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Unit 45, 45 Green Street
 BANKSMEADOW NSW 2019

28 March 2025 25052.1.1.L1R2 Change of Use 20250328

CASS 44-50 Sixth Avenue CAMPSIE NSW 2194

Attention: Mr Hun Low

Dear Hun

Change of Use 253 Cooper Road, Yagoona - NSW 2199 Qualitative Assessment of Operational Noise

1 Introduction and Background

The Council of the Municipality of Bankstown issued Consent (File No. P19/242/253/6) for the construction of a 150-bed nursing home at 253 Cooper Road, Yagoona (Yagoona Nursing Home (YNH)) on 3 June 1970. YNH was subject to further Development Applications (DAs) since 1970, including the erection of a partial first floor via DA53/74, determined 21 June 1974 and the most recent DA also including the erection of a partial first floor being DA1524/2002, determined 2 December 2002.

As can be seen from the above, the YNH has operated for a considerable period of time since the early 1970s.

The Chinese Australian Services Society Limited (CASS) purchased YNH with settlement occurring in February 2020. CASS now propose a DA to Canterbury Bankstown Council for a Change of Use to Mixed Development for Seniors Housing (Hostel), a Community Facility and ancillary Offices for administrative purposes.

It is important to note that not all of the existing YNH buildings will be utilised as part of the proposed Change of Use.

VMS Australia Pty Ltd (VMS) was engaged by CASS to assess the potential operational noise emissions that this proposed Change of Use may have on the surrounding area, being low-density, free-standing residential of both single and double storeys.

Given the likely low risk associated with potential operational noise emissions related to the Change of Use, this letter provides a qualitative desktop assessment that will be submitted as part of, and in support of the DA.

2 Overview of the Proposal

The proposal will be a Change of Use to a Mixed Development for Seniors Housing (Hostel), a Community Facility and ancillary Offices for administrative purposes (Ancillary Administrative Offices). The Hostel will cater for up to 18 beds at all times. Both the Community Centre and the Ancillary Administrative Offices will be only used within the day period, from 8.30 am to 5.30 pm, and will cater for up to 30 persons and 15 persons, respectively.

Following a review of existing available drawings, Calder Flower Architects Pty Ltd (Calder Flower) prepared a site plan as shown in **Figure 1**, as well as floor plans shown in **Figure 2** and **Figure 3**.

Figure 1 Site Plan



Image Source: Calder Flower (Drawing No A001, Issue B, dated 26 March 2025).



Figure 2 Ground Floor Plan



Image Source: Calder Flower (Drawing No A002, Issue B, dated 26 March 2025).

Figure 3 First Floor Plan



Image Source: Calder Flower (Drawing No A002, Issue B, dated 26 March 2025).



3 Qualitative Assessment of Noise Emissions

With reference to the Site Plan, the following aspects are relevant when comparing the approved use and the proposed Change of Use:

- There are no changes proposed to the building footprint.
- There are no changes to the number or location of carpark spaces.
- Site access (in and out) will remain via Cooper Road and Venture Crescent (currently a locked gate).
- Garbage collection will be via Cooper Road and restricted to between 8.30 am and 5.30 pm as per the Waste Management Plan (WMP), prepared 19 March 2025.

As mentioned previously, not all of the existing YNH buildings will be utilised as part of the proposed Change of Use. Floor plans (**Figure 2** and **Figure 3**) show the extent of usage in detail. **Table 1** shows a clear reduction in the utilised floor area.

Table 1 Comparison of Floor Area - Yagoona Nursing Home vs Change of Use

| Usage | Level | Floor Area (m²) |
|----------------------------------|------------------------------|--------------------|
| | | |
| Total Existing Area | Ground Floor and First Floor | 3,505 |
| Total Area in use as proposed | Ground Floor and First Floor | 2,240 ¹ |
| Total Area not in use | Ground Floor and First Floor | 1,265 |
| Area not in use | Ground Floor | 359 |
| Area not in use | First Floor | 906 |
| Hostel (18 ² beds) | Ground Floor | 966 |
| Community Centre | Ground Floor | 385 |
| Ancillary Administrative Offices | Ground Floor and First Floor | 889 |

Note 1: Considering floor area, only 64 % of the total space is proposed to be used as part of the Change of Use.

Note 2: Represents only 12 % of the YNH-approved 150 beds.

The reduced floor area, as proposed by the Change of Use, and the reduced number of people will also lead to both reduced vehicular movements in and out of the site as well as reduced use of mechanical plant. The Change of Use will not include the use of the existing commercial kitchen. Furthermore, no additional mechanical plant is proposed as part of the Change of Use.

The use of the Community Facility (located on the Ground Floor) will be coordinated by the Plan of Management (PoM), prepared 19 March 2025 and will operate on weekdays between 8.30 am and 5.30 pm.

As per the PoM, the Community Facility will cater for culturally appropriate activities ranging from singing to tai chi and include group discussions on topics such as health and personal development. These activities are expected to lead to negligible noise emissions, are planned to occur during the day and are not out of character with the surrounding residential receivers, nor with the typical activities associated with the operation of the YNH since the 1970s.

4 Conclusion

Yagoona Nursing Home, located at 253 Cooper Road, Yagoona is a 150-bed nursing home that began operating in the early 1970s.

The Chinese Australian Services Society Limited propose a Change of Use for the Yagoona Nursing Home to Mixed Development for Seniors Housing (Hostel), a Community Facility and ancillary Offices for administrative purposes and have requested an assessment of noise emissions to support such a low risk change when applying for a development application.

Following a qualitative desktop assessment of a comparison of the operational noise emissions associated with the Yagoona Nursing Home and with the proposed Change of Use, it can be confirmed that the operation of the proposed Change of Use is of a significantly less intensive nature than the Yagoona Nursing Home and likely to result in negligible noise emissions to the surrounding residences. This has been based on the following main findings considering the Change of Use:

- Only 62% of the existing total floor space will be used.
- Only 12 % of the YNH approved 150 beds.
- Reduced number of on-site vehicle movements.
- Reduced number of on-site mechanical plant.
- There are no changes proposed to the building footprint.
- There are no changes to the number or location of carpark spaces.
- Site access (in and out) will remain via Cooper Road and Venture Crescent (currently a locked gate).
- Garbage collection will be via Cooper Road and restricted to between 8:30 am and 5:30 pm as per the Waste Management Plan, prepared 19 March 2025.
- The use of the Community Facility (located on the Ground Floor) will be coordinated by the Plan of Management, prepared 19 March 2025 and will operate on weekdays between 8.30 am and 5.30 pm.

I trust that the above report meets your current requirements. Should you have any questions or require any additional information, please contact me on 0416 085 167.

Regards,

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Sam Demasi BEng(Mech) MIEAust MAAS Principal - Acoustics & Vibration

Reviewed by: Mark Blake



Glossary of Noise and Vibration Terminology

| Sound Pressure | Sound, or sound pressure, is a fluctuation in air pressure over the static ambient pressure. |
|-------------------------------|--|
| Sound Power | Sound Power is the rate at which sound energy is emitted, reflected, transmitted, or received, per unit time. Unlike sound pressure, sound power is neither room-dependent nor distance-dependent. |
| Sound Pressure Level (SPL) | The sound level is the sound pressure relative to a standard reference pressure of 20µPa (20x10 ⁻⁶ Pascals) on a decibel scale. |
| Sound Power Level (SWL) | The Sound Power Level is the sound power relative to a standard reference pressure of 1pW ($20x10^{-12}$ Watts) on a decibel scale. The SWL of a simple point source may be used to calculate the SPL at a given distance (r) using the following formula: SPL = SWL – $10 \log_{10}(4 \times \pi \times r^2)$ |
| | Note that the above formula is only valid for sound propagation in the free-field (see below). |
| Decibel (dB) | A scale for comparing the ratios of two quantities, including sound pressure and sound power. The difference in level between two sounds s1 and s2 is given by 20 log ₁₀ (s1 / s2). The decibel can also be used to measure absolute quantities by specifying a reference value that fixes one point on the scale. For sound pressure, the reference value is 20μPa. |
| A-weighting, dBA | The unit of sound level, weighted according to the A-scale, which takes into account the increased sensitivity of the human ear at some frequencies. |
| Noise Level Indices | Noise levels usually fluctuate over time, so it is often necessary to consider an average or statistical noise level. This can be done in several ways, so a number of different noise indices have been defined, according to how the averaging or statistics are carried out. |
| L _{eq,T} | A noise level index called the equivalent continuous noise level over the time period T. This is the level of a notional steady sound that would contain the same amount of sound energy as the actual, possibly fluctuating, sound that was recorded. |
| Lmax,T | A noise level index defined as the maximum noise level during the period T. L _{max} is sometimes used for the assessment of occasional loud noises, which may have little effect on the overall L _{eq} noise level but will still affect the noise environment. Unless described otherwise, it is measured using the 'fast' sound level meter response. |
| L _{90,T} | A noise level index. The noise level exceeded for 90% of the time over the period T. L_{90} can be considered to be the "average minimum" noise level and is often used to describe the background noise. |
| L _{10,T} | A noise level index. The noise level exceeded for 10% of the time over the period T. L_{10} can be considered to be the "average maximum" noise level. Generally used to describe road traffic noise. |
| Free-Field | Far from the presence of sound reflecting objects (except the ground), usually taken to mean at least 3.5m |
| Fast/Slow Time Weighting | Averaging times used in sound level meters. |
| Octave Band | A range of frequencies whose upper limit is twice the frequency of the lower limit. |
| D _{nT,w} | The single number quantity that characterises airborne sound insulation between rooms over a range of frequencies. |
| R _w | Single number quantity that characterises the airborne sound insulating properties of a material or building element over a range of frequencies. |
| Reverberation | The persistence of sound in a space after a sound source has been stopped. |
| PPV | The particles of a medium are displaced from their random motion in the presence of a vibration wave. The greatest instantaneous velocity of a particle during this displacement is called the Peak Particle Velocity (PPV) and is typically measured in the units of mm/s. |
| Hertz, Hz | The unit of Frequency (or Pitch) of a sound or vibration. One hertz equals one cycle per second. 1 kHz = 1000 Hz, 2 kHz = 2000 Hz, etc. |
| Acceleration | Acceleration is defined as the rate of change of Velocity of a particle over a period of time and is typically measured in the units of m/sec ² . |
| Vibration Dose, VDV | When assessing intermittent vibration, it is necessary to use the vibration dose value (VDV), a cumulative measurement of the vibration level received over an 8-hour or 16-hour period. |
| | The VDV formulae uses the RMS Acceleration raised to the fourth power and is known as the Root-mean-quad method. This technique ensures the VDV is more sensitive to the peaks in the acceleration levels. VDVs are typically measured in the units of m/s ^{1.76} . |

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