30 November 2020

640.10090.05320 626 Heidelberg Rd Alphington Lot B 20201130.docx

City of Yarra
PO Box 168
RICHMOND VIC 3121

Attention: Amy Hodgen

Dear Amy

640 Heidelberg Road, Alphington, (formerly 626 Heidelberg Road, Lot 2B)
Development Application Acoustic Review
PLN 17/0703.02

SLR Consulting Pty Ltd (SLR) has been retained by the City of Yarra to provide a review of the revised acoustic assessment report for the mixed use development proposed for 640 Heidelberg Road, Alphington, (formerly 626 Heidelberg Road, Lot 2B).

Details of the report are as follows:

- Title: Acoustic Services, The Village Alphington – Mixed Use Development
- Reference: Revision 6.2
- Date: 14 July 2020
- Prepared for: Alpha APM
- Prepared by: Norman Disney Young Pty Ltd

The report was revised to address Condition 12 of the Yarra City Council planning permit for the project, which pertains to acoustics. Condition 12 is reproduced below.

SLR reviewed an earlier version of the report in March 2019 (NDY report dated 21 November 2018). It is understood that the current report has been updated to address the updated plans and feedback from town planning.

Acoustic Report

12. Before the development commences, an amended Acoustic Report to the satisfaction of the Responsible Authority must be submitted to and approved by the Responsible Authority. When approved, the amended Acoustic Report will be endorsed and will form part of this permit. The amended Acoustic Report must be generally in accordance with the Acoustic Report prepared by Norman Disney Young Pty Ltd and dated 21 November 2018, but modified to include (or show, or address):
    (a) Acoustic specifications of the external walls to the multi-purpose court to achieve reasonable external noise levels on adjacent apartment balconies;
    (b) Structure borne noise from ball bouncing within the multipurpose court and measure to address potential impacts on commercial uses below, offices on Level 2 and the school building;
    (c) Consider structure borne sound from the indoor recreational facility on surrounding commercial premises;
    (d) Lmax assessments of truck noise of delivery vehicles proposed to utilise the loading bay entrances; and
    (e) Provide adequate acoustic treatment to the community spaces and multipurpose court to enable live music/performance to protect the adjacent residential uses and the school building.

The following review considers the extent to which the report addresses both the permit conditions and the latest plans.

1 Condition 12(a) – Acoustic specification of the external walls to the multipurpose court to achieve reasonable external noise levels on adjacent apartment balconies

(Sections 5.4.1, 5.4.3 and 6.4 of the report)

Internal design targets have been nominated for noise from the multipurpose space. The targets are presented in Section 6.4 and are equal to 35 dBA Leq and 50 dBA Lmax in habitable rooms of apartments during the day and evening periods, and levels 5 dB lower at night.

Considered noise sources within the multipurpose space are detailed in Section 6.4 and include crowd noise and whistle noise (Section 6.4). A maximum level of 95 dBA Lmax is assumed for whistle noise (Section 6.4.2).

Specifications for façade upgrade treatments to both the Multipurpose space and apartments are provided in the report to ensure that these indoor targets are met. Specifications include:

- Rw = 34 dB for external walls of the multipurpose space (Section 5.4.1)
- Rw+Ctr = 58 dB for the wall separating the multipurpose space from apartments to the south (Section 5.4.1)
- Rw = 50 dB for the wall separating the multipurpose space from the Level 3 offices to the east (Section 6.4.3)
- Glazing upgrades to overlooking apartments.

The multipurpose space is proposed to be used during the day and evening periods only.

SLR Comment: *The planning permit calls for upgrades to the multipurpose space to ensure that reasonable external noise levels are achieved on overlooking balconies. However, an explicit assessment to external targets is not provided in the report.*

Based on our indicative calculations, and assuming voice and whistle noise levels of 95 dBA Lmax, the noise level to overlooking balconies will be in the order of 55 dBA Lmax.

The specification provided for the wall separating the Multipurpose space from the Level 3 offices is low and unlikely to provide for an appropriate level of acoustic amenity to offices when the space is in use.

Condition 12(a) has effectively been addressed.

2 Condition 12(b) –Consider structureborne noise from ball bouncing to commercial uses below, offices on Level 2 and the school building

(Section 7.1 of the report)

The revised plans show apartments on Level 2 instead of offices. The school spaces which were on Level 1 adjacent to the multipurpose space, have been replaced with community spaces and a childcare lobby. The most sensitive spaces with respect to impact noise from basketball bouncing are now the supermarket (below) and the apartments (Levels 2 and 3).

Section 7.1 of the revised report specifies a floor within the gym with an Ln,w rating of not more than 55 dB. A specification was previously not provided.

SLR Comment: *In our opinion there is still some risk of nuisance from structureborne noise from the basketball court, particularly to the apartments (which is the more sensitive use). This use is likely to cause nuisance if noise from the activity is audible inside apartments. Ideally these buildings would have a structural break between them.* ***Condition 12(b) has been addressed in the sense that the issue has been considered, however SLR has reservations about the effectiveness of the proposed solution.***

3 Condition 12(c) – Structureborne noise form the indoor recreation facility on surrounding commercial premises

(Section 7.2 of the report)

This condition was understood to pertain to the commercial gym on Level 1 of the facility to the offices directly above. The current design shows a larger commercial gym on Level 1, and offices adjacent, and apartments above. NDY recommend relocating the gym to help control noise to apartments.

A floor with an Ln,w rating of 50 dB or less has been specified for the gym if it remains in its current location.

SLR Comment: *The layout changes have the potential to increase risk of nuisance from structureborne noise from the gym on this project.*

In our opinion the proposed Ln,w 50 dB floor will not be adequate for addressing impacts from weights being dropped, running machines and group exercise classes. Noise from the gym can be expected to cause nuisance if it is clearly audible in offices and apartments. A specialist, high deflection gym floor is likely to be required to address structureborne noise and vibration from high impact areas of the gym. It is recommended that such a floor be provided or, as a minimum, the future tenant be informed of the need to provide the floor. The base building should be constructed such that a suitable high performance gym floor can be installed in the future. ***Condition 12(c) has not been fully addressed.***

4 Condition 12(d) – Lmax assessment of truck noise

(Section 7.3 of the report)

An Lmax assessment of truck noise has been provided. Maximum noise levels of up to 55 dBA from truck passbys are predicted to the apartment overlooking the entrance to the loading bay.

Levels between 32 dBA and 47 dBA are predicted to bedrooms directly above the loading bay. The levels are noted to be within AAAC guidelines.

SLR Comments: *The predicted levels to apartments overlooking the loading dock entrance are reasonable. The levels to apartments directly above the loading bay are higher than we would recommend. (The AAAC guideline targets for Lmax noise events from internal sources in three star apartments are 40 dBA to bedrooms and 45 dBA to living rooms). However, from our review of the current plans all the apartment rooms above the loading bay have windows overlooking Heidelberg Road, and are unlikely to be disturbed by the predicted noise levels. On these grounds the assessment provided is considered reasonable.* ***Condition 12(d) is addressed.***

5 Condition 12(e) - Provide adequate acoustic treatment to the community spaces and multipurpose court to enable live music/performance to protect the adjacent residential uses and the school building

(Section 5 of the acoustic report)

From our understanding music noise has been assessed to indoor targets, with the targets based on estimated indoor background noise levels. The noise limits are presented in Tables 4 and 5 of the report. NDY state that the limits identified are conservative, because typical apartment noises will raise the internal level form that predicted.

SLR Comments: *Ideally, the Multipurpose space should be designed such that music emissions comply with SEPP N-2 externally.. However, an internal assessment is also an option on this project, given that the residential and music space are concurrent developments.*

If internal limits are adopted, they should be, in the first instance, equal to the SEPP N-=2 base noise limits. Estimating internal background noise levels is risky, particularly in developments that will receive shielding from major roads, and have façade upgrade treatments to address other sources of noise (the resulting internal background noise levels have the potential to be very low).

In summary, a SEPP N-2 assessment should be provided to base noise limits. The assumed octave band music noise level within the Multipurpose Space should also be provided in the report.

Condition 12(e) has not been addressed.

6 Other Matters – Childcare Centre

The school in the previous design for this development has been replaced with a childcare centre. The centre is located on Level 5 and will have an outdoor play area in the approximate location of the school outdoor area in the previous design (the school outdoor area was on Level 6).

Noise from the childcare centre outdoor play area has not been explicitly assessed in the report. Instead, the report retains references to this outdoor area as part of the school. Noise from the school outdoor play area was previously assessed to indoor targets in apartments and assumed apartment doors and windows would be closed at times the noise caused nuisance. Façade upgrades were nominated for affected apartments to address the predicted levels of noise. In the current report the façade treatments to apartments to the north and west of the outdoor play area have been downgraded from those proposed previously, from GT03 (10.76mm glass/16mm airgap/12 mm glass) to GT02 (6.38mm glass/12 mm airgap / 6.38 mm glass).

Noise from children's voice in childcare outdoor play areas is potentially more intrusive than voice noise from schools, because it can be louder and can occur for more prolonged periods. Unlike schools, it is standard practice to assess noise from childcare centres to external noise targets, rather than internal ones. This approach provides for a greater level of residential amenity outdoors on balconies, and indoors with windows open. The usual target adopted for voice noise from childcare centres during the day period is 'background + 10 dB' target at residential facades.

The adoption of indoor targets for voice noise from childcare centres is generally only accepted in 'agent of change' situations, where dwellings are constructed near an existing childcare centre. While exceptions can be made to this general rule, in the first instance an assessment to external targets should be provided.

The assessment should utilise the reference sound levels provided in the AAAC Guideline for Childcare Centres Acoustic Assessment, version 3.0. These levels are:

- 10 children aged 0 to 2 years – L_w = 75 dBA $L_{eq,15\ mins}$
- 10 children aged 2 to 4 years – L_w = 83 dBA $L_{eq,15\ mins}$
- 10 children aged 4 to 6 years – L_w = 85 dBA $L_{eq,15\ mins}$

7 Summary

SLR has reviewed the revised acoustic report for the mixed use development proposed for 640 Heidelberg Road, Alphington. The report has been updated to address both the acoustic permit condition and the updated drawings. The following summarises the matters we consider require further attention. Due to the changes in layout, some of these issues were not addressed in either the current permit or the original acoustic report.

Multipurpose Space

- **New issue arising from layout changes:** The wall between the Multipurpose space and the Level 3 offices should be further upgraded to control amenity to the future offices.

- **Condition 12(b):** The provided specification for the Multipurpose Space floor may be adequate for addressing noise to commercial spaces, however there is a risk of unacceptable impacts to the apartments. The apartments were not included in the previous layout, and were therefore not addressed in the permit conditions. Our preference would be for a structural break between the Multipurpose Space and the apartment building. However, we acknowledge that this is a risk management measure and that it does not fall clearly in the category of town planning acoustics. It would seem reasonable for the developer to decide on the level of risk they are prepared to adopt. In summary, Condition 12(b) has been addressed in the sense that the issue has been considered, however SLR has reservations about the effectiveness of the proposed solution

  Condition 12(e): A SEPP N-2 assessment has been provided to noise limits based on estimated internal background noise levels. Our preference would be for SEPP N-2 limits to be met externally, through appropriate façade upgrade treatments to the Multipurpose Space. However, an internal assessment is also acceptable in this instance. The internal assessment provided in the report is to noise limits based on estimated background noise levels. This is not an appropriate response unless the developer commits to ensuring that the assumed background noise levels will be achieved.

  The assessment should be to the SEPP N-2 base noise limits. The assumed octave band music noise level within the Multipurpose Space should also be provided in the report. **Condition 12(e) has not been addressed).**

Gym / Level 1 Indoor Recreation Facility

Condition 12(c): NDY have recommended relocating the gym to control impacts to apartments above and to the adjacent commercial tenancy. We agree that this is the preferable outcome, particularly as the gym is extensive. In the absence of relocation we recommend that advice be sought for a specialist gym floor designed to control noise to apartments and offices. The specified Ln,w rating of 50 dB is unlikely to sufficient to address impacts noise from the gym. **Condition 12(c) has not been fully addressed.**

Childcare Centre

New issue arising from layout changes: It is recommended that the report be revised to include an assessment of noise from the proposed childcare centre. The assessment should be to external targets of 'background + 10 dB' and should use the sound power reference levels provided in the AAAC Guideline for Childcare Centres Acoustic Assessment, version 3.0.

Yours faithfully,

Dianne Williams
Principal – Acoustics

Checked/
Authorised by: JA