Chartered Building Consultancy

Acoustic South East

Noise Impact Assessment – BS4142

Client:	**Cube Storage**
Site Address:	**East Preston Depot, Station Road, Littlehampton, BN16 3AA**
Reported By:	**Simon Barrett BSc(Hons) MSc MIOA MInstSCVE**
Date Written:	**09/01/2026**
	Issue 2
ASE Project Ref:	**J4119**

Constructionline Part of Capita plc

CQMS Safety Scheme

ANC THE ASSOCIATION OF NOISE CONSULTANTS

ATTMA

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Document Control

Report by: Simon Barrett BSc(Hons) MSc MIOA MInstSCVE
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Issue No.	Date	Comments
1	6/1/2026	Initial Issue
2	9/1/2026	Client Name changed in line with planning application

1 Introduction and Executive Summary

Acoustic South East have been appointed to undertake a noise impact assessment relating to the change of use of the Land at “East Preston Depot”, Station Road, Littlehampton, BN16 3AA from a Parker Building Supplies store to a Self-Storage facility. This noise assessment will be submitted to support the planning application to the Local Planning Authority.

Standards and guidance referenced for this assessment include:

- BS4142:2014-A1:2019 - Methods for rating and assessing industrial and commercial sound
- BS8233:2014 – Guidance on Sound Insulation and Noise Reduction for Buildings
- Planning Noise Advice Document Sussex dated November 2023

The purpose of this assessment is to predict any adverse impact the new operation will have on the nearby residential Noise Sensitive Receptors (NSRs).

The results of the survey and assessment show that the Rating Level at the nearest NSR due to Building B is at worst, Parity with the existing L90 Background Sound Level – this is during the final hour of night-time. During the Daytime Hours, the Rating Level at the nearest NSR from Building B activity is 2dB below the existing L90 Background Sound Level. Contextually, this is a minor building with only two storage units.

In terms of the main building, Building A, the assessment has shown that in both the daytime and final-hour-of-night-time periods, the Rating Level at the nearest NSR will be below the existing L90 Background Sound Level. Contextually, the majority of activity will actually be inside the building, with only some initial loading/unloading occurring in the yard externally. Building A’s External Larger storage areas are further to the east, which is significantly further from residential NSRs and also shielded from view by the main building due to its shape.

Based on the assessment findings and taking into account the relevant national and local planning polices, as well as the current subjective soundscape and the context of the site’s recent history it is considered that Adverse Impact would not be experienced by the nearest NSRs.

It is recommended that planning consent should not be refused on noise grounds.

2 Context and Noise Criteria

2.1 Site Description

The application site is the “East Preston Depot”, Station Road, Littlehampton, BN16 3AA and was formerly a large builder’s merchants for many years until early 2025, when the site became vacant.

To the north of the site is a two-line Railway Line, Angmering Station and its associated Level Crossing. To the west of the site is the main Station Road and beyond this, houses. To the south of the site is residential dwellings in the form of a care-home (Millers Court). To the east of the site is additional commercial facilities.

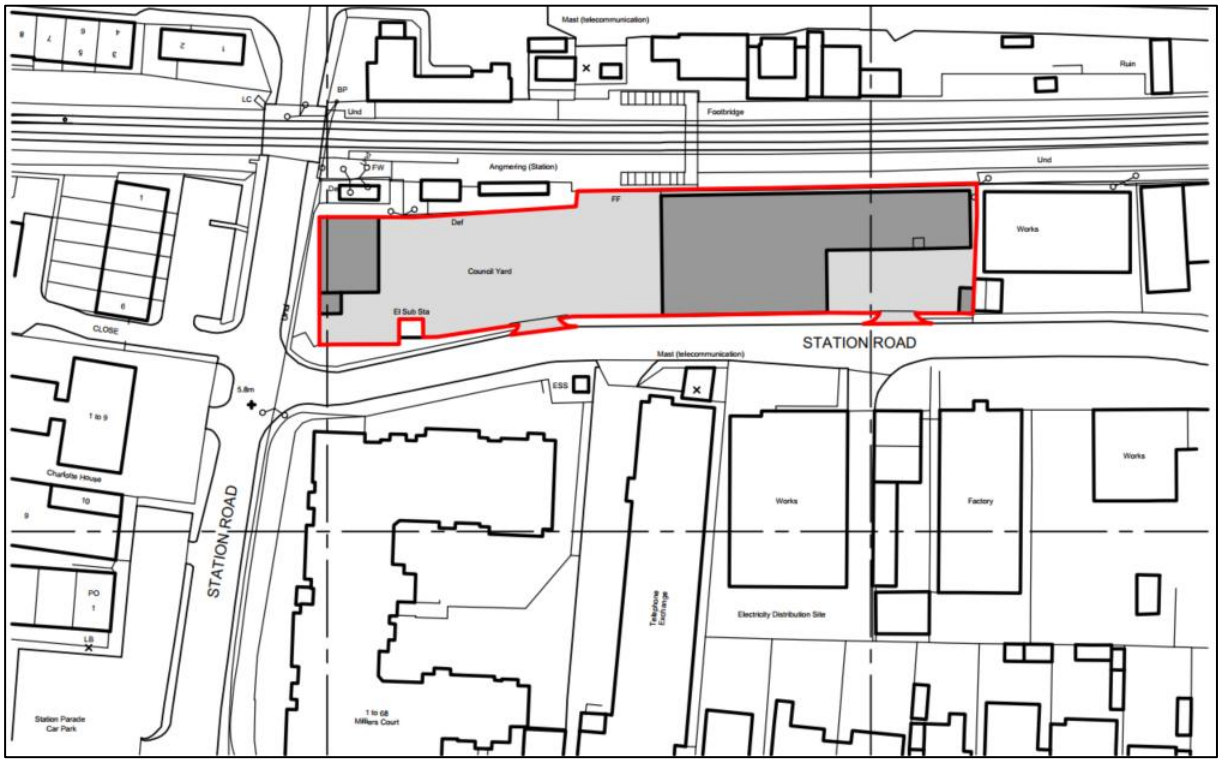


Figure 1. Site Location

2.2 Proposal

The planning application relates to the change of use from a builders’ merchants to a B8 use for Self-Storage units. (The site currently holds an “A1” use status. Prior to this, the site held a B2 use.)

Drawings of the proposed site layout are included in the appendices of this report, however it is relevant to note that there is a Building A and a Building B. Building A is the large main building and Building B is the small building to the west of the site.

Loading and Unloading occurs externally and clients manually take equipment into the building: there is no opportunity for vehicles to enter via a roller shutter door and load/unload internally.

2.3 Soundscape

The soundscape at the nearest NSR was dominated by road traffic on the busy Station Road and Rail traffic / Station activity to the north. Plus, the usual sea-bird sounds associated with what is effectively a coastal town.

A transport assessment has also been reviewed, which states that there will be a significant reduction in vehicular trips to and from the site in comparison to its previous use.

2.4 National Planning Policy

2.4.1 National Planning Policy Framework (Dec 2024)

The National Planning Policy Framework (Dec 2024) defines the Government's planning policies for England and how these are expected to be applied. It sets out the Government's requirements for the planning system only to the extent that it is relevant, proportionate and necessary to do so.

The following paragraphs are relevant within NPPF Section 15 (Conserving and enhancing the natural environment) states the following:

Paragraph 187(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, and

Paragraph 198 - 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 impact 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; and

Paragraph 200– 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.

2.5 Local Planning Guidance – Planning Noise Advice Document Sussex, Nov 2023

Several Local Planning Authority ('LPA') departments have collaborated to create the Planning Noise Advice Document Sussex which Arun District Council is signatory to. The document details relevant standards that should be referred to when completing a noise impact assessment.

Based upon the local guidance noise levels for the day and the night time period have been assessed in terms of and following the guidelines of the documents listed below:

- BS4142 (2014) Method for rating industrial noise affecting mixed residential and industrial areas
- BS8233 (Sound insulation and noise reduction for buildings) 2014

2.6 BS4142(2014+A1:2019): Method for rating and assessing industrial and commercial sound

This document provides a means of assessing the impact of industrial or commercial sound upon nearby noise-sensitive receptors, including residential properties.

It does this by comparing the Rating Level of the noise from the industrial or commercial source with the pre-existent L_{90} background noise level affecting the same noise-sensitive premises. The Standard provides guidance that:

a) Typically, the greater the difference, the greater the magnitude of the impact.

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

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

d) 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 noise level, this is an indication of the specific sound source having a low impact, depending on the context.

2.7 BS8233:2014

Table 4 of BS8233:2014 provides the following guideline values:

Activity	Location	Time period of day	
		07:00-23:00	23:00-07:00
Resting	Living Rooms	35dB $L_{Aeq,16hour}$	-
Dining	Dining Room/Area	40dB $L_{Aeq,16hour}$	-
Sleeping (daytime resting)	Bedroom	35dB $L_{Aeq,16hour}$	30dB $L_{Aeq,8hour}$

Table 1. BS8233:2014 Criteria

3 Noise Survey Baseline Conditions & Results

In order to understand the sound pressure levels being dealt with a two-fold approach has been taken:

- Measurement of the existing and representative Background Sound Level at the application site
- Measurement of sound pressure levels from an existing UK Cube site and its activities

3.1 Unattended Noise Survey Details – Background Sound

Figure 2. Long Term Background Sound Survey and Weather Station

Survey(s) carried out by	Simon Barrett BSc(Hons) MSc MIOA MInstSCVE
Equipment Used	Svantek 307 Class 1 Sound Level Meter, Serial: 130102 – Mounted on a pole in the "Rocket" weather proof housing that was mounted on a heavy-duty tripod.
Equipment Used	Norsonic Acoustic Calibrator – Serial No. 31083
Location	LT1 – 2.5m from ground and sufficiently away from any wall to be considered freefield. W3W: ///nuptials.joints.storms
Duration	20th December 2025 to 6th January 2026
Weather	Variable temperatures, mix of dry and rain. Windspeeds less than 5m/s

All noise levels in this report hereafter are free-field, fast time weighted and A-weighted levels, unless stated otherwise.

3.2 Background Sound Survey Results Summary

The survey data (obtained from the survey which was carried out on a fully vacant site) has been used to calculate the most commonly occurring (modal) background sound pressure levels ($L_{A90,15min}$) for the daytime period excepting the final hour (07:00 – 22:00hrs) and the last hour of night-time (06:00 – 07:00hrs). Please see the Appendix for modal graph data.

While the equipment already exists, it was not practical to switch the plant off for multiple hours. The operational shoulder hours were used for the assessment in order to understand the soundscape of the site.

Representative Background Sound Level Survey Results - $L_{A90,\ 15\text{-minute}}$.	
Time Period	**Modal Average**
(07:00 – 22:00)	48dBA
(06:00 – 07:00)	41dBA

Table 2. Survey Results

3.3 UK Cube Activity Sound Pressure Levels

An unattended sound survey was carried out at their only existing UK Cube self-storage site in Uckfield. The survey location was chosen to ensure the microphone was monitoring self-storage access activities and not the nearby road traffic, whilst also remaining secure. It was also able to survey the most onerous section of the storage as these were the externally-accessed storage units.

The survey details are shown below:

Figure 3: Long Term Survey Position for Existing UK Cube Storage Activity

Survey(s) carried out by	Simon Barrett BSc(Hons) MSc MIOA MInstSCVE
Equipment Used	Svantek 971 Class 1 Sound Level Meter, Serial: 130102 – Mounted in the "Moles" weather proof housing that was mounted to a heavy-duty tripod that was in-turn mounted above an unused storage container.
Equipment Used	Norsonic Acoustic Calibrator – Serial No. 31083
Location	4m from the ground in free-field conditions. W3W: ///unsigned.unfair.showed
Duration	20th December 2025 to 6th January 2026
Weather	Variable temperatures, mix of dry and rain. Windspeeds less than 5m/s

The results from the survey have been collated to show the A-Weighted Leq for every 5-minute period. This allows the data to show if there are any times when sound levels are clearly associated with access to self-storage.

Given the location and height, it is not unsurmountable that the survey will have also collected other sound too, i.e. commercial and road traffic noise and therefore, this represents a worst-case assessment

The graphical data is shown in the appendices but it shows that during daytime hours, (07:00hrs – 23:00hrs) the 1-hour LAeq, which (which is the Daytime Reference period used by BS4142, is 59dBA in the worst-case. Breaking this down into smaller time periods (specifically 5-minute values), it is clear that there are several LAeq,5min values which are typically 65dB. It is key to note that these sound pressure levels only occur for short lengths of time (5-10 minutes only) during any access and a number of these occurrences only were shown to be for a total of 20-minutes during a 1-hour daytime reference period. This indicates that there may be some impulsivity in the sound content. Equally, it demonstrates that the sound does not occur all of the time and an on-time correction will be relevant

The graphical data also shows that during the final hour of night-time (06:00 – 07:00hrs) the storage access sound pressure levels did not exceed 55dBA and the maximum duration of time for these access activity sounds was 5-minutes in any 15-minute reference period. Indeed, the LAeq,15min values ranged from between 48dB and 55dB.

There are no alarms associated with the door openings.

3.4 Distance Attenuation Considerations

In all cases, the monitoring position was 5m from the roller-shutter door of the nearest storage unit and it is understood that the units closest to the monitoring location were frequently visited during the week.

When it comes to the application site, the self-storage activities will be further from the nearest NSR compared to the original measurement position as noted above and thus a distance correction calculation will be required using the formula below:

$$20\log(r2/r1)$$

Where:

r1 = Original Measurement Distance
r2 = Distance to NSR at application site

The SPL measured in this survey are more akin to that which will be occurring in Building B of the application site, as the storage units in Building A are all internal units and only have one main loading door whereas with Building B, there are two larger storage units each with their own roller shutter doors – for larger storage needs.

3.4.1 Building A

The distance from the loading bay of Building A – which is the main building – to the nearest NSR is 38m. Therefore, using the same formula as previously used, it can be replicated here but with the new values:

$$20\log\left({}^{38}/_{5}\right)$$

This results in an additional distance attenuation of 17.6dB to apply to the values referred to in section 3.3 of this report, thus, the maximum daytime Specific Sound Level measured, when adjusted for distance would be Leq,1hr = 42.4dBA.

For the final hour of the night-time, this would be Leq,15min = 37.4dBA in the worst-case.

3.4.2 Building B

The distance from the nearest loading bay of Building B to the nearest NSR is 30m. Therefore, using the above formula it is replicated here as follows:

$$20\log\left({}^{30}/_{5}\right)$$

This results in an additional distance attenuation of 15.6dB to apply to the values referred to in section 3.3 of this report, thus, the maximum daytime Specific Sound Level measured, when adjusted for distance would be Leq,1hr = 44.4dBA.

For the final hour of the night-time, this would be Leq,15min = 39.4dBA in the worst-case.

4 BS4142:2014 Assessment

The BS4142:2014 assessment has considered using the worst case and highest predicted external sound pressure level at the closest receptor. In this instance, this equates to residential care home “Millers Court”.

4.1 Character Corrections

As alluded to in the previous section, the 5-minute values from the un-attended survey of the current UK Cube actions, the results from the 5-minute Leq values outlined in section 3.3 suggest a degree of impulsivity when close by. At further distance, this would become less clear, but still degree of perceptibility and so a character correction of +3dB will be applied.

The nature of the self-storage units means that tonality will not be an issue.

There may be a degree of intermittency with users coming and going to/from the site, but this will be off-set by any “on-time” correction applied (which would actually override any intermittency by an additional 1.8dB attenuation – see tables below).

4.2 BS4142:2014-A1:2019 Assessment

It is important to differentiate between Specific Sound Level and Rating Level. Certain acoustic features can increase the likelihood of complaint but they should only be assessed from the point at which they are perceived at the NSR (see section 5.1 above). The tables below progress the Specific Sound Level into a Rating Level accordingly.

Building A - Daytime			
Results	**Measurement Parameter**		**Relevant Clause**
Specific sound level (distance corrected)	$L_{Aeq(T)}$	42.4	7.3.4
On time corrected value	20-minutes in a 1-hour period	-4.8	
Acoustic feature correction	Intermittency (+3dB)	+3	9.2
Acoustic feature correction	Impulsivity (+3dB)	+3	9.2
Rating level (rounded as required)	$L_{Ar,Tr}$	44	9.2
Background sound level	$L_{A90(T)}$	48	8
Excess of rating level over/under background sound level		-4	11
Assessment indicates:	Below Background thus Adverse Impact Very Unlikely		11
Uncertainty of the assessment	Discussed		10

Table 3. Daytime assessment for Building A

Building B - Daytime			
Results	**Measurement Parameter**		**Relevant Clause**
Specific sound level (distance corrected)	$L_{Aeq(T)}$	44.4	7.3.4
On time corrected value	20-minutes in a 1-hour period	-4.8	
Acoustic feature correction	Intermittency (+3dB)	+3	9.2
Acoustic feature correction	Impulsivity (+3dB)	+3	9.2
Rating level (rounded as required)	$L_{Ar,Tr}$	46	9.2
Background sound level	$L_{A90(T)}$	48	8
Excess of rating level over/under background sound level		-2	11
Assessment indicates:	Below Background thus Adverse Impact Unlikely		11
Uncertainty of the assessment	Discussed		10

Table 4. Daytime assessment for Building B

Building A – Final Hour of Night Time			
Results	**Measurement Parameter**		**Relevant Clause**
Specific sound level (distance corrected)	$L_{Aeq(T)}$	37.4	7.3.4
On time corrected value	5-minutes in a 15-minute period	-4.8	
Acoustic feature correction	Intermittency (+3dB)	+3	9.2
Acoustic feature correction	Impulsivity (+3dB)	+3	9.2
Rating level (rounded as required)	$L_{Ar,Tr}$	39	9.2
Background sound level	$L_{A90(T)}$	41	8
Excess of rating level over/under background sound level		-2	11
Assessment indicates:	Below Background thus Adverse Impact Unlikely		11
Uncertainty of the assessment	Discussed		10

Table 5 Night-time Assessment – Building A

Building B – Final Hour of Night Time			
Results	**Measurement Parameter**		**Relevant Clause**
Specific sound level (distance corrected)	$L_{Aeq(T)}$	39.4	7.3.4
On time corrected value	5-minutes in a 15-minute period	-4.8	
Acoustic feature correction	Intermittency (+3dB)	+3	9.2
Acoustic feature correction	Impulsivity (+3dB)	+3	9.2
Rating level (rounded as required)	$L_{Ar,Tr}$	41	9.2
Background sound level	$L_{A90(T)}$	41	8
Excess of rating level over/under background sound level		0	11
Assessment indicates:	Parity with Background thus Adverse Impact Unlikely		11
Uncertainty of the assessment	Discussed		10

Table 6 Night-time Assessment – Building B

4.3 Discussion

Context is key with any BS4142 assessment and the current version (2014 with amendments in 2019) strongly promotes the importance of this.

In all of the above assessments for Building A and Building B, it can be seen that the worst-case Rating Level from loading/unloading activity is “parity with existing background”. This is for the final hour of the night-time period (06:00hrs – 07:00hrs) and this is assessed because the proposed operating hours are from 06:00hrs – 22:00hrs, which spans the night-time-to-daytime switch over.

Whilst there will be loading and unloading activities happening in the outdoor yard, this will be considerably less than the activities occurring on this site previously when it operated as a large builders’ merchants when there would have been a significant amount of materials handling occurring with plant operating on site such as forklifts and their associated reversing warning sounds. Additionally, larger vehicles would have been frequently visiting, which are inherently higher in SPL than the cars which are more likely to be the vehicle to travel to and from site most regularly.

Previous operating hours on this site (as per planning application: “EP/51/12/” stated 07:30 – 17:30hrs Monday – Friday and 08:00 – 12:30hrs on Saturdays).

It is likely that the site operations for the majority of the day will be low in SPL as by its nature, self-storage units do not produce sound themselves, it is only the access/loading/unloading activity which produces the sound.

The Transport Assessment (produced by i-Transport LLP, Ref: SGe/DGo/ITS210603-001, dated 19th December 2025) also confirms that there will be a reduction in vehicle movements to and from site compared to the previous occupant along with the lack of need for any forklift trucks operating on site. Additionally, that the vehicle type accessing site is less noisy.

Additionally, the surrounding area is relatively busy with road and rail traffic passing regularly and this will provide a degree of "noise masking" to the activities which *do* occur on site.

Additionally, the Rating Level from the main building (Building A), which will see the majority of activity is below the existing representative LA90 Background Sound Level in both time periods assessed. This produces a strong argument for this application to be acceptable on noise-grounds.

It is useful also to consider how the Rating Levels will compare with BS8233:2014 criteria for day and night-time periods.

4.4 BS8233:2014 Compliance

As the Rating Level is, at worst case, parity with the L_{A90} background level, it is informative to estimate the internal sound pressure level of the nearest NSR. While not part of a BS4142 assessment, this does provide wider context for the exposure the nearest NSR is likely to experience.

Table 4 of BS8233:2014 provides the following guideline values:

Activity	Location	Time period of day	
		07:00-23:00	23:00-07:00
Resting	Living Rooms	35dB $L_{Aeq,16hour}$	-
Dining	Dining Room/Area	40dB $L_{Aeq,16hour}$	-
Sleeping (daytime resting)	Bedroom	35dB $L_{Aeq,16hour}$	30dB $L_{Aeq,8hour}$

Table 7. BS8233:2014 Criteria

Whilst BS8233 criteria relates to continuous and anonymous sound, the comparison made in this section will be of the Rating Level against the criteria and the Rating Level has already dealt with any noise characteristics. This is also a worst-case hour / 15-minute period and therefore, a simple comparison can be carried out.

Scenario	Rating Level Outside NSR (dBA)	Typical Attenuation of a Partially Open Window	Resultant Internal SPL (dBA)
Building A Daytime	44	13	31
Building A Night-time	37	13	24
Building B Daytime	46	13	33
Building B Night-time	39	13	26

Table 8. Rating Level vs BS8233:2014 Criteria

Table 7 shows the Outdoor Rating Level vs Internal SPL after attenuation through a partially open window. This latter internal value can be compared with criteria of BS8233:2014 for both the day and final-hour-of-night-time periods measured by the survey. It can be seen that in ALL cases, the criteria of BS8233:2014 are comfortably met.

4.5 Uncertainty

The proposed business applying to operate at the site is variable in nature in terms of frequency of access and type of items being stored. Therefore, in order to provide representation and as accurate assessment as possible, a long-term survey was carried out at an existing UK Cube Storage site. The results from this survey were then able to be applied to the new site.

Background Sound Levels were monitored on the application site during a period of time when it was fully vacant – this included standard business days, weekends and even the Christmas – New Year holiday period. The duration and variance measured allowed for a robust assessment of the existing background sound level against which sound produced by the proposed business could be assessed.

The class 1 sound level meters were used throughout the survey and they were calibrated before and after measurements without any drift observed.

Weather was monitored during the assessment to ensure that data measured was valid (wind speeds below 5m/s).

In all calculations carried out, the values were not rounded until the end of the final calculation, to ensure double-handling did not occur.

In reality, the survey of the existing Uckfield site will have collected all sound and not just from the UK Cube facility, therefore the assessment represents a worst case.

5 Conclusion

The results of the survey and assessment show that the Rating Level at the nearest NSR due to Building B is at worst, Parity with the existing L90 Background Sound Level – this is during the final hour of night-time. During the Daytime Hours, the Rating Level at the nearest NSR from Building B activity is 2dB below the existing L90 Background Sound Level. Contextually, this is a minor building with only two storage units.

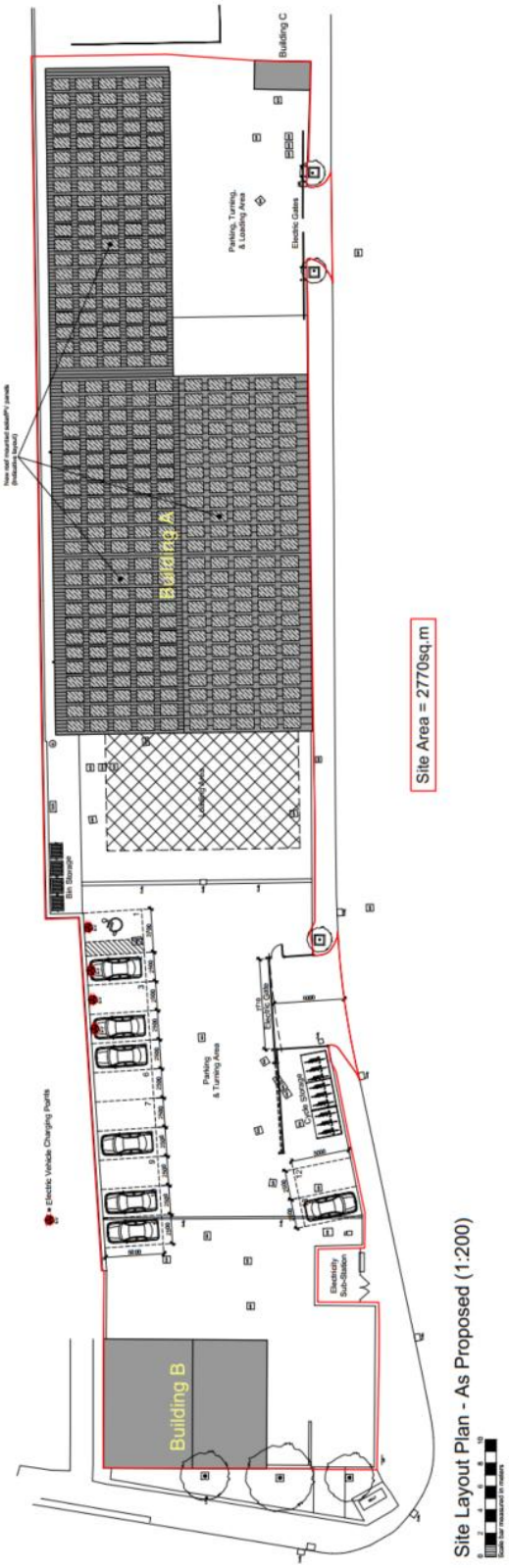
In terms of the main building, Building A, the assessment has shown that in both the daytime and final-hour-of-night-time periods, the Rating Level at the nearest NSR will be below the existing L90 Background Sound Level. Contextually, the majority of activity will actually be inside the building, with only some initial loading/unloading occurring in the yard externally. Building A's External Larger storage areas are further to the east, which is significantly further from residential NSRs and also shielded from view by the main building due to its shape.

Based on the assessment findings and taking into account the relevant national and local planning polices, as well as the current subjective soundscape and the context of the site's recent history it is considered that Adverse Impact would not be experienced by the nearest NSRs.

BS4142 states that the more that the Rating Level is below background, the likelihood of adverse impact decreases even further than being simply "unlikely". It is also important to always consider the context and here there is the case that the previous occupant is considered to have been operationally louder due to the nature of their business. There site is also surrounded by a busy railway line and constant road traffic, both of which would assist in masking any loading/unloading on site.

It is recommended that planning consent should not be refused on noise grounds.

Appendix A – Proposed Site Layouts



Site Layout Plan - As Proposed (1:200)

A1

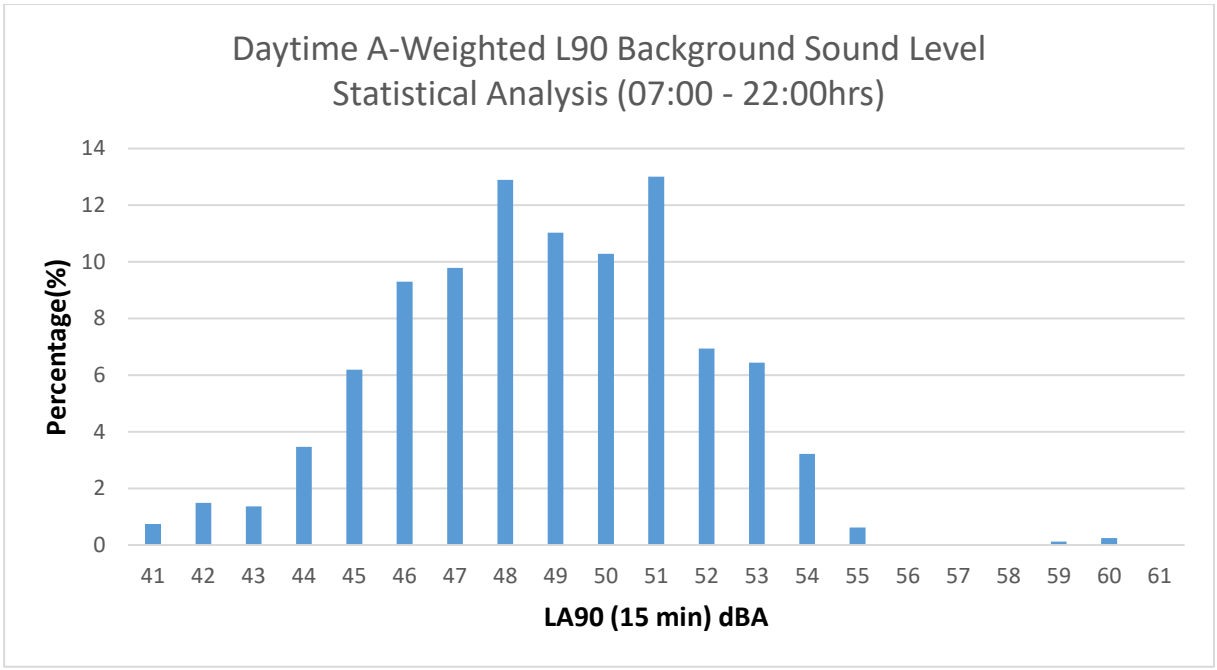
Second Floor Plan

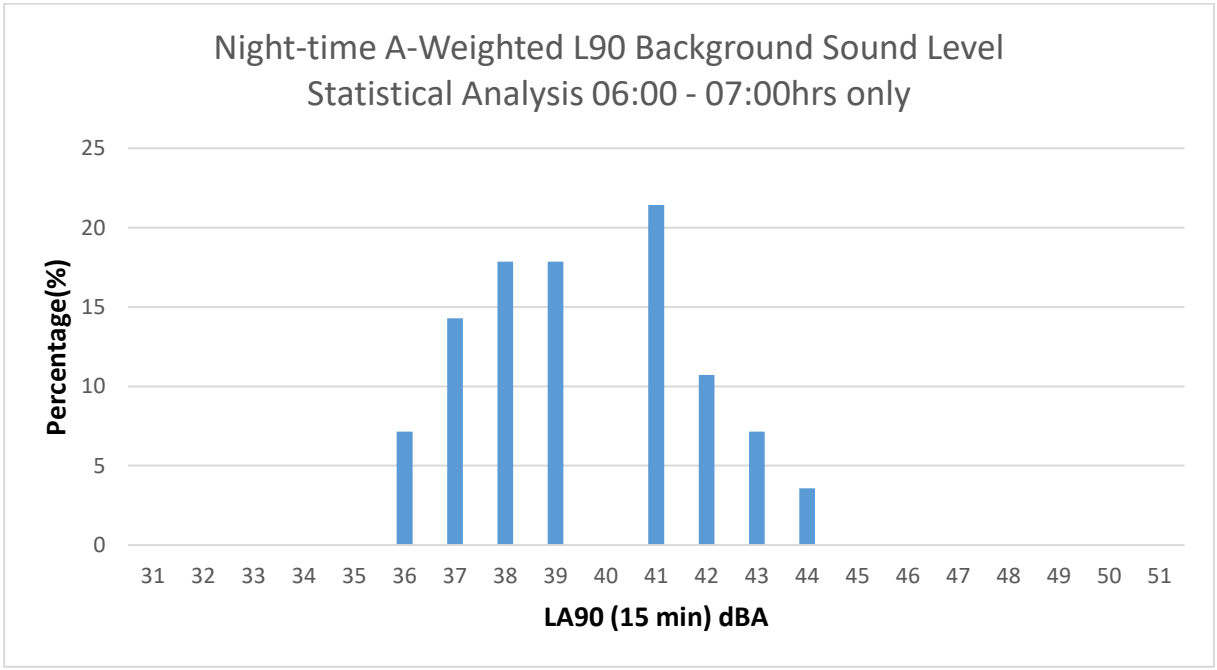
First Floor Plan

Ground Floor Plan

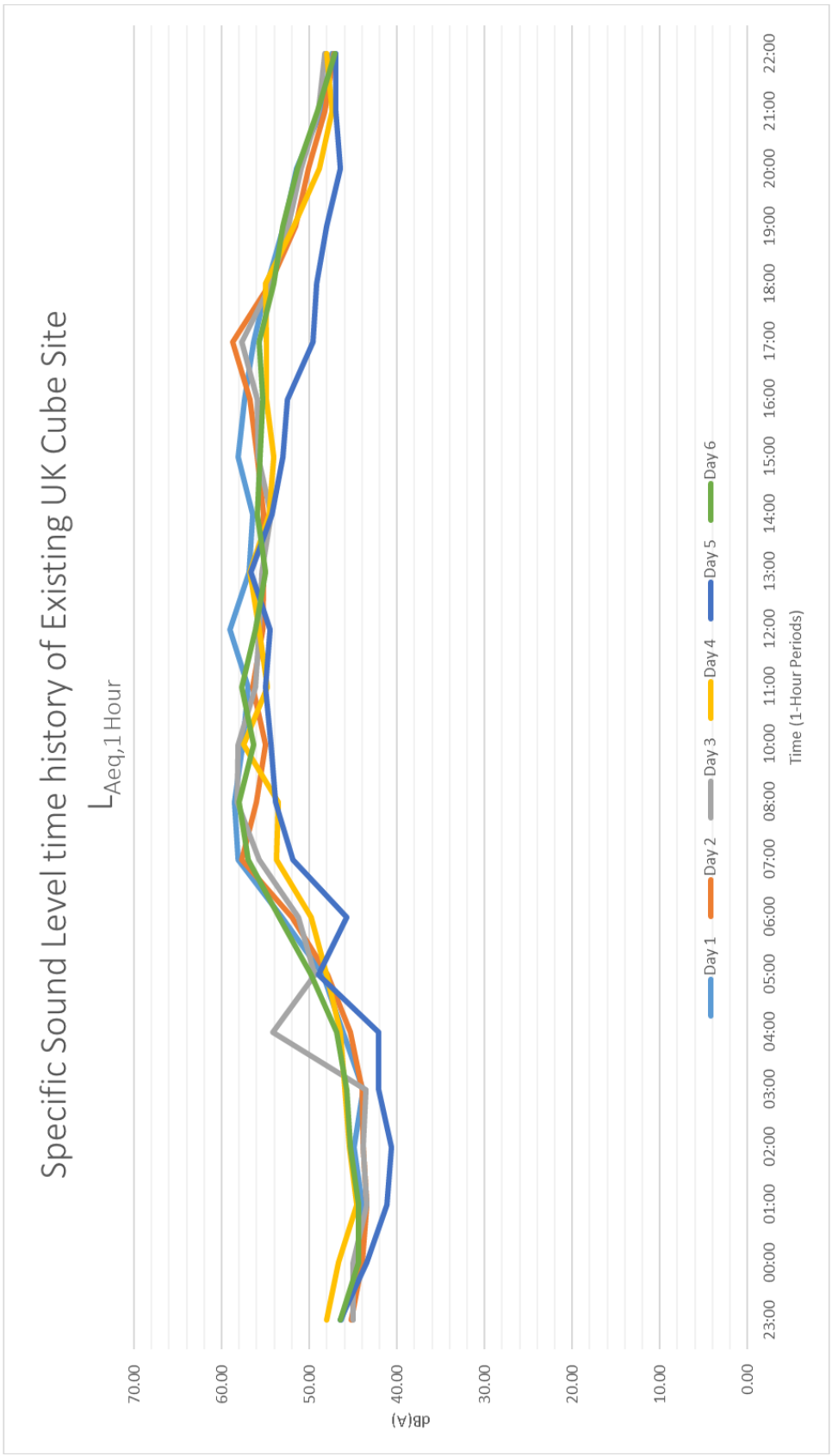
RAL 5015
PLANNING
3D Limited
ARCHITECTURE
Cube Self Store
Station Road
East Preston, Littlehampton
West Sussex BN16 3AA
Plan & Elevations - Building B
As Proposed
1:100
December 2025
ANH
2025/PL05
Side (South) Elevation
Side (North) Elevation
Front (East) Elevation
Rear (West) Elevation
Ground Floor G.I.A = 136.73sq.m
Storage
Storage
Floor Plan
A2

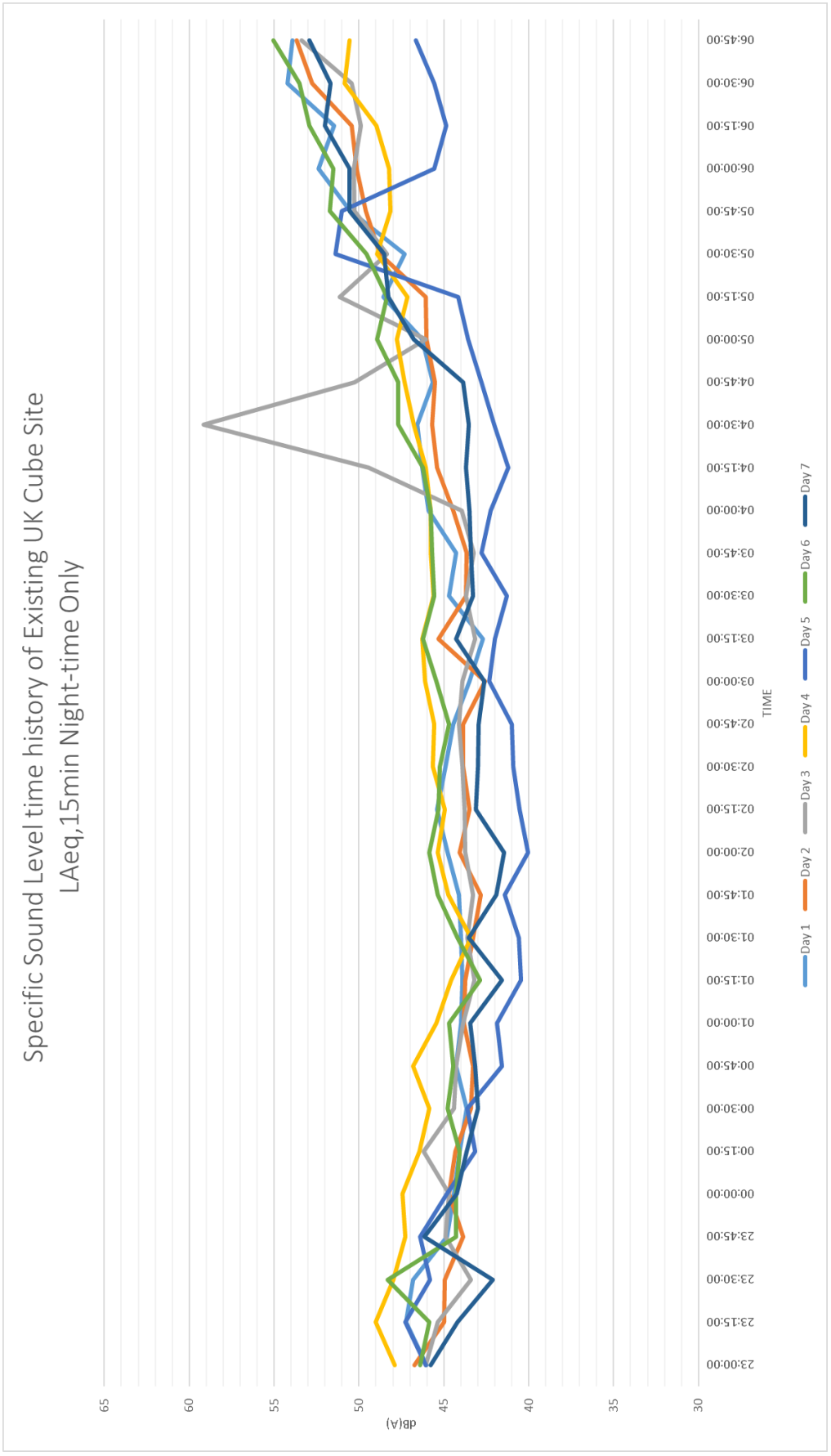
Appendix B – Statistical Analysis of L90 Background Sound Levels

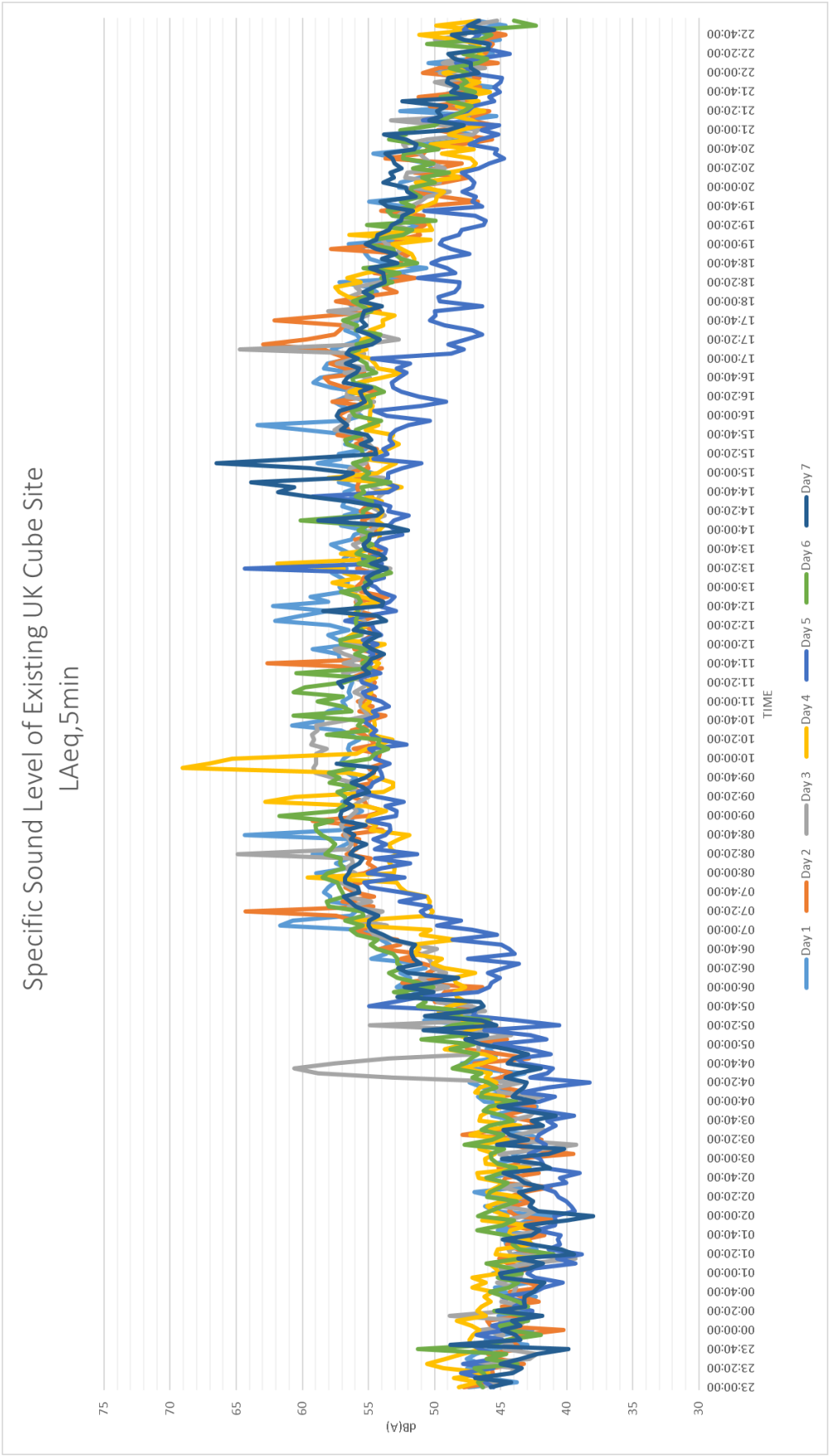




Appendix C – Time History of Specific Sound Level as Measured (Uckfield CUBE)




Specific Sound Level time history of Existing UK Cube Site
LAeq,15min Night-time Only
TIME
dB(A)
Day 1
Day 2
Day 3
Day 4
Day 5
Day 6
Day 7


Specific Sound Level of Existing UK Cube Site
LAeq,5min
dB(A)
TIME
Day 1
Day 2
Day 3
Day 4
Day 5
Day 6
Day 7