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## Memo

15 March 2018

**Client:** LK Property Group c/- Ratio  
**Attention:** Alice Maloney  
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622 - 642 Nicholson Street, Fitzroy North

Technical memo

## 1 Introduction

Octave Acoustics has been requested to provide an acoustic assessment for the 622-642 Nicholson Street (Subject Land) town planning application. The application includes a proposed supermarket with associated back-of-house loading area. It is understood that Council raised the query in a pre-application meeting regarding trucks accessing the loading area via Bik Lane. It is understood that the proposal is for trucks to enter via Bik Lane which abuts existing residential development at 648a Nicholson Street and 4 Bik Lane.

## 2 Proposed Site & Development

The proposed development on the Subject Land will consist of the following:

- Three levels of basement car park
- Ground floor supermarket
- Office and medical suites on levels 1 to 9

The Subject Land is zoned Mixed Used Zone (MUZ) and is surrounded by residential buildings. The site is abutted by:

- To the east by 648a Nicholson Street / 4 Bik Lane multi-storey residential apartments (zoned MUZ).
- To the north by 644 Nicholson Street a single storey residence (zoned MUZ).



- To the west by Nicholson Street (zoned RDZ1) which has two lanes of traffic in each direction as well as tram tracks.
- To the south by 620 Nicholson Street (zoned MUZ), a single storey residence.

### 3 External Noise Emissions

Noise associated with commercial activities and services is required to comply with State Environment Protection *Policy Control of Noise from Commerce, Industry and Trade No. N-1* (SEPP N-1). SEPP N-1 is subordinate legislation under the Environment Protection Act 1970 (EP Act) and compliance with the policy is mandatory when noise levels are assessed at residential properties.

It is important to note that, in accordance with SEPP N-1:

- Only non-commercial vehicles are exempt from assessment; and
- A commercial premise excludes *a street or road, including every carriageway, footpath, reservation and traffic island on any street or road.*

To this end, delivery trucks are assessed in accordance with SEPP N-1 but only when they are on private land. However, the Subject Land is unique in that Bik Lane would not otherwise be used by normal traffic and, while a registered Council ROW, will in practice be an extension of the Subject Land use. This is technically a planning and enforcement matter. Regardless, SEPP N-1 can still be used as a de-facto test standard against the EP or Health Act and is typically applied in planning for similar circumstances.

The applicable SEPP N-1 noise limits applying to the site are as shown in Table 1. As deliveries are often sought on weekends, attended noise measurements were conducted to determine background noise levels on Saturday 10<sup>th</sup> March at 3pm in the laneway off Bik Lane where it is proposed that trucks will be making deliveries.

Measurements were carried out using a NTI XL2 sound level meter which was calibrated before and after all measurements using a Bruel Kjaer 4231 calibrator. No drift in calibration was detected. The NTI XL2 complies with the requirements of IEC 61672-1.2013 Sound Level Meters and is classified as a Class 1 instrument. The calibrator complies with the requirements of IEC 60942.2004 Sound Calibrators. Both the XL2 and calibrator carry current NATA certification or manufactures certification if less than two years old.



TABLE 1 – SEPP N-1 NOISE CRITERIA

Period	Background Noise Level, LA90	Zoning Level, LAeq	Background Classification	Applicable Noise Limit, LAeq
Day	-	57	Neutral	57
Evening	43 <sup>4</sup>	51	Neutral	51
Night	-	46	Neutral	46
Notes:	1. Day period is: <ul style="list-style-type: none"> <li>- 07:00 – 18:00 Monday – Friday</li> <li>- 07:00 – 13:00 Saturday</li> </ul> 2. Evening period is: <ul style="list-style-type: none"> <li>- 18:00 – 22:00 Monday – Friday</li> <li>- 13:00 – 22:00 Saturday</li> <li>- 07:00 – 22:00 Sunday</li> </ul> 3. Night period is: <ul style="list-style-type: none"> <li>- 22:00 – 07:00 Monday – Sunday</li> </ul> 4. Weekend day period measured as the most likely 'Evening' operation time where compliance could be achieved. Refer to results of that assessment later in this report.			





FIGURE 1 - SUBJECT SITE

## 4 Assessment

A 3-D computer model of the proposed building was developed in CadnaA software implementing the ISO9613 environmental noise prediction algorithms. A moving point source was incorporated into the model to represent trucks making deliveries once within any 30-minute SEPP N-1 assessment period. The noise data was based on previously measured sound levels of trucks driving at less than 10km/hr at other supermarket sites. The resulting sound levels were calculated across the façade of 4 Bike Lane apartments.

Noise levels were calculated to be  $L_{Aeq}$  53dB at the worst affected area of the façade at 4 Bik Lane apartments for delivery events.

## 5 Recommendations

To minimise the noise of deliveries, the roller door should be shut immediately after the truck has entered the supermarket to minimise noise emissions from the site associated with unloading the truck. In addition, steps should be taken to minimise delays associated with allowing trucks entry to the supermarket. This is to reduce the time that the truck is idling in the laneway adjacent to the apartments. We also note that the loading area proposes a turntable which would mitigate any additional noise associated with reversing vehicles.

To further reduce noise affecting the apartments a low noise roller door should be installed which has a maximum sound pressure level of 65 dBA measured at 5m from the door.

Based on this assessment, even if the above recommendations are taken into account, noise levels are likely to exceed the evening and night noise limits of SEPP N-1 calculated in Section 3 due to the close proximity of the apartments to the truck path through the laneway.

Therefore, it is recommended that deliveries be restricted to a maximum of two deliveries per any half hour during the hours of 7am to 6pm, Monday to Friday and 7am to 1pm Saturdays (this assessment includes additional noise associated with roller door operations).

We note that the above would also comply with EPA Publication 1254 recommended hours for truck mounted refrigeration units and deliveries to shops and supermarkets.

## 6 Conclusion

Octave Acoustics has performed calculations to determine the likely noise levels associated with truck deliveries to the Subject Land affecting adjacent sensitive uses. Based on this assessment it is recommended that deliveries are restricted to a maximum of two deliveries any half hour during the hours of 7am to 6pm, Monday to Friday and 7am to 1pm Saturdays.

In addition, steps should be taken to minimise the length of time that the truck is in the laneway to reduce the length of time that the apartments are subject to noise from the trucks. This is likely to require the use of low noise automatic roller doors which meet the noise specification detailed above and are able to be closed before turntable / loading operations commence.



Revision	Date	Comment	Author	Reviewer
0	15.03.2018	Issued to client	TM	DT

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