

14 February 2020

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Yarra City Council  
PO Box 168  
RICHMOND 3121

**Attention: Amy Hodgen**

Dear Amy

## **Outer Circle Precinct - 60 Chandler Highway, Alphington Development Application Acoustic Review PLN 19/0606**

SLR Consulting Pty Ltd (SLR) has been retained by the City of Yarra to provide a review of the acoustic assessment report for the mixed use development proposed for Outer Circle Precinct - 60 Chandler Highway, Alphington.

Details of the report are as follows.

- Title: Acoustic Services – Town Planning, Outer Circle Precinct – 60 Chandler Highway
- Reference: 2.1
- Date: 2 September 2019
- Prepared for: Glenvill Pty Ltd
- Prepared by: Norman Disney Young (NDY)

The report has been prepared to address noise impacts to and from the proposal.

### **1 Background Information**

*(Sections 1 and 2 of the acoustic report)*

The project is a mixed use development on the Alphington Paper Mill site. The site and surrounding uses are indicated in Figure 1 of the report. Acoustically significant aspects of the project are summarised below:

- The proposal includes:
  - 8 levels of apartments
  - Wellness centre including indoor and outdoor pools
  - Basement carparking (2 levels)
- The site is approximately 10 m east of Chandler Highway.

**SLR Comments:** *The proposal has generally been identified. We note that the wellness studio is extensive, and in addition to indoor and outdoor lap pools it includes an outdoor wading pool, and a gym with free weights and a number of running machines. The studio is on a suspended slab and has apartments directly above. Some apartments will overlook the outdoor lap and wading pools.*

## 2 Project Mechanical Plant

### 2.1 SEPP N-1 Noise Limits

*(Sections 4.1 of the acoustic report)*

Noise from mechanical services associated with the development is proposed to be designed to meet the SEPP N-1 Zoning Levels until such time as background noise monitoring relative to individual receivers has been undertaken. The zoning levels are provided in Table 1 of the report. The lowest levels are the night levels, which are equal to 47 dBA for the Wetlap Precinct (i.e. at the subject site itself and at the nearest apartments within the redevelopment area), and 39 dBA at dwellings in Margaret Court, approximately 200 m west of the subject site.

Background noise monitoring has not been conducted yet because it is not likely to be representative of the future residential area (the site is currently under development).

**SLR Comments:** *Our calculations of the SEPP N-1 zoning levels agree with NDY's. Generally, we agree that the SEPP N-1 zoning levels provide appropriate interim noise limits, however the zoning levels for the Wetlap Precinct are quite high, and there would seem to be potential for the noise limits to be lower than the zoning levels, particularly at locations shielded from road noise. The development will need to comply with lower SEPP N-1 limits if these are identified.*

### 2.2 Recommendations for Noise Control

*(Section 4.2 of the acoustic report)*

Indicative advice for control of noise from mechanical plant is provided in Section 4.2.

**SLR Comments:** *The provided advice is reasonable in principle but will need to be reviewed in the context of the specific plant and equipment proposed for this project, once details of that equipment become available. We recommend that the planning permit include the requirement that the review be undertaken.*

*The carpark entrance gate is not specifically mentioned in the report. The gate is shown less than 20 m from the nearest proposed dwelling to the east. Noise from the gate should be assessed to a sleep disturbance target of no more than 60 dBA outside openable windows, as well as to SEPP N\_1.*

## 3 Road Traffic Noise

### 3.1 Noise Criteria

*(Section 5.1 of the report)*

Road traffic noise is proposed to be assessed to the upper ends of the AS/NZS2107:2016 design ranges, being 40 dBA from 10 pm to 7 am in bedrooms, and 45 dBA in living rooms.

**SLR Comments:** *NDY do not nominate the specific assessment intervals and it is unclear whether the design targets are proposed to be met by the loudest periods of traffic, or by the day and night average levels. We recommend that:*

- *Average traffic noise levels not to exceed 40 dBA  $L_{eq,16h}$  in all habitable rooms and 35 dBA  $L_{eq,8h}$  in bedrooms. These targets are within the AS/NZS 2107 ranges and are consistent with those provided in Standard D16 of the Yarra Planning Scheme.*
- *Loudest hour of road traffic noise is not to exceed 45 dBA  $L_{eq,1h}$  in habitable rooms from 7 am to 10 pm, and 40 dBA  $L_{eq,1h}$  in bedrooms from 10 pm to 7 am the following morning. The basis for the loudest hour targets is that it meets the upper end of the AS/NZS2107:2016 ranges, with the day and night periods defined in accordance with Victorian EPA legislation and guidelines rather than in accordance with Standard D16.*

### 3.2 Noise Measurements

*(Section 5.3.1 of the report)*

Due to construction works at the time of the assessment, NDY did not measure road traffic noise at the boundary of the subject site, and have instead used traffic noise data obtained in 2017, for a nearby project. The data comprises attended measurements conducted during the evening peak hour on Wednesday 10 May 2017 and between 6 am and 7 am on Thursday 11 May 2017. The measurement position was adjacent to the Chandler Highway. It is indicated that both measurements were conducted under free field conditions and were conducted for 10 to 15 minute intervals.

The results of measurements are provided in Table 4 of the report, and are in the range of 75 to 77 dBA  $L_{eq}$ .

**SLR Comments:** *It would have been preferable to measure road traffic noise from the completed Chandler Highway as this would more accurately quantify noise impacts to the subject site. However we recognise that the traffic noise assessments for all other developments on the Amcor site to date have been conducted using data obtained prior to the completion of the road works (and these assessments have been accepted by SLR and Council).*

*From our understanding the 15 minute noise levels obtained during peak hour have been used to determine façade upgrades to achieve the internal noise targets nominated in the acoustic report (i.e. 45 dBA in living rooms and 40 dBA in bedrooms). This approach would be reasonable for ensuring that the loudest hour targets are met. However, the short term measurements conducted do not enable the  $L_{eq,16h}$  and  $L_{eq,8hr}$  levels to be determined, and this data would be required to assess noise to the lower day and night average targets recommended in this review.*

*We recommend that either further noise logging is conducted to quantify the day and night average levels (preferred approach), or that the noise levels measured at peak hour be adjusted to obtain estimated day and night averages. Evidence should be provided justifying any adjustments adopted.*

### 3.3 Traffic Noise Assessment / Advice for Façade Upgrade Treatments

*(Section 5.4 and Appendix A of the acoustic report)*

A range of glazing is specified for the project, depending on apartment room use and orientation.

The required octave band sound transmission loss and indicative glazing configurations that can be expected to achieve them are provided in Table 5. The locations for upgraded glazing are shown in Appendix A of the report.

All windows are required to have frames that will not compromise the acoustic performance of the system. Openable doors and windows are required to have good acoustic seals.

Façade elements apart from the glazing are noted to be generally concrete (and therefore not requiring a specific upgrade).

**SLR Comments:**

*Recommended minimum acoustic (e.g. Rw) ratings are not provided in the report. The required octave band sound transmission losses in Table 5 provides limited practical guidance for the builder/developer. Most laboratory test data is expressed in one third octave bands rather than octave bands, and few laboratories publish data down to 63 Hz. For these reasons it would be difficult for the builder / developer to source appropriate glazing using the guidance in the report, without further assistance from an acoustical consultant.*

*Our preference would be for the report to also specify minimum laboratory tested Rw ratings (or Rw+Ctr ratings) for glazing proposed to be installed on the project, and particularly for acoustically high performance glazing. The rating would need to be met by the complete glass door/window (not just the glass itself).*

*In the absence of specified acoustic ratings, we would recommend that the report include a statement that the acoustical consultant is to review all proposed windows and glazed doors, and approve the selections before they are finalised.*

*The report should also include the requirement that lightweight walls, if proposed for the project, are to be reviewed and approved by the acoustical consultant to ensure that the relevant indoor targets are met.*

*Our indicative calculations suggest that the currently proposed glazing is likely to need to be upgraded to meet the long term day and night average noise targets recommended in this review.*

## 4 Health and Wellness Studio

*(Section 4.3 of the acoustic report)*

NDY indicate that specific music noise control measures will not be required due to the fact that the studio will be fully enclosed.

**SLR Comments:** *Music from the wellness studio is unlikely to be an issue if it is played at background levels. However other acoustic issues associated with the use may include:*

- *Structureborne noise from use of the running machines and free weights*
- *Airborne noise to overlooking apartments from residents using the outdoor lap and wading pools*

*We would expect the report to include guidance for managing structureborne noise, potentially through a combination of treatments to the gym floor and recommendations that the hours of use be limited.*

*Regarding voice noise from the outdoor pools, the currently proposed glazing to apartments overlooking the pools may be adequate for providing a minimum level of control from noise impacts during the day and evening periods. The proposed glazing is:*

- *Double glazing comprising: 6 mm float glass /12 mm deep airgap /6.38 mm thick laminated glass to bedrooms and*

- *Double glazing comprising: 6 mm float glass /12 mm deep airgap /6 mm thick float glass to living areas*

*Further upgrades and/or restrictions to pool usages times, would be appropriate if these areas were proposed to be used at night, or if a high level of acoustic amenity was sought.*

## 5 Summary

SLR has conducted a review of the acoustic report prepared for the Outer Circle Precinct Apartment development proposed for 60 Chandler Highway, Alphington. Our comments and recommendations are summarised below.

### Project mechanical plant and equipment

- The report proposes using the SEPP N-1 zoning levels as interim noise limits at future dwellings in the development precinct. While zoning levels generally provide reasonably conservative noise limits, there would appear to be potential for lower limits to be identified for some part of this development. If they are, these lower limits will need to be met by project mechanical plant.
- Noise from the carpark entrance gate should be assessed to sleep disturbance targets, as well as SEPP N-1.
- It is recommended that the permit include the requirement for an acoustic assessment of all acoustically significant mechanical plant during the detailed design, to ensure that SEPP N-1 noise limits are met.

### Road traffic noise

The design targets proposed for the project are 5 dB higher than SLR recommend for the day and night average levels. We recommend that the façade upgrade advice be reviewed to ensure that the following targets are met:

- Traffic noise levels not to exceed 40 dBA  $Leq,16h$  in all habitable rooms and 35 dBA  $Leq,8h$  in bedrooms. These targets are within the AS/NZS 2107 ranges and are consistent with those provided in Standard D16 of the Yarra Planning Scheme.
- Loudest hour of road traffic noise is not to exceed 45 dBA  $Leq,1h$  in habitable rooms from 7 am to 10 pm, and 40 dBA  $Leq,1h$  in bedrooms from 10 pm to 7 am the following morning. The basis for the loudest hour targets is that it meets the upper end of the AS/NZS2107:2016 ranges, with the day and night periods defined in accordance with Victorian EPA legislation and guidelines rather than in accordance with Standard D16.
- We recommend that either further noise logging is conducted to quantify the day and night average level, or that the noise levels measured at peak hour be adjusted to obtain estimated day and night averages, with the basis for the adjustments provided in the report.
- It is recommended that all façade elements with acoustic requirements be provided with a minimum  $Rw$  or  $Rw+Ctr$  rating, such that the internal noise targets will be met. If this information is not provided, the report should include the requirement for all acoustically specified façade elements to be reviewed and approved by the acoustical consultant to confirm that their specification requirements (i.e. the octave band sound transmission loss levels and the frame and seal requirements) are met.

## Health and Wellness Studio

It is recommended that the report include advice to manage noise and vibration impacts from the wellness studio, including structureborne noise from the free weight and running machines and airborne noise from the outdoor lap and wading pools.

Regards,



Dianne Williams  
Associate – Acoustics

Reviewed by JA