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97 Alma Road, St Kilda - Acoustic Memo

1 INTRODUCTION

Acoustic Logic Pty Ltd (AL) has been engaged to conduct a high-level acoustic assessment of external noise intrusion for the proposed residential development located at 97 Alma Road, St Kilda. This study assesses external noise intrusion from the adjoining Alma Road and the nearby Sandringham Line rail corridor.

2 SITE DESCRIPTION

The proposed residential development is located at 97 Alma Road, St Kilda as shown in Figure 1. The potential external noise affecting the subject development will be the traffic noise along Alma Road located north of site and the train noise along the nearby Sandringham Line rail corridor located east of site.

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Figure 1 – Subject site and external noise sources (source: Google Maps)

3 ASSESSMENT CRITERIA

3.1 STANDARD D16 AT CLAUSE 58.04-3

Standard D16 contains the following condition:

To contain noise sources in developments that may affect existing dwellings.

To protect residents from external and internal noise sources.

Standard D16

Noise sources, such as mechanical plants should not be located near bedrooms of immediately adjacent existing dwellings.

The layout of new dwellings and buildings should minimise noise transmission within the site.

Noise sensitive rooms (such as living areas and bedrooms) should be located to avoid noise impacts from mechanical plants, lifts, building services, non-residential uses, car parking, communal areas and other dwellings.

New dwellings should be designed and constructed to include acoustic attenuation measures to reduce noise levels from off-site noise sources.

Buildings within a noise influence area specified in Table D3 should be designed and constructed to achieve the following noise levels:

- *Not greater than 35dB(A) for bedrooms, assessed as an LAeq,8h from 10pm to 6am.*
- *Not greater than 40dB(A) for living areas, assessed LAeq,16h from 6am to 10pm.*

Buildings, or part of a building screened from a noise source by an existing solid structure, or the natural topography of the land, do not need to meet the specified noise level requirements.

Noise levels should be assessed in unfurnished rooms with a finished floor and the windows closed.

Table D3 Noise influence area

Noise Source	Noise influence area
Zone interface	
<i>Industry</i>	<i>300 metres from the industrial 1, 2 and 3 zone boundary</i>
Roads	
<i>Freeways, tollways and other roads carrying 40,000 Annual Average Daily Traffic Volume</i>	<i>300 metres from the nearest trafficable lane</i>
Railways	
<i>Railway servicing passengers in Victoria</i>	<i>80 metres from the centre of the nearest track</i>
<i>Railway servicing freight outside Metropolitan Melbourne</i>	<i>80 metres from the centre of the nearest track</i>
<i>Railway servicing freight in Metropolitan Melbourne</i>	<i>135 metres from the centre of the nearest track</i>

Note: The noise influence area should be measured from the closest part of the building to the noise source.

Decision guidelines

Before deciding on an application, the responsible authority must consider:

- The design response.
- Whether it can be demonstrated that the design treatment incorporated into the development meets the specified noise levels or an acoustic report by a suitably qualified consultant submitted with the application.
- Whether the impact of potential noise sources within a development have been mitigated through design, location and siting.
- Whether the layout of rooms within a dwelling mitigates noise transfer within and between dwellings.
- Whether an alternative design meets the relevant objectives having regard to the amenity of the dwelling and the site context.

Based on these conditions, the subject site has been reviewed as follows:

1. The development is **not** within 300m of an industrial zone.
2. The development is **not** within 300m of a freeway or road carrying an AADT >40,000
 - Alma Road carries two-way AADT of 11,000 based on the Department of Transport Data Hub website.
3. The development **is within** 85m of train line.
 - The Sandringham Line rail corridor carries passenger train and located within 85m from the development.
 - The Sandringham Line rail corridor does not carry freight trains.

Based on the above, the criteria based on Standard D16 is applicable for the development to address train noise intrusion from the nearby Sandringham Line rail corridor. The applicable criteria are detailed below.

Table 1 – Internal Train Noise Level Criteria

Location	Internal Design Noise Level ¹
Apartment Living Rooms	40 dB(A) $L_{eq(16hr)}$ (6am – 10pm)
Apartment Bedrooms	35 dB(A) $L_{eq(8hr)}$ (10pm – 6am)

Note 1 – With external windows and doors closed. Apartments are unfurnished with finished floor

As the Standard D16 is not applicable for external traffic noise intrusion, the apartment internal traffic noise level shall be designed to ensure compliance with the criteria nominated in Australian Standards 2107:2016 further detailed in Section 3.2.

3.2 AS 2107:2016

Australian Standard AS/NZS2107:2016 “Recommended Design Sound Levels and Reverberation Times for Building Interiors” sets out recommended design sound levels for residential developments depending on locality to minor or major roads. Table 2 below details the criterion set for the proposed development.

Table 2 – Internal Traffic Noise Level Criteria

Location	Internal Design Noise Level ¹	
	Day (7am – 10pm) dB(A) $L_{eq,1hr}$	Night (10pm – 7am) dB(A) $L_{eq,1hr}$
Apartment Bedrooms	35 - 45	35 - 40
Apartment Living Rooms	35 - 45	N/A

Note 1 - Noise level within furnished room ready for occupation with external windows and doors closed.

4 EXTERNAL NOISE INTRUSION ASSESSMENT

On-site acoustic testing will be required to determine the traffic noise levels along Alma Road. The final external building fabric construction (glazing, external walls and roof / ceiling) shall be reviewed by a suitably qualified acoustic consultant to ensure compliance with the internal traffic noise level criteria detailed in Table 1 and 2 is achieved.

5 CONCLUSION

This acoustic memo provides a high-level assessment of external noise intrusion into the proposed residential development located at 97 Alma Road, St Kilda. Final acoustic treatment shall be reviewed during the detailed design stage by a suitably qualified acoustic consultant to ensure compliance with the established internal traffic noise level criteria is achieved.

We trust this information is satisfactory. Please contact us should you have any further queries.

Yours faithfully,



Acoustic Logic Pty Ltd
Barli Wibisono