

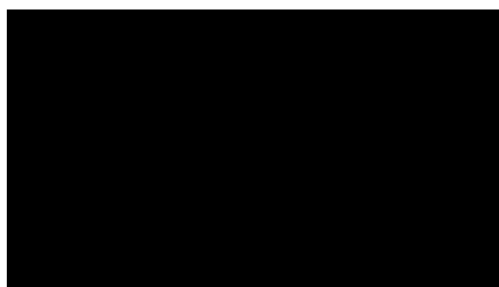
Persimmon Homes

Wick, North Littlehampton

Noise Assessment

December 2019

Executive Park, Avalon Way, Anstey, Leicester, LE7 7GR



Document Control

Project: Wick, North Littlehampton

Client: Persimmon Homes

Job Number: A115680

File Origin: O:\Acoustics Air Quality and Noise\Active Projects\A115680

Document Checking:

Prepared by:	Emma Aspinall <i>Environmental Consultant</i>	Initialled: EA
--------------	--	----------------

Checked by:	Graham Davis AMIOA <i>Principal Environmental Consultant</i>	Initialled: GD
-------------	--	----------------

Verified by:	Nigel Mann MIOA <i>Director</i>	Initialled: NM
--------------	---	----------------

Issue	Date	Status
1	10 th December 2019	First Issue
2		
3		
4		

Contents Page

1.0	Introduction.....	1
2.0	Assessment Criteria	4
3.0	Assessment Methodology	5
4.0	Noise Survey	8
5.0	Assessment of Key Effects	11
6.0	Conclusions	13

Appendix Contents

Appendix A – Acoustic Terminology and Abbreviations

Appendix B – Sketches

Appendix C – Report Conditions

1.0 Introduction

1.1 Purpose of this Report

This report presents the finding of a noise assessment undertaken to assess the impact of commercial noise on both existing and proposed sensitive receptors to the north of Toddington Lane, Wick, Littlehampton.

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 proposed development have been predicted at local representative receptors using CADNA noise modelling software which incorporates ISO 9613 methodologies and calculations.

A list of acoustic terminology and abbreviations used in this report is provided in Appendix A and a set of location plans and noise contour plots are presented in Appendix B.

1.2 Legislative Context (England)

This report is intended to provide information relevant to the local planning authority and their consultees in support of a planning application for the above proposed development. Policy guidance with respect to noise is found in National Planning Policy Framework (NPPF), published on 19th February 2019. With regard to noise and planning, NPPF contains the following statement in paragraph 170:

"170. Planning policies and decisions should contribute to and enhance the natural and local environment by:

- e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans*

A further 2 short statements are presented in paragraph 180, which state:

"180. Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

- a) "mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life*

- b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason."*

Furthermore, paragraphs 182 and 183 state:

"182. Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed.

183. The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively. Equally, where a planning decision has been made on a particular development, the planning issues should not be revisited through the permitting regimes operated by pollution control authorities."

Planning Practice Guidance (PPG): Noise provides further guidance with regard to the assessment of noise within the context of Planning Policy. The overall aim of this guidance, tying in with the principles of the NPPF and the Explanatory Note of the Noise Policy Statement for England, is to *'identify whether the overall effect of noise exposure is, or would be, above or below the significant observed adverse effect level and the lowest observed adverse effect level for the given situation.'*

A summary of the effects of noise exposure associated with both noise generating developments and noise sensitive developments is presented within the PPG and repeated as follows:

Table 1.1 Noise Exposure Hierarchy

Perception	Examples of Outcomes	Increasing Effect Level	Action
Not present	No Effect	No Observed Effect	No Specific Measures Required
Present and not intrusive	Noise can be heard, but does not cause any change in behaviour, attitude or other physiological response. Can slightly affect the acoustic character of the area but not such that there is a change in the quality of life.	No Observed Adverse Effect	No Specific Measures Required
Lowest Observed Adverse Effect Level (LOAEL)			
Present and intrusive	Noise can be heard and causes small changes in behaviour, attitude or other physiological response, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a small actual or perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
Significant Observed Adverse Effect Level (SOAEL)			
Present and disruptive	The noise causes a material change in behaviour, attitude or other physiological response, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Present and very disruptive	Extensive and regular changes in behaviour, attitude or other physiological response and/or an inability to mitigate effect of noise leading to psychological stress, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory.	Unacceptable Adverse Effect	Prevent

2.0 Assessment Criteria

In order to enable the assessment in terms of LOAEL and SOAEL, Table 2.1 presents equivalent noise levels and associated actions with the target noise level criteria identified. The noise level criteria detailed below have been derived from standard and design guidance:

BS 4142:2014+A1:2019 'Methods for rating and assessing industrial and commercial sound'

Table 2.1 Noise Level Criteria and Actions

Effect Level	Assessment	Noise Level Criteria	Action / Justification
No Observed Adverse Effect Level	Commercial Activity	Source noise levels below background L_{A90} noise levels	No Action Required Source noise levels below the background noise is an indication of the sound source having a low impact
Lowest Observed Adverse Effect Level (LOAEL)		Difference between source noise levels and existing background levels of zero to 5 dB	Action: None Justification: + 5 dB above background is considered an indication of an impact of marginal significance.
Significant Observed Adverse Effect Level (SOAEL)		Difference between source noise levels and existing background levels of 5 to 10 dB	Action: Mitigate to achieve less than 5dB above background if possible: Justification: Depending on context, a difference of +10 dB to be an indication of a significant adverse impact.
Unacceptable Observed Adverse Effect Level (UOAE)		Difference between source noise levels and existing background levels of greater than 10 dB	Action: Reduce as far as practicable depending on context Justification: +10 dB above existing background is an indication of a likely significant adverse impact, depending on context

3.0 Assessment Methodology

3.1 Noise Modelling Methodology

With regard to the assessment of commercial activity, three-dimensional noise modelling has been undertaken based on the monitoring data to predict source noise levels at a large number of locations both horizontally and vertically. CADNA noise modelling software has been used. This model is based on 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	Ordnance Survey	Ordnance Survey
Ground levels	Site Observations and Ordnance Survey	OS 1:10,000 OS 1:10,000 Panorama contours
Building heights – around site	WYGE Observations	4 m height for one storey properties, 8 m height for two storey properties.

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

3.2.1 Commercial Service Yard Noise Data

Analysis of the long-term monitoring data has been used to identify the activities associated with the adjacent commercial premises at the former Five Stones nursery site; noise associated with the commercial premises was observed to occur occasionally throughout the day, with the high measured noise source associated with the service yard to the south of the development site attributable to metal on metal impacts.

Therefore, the following calculation is based on measurements of the highest noise recorded events from the long-term monitoring, calculated over a 1-hour period during the daytime. Events are modelled as point sources. To represent a worst-case scenario, a number of point sources have been placed along the boundary, which assumes the metal on metal impact is occurring simultaneously at different positions within the service yard. For completeness, although no noise was observed from the storage yard to the south of the proposed development site, a point source has been placed along the boundary as well, to represent a worst-case scenario (in effect the noise model considers 270 minutes of activity per hour occurring across the service yard to represent multiple occupiers and uses of the site, with an additional 30 minutes of activity to the south-east of the site).

L_{Aeq,1hr} Noise Level

1 x 30 minute at L_p 65.3 dB at 3 m distance (handling materials and metal on metal impacts)

$$L_{Aeq(60 \text{ mins})} = 10 \log(1/60)(30 \text{ min} \times 10^{0.1 \times 65.3 \text{ dB}})$$

$$= 62.3 \text{ dB at 3 m distance}$$

3.3 Sensitive Receptors

The table below summarises receptor locations that have been selected to represent worst-case noise sensitive receptors with respect to direct noise from the commercial premises. Ground floors of the nearest noise sensitive properties have been presented, as well as proposed garden locations of noise sensitive receptors along the boundary with the commercial premises. For the purposes of this assessment, the layout of proposed residential dwellings along the boundary have been taken from plans associated with planning permission ref. LU/240/18/PL and LU/61/19/DOC. The location of sensitive receptors are shown on SK02 in Appendix B.

Table 3.2 Sensitive Receptor Locations

Ref.	Description	Approximate Distance to Source (m)	Height (m)
R01	Proposed Phase 2 Development	28.0	1.5
R02	Proposed Phase 2 Development	43.0	1.5
R03	19 Kenney Drive	58.0	1.5

Noise Assessment



Ref.	Description	Approximate Distance to Source (m)	Height (m)
R04	17 Kenney Drive	44.0	1.5
R05	Proposed Phase 2 Development	19.0	1.5
G01	Proposed Phase 2 Development	27.0	1.2
G02	Proposed Phase 4 Development	15.0	1.2
G03	Proposed Phase 4 Development	14.0	1.2
G04	Proposed Phase 4 Development	25.0	1.2
G05	Proposed Phase 4 Development	36.0	1.2
G06	Proposed Phase 4 Development	49.0	1.2
G07	Proposed Phase 4 Development	63.0	1.2
G08	Proposed Phase 4 Development	76.0	1.2
G09	Proposed Phase 4 Development	90.0	1.2
G10	Proposed Phase 4 Development	105.0	1.2
G11	Proposed Phase 4 Development	32.0	1.2
G12	Proposed Phase 4 Development	22.0	1.2

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-52	Environmental Noise Analyser (WYG15)	s/n	620858
Rion NL-52	Environmental Noise Analyser (WYG22)	s/n	1021257
Rion NL-52	Environmental Noise Analyser (WYG26)	s/n	264488
Rion NL-52	Environmental Noise Analyser (WYG33)	s/n	976224
Rion NC-74	Sound Calibrator	s/n	35046823

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 0.0 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 eight locations (as specified in the following table and shown in SK01 of Appendix B) from Friday 11th October 2019 to Tuesday 15th October 2019. Attended short term measurements were undertaken at five locations during the daytime with three additional locations being measured unattended over a 95-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 partly cloudy. Anemometer readings confirmed that wind speeds were less than 5 ms⁻¹ at all times during the survey, with a predominant western wind direction, during the survey.

Table 4.1 Noise Monitoring Locations

Ref	Description
LT1	On northern boundary of service yard for NADUK commercial premises
LT2	On northeast boundary of service yard for NADUK commercial premises
LT3	Southwest boundary fence, north of storage yard
ST1	Northwest of NADUK 10m from the boundary fence.
ST2	North of NADUK. Approximately 5m from boundary fence. In between LT1 and LT2.
ST3	Southwest boundary fence, northeast of storage yard
ST4	Southwest boundary fence, northeast of storage yard
ST5	Outside 21 Kenney Drive

4.2 Noise Survey Results

The dominant noise sources found in the area include engine/automobile repair noise originating from the industrial site to the south and road traffic noise from Toddington Lane. Construction was ongoing within the consented residential development site during the noise monitoring period however these contributions have been excluded from the assessment.

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).

Table 4.2 Meteorological Conditions during the Survey

Survey Location	Date & Time	Temperature (°C)	Wind Speed (m/s)	Wind Direction	Cloud Cover (Okta)	Dominant Noise Source
ST1	15/10/2019 14:38	16.0	1-2	W	7	Construction noise from development site. Some engine noise from garages south of site.
ST2	15/10/19 14:56	16.0	1-2	W	6	Construction noise from development site. Some engine noise from garages south of site.
ST3	15/10/19 15:24	16.0	1-2	W	5	Construction noise from development site. Distant road traffic noise from Toddington Lane.
ST4	15/10/19 15:44	15.0	1-2	W	3	Construction noise from development site. Distant road traffic noise from Toddington Lane.
ST5	15/10/19 16:58	14.0	1-2	W	2	Construction noise from development site. Distant road traffic noise from Toddington Lane.

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). 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 4.3 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	30 Hours	11/10/2019 - 15/10/2019 07:00 - 23:00	LT1	53.5	95.8	28.1	51.5	48.0
Weekday Night-time 23:00 - 07:00	16 Hours	11/10/2019 - 15/10/2019 23:00 - 07:00		42.4	68.2	22.5	39.6	28.0

Noise Assessment



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)
Weekend Daytime 07:00 - 23:00	32 Hours	11/10/2019 - 15/10/2019 07:00 - 23:00		48.3	80.7	26.0	47.8	44.0
Weekend Night-time 23:00 - 07:00	16 Hours	11/10/2019 - 15/10/2019 23:00 - 07:00		39.2	64.6	21.6	39.9	29.0
Weekday Daytime 07:00 - 23:00	30 Hours	11/10/2019 - 15/10/2019 07:00 - 23:00	LT2	55.4	97.9	29.9	52.7	46.0
Weekday Night-time 23:00 - 07:00	16 Hours	11/10/2019 - 15/10/2019 23:00 - 07:00		43.1	74.4	23.5	39.6	28.0
Weekend Daytime 07:00 - 23:00	32 Hours	11/10/2019 - 15/10/2019 07:00 - 23:00		50.3	93.1	27.0	48.6	44.0
Weekend Night-time 23:00 - 07:00	16 Hours	11/10/2019 - 15/10/2019 23:00 - 07:00		39.5	72.6	21.9	38.9	30.0
Weekday Daytime 07:00 - 23:00	30 Hours	11/10/2019 - 15/10/2019 07:00 - 23:00		50.6	80.6	31.9	50.8	48.0
Weekday Night-time 23:00 - 07:00	16 Hours	11/10/2019 - 15/10/2019 23:00 - 07:00		42.1	77.5	25.5	41.3	32.0
Weekend Daytime 07:00 - 23:00	32 Hours	11/10/2019 - 15/10/2019 07:00 - 23:00	LT3	47.9	81.2	29.4	48.7	46.0
Weekend Night-time 23:00 - 07:00	16 Hours	11/10/2019 - 15/10/2019 23:00 - 07:00		38.8	69.4	24.5	38.3	34.0
Daytime 07:00 - 19:00	15 Mins	15/10/2019 14:38	ST1	50.4	68.8	41.4	52.7	45.4
	15 Mins	15/10/2019 14:56	ST2	58.9	78.1	43.7	61.9	47.9
	15 Mins	15/10/2019 15:24	ST3	52.6	60.5	37.3	54.6	41.8
	15 Mins	15/10/2019 15:44	ST4	49.0	73.5	40.0	51.2	42.5
	15 Mins	15/10/2019 16:58	ST5	46.5	68.6	39.8	49.7	41.8

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

5.0 Assessment of Key Effects

5.1 BS 4142 Noise Assessment

This assessment has been undertaken in order to establish the effect of noise from the adjacent commercial premises during the daytime period on both existing and proposed receptors.

The assessment compares the predicted average noise rating levels from service yard activities with the measured daytime background noise L_{A90} at the nearest noise sensitive properties. A representative background noise level has been taken from long-term weekend monitoring data, to avoid any contamination from ongoing construction works during the weekday period.

An overall +9 dB correction has been applied to account for impulsive sounds that have the potential to be clearly perceptible (+6 dB) and intermittent (+3dB), in accordance with Section 9.2 of BS 4142 to create the 'Noise Rating Level'. The initial assessment has been undertaken with 1.8m garden fences around proposed amenity areas along the boundary with the commercial premises.

Table 5.1 BS 4142 Noise Assessment

Ref	Measured Average Background L_{A90}	Specific noise level L_{Aeq}	Noise Rating Level	BS 4142 Score
R01	46	34	43	-3
R02	46	33	42	-4
R03	46	32	41	-5
R04	46	32	41	-6
R05	46	40	49	3
G01	46	37	46	0
G02	46	41	50	4
G03	46	43	52	6
G04	46	42	51	5
G05	46	39	48	2
G06	46	37	46	0
G07	46	35	44	-3
G08	46	31	40	-6
G09	46	31	40	-6
G10	46	30	39	-7
G11	46	32	41	-5
G12	46	34	43	-3

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

All calculations used to derive the above tables (including averaging of background noise levels and predicted source noise levels) have been undertaken to 1 decimal place to avoid perpetuation of rounding errors. However, in accordance with BS4142 Para 8.6, the levels are expressed as integers (with 0.5 dB being rounded up). This may mean that the arithmetic in the above table may appear to be up to 1 dB incorrect due to this rounding.

The assessment above shows that worst-case noise rating levels, are have the potential to be up to 6 dB above background noise levels during the daytime period at the closest sensitive receptor locations, which indicates the potential for adverse impacts, depending on the context and exceeds the Lowest Observed Adverse Effect Level. As such, mitigation measures have been considered below.

5.2 BS 4142 Noise Assessment with Mitigation

Mitigation has been included in the assessment below in the form of a 2.8m high barrier around the northern boundary of the commercial premises. The location of the proposed barrier and indicative 1.8m high garden fences are shown illustratively on SK04 of Appendix B.

Table 5.2 BS 4142 Noise Assessment with Mitigation

Ref	Measured Average Background L_{Aeq}	Specific noise level L_{Aeq}	Noise Rating Level	BS 4142 Score
R01	46	33	42	-4
R02	46	32	41	-5
R03	46	31	40	-6
R04	46	31	40	-6
R05	46	39	48	2
G01	46	36	45	-1
G02	46	40	49	3
G03	46	41	50	4
G04	46	41	50	4
G05	46	39	48	2
G06	46	37	46	0
G07	46	35	44	-3
G08	46	31	40	-6
G09	46	31	40	-6
G10	46	30	39	-7
G11	46	32	41	-5
G12	46	34	43	-3

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

The assessment above shows that worst-case noise rating levels (inclusive of a +9 dB penalty) are predicted to be no greater to 4 dB above background noise levels during the daytime period at the closest sensitive receptor locations with the inclusion of a 2.8m high barrier, which falls within the Lowest Adverse Effect Level. Considering the worst-case assumptions within this assessment regarding the location and on-time of activities within the former Five Stones nursery site, following the installation of the 2.8m high acoustic barrier, commercial noise is expected to have a low impact.

6.0 Conclusions

This report presents the finding of a noise assessment undertaken to assess the impact of commercial noise on both existing and consented sensitive receptors to the north of Toddington Lane, Wick, Littlehampton. The NPPF gives test points relating to noise; considering these the following conclusions can be drawn:

» *NPPF paragraphs 170 (e) & 180 (a)*

Rating noise levels from commercial activity demonstrate that background noise levels will not be exceeded by more than 4 dB at nearby noise sensitive receptors during the daytime with the inclusion of a 2.8m high acoustic barrier. Therefore, the commercial activity is not expected to have a 'significant adverse impact' on health or quality of life.

» *NPPF paragraphs 180 (b), 182 & 183*

With the inclusion of mitigation, commercial activity is not expected to exceed background noise levels by more than 4 dB, nor have a significant contribution to the ambient noise climate during the daytime. Therefore, it is considered that the residential development would not restrict existing businesses whilst the tranquillity of the area, which is characterised by road traffic noise, will not be affected.

Appendices

Appendix A – Acoustic Terminology and Abbreviations

An explanation of the specific acoustic terminology referred to within this report is provided below.

- 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.

Noise Assessment



An explanation of abbreviations used within this report is provided below.

CADNA – Computer Aided Noise Abatement

DMRB – Design Manual for Roads and Bridges

HGV – Heavy Goods Vehicle

PPG – Planning Practice Guidance

UDP – Unitary Development Plan

UKAS – United Kingdom Accreditation Service

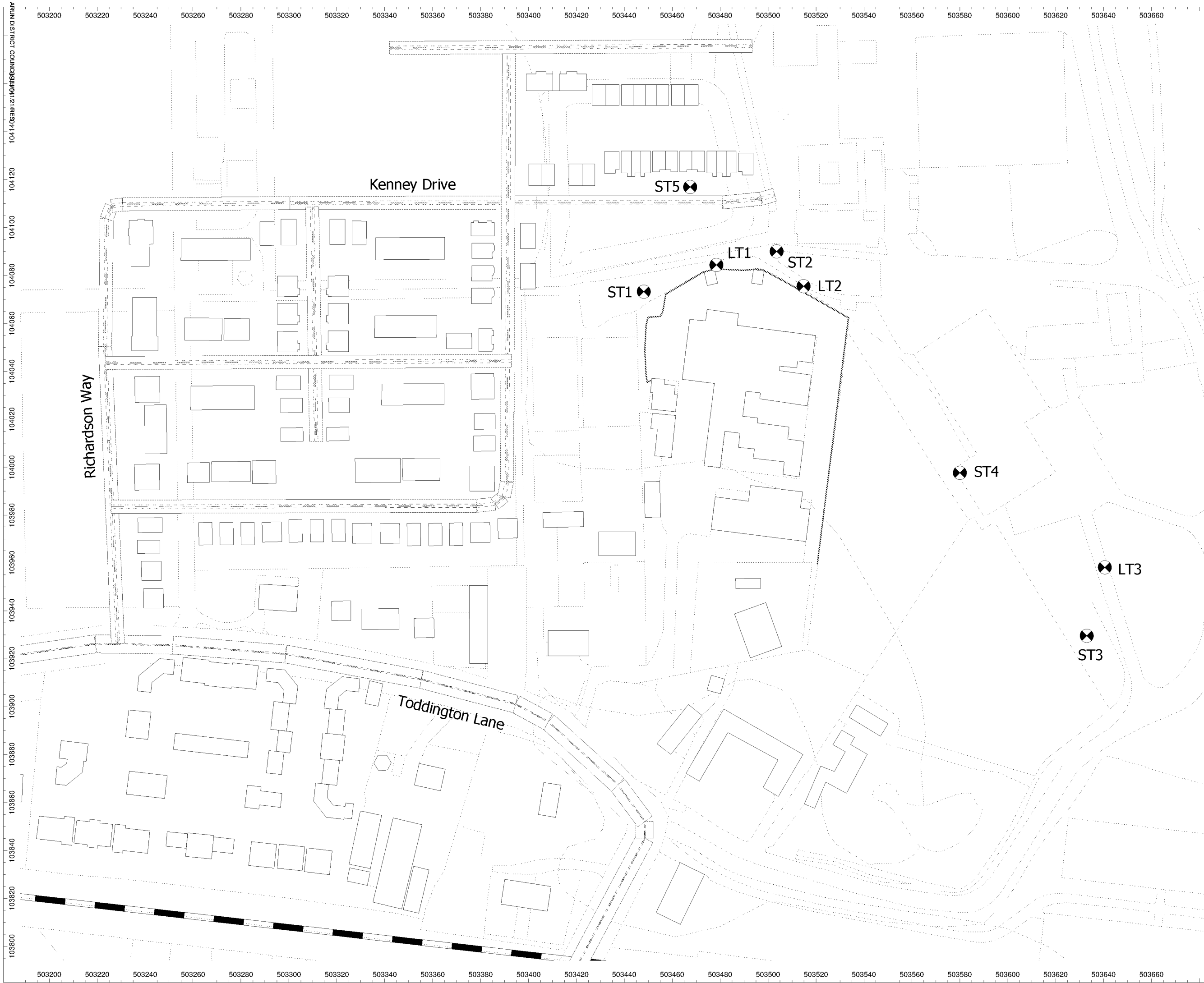
WYGE – WYG Environment

Appendix B – Sketches

SK01 Noise Monitoring Locations

SK02 Sensitive Receptor Locations

SK03 $L_{Aeq,1hr}$ Contribution from Commercial Activity with Mitigation



Client:
Persimmon Homes

Project:
Wick, North Littlehampton

Project Number:
A115680

Drawing Title / Scenario:
Noise Monitoring
Locations

Drawing Number:
SK01

Scale : Not to scale

WYGE Leicester 08.11.19

Licence Number AL 553611



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

© WYGE Environment



Client:
Persimmon Homes

Project:
Wick, North Littlehampton

Project Number:
A115680

Drawing Title / Scenario:
Sensitive Receptor
Locations

Drawing Number:
SK02

Scale : Not to scale

WYGE Leicester 08.11.19

Licence Number AL 553611



Executive Park
Avalon Way
Anstley
Leicestershire
LE7 7GR
Tel 0116 234 8000
© WYG Environment



Client:
Persimmon Homes

Project:
Wick, North Littlehampton

Project Number:
A115680

Drawing Title / Scenario:
LAeq,1hr Contribution
from Commercial Activity
with Mitigation

Drawing Number:
SK03

Key:

2.8m High Barrier: -----

1.8m High Garden
Fences:

0.0 - 50.0 dB
50.0 - 60.0 dB
60.0 - 70.0 dB
> 70.0 dB

Scale : Not to scale

WYGE Leicester 09.12.19

Licence Number AL 553611



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

© WYG Environment

Appendix C – Report Conditions

This Report has been prepared using reasonable skill and care for the sole benefit of Persimmon Homes ("the Client") for the proposed uses stated in the report by WYG Environment Planning Transport Limited ("WYG"). WYG exclude all liability for any other uses and to any other party. The report must not be relied on or reproduced in whole or in part by any other party without the copyright holder's permission.

No liability is accepted or warranty given for; unconfirmed data, third party documents and information supplied to WYG or for the performance, reliability, standing etc of any products, services, organisations or companies referred to in this report. WYG does not purport to provide specialist legal, tax or accounting advice.

The report refers, within the limitations stated, to the environment of the site in the context of the surrounding area at the time of the inspections'. Environmental conditions can vary and no warranty is given as to the possibility of changes in the environment of the site and surrounding area at differing times. No investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather-related conditions. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches indicate in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions. The "shelf life" of the Report will be determined by a number of factors including; its original purpose, the Client's instructions, passage of time, advances in technology and techniques, changes in legislation etc. and therefore may require future re-assessment.

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.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. WYG accept no liability for issues with performance arising from such factors.