# SGN Depot
# 106-112 Brighton Road
# Shoreham

## Environmental Noise Survey
## and Noise Impact Assessment Report

27767/NIA1-Rev1

5 June 2020

For:
SGN

Hann Tucker Associates
Consultants in Acoustics Noise & Vibration

Head Office: Duke House, 1-2 Duke Street, Woking, Surrey, GU21 5BA (t) +44 (0) 1483 770 595
Manchester Office: First Floor, 346 Deansgate, Manchester, M3 4LY (t) +44 (0) 161 832 7041
(w) hanntucker.co.uk (e) enquiries@hanntucker.co.uk

Hann Tucker Associates

# Environmental Noise Survey
# and Noise Impact Assessment Report
# Report 27767/NIA1-Rev1

| Rev | Date | Comment | Prepared by | Authorised by |
|---|---|---|---|---|
| 1 | 05/06/2020 | Wording amendments following feedback | <br>Firas Farhan<br>Principal Consultant<br>BSc(Hons), MIOA | |
| 0 | 04/06/2020 | - | Firas Farhan<br>Principal Consultant<br>BSc(Hons), MIOA | |
| | | | | |
| | | | | |

This report has been prepared by Hann Tucker Associates Limited (HTA) with all reasonable skill, care and diligence in accordance with generally accepted acoustic consultancy principles and the purposes and terms agreed between HTA and our Client. Any information provided by third parties and referred to herein may not have been checked or verified by HTA unless expressly stated otherwise. This document contains confidential and commercially sensitive information and shall not be disclosed to third parties. Any third party relies upon this document at their own risk.

Hann Tucker Associates

# Environmental Noise Survey
# and Noise Impact Assessment Report
# Report 27767/NIA1-Rev1

## Contents


| | | Page |
|---|---|---|
| 1.0 | Introduction | 1 |
| 2.0 | Objectives | 1 |
| 3.0 | Site Description | 2 |
| 4.0 | Acoustic Terminology | 2 |
| 5.0 | Acoustic Standards and Guidelines | 3 |
| 6.0 | Survey Methodology | 9 |
| 7.0 | Results | 11 |
| 8.0 | Discussion Of Noise Climate | 11 |
| 9.0 | Noise Impact Assessment | 11 |
| 10.0 | Conclusions | 13 |


## Attachments


Appendix A – Acoustic Terminology

# 1.0 Introduction

SGN have recently leased the Site at 106-112 Brighton Road.

Hann Tucker Associates have been commissioned to undertake a detailed daytime and night-time fully automated environmental noise survey of the site to establish the currently prevailing noise climate to confirm that the physical and operational requirements they are applying for planning permission for are acceptable.

SGN are proposing to amend the operating hours between Monday and Friday to 7am-6pm and to allow for out of hours gas emergency access. They also seek to partially use the external area for enclosed storage. Please see the Planning Covering Letter and Design & Access Statement for further information.

This report presents the methodology and findings of our noise survey and assessment in the context of national planning policies.

Our assessment shall also consider the likely typical noise levels in the area to compensate for the potentially artificially low levels currently caused by the Government measures in response to the coronavirus pandemic. This may include review of our measured levels, review of previous surveys in the vicinity and any nationally available noise map data. This would be in accordance with current ANC (Association of Noise Consultants) advice relating to surveys during the COVID-19 societal restrictions.

# 2.0 Objectives

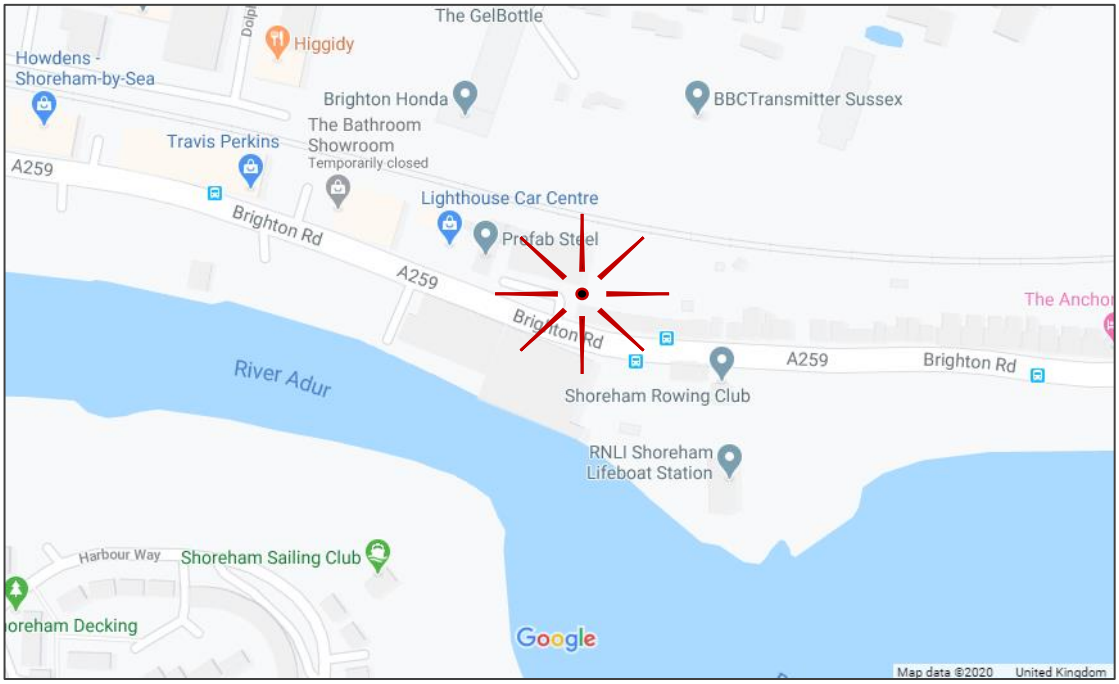
To undertake an environmental noise survey to establish the existing $L_{Amax}$, $L_{Aeq}$ and $L_{A90}$ environmental noise levels at selected accessible positions.

Based on the results of the survey, to undertake a noise assessment to assess the suitability of the site in accordance with the Noise Policy Statement for England (NPSE), National Planning Policy Framework (NPPF), Planning Practice Guidance (ProPG) and British Standard BS4142:2014.

# 3.0 Site Description

## 3.1 Location

The Site is located on the north side of Brighton Road in Shoreham. The location is shown in the Location Map below.




## 3.2 Description

The site overlooks Brighton Road to the south. To the north is a railway line. West and across Brighton road are other industrial units. To the east is the nearest noise sensitive residential dwelling.

# 4.0 Acoustic Terminology

For an explanation of the acoustic terminology used in this report please refer to Appendix A enclosed.

# 5.0 Acoustic Standards and Guidelines

## 5.1 Noise Policy Statement for England

The Noise Policy Statement for England (NPSE) was published in March 2010 (i.e. before the NPPF). The NPSE is the overarching statement of noise policy for England and applies to all forms of noise other than occupational noise, setting out the long term vision of Government noise policy which is to:

*"Promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development."*

*"Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:*

- *avoid significant adverse impacts on health and quality of life;*
- *mitigate and minimise adverse impacts on health and quality of life; and*
- *where possible, contribute to the improvement of health and quality of life."*

The Explanatory Note to the NPSE has three concepts for the assessment of noise in this country:

**NOEL – No Observed Effect Level**
This is the level below which no effect can be detected and below which there is no detectable effect on health and quality of life due to noise.

**LOAEL – Lowest Observable Adverse Effect Level**
This is the level above which adverse effects on health and quality of life can be detected.

**SOAEL – Significant Observed Adverse Effect Level**
This is the level above which significant adverse effects on health and quality of life occur.

None of these three levels are defined numerically and for the SOAEL the NPSE makes it clear that the noise level is likely to vary depending upon the noise source, the receptor and the time of day/day of the week, etc. The need for more research to investigate what may represent an SOAEL for noise is acknowledged in the NPSE and the NPSE asserts that not stating specific SOAEL levels provides policy flexibility in the period until there is further evidence and guidance.

The NPSE concludes by explaining in a little more detail how the LOAEL and SOAEL relate to the three NPSE noise policy aims listed above. It starts with the aim of avoiding significant adverse effects on health and quality of life, then addresses the situation where the noise impact falls between the LOAEL and the SOAEL when *"all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development."* The final aim envisages pro-active management of noise to improve health and quality of life, again taking into account the guiding principles of sustainable development which include the need to minimise travel distance between housing and employment uses in an area.

## 5.2 National Planning Policy Framework (NPPF)

The National Planning Policy Framework (NPPF) was first published in March 2012. This document replaced the existing Planning Policy Guidance Note 24 (PPG24) "Planning and Noise". A new edition of NPPF was published in July 2018 and comes into effect immediately. This new edition however, contains no new directions with respect to noise, and hence, all previous references remain extant. The paragraph references quoted below relate to the July 2018 edition.

Paragraph 170 of the NPPF states that the planning system should contribute to and enhance the natural and local environment by (amongst others) *"preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, water or noise pollution or land stability."*

The following paragraphs are from the NPPF (revised February 2019):

*"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.*

*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."*

Paragraph 180 also references the Noise Policy Statement for England. This document does not refer to specific noise levels but instead sets out three aims:

"Avoid significant adverse impacts on health and quality of life from environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development.

Mitigate and minimise adverse impacts on health and quality of life from environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development.

Where possible, contribute to the improvement of health and quality of life through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development."

The NPPF document does not refer to any other documents or British Standards regarding nose other than the NPSE.

Paragraph 2 of the NPPF states that *"planning law required that applications for planning permission must be determined in accordance with the development plan unless material considerations indicate otherwise."*

Paragraph 12 of the NPPF states that *"The presumption in favour of sustainable development does not change the statutory status of the development plan as the starting point for decision making. Where a planning application conflicts with an up-to-date development plan (including any neighbourhood plans that form part of the development plan), permission should not usually be granted. Local planning authorities may take decisions that depart from an up-to-date development plan, but only if material considerations in a particular case indicate that the plan should not be followed."*

## 5.3 Adur Local Plan 2017

Adur Local plan published in 2017 references noise pollution. The plan states:

***Policy 34: Pollution and Contamination***

*Development should not result in pollution or hazards which prejudice the health and safety of the local community and the environment, including nature conservation interests and the water environment.*

*New development in Adur will be located in areas most suitable to the use of that development to avoid risks from noise, air, odour or light pollution.*

*Mitigation measures will need to be implemented for developments that could increase levels of pollution or have a negative impact on drinking water supplies in Adur. Where there are significant levels of increased pollution that cannot be mitigated, development will be refused.*

*Where appropriate, air quality assessments and/or noise assessments will be required in conjunction with development proposals.*

*Investigations and assessments of all sites situated in or in close proximity to potentially contaminated land will be required in relation to relevant development proposals.*

## 5.4 Planning Practice Guidance on Noise

Planning Practice Guidance (PPG) under the NPPF has been published by the Government as a web based resource at http://planningguidance.planningportal.gov.uk/blog/guidance/. This includes specific guidance on Noise although, like the NPPF and NPSE the PPG does not provide any quantitative advice. It seeks to illustrate a range of effect levels in terms of examples of outcomes as set out in the following table:

| Perception | Examples of Outcomes | Increasing effect level | Action |
|---|---|---|---|
| Not noticeable | No effect | No Observed Effect | No specific measures required |
| Noticeable and not intrusive | Noise can be heard, but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life. | No Observed Adverse Effect | No specific measures required |
| | | Lowest Observed Adverse Effect Level | |
| Noticeable and intrusive | Noise can be heard and causes small changes in behaviour and/or attitude, 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. | Observed Adverse Effect | Mitigate and reduce to a minimum |
| | | Significant Observed Adverse Effect Level | |
| Noticeable and disruptive | The noise causes a material change in behaviour and/or attitude, 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 |
| Noticeable and very disruptive | Extensive and regular changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable hard, e.g. auditory and non-auditory. | Unacceptable Adverse Effect | Prevent |

## 5.5 BS 4142:2014

When setting plant noise emission criteria reference is commonly made to BS 4142: 2014 "*Methods for rating and assessing industrial and commercial sound".*

The procedure contained in BS 4142:2014 provides an assessment of the likely effects of sound on people when comparing the specific noise levels from the source with representative background noise levels. Where the noise contains "a tone, impulse or other characteristic" then various corrections can be added to the specific (source) noise level to obtain the "rating level".

BS 4142 states that: *"The significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the background sound level and the context in which the sound occurs". An estimation of the impact of the specific noise can be obtained by the difference of the rating noise level and the background noise level and considering the following:*

• *"Typically, the greater this difference, the greater the magnitude of the impact."*

• *"A difference of around +10dB or more is likely to be an indication of a significant adverse impact, depending on the context."*

• *"A difference of around +5dB is likely to be an indication of an adverse impact, depending on the context."*

• *"The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context."*

The determination of the "rating level" and the "background level" are both open to interpretation, depending on the context.

In summary it is not possible to set plant noise emission criteria purely on the basis of BS 4142:2014. It is reasonable to infer from the above, however, that a difference of around -5dB corresponds to "No Observed Effect Level" as defined in the Noise Policy Statement for England. It is also reasonable to infer from the above that if the plant noise rating level does not exceed the existing background noise level outside any noise sensitive residential window then the plant noise is of "low impact".

# 6.0 Survey Methodology

## 6.1 Procedure

Fully automated environmental noise monitoring was undertaken from approximately 15:00 hours on Thursday 28 May 2020 to approximately 10:00 hours on Tuesday 2 June 2020.

Due to the nature of the survey, i.e. unmanned, it is not possible to accurately comment on the weather conditions throughout the entire survey period. However at the beginning and end of the survey period the wind conditions were moderate. The sky was generally patchy cloud. We understand that generally throughout the survey period the weather conditions were similar to this. These conditions are considered suitable for obtaining representative measurement results.

## 6.2 Measurement Position

The noise level measurements were undertaken at a single position at the development site. The measurement position is described in the table below.

| Position No | Description |
|---|---|
| 1 | The sound level meter was located in the external outdoor area to the southwest of the warehouse building. The microphone was attached to a pole approximately 2m above ground level and away from any reflecting surfaces approximately 14m from the road edge of Brighton Road. |

The position is thought to be representative of the nearest noise sensitive residential dwelling at 104 Brighton Road located southeast of the site. The position is shown on the plan below.




## 6.3 Instrumentation

The instrumentation used during the survey is presented in the table below:

| Position | Description | Manufacturer | Type | Serial Number | Calibration |
|---|---|---|---|---|---|
| 1 | Type 1 ½" Condenser Microphone | PCB | 377B02 | 122885 | Calibration on 09/10/2019 |
| | Preamp | Larson Davis | PRM902 | 3692 | Calibration on 09/10/2019 |
| | Type 1 Data Logging Sound Level Meter | Larson Davis | 824 | 3444 | Calibration on 09/10/2019 |
| - | Type 1 Calibrator | Bruel & Kjaer | 4231 | 2610161 | Calibration on 19/09/2019 |

The sound level meter, including the extension cable, was calibrated prior to and on completion of the survey. No significant change was found to have occurred (no more than 0.1dB).

The sound level meter was located in an environmental case with the microphone connected to the sound level meter via an extension cable. The microphone was fitted with a windshield.

# 7.0 Results

The results have been plotted on Time History Graphs 27767/TH1.01 enclosed, presenting the 15 minute A-weighted (dBA) $L_{90}$, $L_{eq}$ and $L_{max}$ noise levels at the measurement position throughout the duration of the survey.

The model background $L_{A90\ (15\ min)}$ measurements recorded during the survey are presented in the table below:

| Measured Model $L_{A90(15min)}$ Background Noise Level (dB re 2 x $10^{-5}$ Pa) | | | |
|---|---|---|---|
| **Position** | **Daytime (07:00 – 19:00) Hours** | **Evening (19:00 - 23:00) Hours** | **Night-Time (23:00 – 07:00) Hours** |
| 1 | 56 dBA | 43 dBA | 40 dBA |

# 8.0 Discussion Of Noise Climate

Due to the nature of the survey, i.e. unmanned, it is not possible to accurately describe the dominant noise sources, or specific noise events throughout the entire survey period. However at the beginning and end of the survey period the dominant noise source was noted to be from road traffic on Brighton Road and from nearby industrial sites.

# 9.0 Noise Impact Assessment

The site is permitted to be used for B8 and ancillary B1 uses. SGN require an amendment to the operating hours to facilitate their operations. They require an additional hour in the morning Monday to Friday (07:00 to 18:00) and to access the site outside of the core hours for gas emergencies. Please see the Planning Covering Letter and S73 application for further information.

## 9.1 Vehicular Movement Assessment

Glanville Consultants have undertaken a traffic flow assessment to support the planning application. The marginal increase in Use Class B8 warehouse (with ancillary B1) floorspace will have a negligible impact on the vehicle trips to and from the site and that the proposed operating hours are anticipated to reduce the number of vehicle movements during the peak hours on the local highway network. In terms of noise impact from vehicle movements, the change of the noise impact to the nearest receptor shall be negligible.

## 9.2 Loading Operations Assessment

The application proposes to include an area of external, enclosed storage to the southwest of the warehouse building. We understand that loading activities shall take place just south of the storage facility. The nearest noise sensitive receptor is 104 Brighton Road approximately 41m from the loading area. Enclosed in Appendix B is a plan shows the site layout.

We understand that on average loading shall take place 5 times a day. SGN also require access to the site outside of the core operating hours (18:00 - 07:00) to be able to respond to gas emergencies. This would involve collecting specific items of equipment not held within the team commercial vehicles to be able to deal with non-standard situations. Out of hours access is only required on a periodic basis and is normally limited to around 5no. visits per month. Whilst we do not have noise levels for the proposed loading operations, Hann Tucker have previously undertaken noise measurements at similar sites. The following table presents the noise impact assessment based on typical measured noise levels from loading operations and the results of the noise survey during normal operating hours.

| Description | Results |
|---|---|
| Specific sound level of loading and unloading | $L_{Amax}$ = 69 dB @ 5m |
| Acoustic feature correction | +3 dB for intermittent sound |
| Rating sound level | $L_{Amax}$ = 72 dB @ 5m |
| 5m to 41m Distance Correction | -18 dB |
| Resultant rating sound level at nearest receptor | 54 dB |
| Model background sound level | $L_{A90(15\ min)}$ = 56 dB |
| Excess of rating level over background sound level | (54 – 56) dB = -2 dB |

The above assessment indicates that during normal operating hours, there is likely to be low impact due to loading activities at the nearest noise sensitive receptor given the context of the area.

During gas emergency works, access to site may be required on rare occasions outside normal operating hours. This could be during evening/night-time hours or at weekends.

For evening or night-time access, depending on what time the site is accessed there is a marginal possibility that specific sound from loading activity would start tending towards adverse impact or significant adverse impact at the nearest noise sensitive receptor. However given that context of the area, i.e. being largely industrial, and that access would only be during emergency works which are only required infrequently and only when a van driver does not already have the relevant equipment in his van, it is likely the sound impact to the nearest receptor would be minimal and for only a very short period.

For weekend daytime access, given that the background sound levels are marginally lower that weekday background sound levels, it is likely that the specific sound source would not have an adverse impact or a significant adverse impact on the nearest noise sensitive receptor given the context of the area.

We also note that due to Covid-19 situation, it is likely that the ambient sound level around the site is lower than usual due to there being fewer vehicles on the roads. We therefore expect the noise impact to be less when activity in the local area return to more normal levels.

## 10.0 Conclusions

An environmental noise survey has been undertaken in order to establish the currently prevailing noise levels.

Noise impact criteria have been recommended based on the results of the noise survey and with reference to various guidance and standards.

An assessment has been carried out to determine the noise impact at the nearest noise sensitive window.

The assessment indicates that there is likely to be low noise impact at the nearest noise sensitive receptor given the context of the area

# Appendix A

The acoustic terms used in this report are defined as follows:

dB — Decibel - Used as a measurement of sound level. Decibels are not an absolute unit of measurement but an expression of ratio between two quantities expressed in logarithmic form. The relationships between Decibel levels do not work in the same way that non-logarithmic (linear) numbers work (e.g. 30dB + 30dB = 33dB, not 60dB).

dBA — The human ear is more susceptible to mid-frequency noise than the high and low frequencies. The 'A'-weighting scale approximates this response and allows sound levels to be expressed as an overall single figure value in dBA. The $_A$ subscript is applied to an acoustical parameter to indicate the stated noise level is A-weighted

It should be noted that levels in dBA do not have a linear relationship to each other; for similar noises, a change in noise level of 10dBA represents a doubling or halving of subjective loudness. A change of 3dBA is just perceptible.

$L_{90,T}$ — $L_{90}$ is the noise level exceeded for 90% of the period *T* (i.e. the quietest 10% of the measurement) and is often used to describe the background noise level.

$L_{eq,T}$ — $L_{eq,T}$ is the equivalent continuous sound pressure level. It is an average of the total sound energy measured over a specified time period, *T*.

$L_{max}$ — $L_{max}$ is the maximum sound pressure level recorded over the period stated. $L_{max}$ is sometimes used in assessing environmental noise where occasional loud noises occur, which may have little effect on the $L_{eq}$ noise level.

Sound Pressure Level ($L_p$) is the sound pressure relative to a standard reference pressure of $2 \times 10^{-5}$ Pa. This level varies for a given source according to a number of factors (including but not limited to: distance from the source; positioning; screening and meteorological effects).

Sound Power Level (SWL or $L_w$) is the total amount of sound energy inherent in a particular sound source, independent of its environment. It is a logarithmic measure of the sound power in comparison to a specified reference level (usually $10^{-12}$ W).

# Appendix B

# Site Layout Plan




## PROPOSED SITE PLAN

Scale 1:100 @ A1

Scale 1:100 @ A1 (1:200 @ A3)

## NOTES

1. This drawing is to be read in conjunction with all relevant drawings documents & specifications.

## KEY:

- Existing fence retained
- New 2.4m high Zaun HiSec Super 6 DualFix 2.4m high Bolt Down/ In Ground/ Wall Post Fixing Details, Colour: Jet Black RAL 9005. Matching HiSec 358 Gates both Double and Single.
- Proposed fence line 1.2m high enclosure around Traffic management equipment. New 1.2m high Zaun HiSec Super 6 DualFix 2.4m high Bolt Down/ In Ground/ Wall Post Fixing Details, Colour: Jet Black RAL 9005.
- Double EVC charging point.

New Armco Barrier.

Berry Systems Barrier Rail and Rigid Steel Bolt Down Posts.

| | |
|---|---|
| Manufacturer: | Berry Systems |
| Web: | www.berrysystems.co.uk |
| Tel: | 01902 491100 |
| Product Ref: | Barrier Rail and Rigid Steel Bolt Down Posts |

| Rev. | Description | Date | Drn.By |
|---|---|---|---|
| PA1 | Planning Issue | 03.06.20 | im |

Glanville
Cornerstone House
62 Foxhall Road, Didcot
Oxon, OX11 7AD
Tel: (01235) 515550 Fax: (01235) 817799
postbox@glanvillegroup.com www.glanvillegroup.com

Client : Scotia Gas Networks

Project : SGN Depot
106-112 Brighton Road
Shoreham, BN43 6RH

Title : Proposed Site Plan

| | | | |
|---|---|---|---|
| Project Engineer : | S.Berger | Scale : | 1:100 @ A1 |
| Project Director : | S.Berger | Date : | December 2019 |
| Status : | PLANNING | | |

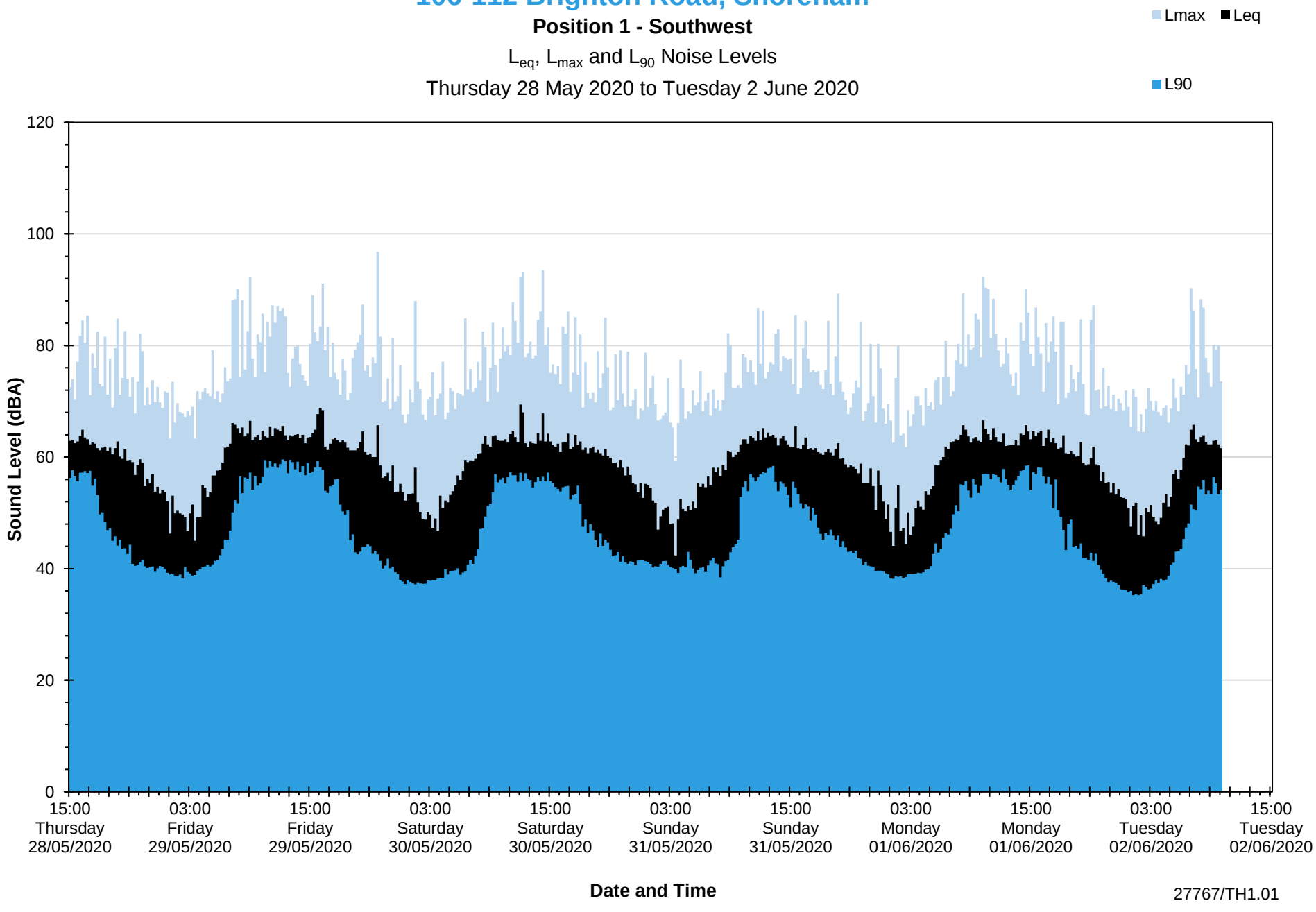
Drawing No. 8191138-5010 Rev. PA1

# 106-112 Brighton Road, Shoreham

**Position 1 - Southwest**

$L_{eq}$, $L_{max}$ and $L_{90}$ Noise Levels

Thursday 28 May 2020 to Tuesday 2 June 2020




27767/TH1.01