

Persimmon Homes Limited

**Aberavon Waterfront, The Princess Margaret
Way, Port Talbot, SA12 6QW**

Noise Constraints Assessment

March 2020

Prepared on behalf of WYG Environment Planning Transport Limited.

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1.0 Introduction

This noise constraints report has been prepared by WYG Environment and Planning on behalf of Persimmon Homes Limited.

A description of the existing noise environment in and around the Site is provided. Noise surveys have been undertaken and the results used to verify predictions of the short-term and long-term effects of noise. The noise levels from the Development have been predicted at local representative receptors using CADNA noise modelling software which incorporates CRTN and ISO 9613 methodologies and calculations.

A list of acoustic terminology and abbreviations used in this report is provided in Appendix A, a set of location plans and noise contour plots relevant to the assessment are presented in Appendix B and Report Conditions are presented in Appendix C.

1.1 Technical Advice Note 11 – Noise

This report is intended to provide information relevant to the local planning authority and their consultees in support of the planning applications for the above proposed development. Policy guidance with respect to noise is found in Technical Advice Note (Wales) 11 Noise – October 1997 (TAN 11).

TAN 11 provides advice on how the planning system can be used to minimise the adverse impact of noise without placing unreasonable restrictions on development or adding unduly to the costs and administrative burdens of business. The Note gives recommended noise exposure categories for new dwellings (Table 1.1 below) and for noise from industrial and commercial developments reference is given to using standard BS 8233 for guidance on acceptable levels of noise within buildings.

Table 1.1 Noise Exposure Categories

Noise Source	Period	Noise Exposure Category			
		A	B	C	D
Road Traffic	07:00 – 23:00	<55	55 – 63	63 – 72	>72
	23:00 – 07:00	<45	45 – 57	57 – 66	>66
Air Traffic	07:00 – 23:00	<57	57 – 66	66 – 72	>72
	23:00 – 07:00	<48	48 – 57	57 – 66	>66
Rail Traffic	07:00 – 23:00	<55	55 – 66	66 – 74	>74
	23:00 – 07:00	<45	45 – 59	59 – 66	>66
Mixed Sources	07:00 – 23:00	<55	55 – 63	63 – 72	>72
	23:00 – 07:00	<45	45 – 57	57 – 66	>66

The noise exposure categories A - D are defined as follows:

i. Noise Exposure Category A

For proposals in this category, noise need not be considered as a determining factor in granting planning permission, although the noise level at the high end of the category should not be regarded as a desirable level.

ii. Noise Exposure Category B

For proposals in this category, authorities should increasingly take noise into account when determining planning applications and where appropriate, conditions should be imposed to ensure an adequate level of protection against noise.

iii. Noise Exposure Category C

For proposals in this category, planning permission should not normally be granted. Where it is considered that permission should be given, for example, because there is no alternative, quieter sites, conditions should be imposed to ensure a commensurate level of protection against noise.

iv. Noise Exposure Category D

For proposals in this category, planning permission should normally be refused.

2.0 Assessment Criteria

2.1 Noise Intrusion Assessment Criteria

The criteria in BS 8233:2014 '*Guidance on sound insulation and noise reduction for buildings – code of practice*' have been chosen as a suitable method for determining an adequate level of noise control to ensure that noise levels within properties, as a result of the existing environment, meet the following noise guideline values specified in the standard:

Living rooms	$L_{Aeq,16 \text{ hour}} =$	35 dB
Bedrooms	$L_{Aeq,8 \text{ hour}} =$	30 dB,
Gardens	$L_{Aeq,16 \text{ hour}} =$	50 - 55 dB

Typical façades, regardless of construction, will offer around 10 dB sound insulation when windows are open. For the purposes of this assessment, the maximum external noise level from the source under consideration will be 45 dB(A) during the daytime, and 40 dB(A) during the night-time to ensure a maximum daytime L_{Aeq} of 35 dB, and a maximum night-time L_{Aeq} of 30 dB within habitable rooms are achieved.

These levels are also comparable to the World Health Organisation Recommendations in their 'Guidelines for Community Noise' (1999) publication which states that outdoor levels of 45 dB $L_{Aeq,T}$ (No more than 10 to 15 times per night) for open windows at night or internal levels of 30 dB $L_{Aeq,T}$ are guideline values to prevent sleep disturbance.

In lieu of specific guidance relating to sports pitches, reference has been given to the following document: Sports England Artificial Grass Pitch (AGP) Acoustics – Planning Implications, New Guidance for 2015. This document (subsequently referred to as the SE guidance document) states that:

'The determining noise criteria for AGPs proximity to residential properties, to avoid moderate annoyance in the daytime and evenings, as set by The World Health Organisation's 'Guidelines for Community Noise': = 50 dB $L_{Aeq(1 \text{ hour})}$ upper noise limit external to residential properties and within external living areas.'

3.0 Assessment Methodology

3.1 Noise Modelling Methodology

Three dimensional noise modelling has been undertaken based on the monitoring data to predict L_{Aeq} and L_{Amax} noise levels at a large number of locations both horizontally and vertically. CADNA noise modelling software has been used which is based on the Department of Transport Calculation of Road Traffic Noise (CRTN) and ISO 9613 noise propagation methodology.

The modelling software calculates noise levels based on the emission parameters and spatial settings that are entered. Input data, assumptions and model settings as given in the table below have been used.

Table 3.1 Modelling Parameters Sources and Assumptions

Parameter	Source	Details
Horizontal distances – around site	Ordnance Survey	Ordnance Survey
Ground levels	Environment Agency	EA LiDAR 2.0 m DTM (resolution reduced to 4.0 m)
Building heights – around site and surrounding area	WYGE Observations	8m height
Receptor positions	WYGE	Height of 1.5 m for ground floor, 4 m for first floor receptors. 1.5 m height for model grid (day) and monitoring locations for validation. 4 m for model grid (night).
Absorbent Ground	CADNA	Frequency dependant ground absorption has been applied based on values specified in VDI 2714/16 clause 6.3

It is acknowledged that a number of these assumptions will affect the overall noise levels presented in this report. However, it should be noted that certain assumptions made, as identified above, are worst case.

3.2 Model Input Data

The models have been verified against the long-term and/or most relevant short-term measurement positions. The comparison between the monitoring and modelling results are shown in the tables below. It should be noted that some measurement positions are representative of multiple sources as reflected in the tables below.

Table 3.2 Daytime Modelled vs. Monitored Results $L_{Aeq,T}$

Monitoring Position	Monitored L_{Aeq} (dB)	Modelled L_{Aeq} (dB)	Difference between modelled and measured noise level (dB)
LT1	57.9	57.9	0.0
LT3	59.0	59.0	0.0
ST3	58.7	59.5	0.8
ST4	58.5	58.5	0.0
ST5	57.8	57.8	0.0
ST6	58.7	58.7	0.0

All values are sound pressure levels in dB re: 2×10^{-5} Pa

Table 3.3 Night-time Modelled vs. Monitored Results $L_{Aeq,T}$

Monitoring Position	Monitored L_{Aeq} (dB)	Modelled L_{Aeq} (dB)	Difference between modelled and measured noise level (dB)
LT1	56.1	56.1	0.0
LT3	55.0	55.0	0.0
ST1	51.4	53.2	1.8
ST3	55.2	55.6	0.4
ST4	54.3	54.3	0.0
ST5	50.7	50.7	0.0
ST6	46.8	49.1	2.3

All values are sound pressure levels in dB re: 2×10^{-5} Pa

Within the daytime and night-time noise models all verification points show a divergence between monitored and modelled results of no more than 3 dB. The models are therefore considered to be suitably verified.

Afan Lido Football Club - Sports Pitch Noise Data

Due to adverse weather conditions occurring during the survey, specific noise data during matches or training at the adjacent football club is not available. Therefore, source noise data associated with sporting activities at the adjacent football club, have been verified as an area source to a noise level of 58 dB $L_{Aeq,1hour}$ at 10m from the halfway line which is based on the reference 'typical' noise level from a sports pitch stated within the SE guidance document associated with measurements commissioned by SE. The height of the area sources has been set to 1.5m. To present a worst-case scenario, activities on both pitches have been assessed to be occurring at the same time.

4.0 Noise Survey

4.1 Noise Survey Methodology

A monitoring survey was undertaken to characterise baseline ambient noise levels currently experienced on the site and to establish the relative local background and traffic noise levels. Equipment used during the survey included:

Rion NL-32	Environmental Noise Analyser (WYG12)	s/n	213442
Rion NL-52	Environmental Noise Analyser (WYG23)	s/n	732146
Rion NL-52	Environmental Noise Analyser (WYG26)	s/n	264488
Rion NL-52	Environmental Noise Analyser (WYG27)	s/n	264490
Rion NC-75	Sound Calibrator	s/n	35270131

The measurement equipment was checked against the appropriate calibrator at the beginning and end of the measurements, in accordance with recommended practice, a drift of 0.2 dB was observed. The accuracy of the calibrators can be traced to National Physical Laboratory Standards, calibration certificates for which are available on request.

A baseline monitoring survey was undertaken at 9 locations (as specified in the following table and shown in SK01 of Appendix B) from Thursday 20th February 2020 to Tuesday 25th February 2020. Attended short term measurements were undertaken at 6 during day, evening and night-time periods with two additional locations being measured unattended over a 89 hour period. The raw data collected from the long-term monitoring is available upon request.

Measurements were taken in general accordance with BS 7445-1:2003 *The Description and Measurement of Environmental Noise: Guide to quantities and procedures*. Weather conditions during the survey period were observed as being dry and windy with scattered showers. Anemometer readings confirmed that wind speeds were less than 5 ms⁻¹ at all times during the survey, with a predominant South-Westerly wind direction, during the survey.

Table 4.1 Noise Monitoring Locations

Ref	Description
LT1	North-East tip of the site bordering the Princess Margaret way
LT2	Centre of the North-West perimeter fence of the site, bordering Afan Lido FC
LT3	Centre South-West perimeter fence bordering Channel View
ST1	Outside Burger King alongside The Princess Margaret way
ST2	Down the road leading to Port Talbot Bowls and Afan Lido FC
ST3	Channel View outside the Sports bar

Ref	Description
ST4	Along Princess Margaret Way adjacent the Seafront behind the grounds of Tywyn Primary School
ST5	In front of houses on Victoria Road
ST6	Junction of Sunnybank Road and Channel View

4.2 Noise Survey Results

The dominant noise source in the area is road traffic noise with additional contributions from the sea and adverse weather conditions. Additionally, it is understood that due to roadworks, Princess Margaret Way was closed from Dalton Road to Cinnamon Kitchen roundabout to the north west of the site. Vehicular traffic passed the site during the survey including the re-routing of vehicles to the retail park, however, traffic conditions during the survey may not have been typical.

Over a large period of the unattended noise survey, adverse weather conditions (high winds and heavy rain) were present. Noise data which has been significantly influenced by the adverse weather conditions has been omitted from the dataset presented in Table 4.3.

Ambient and background noise levels are usually described using the L_{Aeq} index (a form of energy average) and the L_{A90} index (i.e. the level exceeded for 90% of the measurement period) respectively. Road traffic noise is generally described using the L_{A10} index (i.e. the level exceeded for 10% of the measurement period). For the long-term (LT) locations, the presented $L_{Aeq,T}$ and $L_{A10,T}$ are average noise levels whilst the L_{A90} is the modal noise level of each 5 minute measurement over the stated survey period.

Table 4.2 Meteorological Conditions during the Survey

Survey Location	Date & Time	Temperature (°C)	Wind Speed (m/s)	Wind Direction	Cloud Cover (Oktas)	Dominant Noise Source
Day ST1	25/02/2020 10:25:14	6	1-2	W	6	Traffic on Princess Margaret Way, Waves from the Sea front, Burger King employees emptying bins
Day ST2	25/02/2020 10:07:18	6	0-2	W	4	Traffic on Princess Margaret Way, Waves from the Sea front, customers in Bowls club car park
Day ST3	25/02/2020 11:31:34	7	1-2	W	6	Traffic from Channel view and Princess Margaret way, footfall from pedestrians
Day ST4	25/02/2020 10:44:39	7	2-3	W	2	Traffic on Princess Margaret Way, Waves from the Sea front, footfall from dog walkers

Survey Location	Date & Time	Temperature (°C)	Wind Speed (m/s)	Wind Direction	Cloud Cover (Oktas)	Dominant Noise Source
Day ST5	25/02/2020 11:02:24	7	2-3	W	3	Traffic on Victoria road and housing estates nearby
Day ST6	25/02/2020 11:31:34	7	0-2	W	7	Traffic on crossroads between Sunnybank road and Channel view
Evening ST1	20/02/2020 21:05:23	5.0	2-6	W	2	Traffic on Princess Margaret Way, Waves from the Sea front
Evening ST2	20/02/2020 21:23:43	5.0	0-3	W	2	Traffic on Princess Margaret Way, Waves from the Sea front
Evening ST3	20/02/2020 20:45:34	5.0	0-4	W	0	Traffic from Channel view and Princess Margaret way, footfall from pedestrians
Evening ST4	20/02/2020 22:27:36	5.0	3-4	W	0	Traffic on Princess Margaret Way, Waves from the Sea front
Evening ST5	20/02/2020 22:07:19	5.0	0-3	W	0	Traffic on Victoria road and housing estates nearby
Evening ST6	20/02/2020 21:45:14	5.0	0-3	W	0	Traffic on crossroads between Sunnybank road and Channel view
Night ST1	20/02/2020 23:01:39	5.0	2-4	W	7	Wind, Traffic on Princess Margaret Way, Waves from the Sea front
Night ST2	20/02/2020 23:19:34	5.0	1-3	W	6	Wind, Traffic on Princess Margaret Way, Waves from the Sea front
Night ST3	20/02/2020 23:39:08	5.0	2-4	W	7	Wind, Traffic from Channel view and Princess Margaret way, footfall from pedestrians
Night ST4	21/02/2020 00:36:03	5.0	3-4	W	7	Wind, Traffic on Princess Margaret Way, Waves from the Sea front, footfall from dog walkers
Night ST5	21/02/2020 00:16:34	5.0	1-3	W	6	Wind, Traffic on Victoria road and housing estates nearby
Night ST6	20/02/2020 23:57:10	5.0	1-3	W	6	Wind, Traffic on crossroads between Sunnybank road and Channel view

The results of the statistical measurements and frequency measurements conducted during the survey are summarised in the following table. All values are sound pressure levels in dB (re: 2×10^{-5} Pa).

Table 4.3 Results of Baseline Noise Monitoring Survey (Average Levels)

Period	Duration (T)	Monitoring Date and Times	Location	L _{Aeq,T} (dB)	L _{Amax,T} (dB)	L _{Amin,T} (dB)	L _{A10,T} (dB)	L _{A90,T} (dB)
Weekday Daytime 07:00 - 23:00	4 Hours	24/02/2020 – 25/02/2020 22:00 – 09:45	LT1	57.9	90.1	46.2	59.2	54
Weekday Night-time 23:00 – 07:00	12 Hours	24/02/2020 – 25/02/2020 00:00 – 07:00		56.1	76.7	45.0	56.1	51
Weekend Daytime 07:00 - 23:00	9 Hours	23/02/2020 – 23/02/2020 14:10 – 23:00		54.8	85.2	42.5	56.2	51
Weekend Night-time 23:00 – 07:00	4 hours	22/02/2020 – 24/02/2020 23:00 – 00:00		56.1	69.4	42.7	55.8	56
Weekday Daytime 07:00 - 23:00	4 Hours	24/02/2020 – 25/02/2020 22:00 – 09:40	LT2	51.2	70.3	42.7	52.5	47
Weekday Night-time 23:00 – 07:00	12 Hours	24/02/2020 – 25/02/2020 00:00 – 07:00		51.1	68.9	43.5	51.7	47
Weekend Daytime 07:00 - 23:00	9 Hours	23/02/2020 – 23/02/2020 14:10 – 23:00		47.0	72.0	38.6	47.8	42
Weekend Night-time 23:00 – 07:00	4 hours	22/02/2020 – 24/02/2020 23:00 – 00:00		53.5	80.4	42.1	53.3	53
Weekday Daytime 07:00 - 23:00	4 Hours	24/02/2020 – 25/02/2020 22:00 – 10:00	LT3	59.0	92.6	45.6	59.5	52
Weekday Night-time 23:00 – 07:00	12 Hours	24/02/2020 – 25/02/2020 00:00 – 07:00		48.4	76.5	41.5	52.9	49
Weekend Daytime 07:00 - 23:00	9 Hours	23/02/2020 – 23/02/2020 14:10 – 23:00		54.8	89.8	39.5	53.6	44
Weekend Night-time 23:00 – 07:00	4 hours	22/02/2020 – 24/02/2020 23:00 – 00:00		55.0	82.4	38.8	52.7	54
Daytime 07:00 - 19:00	15 Mins	25/02/2020 10:25:14	ST1	59.8	77.9	52.3	61.8	54.8
Daytime 07:00 - 19:00	15 Mins	25/02/2020 10:07:18	ST2	47.0	66.1	41.7	49.3	43.6
Daytime 07:00 - 19:00	15 Mins	25/02/2020 11:31:34	ST3	58.7	84.1	48.5	60.7	51.1
Daytime 07:00 - 19:00	15 Mins	25/02/2020 10:44:39	ST4	58.5	73.8	50.2	61.8	53.7
Daytime 07:00 - 19:00	15 Mins	25/02/2020 11:02:24	ST5	57.8	74.6	47.1	61.0	50.6
Daytime 07:00 - 19:00	15 Mins	25/02/2020 11:31:34	ST6	58.7	75.3	48.5	60.7	51.1
Evening 19:00 - 23:00	15 Mins	20/02/2020 21:05:23	ST1	56.6	67.0	51.8	58.4	54.3
Evening 19:00 - 23:00	15 Mins	20/02/2020 21:23:43	ST2	52.7	82.7	47.1	52.0	49.1
Evening 19:00 - 23:00	15 Mins	20/02/2020 20:45:34	ST3	56.8	77.7	47.9	53.6	49.7
Evening 19:00 - 23:00	15 Mins	20/02/2020 22:27:36	ST4	56.4	69.8	49.6	58.1	52.8
Evening 19:00 - 23:00	15 Mins	20/02/2020 22:07:19	ST5	57.4	73.4	44.8	60.7	47.3
Evening	15 Mins	20/02/2020 21:45:14	ST6	50.2	68.5	42.0	49.8	43.8

Period	Duration (T)	Monitoring Date and Times	Location	L _{Aeq,T} (dB)	L _{Amax,T} (dB)	L _{Amin,T} (dB)	L _{A10,T} (dB)	L _{A90,T} (dB)
19:00 - 23:00								
Night 23:00 – 07:00	15 Mins	20/02/2020 23:01:39	ST1	51.4	60.9	47.3	52.6	49.9
Night 23:00 – 07:00	15 Mins	20/02/2020 23:19:34	ST2	55.8	63.4	52.8	56.9	54.5
Night 23:00 – 07:00	15 Mins	20/02/2020 23:39:08	ST3	55.2	73.5	49.9	54.9	52.2
Night 23:00 – 07:00	15 Mins	21/02/2020 00:36:03	ST4	54.3	60.0	51.4	55.3	53.2
Night 23:00 – 07:00	15 Mins	21/02/2020 00:16:34	ST5	50.7	70.1	45.1	50.6	47.8
Night 23:00 – 07:00	15 Mins	20/02/2020 23:57:10	ST6	46.8	51.2	44.0	47.69	45.8

All values are sound pressure levels in dB re: 2×10^{-5} Pa

5.0 Assessment of Key Effects

5.1 Noise Exposure Assessment

An assessment of road traffic and sports pitch noise has been undertaken based on the model input data provided in Section 3.2.

In accordance with TAN 11 the results of the modelling presented in SK02 and SK03 in Appendix B show that areas of the proposed development site falls within Noise Exposure Categories (NEC) A and B during the daytime and night-time (A = Green, B = Yellow, C = Orange, D = Pink). The NEC categories relevant to the site are explained as follows:

Noise Exposure Category A

For proposals in this category, noise need not be considered as a determining factor in granting planning permission, although the noise level at the high end of the category should not be regarded as a desirable level.

Noise Exposure Category B

For proposals in this category, authorities should increasingly take noise into account when determining planning applications and where appropriate, conditions should be imposed to ensure an adequate level of protection against noise.

With specific regard to noise from the sports pitches, predicted noise contributions for the sports pitches along the proposed development boundary marginally exceed the 50 dB $L_{Aeq,1hr}$ SE recommended criteria with noise levels predicted to be around 53 dB $L_{Aeq,1hr}$ along the boundary adjacent to the sports pitches. Noise levels drop to below the criteria at around 10m into the site.

In addition, following a review of the noise data and audio recording at LT1 on the site boundary, indicate noise levels while the sea was audible ranging from 47 – 61 dB $L_{Aeq,5min}$ although noise levels within the higher range are influenced by adverse weather conditions. Typically noise levels associated with the sea are below 55 $L_{Aeq,5mins}$ and is not considered to be a significant constraint.

5.2 Design Recommendations

Given the sites location next to the local road network there will be areas within parts of the site where the relevant BS 8233 criteria will be exceeded when windows are open. However, this is typical in such locations and mitigation can achieved through a suitable glazing and ventilation strategy which would be established during later design stages and would not be prohibitive.

Based on the highest measured L_{Aeq} noise levels of 59 dB during the daytime and 56 dB during the night-time. For proposed residential dwelling located at the extremities of the site, overlooking The Princess Margaret way and Channel View, provision should be made for alternative ventilation. Standard double glazing (e.g. 4mm/16mm/4mm) should be acceptable throughout the development.

Alternative ventilation can be provided in several ways from acoustic trickle vents (which need to have the same acoustic performance as the glazing), other passive ventilation systems or mechanical ventilations systems. The sound insulation performance of the units installed should be comparable to the glazing specification.

With regards to amenity in external private gardens, a noise criterion of 55 $dB_{LAeq,16hours}$ is considered to represent the target design noise level in gardens. In order to achieve this, screening to private external amenity areas around the boundaries of the site will be required.

Screening could comprise the installation of barriers or orientating buildings towards the roads with gardens to the rear. The options would be dependent on various design requirements such as proposed ground levels and the distance of the residential premises to adjacent roads. Should any gardens be proposed along the eastern boundary of the southern parcel of the site, a 1.8m barrier should be installed as a good design measure to minimise the potential for noise associated with the school playing fields.

6.0 Conclusions

This report presents the findings of a noise constraints assessment in relation to support the allocation of a site proposed for housing development located at Aberavon Waterfront, The Princess Margaret Way, Port Talbot, SA12 6QW

Recommendations have been outlined within the report to support the masterplanning of the site and this exercise establishes that the site is suitable for residential development. Consideration will need to be given to screening from the adjacent road network and sports pitches through the use of building orientation and / or barriers such as close boarded fences.

Standard double glazing would generally be acceptable within the site, however, alternative ventilation will need to be considered within the parts of the site most exposed to road traffic noise and potentially noise from the sports pitches depending on the final layout.

Appendices

Appendix A – Acoustic Terminology and Abbreviations

Acoustic Terminology

- dB** Sound levels from any source can be measured in frequency bands in order to provide detailed information about the spectral content of the noise, i.e. whether it is high-pitched, low-pitched, or with no distinct tonal character. These measurements are usually undertaken in octave or third octave frequency bands. If these values are summed logarithmically, a single dB figure is obtained. This is usually not very helpful as it simply describes the total amount of acoustic energy measured and does not take any account of the ear's ability to hear certain frequencies more readily than others.
- dB(A)** Instead, the dBA figure is used, as this is found to relate better to the loudness of the sound heard. The dBA figure is obtained by subtracting an appropriate correction, which represents the variation in the ear's ability to hear different frequencies, from the individual octave or third octave band values, before summing them logarithmically. As a result the single dBA value provides a good representation of how loud a sound is.
- L_{Aeq}** Since almost all sounds vary or fluctuate with time it is helpful, instead of having an instantaneous value to describe the noise event, to have an average of the total acoustic energy experienced over its duration. The L_{Aeq, 07:00 – 23:00} for example, describes the equivalent continuous noise level over the 12 hour period between 7 am and 11 pm. During this time period the L_{pA} at any particular time is likely to have been either greater or lower than the L_{Aeq, 07:00 – 23:00}.
- L_{Amin}** The L_{Amin} is the quietest instantaneous noise level. This is usually the quietest 125 milliseconds measured during any given period of time.
- L_{Amax}** The L_{Amax} is the loudest instantaneous noise level. This is usually the loudest 125 milliseconds measured during any given period of time.
- L_n** Another method of describing, with a single value, a noise level which varies over a given time period is, instead of considering the average amount of acoustic energy, to consider the length of time for which a particular noise level is exceeded. If a level of x dBA is exceeded for say. 6 minutes within one hour, then that level can be described as being exceeded for 10% of the total measurement period. This is denoted as the L_{A10, 1 hr} = x dB.
- The L_{A10} index is often used in the description of road traffic noise, whilst the L_{A90}, the noise level exceeded for 90% of the measurement period, is the usual descriptor for underlying background noise. L_{A1} and L_{Amax} are common descriptors of construction noise.
- R_w** The *weighted sound reduction index* determined using the above *measurement* procedure, but weighted in accordance with the procedures set down in BS EN ISO 717-1. Partitioning and building board manufacturers commonly use this index to describe the inherent sound insulation performance of their products.

Abbreviations

CADNA – Computer Aided Noise Abatement

WYGE – WYG Environment

NPPF – National Planning Policy Framework

NPPG – National Planning Practice Guidance

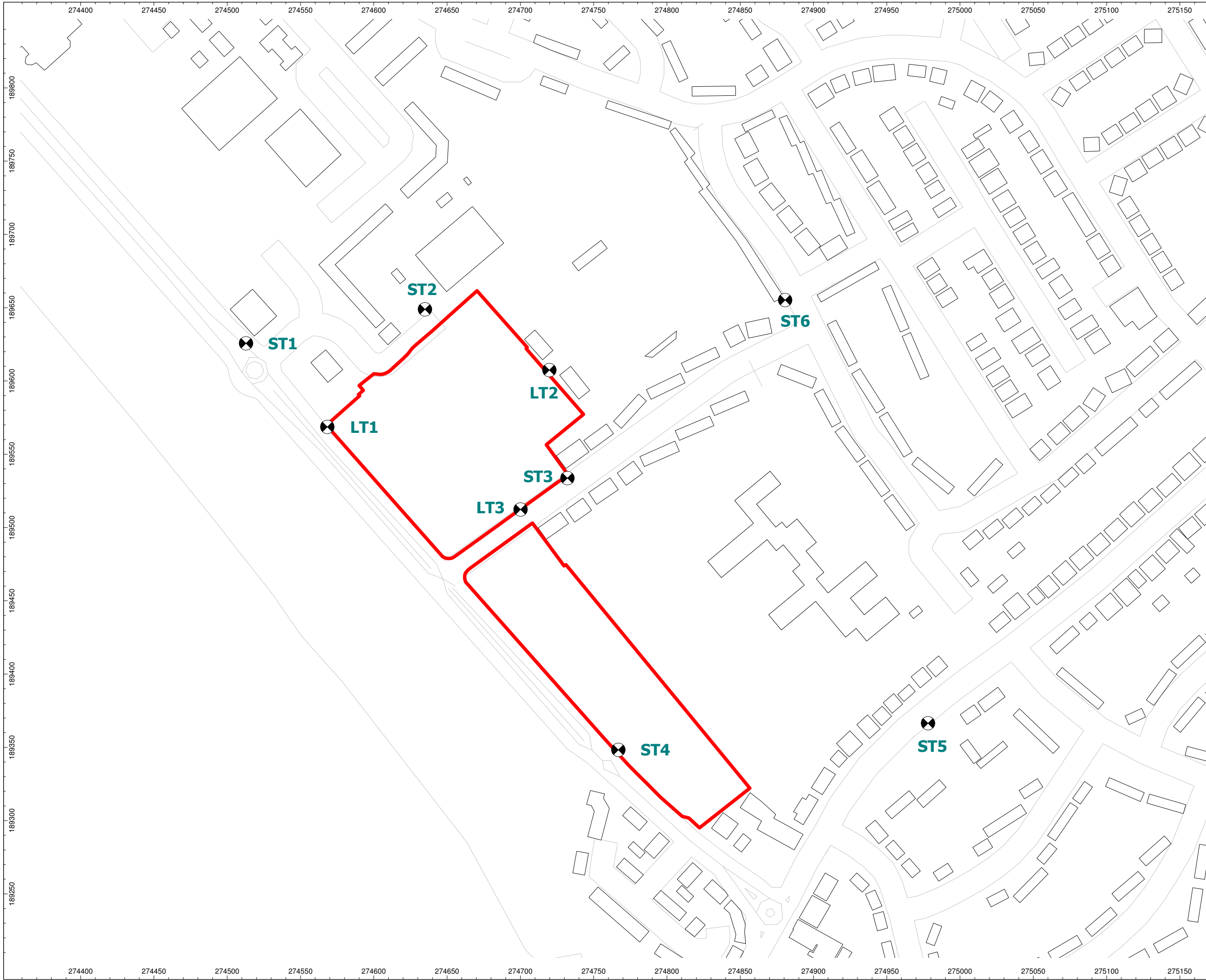
SE – Sports England

Appendix B – Sketches

SK01 Noise Monitoring Location Plan

SK02 Daytime Noise Contour Plot $L_{Aeq,16hr}$

SK03 Night-time Noise Contour Plot $L_{Aeq,8hr}$



Client:
Persimmon Homes Limited

Project:
Aberavon Waterfront

Project Number:
A116745

Drawing Title / Scenario:
Noise Monitoring Location Plan

Drawing Number:
SK01

Key:
Site Boundary: 

Noise Monitoring Locations: 

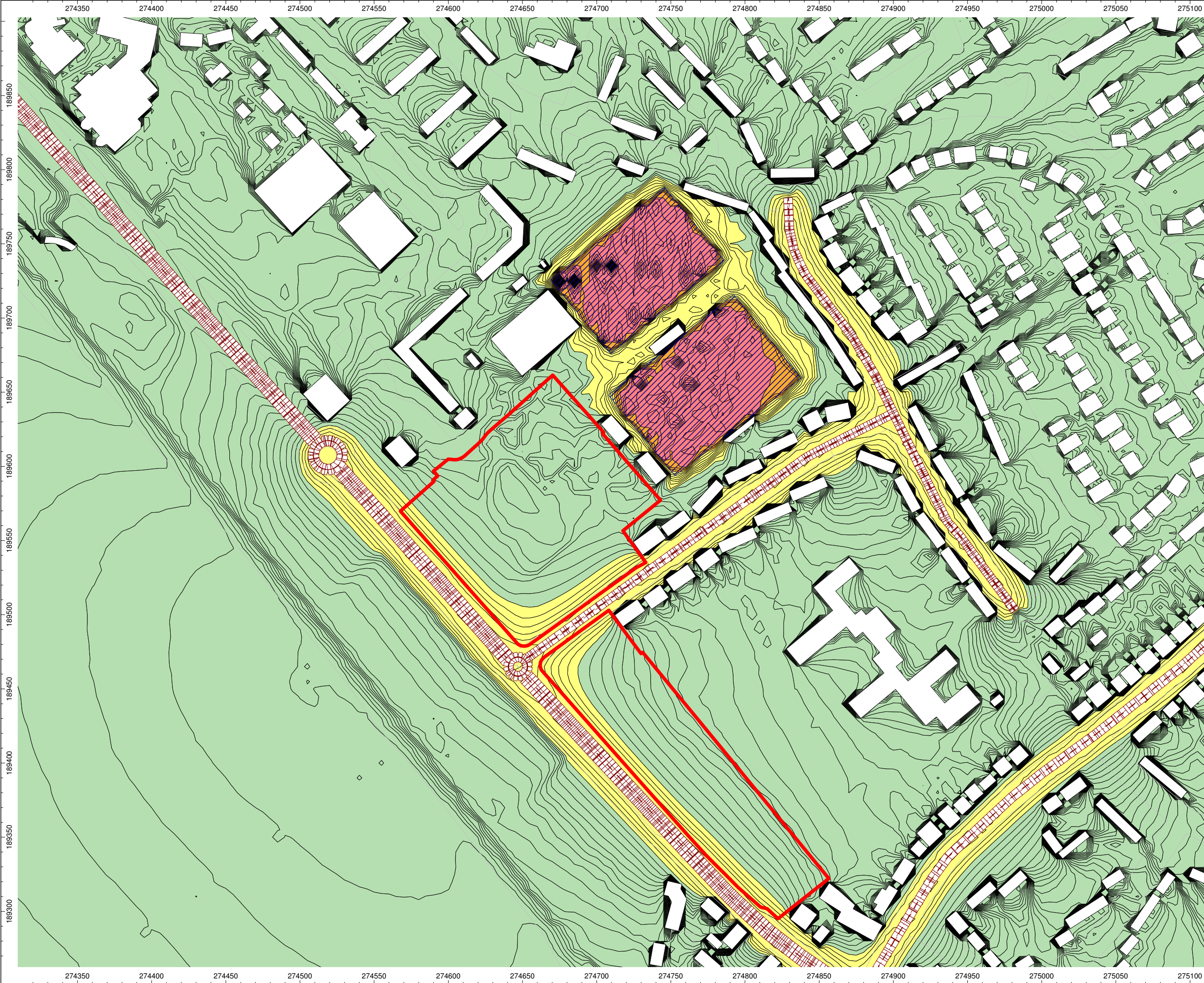
Scale : Not to scale

WYGE Leicester 02.03.20



Executive Park
Avalon Way
Anstey
Leicestershire
LE7 7GR
Tel 0116 234 8000

© WYG Environment



Client:
Persimmon Homes
Limited

Project:
Aberavon Waterfront

Project Number:
A116745

Drawing Title / Scenario:
Daytime Noise Contour
Plot LAeq,16hour

Drawing Number:
SK02

Key:

Site Boundary: —

— 0 - 55 dBA
— 55 - 63 dBA
— 63 - 72 dBA
— >66 dBA

Scale : Not to scale

Contour height at 1.5m

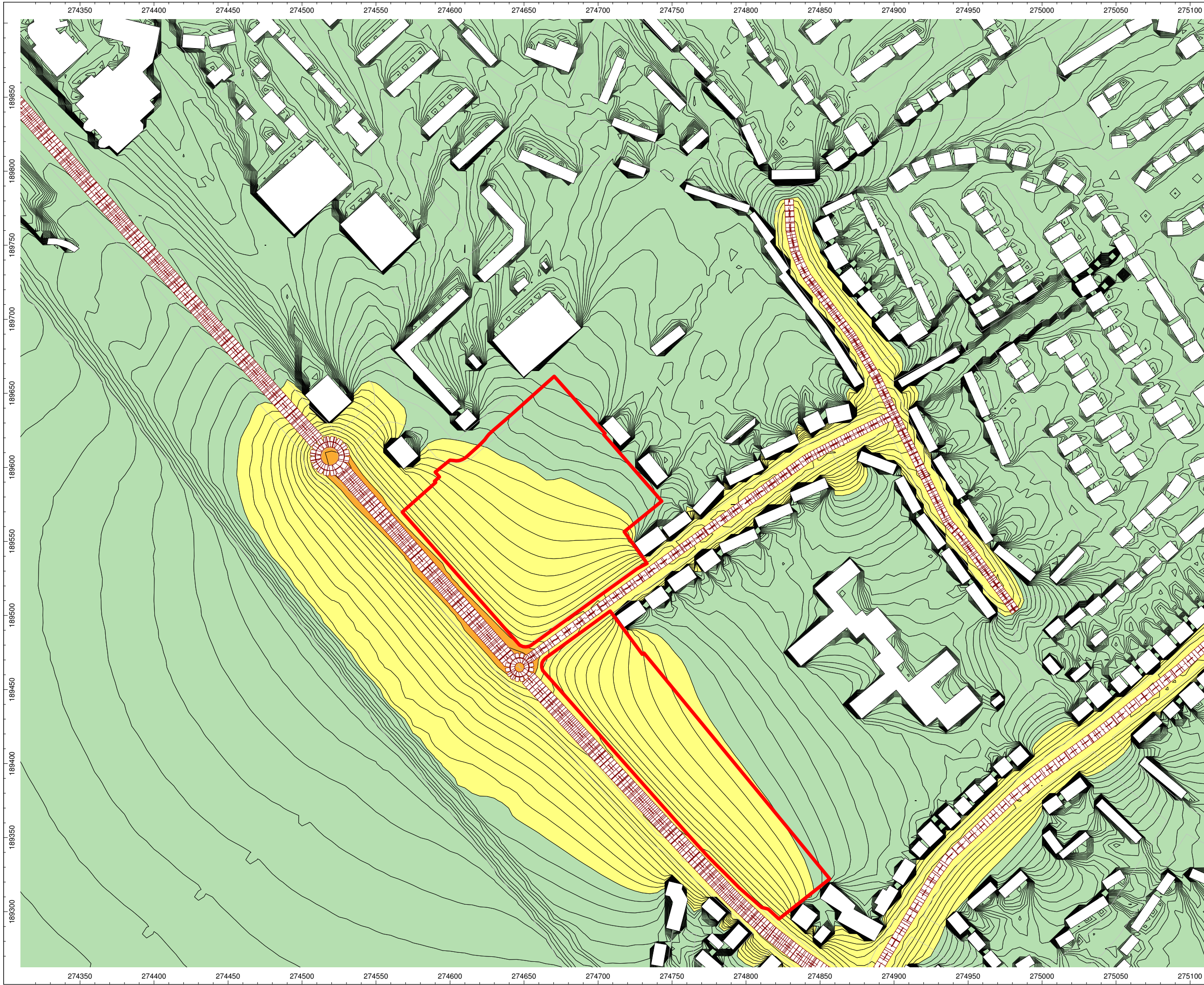
Please note: Noise contour
plots are for illustrative
purposes only

WYGE Leicester 02.03.20



Executive Park
Avalon Way
Anstey
Leicestershire
LE7 7GR
Tel 0116 234 8000

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Client:
Persimmon Homes
Limited

Project:
Aberavon Waterfront

Project Number:
A116745

Drawing Title / Scenario:
Daytime Noise Contour
Plot LAeq,8hour

Drawing Number:
SK03

Key:
Site Boundary: —

■ 0 - 45 dBA
■ 45 - 57 dBA
■ 57 - 66 dBA
■ >66 dBA

Scale : Not to scale
Contour height at 4.0m

Please note: Noise contour
plots are for illustrative
purposes only

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Appendix C – Report Conditions

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The whole of the report must be read as other sections of the report may contain information which puts into context the findings in any executive summary.

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