

14 June 2022

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Yarra City Council
PO Box 168
RICHMOND 3121

Attention: Lara Fiscalini

Dear Lara

81-95 Burnley 1-9 Doonside Street, Richmond Development Application Acoustic Review

SLR Consulting Pty Ltd (SLR) has been retained by the City of Yarra to provide a review of the acoustic documentation prepared to support the application for a residential development at 81-95 Burnley 1-9 Doonside Street, Richmond.

Details of the acoustic report are as follows:

- Title: Victoria Gardens Doonside Precinct
- Date: 1 March 2022
- Reference: Rev. 4.0-DA Submission
- Prepared for: Salta Property Group
- Prepared by: NDY Pty Ltd

The report has been prepared to address noise issues to and from the subject development.

SLR have been asked to review the provided report and provide an opinion on the internal noise levels to the proposed apartments from both traffic and mechanical plant.

1 Background

(Section 1, 2, 3.1.2 and 4.1 of the report)

The proposal is for a 16 level + basement mixed use development at 1-9 Doonside Street, Richmond. The development is an extension of the Victoria Gardens shopping centre. The project comprises:

- 6 separate towers with a common podium.
- Two levels of basement carparking. Loading area, and services.
- Ground floor retail and offices (retail understood to be linked to the existing Victoria Gardens shopping centre).
- Level 1 residential amenities, offices, hotel and apartments.
- Level 2 apartments and carparking.

- Levels 3 to 16, apartments and resident amenities.
- Noise impacts to the subject development are identified as:
 - Road traffic from Burnley Street.
 - Rooftop mechanical plant from Victoria Gardens and from the development itself.
- Potential noise impacts from the development are identified in Section 4.1 as:
 - Mechanical plant and equipment including carpark fans, rooftop condenser units, chillers and pumps.
 - Loading dock.
 - Proposed food and beverages uses.
- Representative sensitive receivers with respect to noise emissions from the site are identified as:
 - 65 Burnley Street (i.e. apartments within the subject development itself),
 - 54 Leslie Street (i.e. single dwelling representative of the general residential area west of the development),
 - 12 David Street (existing multi-level apartment building to the east of the site),
 - 39 Appleton Street (multi-level mixed use building under construction south of the development site).

SLR Comments: *The proposed use and noise impacts to and from the development have generally been identified and/or described. No detail is provided regarding the proposed uses of the commercial levels of the development, and we have assumed that these are not finalised at this stage of the design. However, these areas appear to be extensive, and further acoustic input into the design during the planning phase of the project is likely to be necessary.*

2 Noise Protocol Part I limits

(Section 3.1 of the report)

Noise from the subject development is proposed to be assessed to Victorian EPA Noise Protocol / Publication 1826.4. Zoning levels have been calculated for dwellings in the existing residential area to the west of the subject development, and for the subject development itself. Results are presented in Table 1.

Attended background noise levels were measured at 54 Leslie Street during the 'day period' (period not defined). These levels have been used to provide estimations of noise limits for all receivers. The estimated limits are presented in Tables 2 and 3 of the report. NDY observe that the limits may change following further measurements.

SLR Comment: *The provided approach and interim noise limits are reasonable in the context of a high level planning report, and appear to be conservative. We agree that further measurements should be undertaken in the future to confirm noise limits.*

3 Assessment of noise from the project

3.1 Project mechanical plant

(Section 4.2 of the report)

NDY present conceptual options for controlling noise from project mechanical plant and recommend that the design be reviewed by a suitably qualified acoustic consultant to ensure that the criteria are met.

SLR Comment: *The proposed approach is reasonable in a high level planning report. We agree that the identified noise criteria should be able to be met using standard noise control treatments.*

3.2 Loading dock noise

(Sections 3.3 and 4.3 of the report)

Noise from loading dock activity is proposed to be assessed to the Noise Protocol limits and sleep disturbance criterion of 65 L_{Amax}, dB outside bedroom windows at night.

The project loading dock is observed to be located in Basement 2 and fully enclosed (there is also a level of retail separating the loading dock from apartments). NDY state that compliance will be able to be achieved at the nearest dwellings including the multilevel residential development at 12 David Street which is opposite the basement entrance.

SLR Comment: *We agree that noise from within the loading area is manageable on this project, given that it is fully enclosed and remote from sensitive receivers both within and external to the subject development. Some restrictions on delivery times may nevertheless be necessary to achieve the nominated 65 dBA L_{max} outside bedroom windows, particularly if large supermarket style deliveries are proposed to take place, as noise from trucks entering and leaving the basement carpark has the potential to exceed this level.*

4 Food and beverage tenancies

(Section 4.4 of the report)

NDY recommend including clauses within the tenancy agreement to require future tenants to address noise from music and airborne and structureborne noise from the food and beverage tenancies and gyms or similar areas.

SLR Comment: *Depending on the detailed design and proposed uses, we would prefer to see the developer take more responsibility for noise from these areas to ensure that they are fit for purpose.*

Our concerns are in relation to any areas where structureborne impacts to the floor are likely, as there can be limited options for addressing this noise if allowance is not provided within the base building layout (e.g. with allowances provided for floor setdowns in areas where high performance floors for gyms or large commercial kitchens may be required). However, the current drawings are not sufficiently detailed for us to assess potential risks on this project. We suggest that the acoustic planning report be updated once further detail of future tenancies are known, to ensure that the building is fit for the intended purpose.

We also note that the layout may preclude some anticipated uses, such as use of outdoor patron areas during the night period. The acoustic planning report should identify any such constraints in order to minimise the risk of attracting tenants who cannot comply with the relevant acoustic requirements without compromising their operations.

5 Noise intrusion

5.1 Criteria

(Section 5.1 of the report)

Design criteria for noise intrusion are derived from AS/NZS2107 and are equal to 35 dBA Leq in bedrooms and 40dBA in living rooms. Criteria are also nominated for non residential areas of the development.

SLR Comment: *The proposed criteria are reasonable for road traffic noise and are in line with the levels usually required by the City of Yarra.*

However, any existing commercial / mechanical plant noise that does not comply with the Noise Protocol at the subject development, should be designed to meet indoor levels consistent with Part I of the Noise Protocol, consistent with the advice provided in Section 4.4 of the City of Yarra ‘Guidelines – managing noise impacts in urban development’. The relevant levels are:

- *Noise Protocol Part I indoor limits, being the outdoor limits less 20 dB (i.e. updated from the City of Yarra Guidelines to take the more onerous Noise Protocol adjustment into consideration), and*
- *Not more than 30 dBA L_{eq} in bedrooms at night and 35 dBA L_{eq} in living rooms (30 min.).*
- *Not more than 45 dBA L_{max} in bedrooms at night and 50 dBA L_{max} in living rooms.*
- *In addition to the above, commercial plant and equipment noise levels should not exceed the following levels externally:*
 - *Not more than 10 dBA above any Noise Protocol Part I period noise limits, outside any openable windows or doors, and*
- *For balconies and other private open spaces:*
 - *Not more than 65 dBA during the day*
 - *Not more than 55 dBA during the evening and night*

5.2 Road Traffic Noise

5.2.1 Quantification of impacts

(Section 5.2 of the report)

NDY have conducted attended measurements of road traffic noise 6.5 m from the centre of Burnley Street. The measured level was 70 dBA LAeq.

SLR Comments: *The time, date and duration of the traffic noise measurement/s are not provided in the report. This information should be presented for transparency. However, the overall measured level is consistent with data we have previously seen for Burnley Street, and on those grounds is considered to provide a reasonable indicative assessment of impacts.*

5.2.2 Control of noise from road traffic

(Section 5.3 of the report)

Recommendations for glazing to address external noise are provided in Table 8. All residential apartments are proposed to be glazed with $R_w = 37$ to $R_w = 39$ glazing, with the higher performance glazing applying to lower level apartments overlooking Burnley street and apartments in towers exposed to noise from roof mounted mechanical plant. Indicative glazing configurations required to meet the specified ratings are presented in Table 8. Advice is also provided for façade upgrades to the lower level commercial tenancies.

SLR Comment: *The predicted noise levels at the apartment facades are not presented in the report, and it is unclear what these are or how they have been determined. However, the proposed glazing is commensurate with systems we would expect to be required taking into consideration the measured traffic noise level and the additional distance from the measurement location to apartments.*

5.3 Existing commercial mechanical plant

5.3.1 Quantification of impacts

(Section 5.2 of the report)

NDY have measured mechanical plant noise at 10 m from the plant deck. The octave band levels are presented in Table 7. The overall level is 54 dBA.

SLR Comments: *We assume that the measurement was taken relative to the Coles plant deck highlighted in Figure 21 of the report as this the plant in closest proximity to the subject site.*

The provided measurement provides a good indication that the equipment will be non-compliant at overlooking apartments in the subject development, however it is not sufficient to fully quantify impacts. Both Victoria Gardens and the subject development site are extensive, and overlooking apartments are likely to be exposed to noise from a number of items of plant and equipment and different plant deck areas. A detailed noise model is likely to be required to determine the cumulative impacts to all areas of the subject development, and this would necessitate measurements of all potentially contributing plant and equipment, as well as an understanding of when that equipment operated.

5.4 Control of existing commercial roof mounted mechanical plant

(Section 5.4 of the report)

NDY state that noise from the existing roof mounted plant will be treated to ensure that the Noise Protocol external limits are met. They note that options include provision of acoustically lined duct, absorptive enclosures, replacement and/or relocation of plant and equipment.

SLR Comments: *Treatment of noise at the source is the preferred approach to control commercial noise to proposed new dwellings and is the only means for ensuring ongoing compliance of the existing commercial premises with mandatory noise limits. However, the proposed works are potentially extensive and a much more detailed assessment and design review would be required than has been provided here, to determine what works need to be undertaken and who is responsible for them.*

While this work can theoretically be undertaken during the detailed design phase of the project, we are concerned that the assumption that this noise can, and will, be controlled to the façade of future apartments may be unrealistic. As a minimum, it is likely to require coordination of a number of parties including the equipment owners and operators, the Victoria Gardens Body Corporate and the subject site developer to work out what can be done and who will pay for it. Given the potential complexity of this process we recommend that it proceed during the planning stage of the development, while there is Council involvement.

6 Other matters

There are several delivery docks in the Victoria Gardens shopping centre, including the Coles dock on the south east corner of the site, and the docks between the Victoria Gardens carpark and the shopping centre (this area is currently accessed via a road through the subject site – and it is unclear how the dock will be accessed following construction of the subject development). Noise from truck movements and delivery activity to the subject development should be addressed in the acoustic report, taking into consideration the delivery hours and the relevant noise criteria, including sleep disturbance criteria for any 24 hour facilities.

7 Summary

SLR has reviewed the acoustic report prepared to address noise to and from the mixed use development proposed for 1-9 Doonside Street, Richmond. The development is extensive and the provided architectural drawings are not fully detailed with respect to the proposed uses of the Ground and Level 1 tenancies. Consistent with this, the provided report is of a 'high level' nature, and appears to provide conceptual advice for addressing the acoustic issues, rather than the level of detail usually provided in acoustic planning report in the City of Yarra. We recommend that the following matters be further addressed:

- Noise from the proposed ground and first floor commercial tenancies - the report proposes that all noise from the ground and Level 1 commercial tenants should be addressed by the commercial tenants themselves, and recommends that tenancy agreements be put in place to ensure that appropriate criteria are met. We recommend that the acoustic report is updated once further information regarding the proposed use of these areas is available, to ensure that the buildings are fit for purpose and that future tenants have a clear understanding of any site constraints. In particular, we recommend that the report:
 - Identify any likely structureborne noise sources, such as commercial gyms and large commercial kitchens, and nominate necessary structural isolation and setdowns if necessary to accommodate the required isolated flooring. Alternatively, the report could provide guidance on restriction of commercial uses (eg. no gyms etc.).
 - Review any proposed outdoor patron areas and provide advice for managing impacts to existing and proposed apartments.
- Road traffic noise ingress – further detail of the road traffic noise measurements including the time and duration of measurements should be provided in the planning acoustic report. The calculated road traffic noise level at the most impacted residential façade/s should also be presented.

- Existing commercial noise – the current report demonstrates that noise from some equipment will be non-compliant at the subject development, but does not provide sufficient detail to enable the specific items of non-compliant equipment to be identified or options for addressing their non-compliance to be developed. Achieving compliant noise levels at the subject development is likely to be challenging and will potentially involve a number of parties. Given these complications, we recommend that this issue be further investigated and resolved during the planning stage of the development, with Council involvement.
- Existing loading dock noise and rubbish collection – Victoria Gardens has a number of loading docks and presumably other potentially noisy back of house areas in close proximity to the subject development. Noise from these areas has the potential to be non-compliant at the future apartments. An assessment of impacts should be provided in the acoustic planning report, taking into consideration the hours of operation of the service areas.

The report does not propose to assess existing commercial noise to internal criteria. Assessment of existing commercial noise to external criteria, as proposed by NDY, is best practice and we recommend that this approach be adopted insofar as it can be. However, if an assessment to internal criteria is proposed for any apartments, the criteria should be no greater than the Noise Protocol Part I internal limits, with the default effective indoor noise limit being equal to the external limit less 20 dB, and the assessment in accordance with the City of Yarra Guidelines, which includes consideration of external areas.

Yours faithfully



Dianne Williams
Principal – Acoustics

Checked/Authorised by: JA