REPORT



Noise Impact Assessment

Project Title: Royal Liver Creche

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AWN Consulting Ltd, The Tecpro Building, IDA Business & Technology Park, Clonshaugh, Dublin 17, D17 XD90

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Details	Written by	Approved by
Signature		
Name	Alistair Maclaurin	Dermot Blunnie
Qualifications	BSc MIOA	BEng (Hons) MSc MIOA MIEI
Title	Senior Acoustic Consultant	Associate Director (Acoustics)
Date	19 August 2026	

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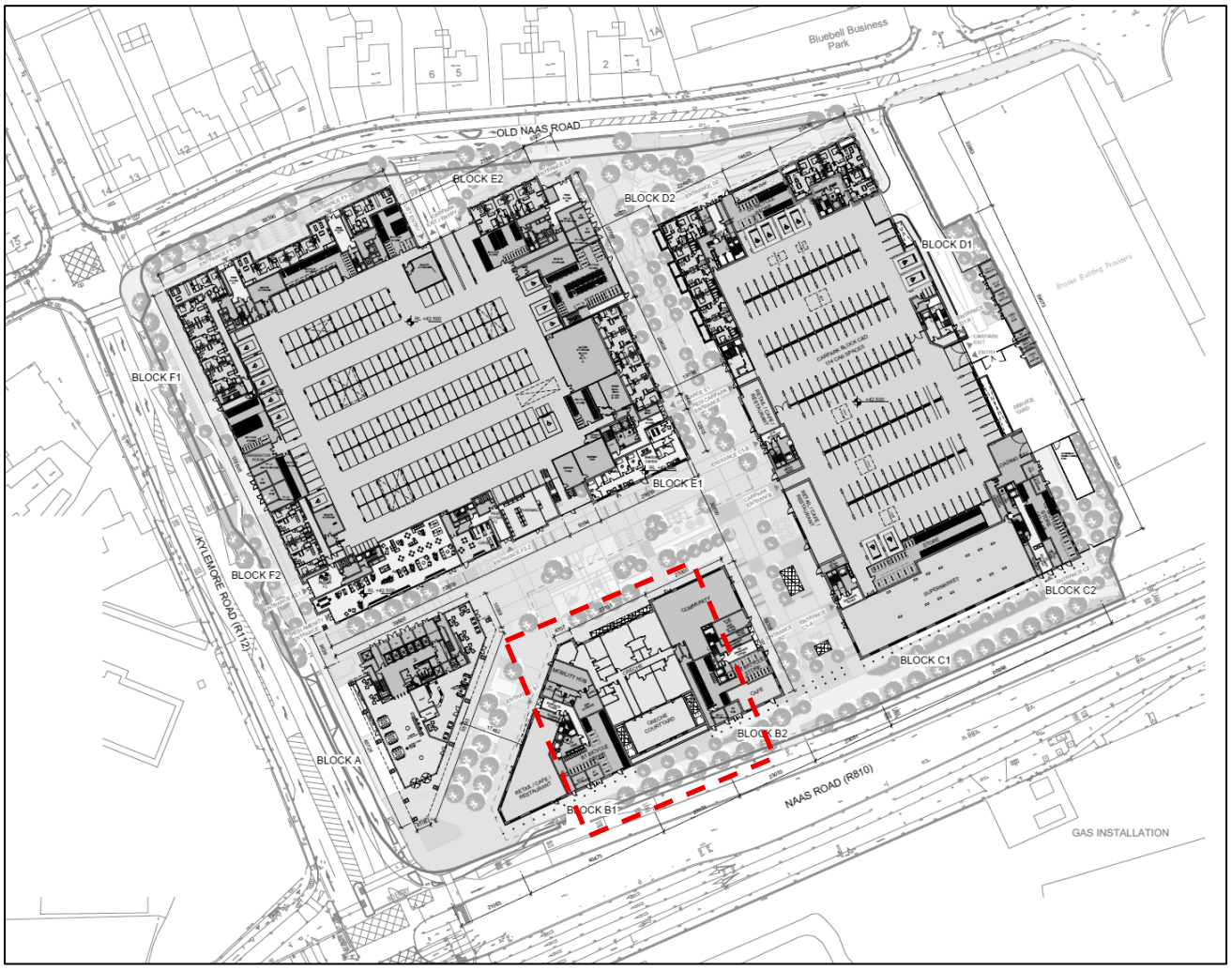
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1. INTRODUCTION

AWN Consulting, a Trinity Consultants Company, has been commissioned to prepare a noise impact assessment relating to the proposed creche for Phase 2 of the Royal Liver Project. The creche has been relocated since the original planning application and this report assesses the noise impacts of the creche in the new location, adjacent to Naas Road (R810). The location of the proposed creche is shown in Figure 1-1.

Figure 1-1. Location of Proposed Creche



The assessment has been undertaken using the following methodology:

- A baseline noise survey was undertaken at the proposed location of the relocated creche;
- An assessment of the predicted noise levels associated with the operational phase of the proposed development has been undertaken;
- Mitigation measures have been set out, to reduce the noise impact of the proposed development, where required.

2. BASELINE ENVIRONMENT

The baseline noise survey was conducted in accordance with ISO 1996: 2017*: Acoustics – Description and measurement and assessment of environmental noise*. Specific details are set out below.

2.1 Survey Location

An Unattended meter was located at the approximate position of the proposed creche courtyard area as identified in Figure 2-1.

Figure 2-1. Noise Monitoring Location



2.2 Survey Period

Unattended measurements were conducted from 10:45 on 29 August 2025 to 14:12hrs on 2 September 2025.

Survey periods for all measurements were 15 minutes.

Unattended noise measurements were conducted using a Rion NL-52 sound level meter. The measurement apparatus was check calibrated both before and after each survey using a Brüel & Kjær Type 4231 Sound Level Meter Calibrator.

2.3 Measurement Parameters

The survey results are presented in terms of the following three parameters:

L_{Aeq} is the equivalent continuous sound level. It is a type of average and is used to describe a fluctuating noise in terms of a single noise level over the sample period. It is typically used as a descriptor for ambient noise.

L_{AMax} is the maximum sound level that is exceeded during the survey period measured using slow weighting of 1 second.

The "A" suffix denotes the fact that the sound levels have been "A-weighted" in order to account for the non-linear nature of human hearing. All sound levels in this report are expressed in terms of decibels (dB) relative to $2x10^{-5}$ Pa.

2.4 Survey Results

Table 2-1 reviews the measured noise levels measured at the unattended monitoring location at UT1 over the course of the monitoring period.

Table 2-1. UT1 Daytime Measurements

Date	Sound Pressure Level (dB) per Octave Band (Hz)								Overall
	63	125	250	500	1000	2000	4000	8000	dB(A)
29-Aug	67	62	59	59	61	58	47	36	64
30-Aug	65	60	58	59	61	59	49	39	65
31-Aug	68	60	58	59	61	58	48	40	64
01-Sept	67	62	59	60	61	58	49	39	65
02-Sept	68	63	60	60	61	58	48	37	65
Average	67	61	59	59	61	58	48	38	65

3. CRITERIA

There are no specific Irish planning noise criteria applicable to external play areas associated with childcare facilities. Therefore, reference has been made to relevant UK best practice guidance.

The EIAR submitted as part of the original planning application (ref. 4238/19) has already identified sound insulation specifications for building façades (Chapter 12, Section 12.6 of the EIAR). These specifications will also apply to the creche facility for façades that face on to Naas Road. These proposed amendments do not alter the findings of the original assessment. Additionally, these specifications will also protect the residents in apartments that overlook proposed external creche area from potential noise from the external creche area, hence, these are not further assessed in this report.

3.1 BS8233:2014 Guidance on sound insulation and noise reduction for buildings

For the external play area that faces onto Naas Road, guidance is drawn from BS 8233 for recommendations for noise levels in external amenity areas. It states:

> *"For traditional external areas that are used for amenity space, such as gardens and patios, it is desirable that the external noise level does not exceed 50 dB $L_{Aeq,T}$, with an upper guideline value of 55 dB $L_{Aeq,T}$ which would be acceptable in noisier environments."*

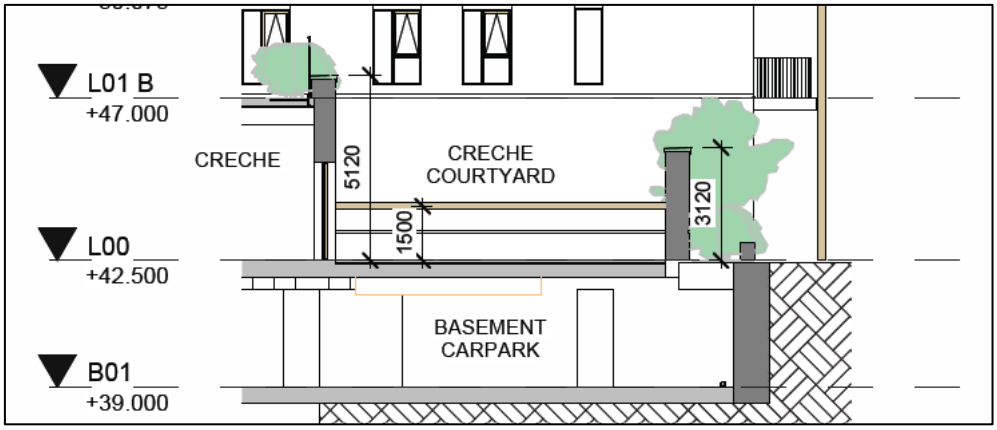
Taking consideration of this, a criterion of 55 dB L_{AeqT} has been adopted for the external play area for the proposed creche.

4. NOISE ASSESSMENT

The assessment of noise takes into consideration the proximity of the Naas Road to the proposed creche external play. The purpose of the assessment is to consider suitability of the external courtyard area in terms of noise impacts to the amenity space.

Figure 4-1 provides a cross-section of the proposed creche courtyard area. The cross-section specifies that there is a 3m wall to the perimeter to the courtyard proposed as part of the design.

Figure 4-1 Creche Courtyard Section



4.1 Noise Model

Proprietary noise calculation software was used for the purposes of establishing the potential traffic noise levels on the proposed courtyard area. The selected software, iNoise, calculates noise levels in accordance with the ISO 9613: *Acoustics – Attenuation of sound during propagation outdoors*.

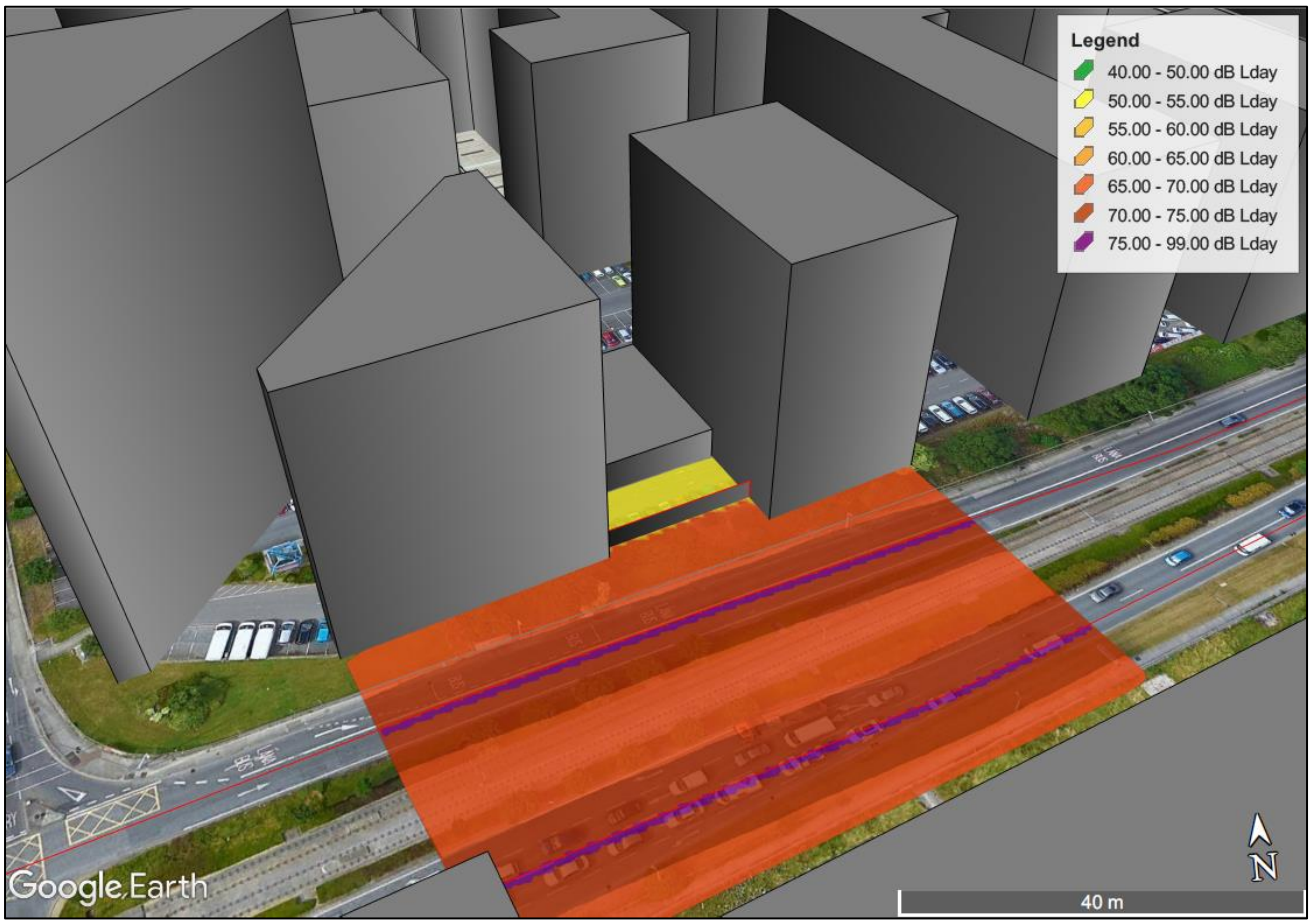
4.1.1 Noise Model Output

The noise model was calibrated to the measured noise levels previously presented in Section 2. A predicted noise level of 66 dB is achieved in the model in comparison with the average measured noise level of 65 dB. This is considered a strong correlation as a difference of 1 dB is within assessment tolerances and noise perceptibility thresholds.

The proposed development layout was then modelled and noise levels were predicted in the external courtyard area. Review of the model output shown in Figure 4-2 indicates that noise levels in the external courtyard area will be in the range of 50 to 55 dB $L_{Aeq,T}$ which is within the adopted criteria of 55 dB $L_{Aeq,T}$. The results confirm that no further mitigation is required to achieve the guidance noise levels.

Note that any proposed wall should be solid in structure, with no openings. If openings are desired for lighting purposes then they will be sealed off appropriately using perspex or similar material to ensure that the barrier remains effective for screening noise.

Figure 4-2 Predicted Noise Levels in Creche External Area



5. CONCLUSION

An assessment of noise impacts for the proposed creche has been undertaken.

Inward noise impacts to the creche itself will be controlled through the glazing and ventilation specifications identified as part of the original EIAR planning submission (planning ref. 4238/19, Chapter 12, Section 12.6 of the EIAR).

Additionally, apartments that overlook the proposed courtyard area will also be afforded protection from any possible outbreak of noise from the courtyard by the glazing and ventilation specifications of the original EIAR application.

This assessment has therefore focused on the assessment of noise in the external courtyard area of the proposed creche. Road traffic noise from Naas Road impacting on the courtyard has been modelled and the results indicate that external noise levels will be within the criteria outlined in Section 3 of the report.