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ATTN: SIMON FOX

201 Elizabeth Street, Sydney - Stage 1 Development Application - Indicative Acoustic Review

1 INTRODUCTION

This letter has been prepared to provide a high-level review of noise sources potentially impacting the proposed residential and hotel development to be located at 201 Elizabeth Street, Sydney in addition to identifying noise sources associated with the operation of the proposed site.

It is noted that this letter provides an indicative review of both noise intrusion and noise emissions as this is a Stage 1 Development Application. Further assessments and detailed site noise monitoring will be conducted as part of the Stage 2 Development Application.

2 SITE DESCRIPTION

The site is located at 201 Elizabeth Street, Sydney and is currently a commercial office tower. It is proposed to construct a 52 storey residential tower with a hotel between ground and level 12. It is proposed to have retail tenancies at ground level and lower ground level.

The nearest potentially affected receivers of noise from the site are the commercial properties to the north and immediately south of the site. To the west of the site, across Castlereagh Street is a potentially affected residential receiver at 199 Castlereagh Street, Sydney.

The site is affected by traffic noise from Elizabeth Street, Park Street and Castlereagh Street.

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3 NOISE INTRUSION

Noise intrusion (traffic noise) to the site will be required to comply with the City of Sydney DCP and the State Environmental Planning Policy (Infrastructure SEPP) 2007.

3.1 NOISE INTRUSION CRITERIA

3.1.1 City of Sydney Council DCP 2012

Section 4.2 of the Sydney DCP 2012 relates to objectives and provisions for residential flat developments. Part 4.2.3.11 of this section outlines acoustic controls for new developments affected by traffic noise:

(7) The repeatable maximum $L_{Aeq(1hour)}$ for residential buildings and serviced apartments must not exceed the following levels:

(a) for closed windows and doors:

- i) 35dB for bedrooms (10pm-7am); and*
- ii) 45dB for main living areas (24 hours).*

(b) for open windows and doors:

- i) 45dB for bedrooms (10pm-7am); and*
- ii) 55dB for main living areas (24 hours).*

*Where natural ventilation of a room cannot be achieved, the repeatable **maximum LAeq (1hour)** level in a dwelling when doors and windows are shut and air conditioning is operating must not exceed:*

- (a) 38dB for bedrooms (10pm-7am); and*
- (b) 48dB for main living areas (24 hours).*

3.1.2 State Environmental Planning Policy (SEPP Infrastructure) 2007

Although not directly referred to in the City of Sydney Council DCP (2012) the road traffic noise criteria, as specified in the State Environmental Planning Policy (SEPP Infrastructure) 2007, additionally applies to this site.

Clause 102 of the SEPP states:

“This clause applies to development for any of the following purposes that is on land in or adjacent to the road corridor for a freeway, a tollway or a transit way or any other road with an annual average daily traffic volume of more than 40,000 vehicles (based on the traffic volume data published on the website of the RTA) and that the consent authority considers is likely to be adversely affected by road noise or vibration:

- (a) a building for residential use,*

If the development is for the purposes of a building for residential use, the consent authority must not grant consent to the development unless it is satisfied that appropriate measures will be taken to ensure that the following L_{Aeq} levels are not exceeded:

(a) in any bedroom in the building – 35 dB(A) at any time between 10 pm and 7am,

(b) anywhere else in the building (other than a garage, kitchen, bathroom or hallway) – 40 dB(A) at any time.”

3.2 INDICATIVE ASSESSMENT / RECOMMENDATIONS

The proposed development is a concrete framed building with glazed façade elements for living rooms and bedrooms. The internal noise goals of the SEPP Infrastructure and the City of Sydney Council can be satisfied with the implementation of heavy weight single glazing. All external walls are proposed to be heavy masonry elements that will not require upgrading to satisfy noise intrusion goals.

The development is fully capable of complying with the noise intrusion requirements of the City of Sydney and the State Environmental Planning Policy.

Detailed assessment of noise intrusion should be conducted at Stage 2 DA stage to determine window thicknesses and Sound Transmission Class (STC) requirements for glazing. A final review should be conducted at CC Stage based on finalised plans with window sizes, etc.

4 NOISE EMISSIONS

Mechanical plant and noise from cafés or restaurants occupying retail spaces have been identified as potential noise sources associated with the development.

4.1 NOISE EMISSION CRITERIA

Acoustic criteria typically adopted by the City of Sydney Council are presented below:

4.1.1 Mechanical Plant

Noise emissions (plant noise), comply with the noise emission requirements of the EPA Industrial Noise Policy.

4.1.2 Noise Generally

Noise emissions (noise generally) not exceed background noise levels by more than 3dB when measured in octave bands between 31.5Hz and 8,000Hz.

4.1.3 Noise from Entertainment (Café / Restaurant)

Patron noise to *external* areas, typical City of Sydney Standard acoustic criteria requires that:

- The L_{10} noise emissions not exceed background noise levels by more than 3dB when measured in octave bands between 31.5Hz and 8,000Hz at a commercial property boundary.

Patron noise to *internal* areas (internal to internal area noise transmission through common walls), City of Sydney Standard acoustic criteria requires that:

- The L_{eq} noise emissions not exceed background noise levels by more than 3dB when measured in octave bands between 31.5Hz and 8,000Hz.

4.2 INDICATIVE ASSESSMENT / RECOMMENDATIONS

Indicatively, the following building and management controls can be adopted for the various retail occupancies:

- Cafés / Restaurants
 - In the event that café or restaurant tenants propose late night use of outdoor dining areas, this should be subject to an exclusive development application where detailed review of operating times and patron numbers (and the associated noise generated) would be assessed with reference to Council and (if necessary) Office of Liquor Gaming and Racing acoustic criteria.
- Mechanical Plant
 - Detailed review of mechanical plant should be undertaken at CC stage, once plant selections and locations are finalised.

In particular, we note:

- Roof top or podium plant (cooling towers, air-cooled chillers or condensers) may require acoustic treatment as residential towers will overlook these items. However, given the ambient environment in the CBD, any significant treatment is unlikely to be required for compliance with Council guidelines.

- All plant can be satisfactorily attenuated to levels complying with noise emission criteria through appropriate location and (if necessary) standard acoustic treatments such as noise screens, enclosures, in-duct treatments (silencers/lined-duct).

5 CONCLUSION

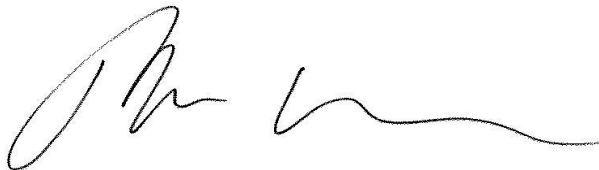
A high level noise impact assessment of the proposed mixed-use residential development to be located at 201 Elizabeth Street, Sydney has been presented within this report to supplement the Stage 1 Development Application.

It is concluded that:

- Further acoustic assessments and detailed site noise monitoring should be conducted as part of the Stage 2 Development Application;
- It would be appropriate to permit residential development on the basis that the buildings would be constructed to meet the internal noise level recommendations contained in the City of Sydney DCP and the Infrastructure SEPP (2007);
- Typical building and façade constructions will result in internal aircraft noise levels that are compliant with the City of Sydney DCP and the Infrastructure SEPP (2007); and
- Noise emissions from the development (primarily mechanical plant) can be treated to fully comply with the requirements of City of Sydney Council DCP and the EPA Industrial Noise Policy.

We trust this information is satisfactory.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Thomas Aubusson', written in a cursive style.

Acoustic Logic Consultancy Pty Ltd
Thomas Aubusson MAAS