

Campsie Health Precinct
Review of Masterplan Concept



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1 INTRODUCTION

This report summarises our desktop review of the proposed Campsie Health Precinct. The review discusses:

- Potential construction and operational and noise impacts arising from the proposed development on surrounding land uses.
- Potential noise impacts on sensitive uses within the proposed development from existing surrounding land uses.
- The compatibility of the various uses within the precinct.
- Impact of additional vehicle movements on local roads.

The review identifies noise sources and proposes assessment criteria and typical methods to mitigate any adverse impacts identified.

The proposed development includes the following uses:

- Aged Care
- Independent living units
- Hospital
- Medical
- Back of house and loading facilities
- Basement car parking for approximately 500 vehicles with access from Harp Street

Appendix 1 shows the site plan, proposed uses and massing.

2 LOCAL ACOUSTIC ENVIRONMENT

The site is bounded by:

- Commercial/ light industrial uses bounding the north east and south east boundaries of the subject site.
- Detached dwellings on the south west side boundary
- Mixed use development on the north western boundary.

The site is currently used to store passenger vehicles. The site is accessed from a driveway onto Harp Street.

Canterbury Road is a major arterial road that runs parallel to the north west site boundary. The road is substantially screened from the site by a recently completed approximately 7 level mixed use development that is located between the subject site and the road.

The remaining roads near the subject site carry low to medium traffic volumes. The site is buffered from traffic noise emanating from these streets by the residential and industrial properties bounding the site.

The existing environmental noise sources impacting the site are:

- Traffic noise.
- Noise emitted by the light industrial/commercial properties.

3 NOISE IMPACT ON THE PROPOSED DEVELOPMENT FROM EXISTING LOCAL SOURCES

The primary existing environmental noise sources are:

- Road traffic on surrounding roads
- Noise emissions from the commercial/industrial uses along Elizabeth and Harp Streets

3.1 ROAD TRAFFIC

Canterbury Road carried more than 20,000 vehicles per day. Therefore, traffic noise intrusion into the following uses should comply with the NSW Infrastructure SEPP:

- Aged Care
- Hospital
- Independent Living Units

Given the site is located approximately 60m from Canterbury Road and is largely screened by existing buildings on Canterbury Road it is expected that traffic noise levels within these buildings will either comply or nearly comply with those required by the ISEPP with no treatment, or only minor acoustic upgrading of the facades.

The remaining roads surrounding the development, carry less than 20,000 vehicles per day and are not required to be assessed under ISEPP. As the proposed sensitive uses are set back from these roadways acceptable internal noise levels are expected to be achieved with no treatment, or only minor acoustic upgrading of the facades.

The ISEPP requires the following L_{Aeq} noise levels within residential accommodation:

- In any bedroom in the residential accommodation—35 dB(A) at any time between 10 pm and 7 am,
- Anywhere else in the residential accommodation (other than a garage, kitchen, bathroom or hallway)—40 dB(A) at any time.

3.2 NOISE FROM NEARBY COMMERCIAL AND INDUSTRIAL PROPERTIES

The north eastern and south eastern site boundaries will be subject to noise emissions from existing commercial and light industrial uses.

The buildings most impacted by these uses will be the aged care, hospital and medical centre buildings. All these buildings typically operate with fixed façade or a façade with openable windows that are largely kept closed. Noise emissions can be controlled to acceptable levels by installing a sound rated façade designed to:

- Reduce the existing levels of noise produced by industry to levels complying with AS 2107:2016 "Acoustics - Recommended design sound levels and reverberation times for building interiors". Where applicable noise emissions should be penalised using the modifying factors in the NSW Noise Policy for Industry (NPfI).
- Where existing levels are less than 70 dB(A), using an assumed noise level of 70 dB(A) at the boundary of the industrial use and 65 dB(A) at the boundary of a commercial use.

This approach will provide an acceptable level of amenity to the future occupants of the subject development located near the existing industry while allowing the viable operation of the existing commercial/industrial uses.

The proposed independent living units are located in buildings that are largely buffered from the existing industry to the east and are therefore not expected to be adversely impacted.

4 OPERATIONAL NOISE IMPACTS TO SURROUNDING PROPERTIES

The main source of noise emissions will be those sources related to the hospital, medical centre and aged care facility.

These buildings will require (to varying degrees) significant air conditioning and ventilation plant given these buildings will be largely enclosed and air conditioned, and the basement carpark would need to be mechanically ventilated. These uses are not significant generators of activity related noise and activity noise emissions will largely be as a result of vehicle movements and materials handling/deliveries.

The main noise emitters related to the independent living units would be ventilation fans for the basement carpark.

4.1 PLANT AND EQUIPMENT

Noise emissions from plant and equipment are generally assessed using the guidelines contained in the NSW EPA Noise Policy for Industry (NPfI).

The guideline nominates trigger levels for assessing noise emissions and generally form the basis for determining noise emission limits to prevent adversely impacting the surrounding properties. The trigger levels vary depending on the receiver type and are summarised below:

- Residential – Limit the noise increase to no more than 5 dB(A) above background plus limit absolute level of noise from “industrial” sources. The surrounding residential receivers would be classed as or urban, being close to existing industrial development. The corresponding amenity noise levels are 58, 48 and 43 dB(A) $L_{eq,15min}$ for the day, evening and night periods respectively.
- Commercial/Industrial - Limit absolute level of noise from “industrial” sources to 65 and 70 dB(A) L_{eq} respectively for commercial and industrial receivers.

Except for minor plant, plant and equipment will generally be located within plant rooms where noise emissions can be controlled by one or more of the following methods:

- Selecting quiet plant
- The use of speed controllers, etc to match the capacity of plant to loads so that night time noise is minimised.
- Locating plant as far as possible and screened from sensitive receivers.
- Applying treatment such as barriers, lined ducting, attenuators and acoustic louvres to reduce emissions

The proposed site planning has minimised the potential for noise impacts from plant to existing residences, as the most plant intensive buildings (medical centre and hospital) have been located next to the less sensitive industrial uses. Additionally, emissions from these buildings to existing residences would be the proposed aged care and ILU buildings.

By adopting the above methods noise emissions can be reasonably and feasibly controlled to the trigger levels determined using the NPfI guidelines. Consequently, no existing property surrounding the subject site would be adversely impacted by plant noise emissions.

4.2 ON-SITE VEHICLE MOVEMENTS

Vehicles will enter and leave the site from Harp Street. Harp Street carried medium levels of traffic. A proposed central street would be used to access the basement carpark, as well as providing a surface road for deliveries and passenger pick up and drop off.

It is envisaged that vehicle movements associated with the aged care, hospital and medical centre would largely occur during the day and early evening.

Noise emissions from vehicle movements on the site to existing would generally be assessed using the same triggers levels as applied to plant. However, traffic on surface roads noise cannot be controlled to the same extent as plant noise, and the trigger levels should be seen as goals that should be met provided the treatment is reasonable and feasible.

Notwithstanding, the planning of the proposed development minimises noise impact from vehicles by:

- Providing a basement car park with entrance and exit located close to the site entrance.
- The driveway is largely buffered from exiting residential properties by the proposed buildings and existing buildings located near Harp Street.

If required additional noise mitigation can be applied as follows:

- Limiting deliveries to day and evening periods.
- Incorporating solid barriers on the side of the driveway

4.3 CONCLUSION

The proposed planning of the subject development assists in minimising noise impacts to surrounding sensitive receivers. Any residual impacts can be controlled either by managing the noise sources or by implementing engineering controls.

A detailed assessment of noise impacts should occur prior to development approval/construction certificate as appropriate and any recommendations arising from the assessment should be incorporated into the development.

5 OPERATIONAL NOISE IMPACTS TO SENSITIVE USES WITHIN THE PROPOSED DEVELOPMENT

Noise emissions from the various uses on the subject site have the potential to impact the amenity of the more sensitive uses. The most noise sensitive proposed use are the residential independent living units, followed by the aged care and hospital buildings.

Noise emissions from plant and equipment to the independent living units should be limited to the same levels (using criteria determined using the NPfI guidelines) as that recommended for the existing dwellings, since it is desirable, to the extent possible, for these dwellings to have openable windows without the need for supplementary ventilation.

Noise levels from vehicle movements along the central street to the proposed buildings cannot be mitigated "at source" but any adverse impact can be mitigated by:

- Limiting night time vehicle deliveries.
- Installing acoustically rated glass and where necessary installing supplementary outside air ventilation.

It is recommended that noise within residential accommodation be assessed using the same criteria as the ISEPP and façade treatment applied accordingly. Given the relatively low traffic volumes, and the reduced night time flows only a moderate level of façade upgrading is expected, if at all.

5.1 NOISE FROM INCREASED LOCAL ROAD TRAFFIC

This section reviews the impact of additional traffic movements generated by the development.

The number of traffic movements generated by the proposed development has been estimated by GTA Consultants. In terms of traffic noise impact the street most impacted is likely to be Harp Street as this will carry all traffic generated by the development and is classified by the traffic engineers as a local road. GTA have predicted less than a 20% increase in traffic volumes on Harp Street. This will produce a less than 1 dB(A) increase in traffic noise levels, which will be inaudible change in noise. It is therefore concluded that additional traffic movements generated by the proposal would not produce an adverse noise impact.

6 CONSTRUCTION NOISE AND VIBRATION

The subject development is located close to sensitive receivers. Construction of the proposed development includes the excavation of a basement prior to construction commencement. This phase of the project is likely to generate the highest noise and vibration levels. Due to the nature of the works management of construction activities will be required to minimise noise and vibration impacts to nearby properties.

It is recommended that construction be in accordance with the EPA Interim Construction Noise Guideline. This will require:

- Identification of sensitive receivers.
- The setting of noise management levels for the various sensitive receivers.
- The assessment of likely noise/vibration levels at the receivers.
- The assessment of reasonable and feasible measures to minimise impacts.
- Where the level of impact is still significant consideration of other mitigation.
- Using the results of the study prepare a construction noise and vibration management plan in accordance with the IGNG should be completed prior to the commencement of works at the site which will be used to manage noise and vibration impacts.

7 RECOMMENDATIONS

The following recommendations are made in respect of any future development applications so as to appropriately assess the potential impacts identified and develop development controls to protect the amenity of the existing properties surrounding the subject site and future occupants of the development.

- Undertake noise monitoring to determine the existing noise levels at the site from existing industry/commercial properties. Obtain minimum 2 weeks of weather unaffected data. Undertake attended noise monitoring or otherwise assess the noise sources for modifying factors. Based on this determine façade noise levels including modifying factors as per NPfI.
- Undertake noise monitoring to determine the existing noise levels at the site from road traffic on Canterbury Road. Obtain minimum 5 working days of weather unaffected data.
- Undertake background noise monitoring in accordance with NPfI to determine rating background noise levels applying at existing and future dwellings.
- Noise emissions from plant and equipment, loading docks and the like should comply with noise criteria determined using the EPA NPfI trigger levels.
- Reasonable and feasible treatment should be applied to reduce noise from the internal road to existing residences to levels complying with the EPA NPfI trigger levels.
- Noise level within the aged care and independent living units due to road traffic (external and internal roads) should comply with the levels stipulated in the ISEPP.
- Construction noise and vibration should be managed in accordance with the EPA Interim Construction Noise Guideline. A construction noise and vibration management plan should be completed prior to the commencement of works at the site.

8 CONCLUSION

A desktop review of the proposed Campsie Health Precinct Masterplan has been undertaken. The following has been reviewed:

- Potential construction and operational and noise impacts arising from the proposed development on surrounding land uses.
- Potential noise impacts on sensitive uses within the proposed development from existing surrounding land uses.
- The compatibility of the various uses within the precinct.
- Impact of additional vehicle movements on local roads.

It is concluded that:

- The proposed planning mitigates the risk of noise impacts by:
 - Positioning less noise sensitive activities closer to nearby industry. Any industrial impacts in these buildings can be mitigated with noise with appropriate noise rated facades. These buildings also act as a noise buffer to the more noise sensitive independent living units proposed to be constructed as part of this development.
 - Placing buildings containing independent living units along the boundary common to existing detached dwellings. This use generates minimal noise emissions and the buildings act as screens for noise from the internal street and medical buildings.
 - Incorporating an underground car park with entrance close to Harp Street to minimise site traffic.
- Operational noise impacts can be adequately mitigated with the implementation of typical methods to achieve compliance with EPA and NSW Infrastructure SEPP guidelines. Controls have been recommended in respect of future studies, development approval and compliance.
- Construction noise and vibration impacts can be adequately managed through the implementation of the NSW EPA Interim Construction Noise Guideline.
- Additional traffic generated by the proposed development would not produce a significant increase in traffic noise levels on the surrounding road network.

Yours faithfully,

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Victor Fattoretto

APPENDIX 1 – PROPOSED MASTERPLAN

