

DEVELOPMENT APPLICATION DA17/0663

THE MILL HOTEL AND COMMERCIAL PRECINCT - ACOUSTIC ASSESSMENT (25/01/2018)

Reference Documents

Referenced documents are appended to this Acoustic Assessment in the following order.

Approval	Report Date	Acoustic Logic Report Title
DA17/0496	29/09/2017	The Mill, Wagga Wagga – Lone Star – Plant Noise Advice - Noise assessment and building design recommendations, included in DA17/0496
DA11/0568.07	28/07/2016	The Mill, Wagga Wagga – Compliance Testing – Buildings 1, 2 & 3. - Statement of Compliance included in the Mill Residence Occupation Certificate.
DA11/0568.07	15/06/2016	The Mill, Wagga Wagga – Compliance Testing – Buildings 1, 2 & 3. - Test Report included in the Mill Residence Occupation Certificate.
DA11/0568.04	7/03/2013	The Mill Wagga Wagga – Buildings 4 & 5 – Mechanical Assessment -
DA11/0568.04	19/02/2013	The Mill Wagga Wagga – s96(2) Acoustic Assessment - Referenced in DA11/0568.09 and Conditions of Consent
DA11/0568.xx	12/09/2012	The Mill Wagga Wagga – Apartments Acoustic Specification for Construction
DA11/0568.xx	13/07/2012	The Mill Wagga Wagga – Acoustic Details for Architectural Design
DA11/0568.xx	21/12/2011	The Mill Wagga Wagga – Acoustic Specification – Mechanical

The Acoustic Logic Assessment Report dated 19/02/2013 (referenced in Consent DA11/0568.09) presents the noise impact assessment of the mixed-use development, known as The Mill, Wagga Wagga.

Consent DA11/0568.09 is for a mixed-use development on the entire 25,000m² site including 98 residential apartments, 1,170m² retail colonnade, commercial development of the existing Mill building and associated land, including loading dock and carparking.

The main changes between the Consent DA11/0568.09 and the current Application DA17/0663 is the deletion of the supermarket and replacement with a new hotel building and function centre, new commercial building and adaptive re-use of the Murrumbidgee Mill as part of the Hotel. Other changes relate to rationalisation of the levels over the site, and reconfiguration of carparking and circulation to facilitate those changes.

The acoustic survey of the site remains current and confirms the site is impacted by the following noise sources:

- Rail noise from the adjacent Sydney to Melbourne rail corridor;
- Road traffic noise from Edward Street (the Sturt Highway).

In the report, Acoustic Logic recommended upgraded glazing to mitigate internal noise levels for compliance with the following:

- SEPP Infrastructure (2007) for Rail Noise and Vibration;
- Australian Standard 2107:2000

Acoustic Logic also determined that no attenuation treatment is necessary to mitigate rail vibration impacts on the site.

Potential noise impacts from the site to the surrounding receivers include the following:

- Vehicles using the car parks at grade
- Trucks using the Loading Docks;
- Peak noise events from use of the site during the night time (sleep disturbance);
- Mechanical plant and equipment; and
- Noise from traffic generated by the development.

The peak night-time noise events, occurring due to commercial businesses operating on the site, are likely to be associated with customers leaving the various restaurants and function centre attendees returning to their cars, taxis or walking in groups.

The existing and approved restaurants and bars are each subject to a “Venue Management Plan”, developed in cooperation with the Licencing Sergeant, which set out the restaurant management responsibilities and controls to minimise development of late-night noise events and impacts on the nearby residents.

Each of these sources has been assessed and the Acoustic Logic Report recommends treatments and/or management controls for compliance with the following:

- Wagga Wagga City Council development controls;
- SEPP Infrastructure (2007) for Rail Noise and Vibration;
- Department of Environment Climate Change and Water *Industrial Noise Policy*; and
- Department of Environment Climate Change and Water *Environmental Criteria for Road Traffic Noise*.

The Hotel and Commercial Building mechanical plant and equipment will need to be assessed at the CC stage and acoustic compliance certified by the respective mechanical designers. Compliance with the project acoustic criteria is practical and achievable using acoustic treatments detailed in the accompanying documents.

The success of the treatments recommended in the Acoustic Logic report and the Architectural and Mechanical Acoustic Specifications is evidenced by the Acoustic Logic Compliance Testing – Buildings 1, 2 & 3 (15/06/2016), undertaken for the Interim Occupation Certificates (SP#1 and SP#2). Further

design information was provided for the mechanical plantrooms serving the Grainstore tenancy – Lone Star Rib House DA17/0496. This acoustic design is currently being implemented.

Due to the depth of existing acoustic information and acoustic design guidelines specific to the overall development, Interlink Wagga Central Pty Ltd did not commission another Acoustic Assessment Report for the Hotel DA17/0663 submission.

Please refer to the Acoustic Performance Requirements, acoustic details for architectural design and acoustic specification for mechanical plant proposed for the Hotel. It is proposed that the acoustic design performance is assessed and signed off as a component of the Construction Certificate.

The Mill Hotel Acoustic Performance

The Mill Hotel is designed to achieve 4.5* standard.

The hotel rooms will be designed for acoustic performance similar to the residential apartments. The design will utilise the acoustic detailing demonstrated to achieve the required acoustic outcomes, as evidenced by the acoustic testing undertaken in the residential apartments.

Extract from Acoustic Logic - Acoustic Specification

WALLS

Minimum R_w Requirements

Table 1 – Wall Ratings

Wall Type	Minimum Rating
All Hotel Room Walls to other Hotel Rooms	$R_w + C_{tr} 50 / D_{ntw} + C_{tr} 45$
All Hotel Room Walls to Common Areas	$R_w 50 / D_{ntw} 45$
Services Ducts/Risers Facing Wet Areas, Risers in common areas and commercial spaces	$R_w + C_{tr} 25^*$
Within Hotel Rooms - Services Ducts/Risers Not Facing Wet Areas	$R_w + C_{tr} 40^*$

FLOORS

Minimum STC/ R_w Requirements

Table 2 – Airborne Floor Ratings

Floor Type	Minimum Rating
Under Hotel Habitable Rooms to other habitable room , common area or non-residential (except plant rooms)	$R_w + C_{tr} 50$
Under Hotel Room Kitchens to another Hotel Room (if any)	$R_w + C_{tr} 50$
Under Wet Areas to wet area in another Hotel Room	$R_w + C_{tr} 50$
Under Habitable Rooms to Wet Areas/Kitchens in another Habitable Room	$R_w + C_{tr} 50$

Table 3 – Minimum Impact Sound Requirements

Floor Type	$L'_{nw} / L_{nw} + C_1 / IIC^*$
Floor of one Hotel Room (including balconies and terraces) or common area to living area of another Hotel Room	<62 / 55
Floor of one Hotel Room (including balconies and terraces) or common area to bedroom of another Hotel Room	<62 / 55
Floor of bathroom or laundry or balconies and terraces of one Hotel Room or common area to bathroom or laundry of another Hotel Room	<62 / -

DOORS

Table 4 – Minimum Door Requirement

Door	Minimum Requirement
Hotel Room Entry Door Opening to Common Areas	$R_w 30 / D_{ntw} 25$ – 40mm thick solid core door with acoustic seals (Raven RP 10 or Lorient Batwing) to top and sides). Gap at bottom no more than 7mm.

ACOUSTIC DESIGN DETAILS: Refer Appendix: Acoustic Logic – “Acoustic Details” 13/07/2012

Table 5 – Typical Acoustic Details

AC 001	Sectional elevation showing floor finishes – Typical carpet floor
AC 002a	Sectional elevation showing floor finishes – Tile Floor (inside) on Vibramat
AC 002b	Sectional elevation showing floor finishes – Wet Area Engineered Timber Floor above Habitable Area
AC 002c	Sectional elevation showing floor finishes – Wet Area Timber Floor above Habitable Area
AC 002d	Sectional elevation showing floor finishes – Tile floor in wet area above wet area
AC 002e	Sectional elevation showing floor finishes – Timber decking on pads
AC002f	Sectional elevation showing floor finishes – Gym Floor
AC 003a	Sectional elevation showing typical intertenancy and corridor wall
AC 003b	Plan view intertenancy wall with column wet to wet
AC 003c	Plan View Intertenancy wall with column wet to habitable
AC 004a	Sectional elevation stairwell wall to apartment
AC 004b	Sectional elevation – lift shaft to apartment
AC 004c	Sectional elevation – Apartment to Plant room
AC 005	Waste pipe treatment in ceiling above wet areas – pipes wrapped
AC 006b	Sectional elevation of wall/ ceiling requirements for wet area perimeter wall – pipes wrapped
AC 007	Waste pipe treatment in ceiling above habitable areas
AC 008	Flex Duct Penetration detail through wet area perimeter wall
AC 009	Riser treatment for bathrooms and laundries
AC 010	Riser treatment outside of wet areas
AC 011a	Intertenancy Wall Façade Junction Detail
AC 011b	Intertenancy wall roof junction detail
AC 011c	Intertenancy façade junction detail
AC 012	Pipe Sealing Detail
AC 013a	Duct Sealing Detail - 1
AC 013b	Duct Sealing Detail – 2

MECHANICAL SERVICES - NOISE AND VIBRATION

Table 9 - Noise Criteria for Residential Areas

SPACE/ACTIVITY TYPE	NOISE LEVEL dB(A)
Bedrooms/Sleeping areas	35 from Hotel Room a/c unit on design speed 25 from all other plant other than Hotel Room a/c unit
Living, Dining Room and other habitable rooms	45 from Hotel Room a/c unit on design speed 35 from all other plant other than Hotel Room a/c unit
Kitchens	45
Bathrooms/ Laundry	45

Table 10 - Noise Criteria for Common and Non-Residential Areas

SPACE/ACTIVITY TYPE	NOISE LEVEL dB(A)
Carpark	65
Lift Lobbies and Corridors, Gym	45
Basement and Garbage Rooms	65

Noise during a Fire Emergency

Noise from all plant during a fire emergency shall comply with the requirements of AS 1668. AS 1668 requires that noise levels during a fire emergency not exceed 80 dB(A) within fire isolated passageways or 65 dB(A) within occupied spaces. Noise levels inside the fire control room shall not exceed 65dB(A) during a fire emergency.

External Noise Levels

Noise levels emitted by the mechanical plant (except fire emergency plant) at all property boundaries and nearby buildings on adjacent properties are not to exceed the following whichever is more stringent.

Noise emissions from mechanical plant and equipment are to comply with the DECCW Industrial Noise Policy. In accordance with the policy, the following criteria apply at residential receivers:

Table 8 - Intrusiveness Criterion at Residential

Receivers Location	Time of Day	Measured Rating Background Noise Level dB(A) L ₉₀	Intrusiveness Criterion dB(A) L _{eq} (15 min)
Residential Receivers to the North	Day	50	55
	Evening	46	51
	Night	37	42
Residential Receivers to the South	Day	42	47
	Evening	41	46

	Night	36	41
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Table 9 - DECC/EPA Recommended Acceptable Noise Levels –

Residential Receivers - Time of day	Acceptable Noise Level - based on Suburban Criterion dB(A)
Day (7am to 6pm)	55
Evening (6pm to 10pm)	45
Night (10pm to 7am)	40

Table 10 - Acceptable Noise Levels at Non-Residential Receivers

Land Use	Time of Day	Amenity Objective dB(A) Leq
Industrial	When in use	75
Commercial	When in use	70
Active Recreation	When in use	55

In addition to the above noise emission criteria, air conditioning or heat pump plant must not emit noise that can be heard within a habitable room in any other residential premises (regardless of whether any door or window to that room is open):

- a) before 8 am or after 10 pm on any Saturday, Sunday or public holiday, or
- b) before 7 am or after 10 pm on any other day.

Acoustic Specification – Mechanical

Refer to Acoustic Logic: “Acoustic Specification – Mechanical” for full detailing of the design and testing criteria.

Hotel Procurement Method

Form of Contract: General Conditions for Design and Construction (AS 4300) AS 4300-1995.

The project procurement method chosen by the principal is *Design Development and Construction*.

The tender will include ‘*Principal’s Project Requirements*’ and ‘*Preliminary Design*’.

The successful Contractor will develop the design in conjunction with the Principal’s Project Manager and prepare the “Construction Certificate” and “For Construction” documentation.

This DD&C tender and contract documents include the ‘*Principal’s Project Requirements*’ and ‘*Preliminary Design*’.

When approved, the Hotel and Commercial Precinct Consent DA17/0663 documentation provides the following elements of the **Preliminary Design and Conditions**:

- Development Consent and Conditions
- Lines of subdivision
- Architectural scheme design
- Civil works – stormwater and roadworks scheme design
- Schedule of finishes – external
- Traffic management and carparking requirements
- Heritage conservation requirements
- Landscaping scheme design
- Acoustic brief

Following Development Consent, Interlink Group and its' consultants will prepare the **Principal's Project Requirements** for the tender:

- Project Manager (Interlink Group)
- Quantity Surveyor, to prepare the pre-tender estimate and tender pricing schedules
- Architect
- Multi-discipline Engineering firm

By Project Manager and QS, working with the Hotel Operator:

- Cost Plan and Pricing Schedule
- Principal's requirements for Project Control including:
- Principal's program for commencement of trading
- Hotel Operator's Brand Standards and Technical Briefs, including FF&E

By Architect:

- Architectural Specification, including full schedule of PC Items, Appliances, Materials and Finishes, specific Building Code and Australian Standards requirements (including accessibility and Section J)
- Acoustic Performance Brief

By Multi-Disciplinary Engineering Firm:

- Civil and Structural Performance Specification
- Mechanical Performance Specification
- Power and Lighting Performance Specification
- Communications Performance Specification
- Dry Fire Performance Specification
- Security and Access Control Performance Specification
- Hydraulic and Wet Fire Performance Specification
- Vertical Transportation Performance Specification
- Building Operation and Maintenance Manual Specification

At the time of submitting the Construction Certificate documentation, the Contractor must demonstrate that the design complies with the Acoustic Performance Brief.