DUNEDIN CITY COUNCIL
Kaunihera-a-rohe o Otepoti

Memorandum

TO: Campbell Thompson, Planner

FROM: Tanya Morrison, Environmental Health Officer

DATE: 13 December 2017

SUBJECT: **Resource Consent Application: LUC-2017-561**

5 Clark street, Dunedin (LOT 2 DP 439708)

Land Use Consent – Establish a seven bedroom apartment on the ground floor and reconfigure the existing three apartments on the first floor to create one.

Environmental Health has reviewed the application for Land Use Consent to establish a residential activity (establish a seven bedroom apartment on the ground floor and reconfigure the existing three apartments on the first floor to create one) at 5 Clark Street, Dunedin.

Environmental comments on this application relate to noise requirements. The following standards, guidelines, plan rules and legislative requirements are applicable for consideration:

Reverse Sensitivity

The site is zoned as Industrial 1 and is located in close proximity to commercial and industrial activities such as office buildings (across the street) and an automotive repair shop 2 buildings down (51 Maclaggan street (corner of Maclaggan/Clarke Street) from this proposed activity.

Our primary concern in relation to public health therefore relates to reverse sensitivity issues and in particular the impact of noise from existing industrial and commercial activities including traffic routes near the residents/occupants of the proposed accommodation. Should residential activity be approved, existing business operations need to be protected as it can be costly to rectify emissions that prior to the arrival of residential activity were not causing problems.

This has the potential for reverse sensitivity effects, particularly the LAF max values (loud, spontaneous noises) which could potentially cause sleep disturbance.

For general road and industrial noise the inner city district plan minimum performance standard of $D_{2m\ nT,w} + C_u > 30$ for insulation is deemed as the most suitable measure for noise reduction. Environmental health suggests that this requirement could be a condition of consent. This will need to be addressed in the level of glazing for windows and insulation provided through existing or added building materials during construction to achieve substantial noise reduction.

Consideration may need to be given to the installation of an internal ventilation system as the noise reduction calculations (assuming window glazing has been installed), refers to all windows remaining closed.

World Health Organisation (WHO) Guideline Values for community noise:

With respect to a residential dwelling (planning residential zone) the critical effects of noise are on sleep, annoyance and speech interference.

The above guidelines suggest that to avoid sleep disturbance, the indoor guideline values for bedrooms are 30dB LAeq for continuous noise and 45 LAmax for single sound events.

To protect the majority of people from being annoyed during the daytime, sound pressure levels on balconies, terraces and outdoor living areas should not exceed 55 dB LAeq for a steady continuous noise. To protect the majority of people from being moderately annoyed

during the daytime, the outdoor sound pressure level should not exceed 50dB LAeq. These values are based on annoyance studies most countries have adopted 40 dB LAeq as the maximum allowable level for new developments.

It is acknowledged that the application mentions 'party walls' already being in place with regards to the courtyard space and these already offering noise reduction/insulation to the courtyard area. Without noise measurements being provided or undertaken to ascertain the background noise levels in this location, Environmental Health cannot confirm whether these 'party walls' are sufficiently reducing noise levels within the courtyard area.

The applicant is advised to consider undertaking noise monitoring to ascertain background noise levels in order to fully assess the effectiveness of these current walls. Should noise monitoring indicate an insufficient noise level reduction (considering the World Health organisation recommendations/guidance) further construction/insulation work may need to be undertaken by the applicant with regards to the party walls.

Use of first floor – Existing residential activity/accommodation

We have no information regarding the internal insulation (with regards to noise) between the floors, given the proposed accommodation on the ground floor. Whilst within the same building, occupiers of accommodation on the ground floor are still protected by the provisions under The Resource Management Act 1991 with regards to Excessive or Unreasonable noise being generated from activities from the first floor.

Construction Noise

The period of construction applied for by the applicant is expected to be of 'Typical duration'. The **New Zealand Standard Acoustics - Construction Noise (NZS 6803:1999)** states that "Typical duration" of construction, means construction work at any one location for more than 14 calendar days but less than 20 weeks. If the applicant is proposing that construction times are not of 'typical duration' the applicant is advised to contact this department for clarification on the noise limits that apply.

Table 2 – Recommended upper limits for construction noise received in residential zones and dwellings in rural areas.

Time of week	Time period	Duration of work					
		Typical duration (dBA)		Short-term duration (dBA)		Long-term duration (dBA)	
		Leq	Lmax	Leq	Lmax	Leq	Lmax
Weekdays	0630-0730	60	75	65	75	55	75
	0730-1800	75	90	80	95	70	85
	1800-2000	70	85	75	90	65	80
	2000-0630	45	75	45	75	45	75
Saturdays	0630-0730	45	75	45	75	45	75
	0730-1800	75	90	80	95	70	85
	1800-2000	45	75	45	75	45	75
	2000-0630	45	75	45	75	45	75
Sundays and public holidays	0630-0730	45	75	45	75	45	75
	0730-1800	55	85	55	85	55	85
	1800-2000	45	75	45	75	45	75
	2000-0630	45	75	45	75	45	75

Noise limits (Leq) of 55dBA during daytime or 45 dBA at night time may mean that no construction work can take place.

District Plan rules: Noise Limits

As the proposed activity is within an industrial 1 zone, the following noise limits (L10) apply as per the Dunedin City District Plan (Volume 2).

Time Period	L10 Limit (dBA)
Daytime (7am – 9pm daily)	55 dBA
Night time (9pm – 7am daily)	40 dBA

Conclusion

It is expected that the ambient background noise will reduce considerably at night particularly with respect to commercial activity and traffic noise. Environmental health acknowledges the application states no record of any conflict between the existing residential activity on the site and adjoining industrial and commercial activities have been identified.

Environmental Health does however recommend that conditions be placed on this consent (if granted) to insulate the property (in terms of noise reduction) to minimise any potential reverse sensitivity effects. The applicant in insulating the dwelling in terms of noise reduction may also need to consider the level of insulation between the ground and first floor levels along with the current effectiveness of the 'party walls' at the south, west and northern boundaries.