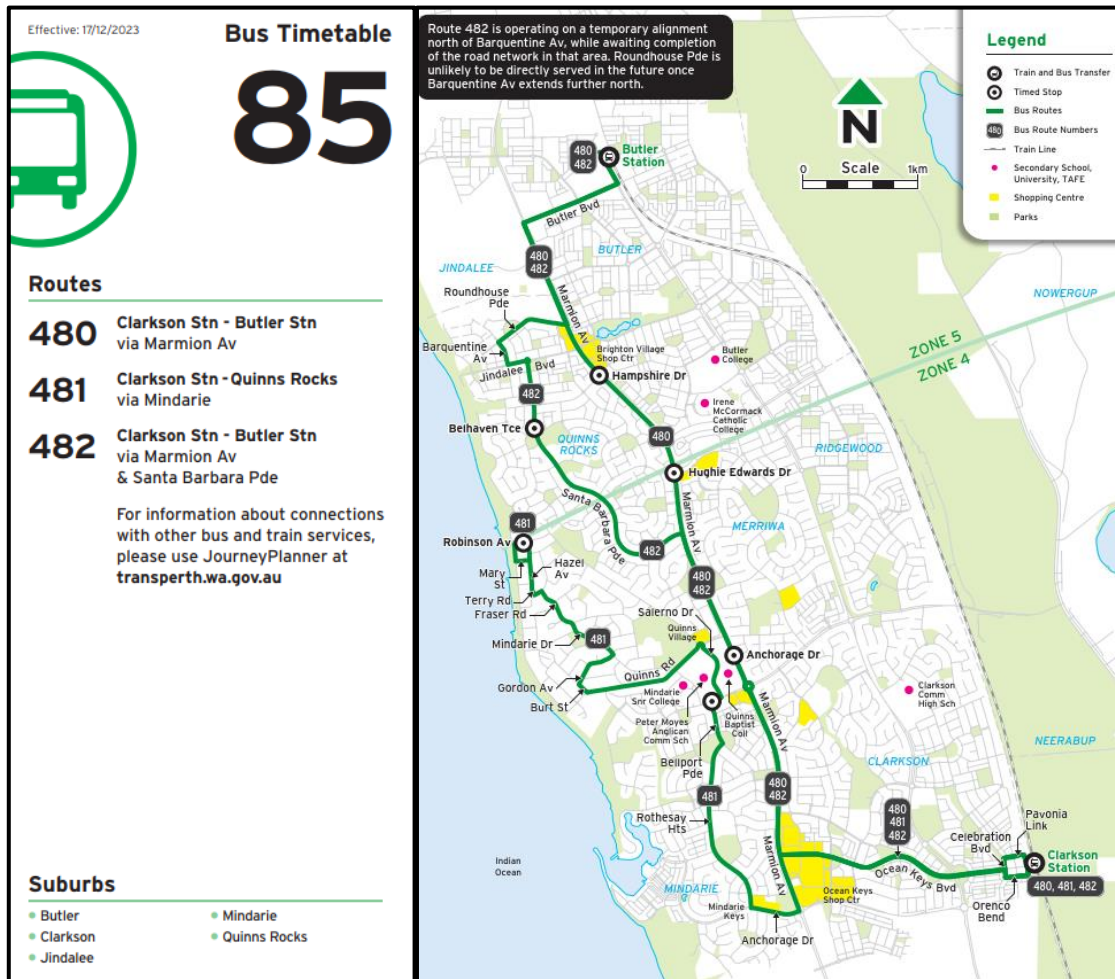


Figure 4: Existing Public Transport Bus Services

Bicycle lanes and/or sealed shoulders are in place on both sides of Marmion Avenue, Lukin Drive and Connolly Drive in the vicinity of the site with dual use off-road paths also in place on both sides of Marmion Avenue and Connolly Drive and on the north side of Lukin Drive. A dual use path is in place on the south side of Hughie Edwards Drive along the northern boundary of the site and on the east side of Dalvik Avenue to the east of the site.

Figure 5 shows the cycling and pedestrian infrastructure in the vicinity of the site.





Figure 5: Existing Cycling and Pedestrian Infrastructure

### 3. PROPOSED CHANGE OF USE

A plan of the existing site is attached in **Appendix A** showing the existing four (4) tenancy allocations across the site.....

#### 3.1 PROPOSED ACTIVITY

The proposal seeks the approval of a Change of Use application for an existing tenancy at 12 Hughie Edwards Drive, Merriwa, namely the central tenancy between an existing hair salon and an existing restaurant. The existing café at the site within the central tenancy, currently occupied by a mini golf facility, will remain ancillary to the proposed place of worship. The proposed Change of Use entails the reallocation of the central mini golf tenancy to a place of worship.

The indicative hours of the proposal are as follows:

- Church services – Sunday morning – 10 a.m. to 12 p.m.(maximum 200 persons)
- Classes on Wednesday evening – 7 p.m. to 9 p.m. (maximum 50 persons)
- General office and administration – 9 a.m. to 5 p.m. (maximum 4 persons)
- Café – ancillary to worship, office and class activities (not open to public)

The operating hours above indicate that there will be limited times when the proposed place of worship will operate coincidentally with the other tenancies on the site (weekdays 9 a.m. to 4 p.m. with the exception of Mondays, Saturdays and Sundays for the hair salon and Wednesday evenings from 7 p.m. to 9 p.m. for the restaurant).

### **3.2 PROPOSED ACCESS AND PARKING ARRANGEMENTS**

Existing access arrangements in place will continue to service the facility and include a full movements crossover to the south side of Hughie Edwards Drive and a full movements crossover on the west side of Dalvik Avenue. Reciprocal access is also in place between the site and existing commercial uses to the immediate west of the site. These crossovers measure 8.5 to 9.0m in width at the kerb line to the carriageway and narrow to 6m inside the property line. Existing car parking on the site consists of approximately 55 bays arranged in a right-angle manner abutting the northern, eastern and southern facades of the building. Additional car parking is in place adjacent to the site to the immediate west of the site in the order of approximately 39 bays.

### **3.3 END OF TRIP FACILITIES**

End-of-trip facilities can be provided on the site through the provision of bicycle U-rails if required external to the site or bicycle storage internal to the tenancy to be compliant with City of Wanneroo and Austroads guidelines.

## **4. TRANSPORT ANALYSIS**

A traffic generation and distribution exercise has been undertaken to assess the potential traffic impacts associated with the proposed development. The aim of this exercise was to establish the traffic volumes which would be generated from the proposed development and to quantify the effect that the additional traffic has on the surrounding road network.

### **4.1 TRIP GENERATION AND DISTRIBUTION**

The average amended daily traffic volume generated by the site was estimated based on traffic generation derived from the Institute of Transportation Engineers *Trip Generation Manual, 10<sup>th</sup> Edition* supplemented by information provided by the proponent with regard to the types of activity proposed to be undertaken on the site.

It should be noted that that café within the place of worship space will cater only to visitors to this use and not open to users of the gym.

Typical weekday traffic generation for the site has been estimated to be a maximum 50 daily vehicle trips (25 inbound/25 outbound), 3 vehicles trips during the a.m. peak hour (2 inbound/1 outbound) and 3 vehicle trips during the p.m. peak hour (1 inbound/2 outbound). Evening peak traffic generation for Wednesday between 7 p.m. and 9 p.m. would be in the order of 25 vehicle trips (20 inbound/5 outbound). The peak generating period for the place of worship will occur on a Sunday morning where typical peak hour generation would be in the order of 40 vehicle trips (35 inbound/5 outbound) with daily trips estimated on a Sunday to be in the order of 110 vehicle trips. Based upon a review of the existing operating protocols of the mini golf facility, this would result in a net change in traffic of approximately 5 vehicle trips per day and 2 additional trips during weekday peak hours plus 25 vehicles trips

between 7 p.m. and 9 p.m. on a Wednesday and 50 vehicle trips per day and 35 vehicle trips during the peak hour. This net difference has been derived following a review of existing operations at the site during peak demand periods and the existing operating hours of both the restaurant and the hair salon external to the proposal.

Based upon the existing traffic patterns in the area and the spatial distribution of adjacent land uses, the following distribution for the proposed development generated traffic has been assume broadly:

- 40% to and from the north via Marmion Avenue and Hughie Edwards Drive.
- 30% to and from the south via Marmion Avenue and Hughie Edwards Drive
- 30% to and from the east via Hughie Edwards Drive, Lukin Drive and Connolly Drive. Via Dalvik Avenue crossover.
- The number of trips entering / exiting the site via the proposed site crossover has been assigned based upon the most logical route for vehicles to take given their origin / destination.

The anticipated site-generated traffic was then assigned to the respective crossovers based upon the existing proportions for both the weekday a.m. and p.m. peak hours. The resultant increases in weekday daily and a.m. and p.m. peak hour-generated traffic under the 'worst case' scenario for the boundary road network would be as follows:

*Weekday (Wednesday Peak Design Period):*

- Marmion Avenue (North):
  - Daily: +2 vehicular trips
  - A.M. Peak Hour: +1 vehicular trip
  - P.M. Peak Hour: +1 vehicular trip
  - Evening Peak Hour: +10 vehicular trips
- Marmion Avenue (South):
  - Daily: +2 vehicular trips
  - A.M. Peak Hour: +1 vehicular trip
  - P.M. Peak Hour: +1 vehicular trip
  - Evening Peak Hour: +8 vehicular trips
- Lukin Drive:
  - Daily: +2 vehicular trips
  - A.M. Peak Hour: +1 vehicular trip
  - P.M. Peak Hour: +1 vehicular trip
  - Evening Peak Hour: +8 vehicular trips
- Connolly Drive:
  - Daily: +2 vehicular trips
  - A.M. Peak Hour: +1 vehicular trip
  - P.M. Peak Hour: +1 vehicular trip
  - Evening Peak Hour: +8 vehicular trips
- Hughie Edwards Drive:
  - Daily: +4 vehicular trips
  - A.M. Peak Hour: +1 vehicular trip
  - P.M. Peak Hour: +1 vehicular trip
  - Evening Peak Hour: +23 vehicular trips



- Dalvik Avenue:
  - Daily: +2 vehicular trips
  - A.M. Peak Hour: +1 vehicular trip
  - P.M. Peak Hour: +1 vehicular trip
  - Evening Peak Hour: +2 vehicular trips

*Sunday:*

- Marmion Avenue (North):
  - Daily: +20 vehicular trips
  - Peak Hour: +14 vehicular trips
- Marmion Avenue (South):
  - Daily: +15 vehicular trips
  - Peak Hour: +10 vehicular trips
- Lukin Drive:
  - Daily: +15 vehicular trips
  - Peak Hour: +10 vehicular trips
- Connolly Drive:
  - Daily: +15 vehicular trips
  - Peak Hour: +10 vehicular trips
- Hughie Edwards Drive:
  - Daily: +45 vehicular trips
  - Peak Hour: +32 vehicular trips
- Dalvik Avenue:
  - Daily: +5 vehicular trips
  - Peak Hour: +3 vehicular trips

These increases in the weekday daily and a.m./p.m. and evening peak hour and Sunday daily and peak hour volumes will have a minimal impact on existing traffic operations in the area and can be comfortably accommodated within the practical capacities of the respective links on the boundary road network.

These modest increases in daily and a.m./p.m. peak hour volumes will have a negligible impact on existing traffic operations in the area and can be accommodated well within the practical capacity of the boundary road network and will result in acceptable traffic operations on the adjacent road network.

In conclusion, it should be noted that based both on a review of the modelled revised total traffic assessment and observed traffic operations of the boundary road system, the anticipated site-generated traffic associated with the redevelopment proposal is negligible and that no external boundary road improvements will be required.

## **5. VEHICULAR ACCESS AND PARKING**

### **5.1 ON-SITE QUEUING, CIRCULATION AND ACCESS AND CAR PARKING**

The existing operating hours of the hair salon and restaurant are as follows:

- Hair Salon – Tues /Wed 9 a.m. to 4 p.m., Thursday 9 a.m. to 5:30 p.m. and Fri/Sat 9 a.m. to 5 p.m.
- Restaurant – Mon/Wed to Sunday – 4:30 p.m. to 9:30 p.m. (closed on Tuesdays)

The theoretical required car parking supply associated with the overall site is in the order of 18 bays as per the City of Wanneroo's *District Planning Scheme No. 2* is in the order of 53 bays

A review of the coincident maximum demand periods for all uses operating at full capacity on the site indicates the following:

- The place of worship and the hair salon parking demands will only overlap on weekdays between 9 a.m. and 5 p.m. with only office demand for car parking for the subject proposal required to be catered for.
- The place of worship and the restaurant parking demands would only overlap on weekdays between 4:30 p.m. and 5:00 p.m. and on Wednesday evenings from 7 p.m. to 9 p.m.
- Coincident demand for all tenancies on the site would only occur on weekdays between 4:30 p.m. and 5 p.m.
- Observations at the property on a Monday afternoon indicates a maximum peak demand on the site on a typical weekday at 4:30 p.m. of 10 vehicles parked on the site with a surplus of 45 bays.
- Observations at the property on a Tuesday afternoon indicates a maximum peak demand on the site on a typical weekday at 4:30 p.m. of 21 vehicles parked on the site with a surplus of 34 bays.
- Observations at the property on a Sunday morning indicates the maximum peak demand at 10 a.m. of 2 vehicles parked on the site with a surplus of 53 bays. It should be noted that this demand is associated with the mini golf facility which will be replaced by the place of worship. No demands were observed for parking associated with either the hair salon or the restaurant as these tenancies do not operate during this time period.
- It is anticipated that the parking demand on a Wednesday evening would be in the order of 15 to 20 vehicles associated only with the restaurant on the site as the hair salon and existing mini golf tenancies are closed.

The City of Wanneroo's TPS indicates that a requirement of in the order of 53 car parking bays are theoretically required to cater to the place of worship. Based upon a review of the TPS and the existing demands associated with the tenancies on the site, it is anticipated that the car parking demands for a typical weekday between 9 a.m. and 5 p.m. would be in the order of 4 bays, for a typical Wednesday evening would be 15 to 20 bays and 27 bays on a Sunday morning. These demands can be comfortably accommodated within the existing surplus supply on the site based upon the 'worst case' scenario (not taking into consideration the car parking demands associated with the existing mini golf operation). This efficient and effective use of car parking supply on the site is a result of complimentary uses on the site which do not generate their respective cumulative peak parking demands during the same time periods. In addition, the car park adjacent to the site immediately to the west which shares reciprocal access to the boundary road network was observed on a Sunday morning to have only 1 vehicle parked between 10 a.m. and 11 a.m. and there is potential for the Applicant to enter into discussions with the adjacent land owner to access this car parking if required.

A review of the proposed car parking layout was undertaken to assess the adequacy of the proposed site access and circulation in addition to service/delivery areas on the site. The design of the proposed car parking on the site has been reviewed using traffic engineering standards and the relevant Australian Standards and Austroads

guidelines, with the proposed design considered adequate to accommodate on-site manoeuvring and circulation with all vehicles entering and exiting the car parking areas in forward gear from and to the boundary road network.

It can therefore be concluded that the existing car parking supply on the site will adequately cater to coincident peak parking demands across the tenancies on the site with no additional car parking required. This is consistent with the City's TPS and traffic engineering best practice. This approach proposed by Move Consultants has also been endorsed by sitting members with regard to number of applications approved by the State Administrative Tribunal and is considered a reasonable and appropriate cost-effective approach to the provision and management of public car parking infrastructure.

Service, delivery and loading activities will continue to be accommodated within the existing delivery/loading area at the rear of the site and details can be negotiated with the City of Wanneroo.

## **5.2 SIGHTLINE REVIEW AND CRASH HISTORY**

A review of the sightlines along Hughie Edwards Drive and Dalvik Avenue along the northern and eastern boundaries of the site, respectively, in the vicinity of the site crossovers for exiting and entering vehicles has been undertaken and it can be concluded that due to the low-speed environment, the sightlines meet minimum Austroads sightline requirements for MGSD, ASD and SISD.

An updated review of the crash history for the 5-year reporting period 2018-2022 of indicates all crashes recorded for this time period occurred at the intersection of Marmion Avenue/Hughie Edwards Drive with no driveway or midblock crashes along the respective frontages of the site. This indicates that the additional traffic associated with the development will have a negligible impact on the risk profile on the boundary road network and can accommodate pedestrians, cyclists, and public transport users safely to and from the site as well as vehicles parking on and off the site.

## 6. CONCLUSIONS

This Transport Impact and Car Parking Assessment has been prepared by Move Consultants on behalf of the Open Foundation with regard to a proposed Change of Use Application to locate a Place of Worship within the existing Chillisaurus Mini Golf tenancy within the existing commercial development located at 12 Hughie Edwards Drive, Merriwa in the City of Wanneroo. The site is broadly located in close proximity to the Ridgewood, Bulter and Quinns Rocks Activity Centre, east of Marmion Avenue and south of Lukin Drive within the south-west corner of Hughie Edwards Drive and Dalvik Avenue. The subject site houses a large building with four (4) existing tenancies inclusive of a restaurant, café, the subject tenancy (the mini golf tenancy) and a hair salon. This assessment has been prepared following receipt of a request sent to the Applicant in December 2023.

A review of the anticipated amended traffic generation associated with the proposal indicates that the expected traffic which will be generated by the development on a daily basis and during peak weekday a.m., p.m., and evening as well as Sunday daily and peak demand periods can be comfortably accommodated within the practical capacity of the boundary road network with no impacts expected to existing traffic operations.

A review of the proposed car parking layout was undertaken to assess the adequacy of the proposed site access and circulation in addition to service/delivery areas on the site. The design of the proposed car parking on the site has been reviewed using traffic engineering standards and the relevant Australian Standards and Austroads guidelines, with the proposed design considered adequate to accommodate on-site manoeuvring and circulation with all vehicles entering and exiting the car parking areas in forward gear from and to the boundary road network.

Service, delivery and loading activities will continue to be accommodated within the existing delivery/loading area at the rear of the site and details can be negotiated with the City of Wanneroo.

The City of Wanneroo's TPS indicates that a requirement of in the order of 53 car parking bays are theoretically required to cater to the place of worship. Based upon a review of the TPS and the existing demands associated with the tenancies on the site, it is anticipated that the car parking demands for a typical weekday between 9 a.m. and 5 p.m. would be in the order of 4 bays, for a typical Wednesday evening would be 15 to 20 bays and 27 bays on a Sunday morning. These demands can be comfortably accommodated within the existing surplus supply on the site based upon the 'worst case' scenario (not taking into consideration the car parking demands associated with the existing mini golf operation). This efficient and effective use of car parking supply on the site is a result of complimentary uses on the site which do not generate their respective cumulative peak parking demands during the same time periods. In addition, the car park adjacent to the site immediately to the west which shares reciprocal access to the boundary road network was observed on a Sunday morning to have only 1 vehicle parked between 10 a.m. and 11 a.m. and there is potential for the Applicant to enter into discussions with the adjacent land owner to access this car parking if required.



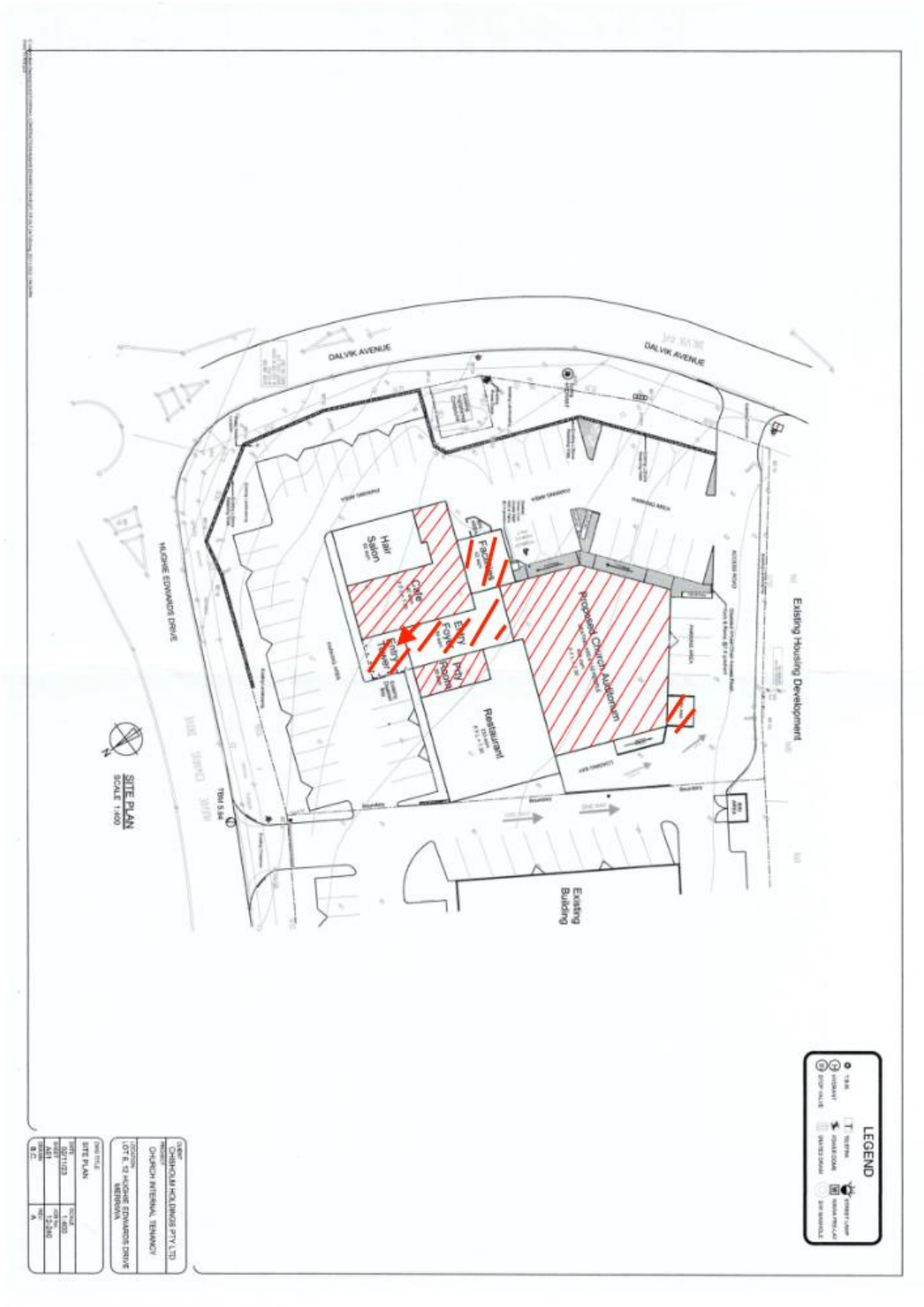
It can therefore be concluded that the existing car parking supply on the site will adequately cater to coincident peak parking demands across the tenancies on the site with no additional car parking required. This is consistent with the City's TPS and traffic engineering best practice. This approach proposed by Move Consultants has also been endorsed by sitting members with regard to number of applications approved by the State Administrative Tribunal and is considered a reasonable and appropriate cost-effective approach to the provision and management of public car parking infrastructure.

In conclusion, it should be noted that based both on a review of the modelled total traffic and observed traffic operations of the boundary road system, the anticipated site-generated traffic associated with the proposed development can be accommodated within the existing practical capacity and functional road classification of the local road system and the existing car parking supply on the site can adequately cater to the proposal's car parking demands with the proposed Change of Use application wholly justified based upon endorsed traffic engineering principles.

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# APPENDIX A: SITE PLAN

**PLAN OF LEASED PREMISES**



Landlord initial here

Tenant initial here