



11 August 2026

Our Ref: 25GCA0160 R01_3

Your Ref:

Attention: Samantha Richards

McDonald Jones Homes

Via email: srichards@mjhgroup.net.au

Dear Samantha,

RE: 652 Hume Highway, Yagoona – Acoustic Design Report

This report outlines the road traffic noise attenuation requirements for the proposed dwelling at 652 Hume Highway, Yagoona to comply with the indoor noise criteria outlined in *Development near Rail Corridors and Busy Roads – Interim Guideline*.

The assessment is based on the following information:

- a. Item 5 of the Canterbury-Bankstown Council information request.
- b. State Environmental Planning Policy (Transport and Infrastructure 2021).
- c. NSW Department of Planning *Development near Rail Corridors and Busy Roads – Interim Guideline*.
- d. Australian Standard *AS3671:1989 Acoustics – Road Traffic Noise Intrusion – Building Siting and Construction* (AS3671).
- e. Noise monitoring, modelling and calculations performed by Colliers.
- f. Proposed building plans by *McDonald Jones Homes* (shown in Appendix A).

1. Internal Assessment Criteria

Internal noise levels of the dwelling are to achieve those specified in *Development near Rail Corridors and Busy Roads – Interim Guideline*. Internal noise levels specified in the Guideline are expressed as L_{Aeq} levels and are reproduced in Table 1 below.

Table 1: Internal Noise Limits from *Development near Rail Corridors and Busy Roads – Interim Guideline*

Type of Occupancy	Residential Buildings	
	Design Sound Level, dB(A)	Applicable time period
Sleeping areas (bedroom)	35	Night 10pm to 7am
Other habitable rooms (excluding bathrooms)	40	At any time

2. Measured Noise Levels

Unattended noise monitoring of the Hume Highway was conducted onsite between Thursday 29th January and Thursday 5th February 2026 using an ARL EL316 noise monitor. The noise monitor was calibrated before and after use with no significant drift from the reference signal.

The noise monitor was positioned on the southern property boundary, approximately 6m from the nearest lane of the Hume Highway. The microphone was in a free-field position and approximately 1.5m above ground level. Weather conditions during the noise monitoring period were generally fine and suitable for noise measurement.

Table 2 presents the measured road traffic noise levels at the unattended monitoring location.

Table 2: Measured Road Traffic Noise Levels

Day and Date	Road Traffic Noise Descriptor	Time Period	Measured Level, dB(A)	Correction offset $L_{A10, 18hr}$ to $L_{Aeq, 1hr}$
Weekday measurement average from Monday 2 nd to Wednesday 4 th February 2026 inclusive	$L_{A10, 18hr}$	6am to midnight	75.9	-
	Noisiest day time $L_{Aeq, 1hr}$	8am to 9am	76.5	+0.6
	Noisiest night time $L_{Aeq, 1hr}$	5am to 6am	74.2	-1.7

3. Predicted Noise Levels

Noise modelling was conducted using SoundPLAN to verify the measured noise levels and predict future road traffic noise levels at facades of the proposed dwelling. Table 3 presents the predicted road traffic levels at habitable rooms of the dwelling.

Table 3: Predicted Road Traffic Noise Levels

Facade	Floor	Rooms	Predicted Noise Level, dB(A)		
			LA10 (18 hour)	LAeq (1 hour) Day	LAeq (1 hour) Night
N	GF	Kitchen / Dining	51	52	49
		Family / Living (alfresco area)	55	56	53
	1F	Bedroom 3, Bedroom 4	56	57	54
E	GF	Kitchen	59	60	57
	1F	Bedroom 1, Bedroom 4	63	64	61
S	GF	Entry, Lounge	74	75	72
		Guest Bedroom	75	76	73
	1F	Bedroom 1	76	77	74
		Children's Activities	78	79	76
W	GF	Family / Living	67	68	65
	1F	Stairwell, Bedroom 2, Bedroom 3	70	71	68

Based on the noise impact level, calculations were conducted in accordance with AS3671 to achieve the indoor sound levels prescribed in the *Development near Rail Corridors and Busy Roads – Interim Guideline*. The $L_{Aeq}(1 \text{ hour})$ noise level corrections used for the calculation of building treatments were taken from the results of the onsite noise monitoring.

4. Recommendations

Building treatments were determined by using the calculation methods detailed in Australian Standard AS3671:1989 *Acoustics – Road Traffic Noise Intrusion – Building Siting and Construction*. Based on the architectural drawings, the recommended construction details are listed below.

4.1 Glazing Treatments

Table 4 presents the recommended glazing R_w performance specifications for the dwelling, based on the following:

- The R_w rating relates to the full glazing system including the frame, seals and the glass. Where acoustic seals are necessary, glazing will require a Q-Lon seal or equivalent product.
- Alternative glazing may be used provided the specified R_w rating can be achieved and certified by the window manufacturer with a NATA report (on request). Generic reports should not be accepted.
- Depending on the type of window system, the framing can significantly reduce the performance. This should be investigated with the glazing supplier thoroughly (referring to NATA certified test report data) to ensure the minimum R_w is being achieved.
- It is imperative that the minimum R_w rating is achieved and that the presented glazing thickness is used as a guide only. If the glazing thickness does not comply with the R_w rating, thicker glass should be considered until the R_w rating is achieved.

Table 4: Recommended Glazing Treatments

Room	Component	Indicative Glazing Thickness	Acoustic seals	Min R_w
Kitchen / Dining / Family	Sliding Doors	5mm toughened	Yes	28
	Windows N & E	4mm float	No	24
	Windows W	6.38mm laminate	Yes	31
Lounge	Windows	11.52mm laminate	Yes	37
Guest Bedroom	Windows	11.52mm laminate	Yes	37
Bedroom 1	Windows	11.52mm laminate	Yes	37
Bedroom 2	Windows	10.38mm laminate	Yes	34
Bedroom 3	Windows	10.38mm laminate	Yes	34
Bedroom 4	Windows	4mm float	No	24
Children's Activities	Sliding Doors	11.52mm laminate	Yes	37
	Windows	11.52mm laminate	Yes	37

Note 1: The glazing treatments specified above are based on hard flooring throughout the whole house. A change to carpeted floors in living or bedrooms has the potential to reduce the glazing requirement slightly.

Note 2: Glazing calculations for Bedroom 1 (Master Suite) are based on a reduction of glazing size to 2x 1509 windows as advised by McDonald Jones Homes. The plans in Appendix A indicate the previous glazing sizes.

Note 3: Glazing calculations for Children's Activities are based on a reduction of glazing size to 1x 2115 sliding door, and 1x 0609 side window as advised by McDonald Jones Homes. The plans in Appendix A indicate the previous glazing sizes.

All remaining glazing not stated above should be installed with a minimum of 4mm float (R_{w24}) for windows and 5mm toughened (R_{w25}) for sliding doors.

It is recommended that a glazing certificate be obtained from the glazier demonstrating that the installed glazing meets the minimum weighted sound reduction index (R_w) requirements. The certificate should be retained for certification of the completed dwelling.

4.2 Wall Construction

Rendered brick external walls must achieve a minimum R_{w55} acoustic rating. Table 5 below details a system that is predicted to meet the required acoustic rating.

Table 5: Recommended External Wall Constructions

Rooms	Indicative Wall Construction	Cavity Insulation	Minimum R_w
All habitable rooms	• Fire rated masonry veneer wall, • Minimum 40mm gap to timber framing, • Wall wrap, • 70mm or 90mm timber studs, • Cavity insulation as specified, • 10mm plasterboard internally.	Minimum 75mm thick R2.0 insulation	55

Based on CSR 5877. Other construction may be used provided it achieves the required R_w rating.

Internal wall insulation is not required but is recommended between the rooms outlined below to improve privacy and amenity for occupants.

- Children's Activities and Bedroom 1.

4.3 External Penetrations

Penetrations through the walls/ceiling system to the outside shall be kept to a minimum to ensure the acoustic integrity of the system is maximised. Where penetrations must be made, they must be no larger than 10-15mm greater than the object passing through the wall. The gap shall be filled with Bostik Fireban 1 or equivalent product.

Large diameter services penetrations (greater than 15mm around the penetrating object) will require further detailed design to ensure the acoustic integrity of the wall system is not diminished. As a guide, using the plasterboard materials close the gap to a maximum 10-15mm and generously fill the residual gap with a non-hardening fire-rated mastic.

All remaining penetrations with a gap of maximum 10-15mm around the penetrating object must be generously filled with a non-hardening fire-rated mastic.

Penetrations through noise affected walls may require specific design to provide adequate attenuation for internal compliance and should be reviewed by the acoustic consultant before final approval.

4.4 Roof/Ceiling Construction

Table 6 below details the minimum roof/ceiling construction that is predicted to meet the required acoustic rating.

Table 6: Recommended Roof/Ceiling Construction

Rooms	Indicative Roof/Ceiling Construction	Cavity Insulation	Minimum R_w
Bedroom 1, Children's Activities	- Pitched tiled roof with sarking under battens, - Cavity insulation as specified, 1 x 13mm <u>sound-rated</u> plasterboard internally.	Minimum R4.1 insulation batts	49
Bedroom 2, Bedroom 3, Bedroom 4	- Pitched tiled roof with sarking under battens, - Cavity insulation as specified, 1 x 13mm <u>standard</u> plasterboard internally.	Minimum R4.1 insulation batts	44

Other construction may be used provided it achieves the required R_w rating.

4.5 Entry Door

The front entry door is required to achieve a minimum R_w 31. We recommend consultation with a suitable manufacturer to determine a door system that can achieve the required rating. Alternatively, AS3671 recommends a solid-core 42mm thick plywood door, soft plastics gasket around sides and top, and drop seal at the base. Glass planes should also achieve a minimum R_w 31.

4.6 Alternative Ventilation

Section 3.6.1 of *Development near Rail Corridors and Busy Roads – Interim Guideline* states that:

“If internal noise levels with windows or doors open exceed the criteria by more than 10dBA, the design of the ventilation for these rooms should be such that occupants can leave windows closed, if they so desire, and also to meet the ventilation requirements of the Building Code of Australia.”

Based on the above, the external noise criteria can be derived to equal the internal noise criteria + 20dB (10dB allowance + nominal 10dB reduction through an open window). Therefore, it is recommended that alternative ventilation is provided to:

- All habitable rooms, except for Living/Dining/Kitchen and Bedroom 4

Suitable forms of ventilation include air-conditioning, borrowed ventilation in accordance with the BCA, Silence Air or Aeropac noise ventilators. The plant should not reduce the acoustic performance of the building or cause intrusive noise at neighbouring properties.

5. Conclusion

The proposed dwelling at 652 Hume Highway, Yagoona was designed in accordance with AS3671 to comply with the indoor sound levels stated in Section 1. Based on the inclusion of the recommendations in this report, the dwelling is predicted to comply with the relevant noise requirements.

Note that this assessment does not imply that road traffic noise will be inaudible within a living or sleeping area.

We trust this information meets with your current requirements. Should you have any queries please do not hesitate to contact Colliers.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Jm Fox".

Jason Fox

Principal Consultant

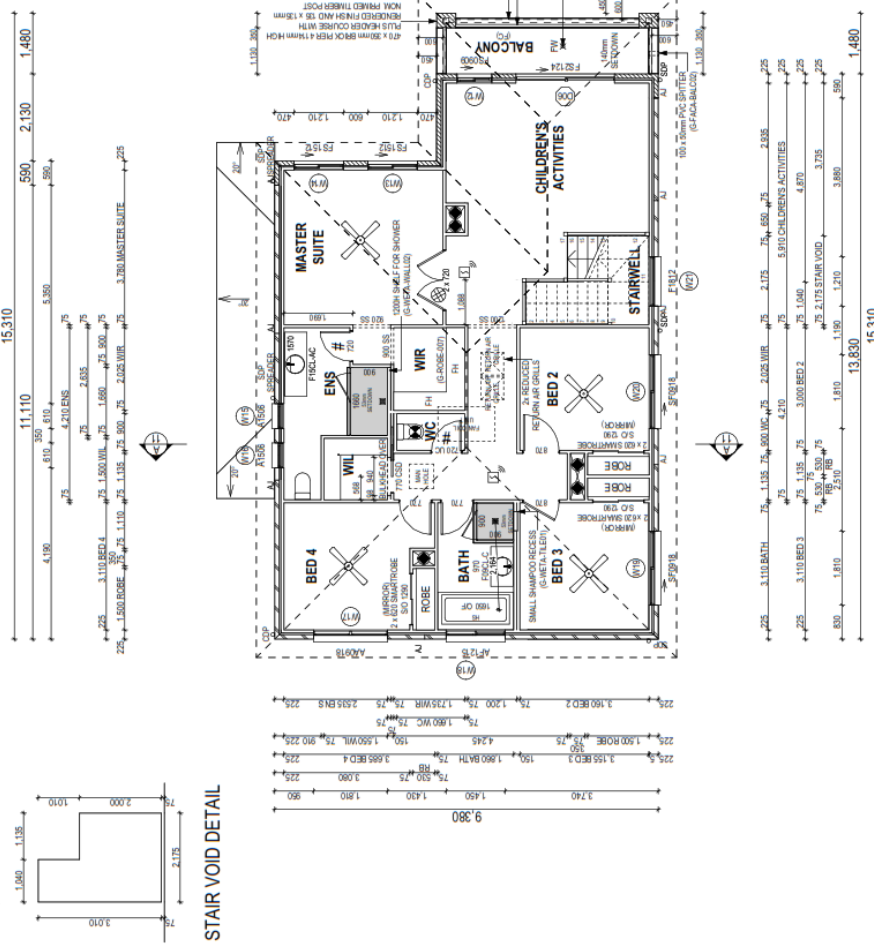
Colliers International Engineering & Design (TTMC) Pty Ltd

6. Appendix A – Architectural Plans

SKETCH PLAN FOR PRICING ONLY

PROVIDE AND INSTALL SINGLE PHASE REVERSE CYCLE AIR CONDITIONING SYSTEM, NUMBER AND POSITIONING OF SPLIT SYSTEMS TO BE DETERMINED BY THE AIR CONDITIONING CONTRACTOR AND IS SUBJECT TO THE LOADS AND ANY OTHER CONSTRUCTION CONSTRAINTS. PROVIDE AND INSTALL SINGLE PHASE REVERSE CYCLE AIR CONDITIONING SYSTEM, NUMBER AND POSITIONING OF SPLIT SYSTEMS TO BE DETERMINED BY THE AIR CONDITIONING CONTRACTOR AND IS SUBJECT TO THE LOADS AND ANY OTHER CONSTRUCTION CONSTRAINTS. PROVIDE AND INSTALL SINGLE PHASE REVERSE CYCLE AIR CONDITIONING SYSTEM, NUMBER AND POSITIONING OF SPLIT SYSTEMS TO BE DETERMINED BY THE AIR CONDITIONING CONTRACTOR AND IS SUBJECT TO THE LOADS AND ANY OTHER CONSTRUCTION CONSTRAINTS.

Note: Glazing sizes for the Master Suite and Children's Activities have reduced. Detail is provided in Section 4.1.



SUBJECT TO NCC 2022 (1 OCT 2023 + 7 STAR BASIS)
WATERPROOFING & PLUMBING
CONDENSATION MANAGEMENT
ENERGY EFFICIENT

PLAN ACCEPTANCE BY OWNER
SIGNATURE: _____ DATE: _____
SIGNATURE: _____ DATE: _____

PLEASE NOTE THAT VARIATIONS WILL NOT BE ACCEPTED AFTER THIS PLAN ACCEPTANCE HAS BEEN SIGNED

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REFER TO SHEET 1 (COVER SHEET) FOR ALL BUILDING INFORMATION REGARDING:
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- GENERAL BUILDING INFORMATION
- ALL MECHANICAL VENTILATION TO BE PROVIDED BY THE AIR CONDITIONING CONTRACTOR AND IS SUBJECT TO THE LOADS AND ANY OTHER CONSTRUCTION CONSTRAINTS.
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LEGEND

HS 1/8"	HSB SPOT WALL SPOT
CMU	COMMON BRICK
HEB	HEBEL
SI	SOUND INSULATION
BJ	BRICK ARTICULATION JOINT
SP	STANDARD DOWNPIPE
CP	CHARGED DOWNPIPE
EF	EXHAUST FAN
EV	EXHAUST VENT
LBW	LOAD BEARING WALL
TD	THIS DOOR OPENS FIRST
IC	INTERCONNECTED
SA	SMOKE ALARM
W	WATER POINT
WP	WATER POINT
GA	GAS BAYNET

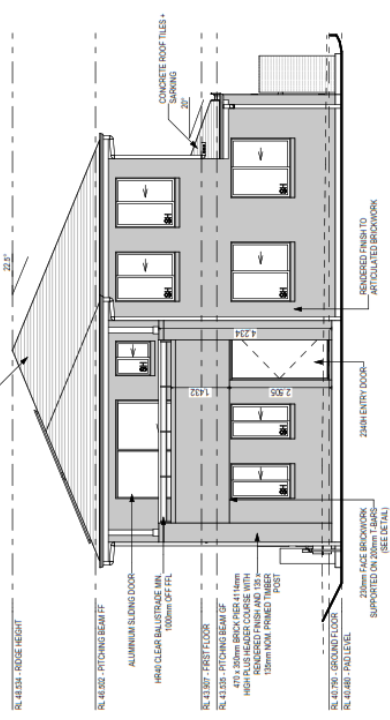
 McDonald Jones FIND YOURSELF AT HOME	REVISION 5 HATCHED AS PER PCV02 6 COLOURS APPLIED 7 HATCHED AS PER PCV08 - GRANNY FLAT REMOVED 8 PCV010 APPLIED (HYDRAULIC STAMP) 9 SKETCH FOR WINDOWS ADJUSTMENTS	DRAWN (682) 20/06/2025 LUE 20/06/2025 LUE 11/10/2025 JAC 19/10/2025 PMS 19/06/2025	CHECKED MS YEN THI KIM TRAN ADDRESS 652 HUME HIGHWAY, YAGOONA NSW 2169 LOT / SECTION DP [D] - 1/400267	HOUSE CODE H-MNWL R020DA FLOOR CODE F-LR01BTR01 SHEET NO. 8 / 24 SCALE 1:100	PROJECT NO. 607503
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SKETCH PLAN FOR PRICING ONLY

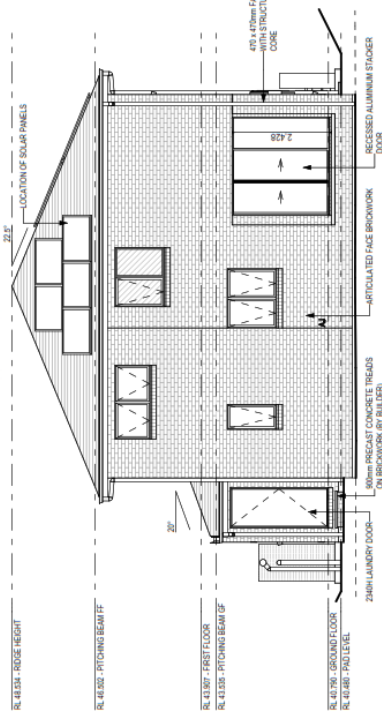
REFER TO SHEET COVER SHEET FOR ALL BUILDING INFORMATION REGARDING THE PROJECT AND REQUIREMENTS - SITE CLASSIFICATION - GENERAL BUILDING INFORMATION - SOME DETAILS ON THIS SHEET ARE INDICATED FOR PRICING ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION. ANY CHANGES TO THE DESIGN, MATERIALS, FINISHES, JOINTS, ORIENTATION AND LAYOUT AND ARE SUBJECT TO CHANGE.

BY: SMP-HEADER SLL

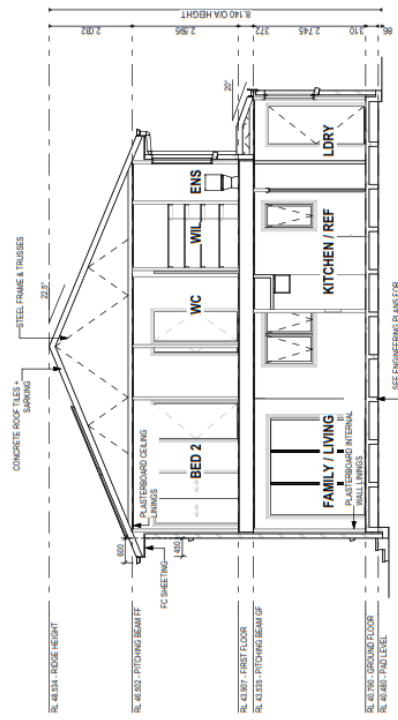
FIRST FLOOR WINDOW OPENINGS TO BE RESTRICTED AS REQUIRED BY NOV 2022



FRONT ELEVATION (SOUTH)
SCALE: 1:100



REAR ELEVATION (NORTH)
SCALE: 1:100



SECTION A-A
SCALE: 1:100

SUBJECT TO NCC 2022
(1 OCT 2023 + 7 STAR BASIS)
WATERPROOFING & PLUMBING
CONDENSATION MANAGEMENT
ENERGY EFFICIENCY

PLAN ACCEPTANCE BY OWNER

SIGNATURE: _____ DATE: _____

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WINDOW TYPE LEGEND

AWNING DOUBLE FIXED LOUVER SLIDING

GLASS TYPE LEGEND

CLEAR OBSCURE

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REVISION	DATE	BY	DESCRIPTION
1	20/08/2021	MS YEN THI KIM TRAN	REVISION
2	20/08/2021	MS YEN THI KIM TRAN	REVISION
3	11/10/2021	MS YEN THI KIM TRAN	REVISION
4	11/10/2021	MS YEN THI KIM TRAN	REVISION
5	11/10/2021	MS YEN THI KIM TRAN	REVISION
6	11/10/2021	MS YEN THI KIM TRAN	REVISION
7	11/10/2021	MS YEN THI KIM TRAN	REVISION
8	11/10/2021	MS YEN THI KIM TRAN	REVISION
9	11/10/2021	MS YEN THI KIM TRAN	REVISION
10	11/10/2021	MS YEN THI KIM TRAN	REVISION

PROJECT NO.	607503
PROJECT NAME	602 HUME HIGHWAY, YAGOONA NSW 2199
CLIENT	CANTERBURY BANKSTOWN
SECTION	ELEVATIONS / SECTION
SHEET NO.	11/24
SCALE	1:100
HOUSE CODE	H-MNWL-R020DA
HOUSE CODE	F-LRWBTR01
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