The Chocolate Factory, Block E1,

Noise Assessment
Planning Conditions 28 & 29

August 2026

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1 Introduction

NRG Consulting has been commissioned to undertake a noise impact assessment to i) review the acoustic separation details between commercial and residential areas, and ii) complete detailed façade calculations to predict internal noise levels within habitable rooms, to support the discharge of acoustic-related planning conditions associated with the approved development at **Land at the Chocolate Factory and Parma House, 5 Clarendon Road, Haringey, N22 6XJ.**

The scheme benefits from Planning Permission under ref: HGY/2017/3020 with a subsequent NMA ref: HGY/2021/0624.

The proposed development comprises the *partial demolition, change of use and extension of the Chocolate Factory buildings including redevelopment to create four new build mixed use blocks ranging in height from three to eighteen storeys, together with associated residential and commercial car parking, public realm work and access.*

This noise impact assessment is related to the construction of **Block E1 only** and addresses the discharge of planning conditions 28 and 29.

The structure of this report is as follows:

- The existing site and proposed development are described in Section 2;
- Section 3 outlines relevant legislation, guidance, and the planning conditions;
- Section 4 summarises the environmental noise surveys;
- Sections 5 and 6 presents detailed façade noise calculations and internal noise assessments; and
- Section 7 provides conclusions.

Figures and additional supporting information are presented in Appendix 1.

2 Site Description and Proposed Development

2.1 Site Description

The site is located at Land at the Chocolate Factory and Parma House, 5 Clarendon Road, Haringey, N22 6XJ.

The surrounding area is of a mixed-use nature, comprising recently constructed blocks of residential dwellings, commercial buildings including office spaces, and light industrial/warehouse units. A railway line is approximately 120m to the west and a waste and recycling centre is approximately 80m to the north-west. The ambient sound environment is dominated by local road traffic.

The location of site is shown in Figure 1.1 in Appendix 1.

2.2 Proposed Development

Planning permission was granted (HGY/2017/3020) for the *'Partial demolition, change of use and extension of the Chocolate Factory buildings. Demolition of the remaining buildings and redevelopment to create four new build blocks ranging in height from three up to 18 storeys. Mixed use development comprising 10,657 sq.m (GIA) of height from three up to 18 storeys. Mixed use development comprising 10,657 sq.m (GIA) of commercial floor space (flexible Use Classes A1, A3, B1, D1 and D2), 230 Class C3 residential units together with associated residential and commercial car parking, public realm works and access.'*

This noise impact assessment is related to the construction of block E1 only.

Proposed site elevations are presented in Figures 1.2 to 1.6 of Appendix 1.

2.3 Planning Condition Wording

The development is located within the administrative boundary of Haringey Council.

As part of the original planning permission, 2 no. noise related conditions (no. 28 and no. 29) were attached to the consent, which are set out below.

28) Sound Insulation – residential

Prior to the commencement of the above ground floor works for Blocks B, D and E hereby approved, a scheme of sound insulation for glazing and ventilators verifying that the required internal noise levels can be met, shall be submitted to and approved by the Local Planning Authority. The development shall be implemented in accordance with approved details.

29) Sound Insulation – commercial

Prior to the commencement of the above ground floor works for Blocks D and E hereby approved, a scheme shall be submitted of sound insulation between the commercial (flexible Use Classes A1, A3, B1, D1 and D2) properties and residential units and approved by the Local Planning Authority. The development shall be implemented in accordance with approved details.

3 Regulations and Guidance

3.1 BS 8233: 2014 Sound Insulation and Noise Reduction for Buildings – Code of Practice

The scope of BS 8233: 2014[i] includes the provision of recommendations for the control of noise in and around buildings. It suggests appropriate design guide noise limits for different situations, which are primarily intended to guide the design of new buildings. For steady external noise source, it is desirable that the internal ambient noise levels do not exceed the guideline values in Table 2 of BS 8233: 2014. This information has been reproduced below in Table 1 for ease of reference.

Activity	Location	07:00 to 23:00	23:00 to 07:00
Resting	Living room	35 dB $L_{Aeq,\ 16hour}$	--
Dining	Dining room /area	40 dB $L_{Aeq,\ 16hour}$	--
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq,\ 16hour}$	30 dB $L_{Aeq,\ 8hour}$

Table 1: BS 8233: 2014 Internal Noise Targets for Domestic Uses

3.3 World Health Organisation

The most recent WHO guidelines 'Environmental Noise Guidelines for the European Region'[ii] acknowledge that 'single event noise indicators such as the maximum sound pressure level are warranted in specific situations such as night time railway events that can clearly elicit awakenings', however, the guidance indicates that 'the relationship between different types of single-event noise indicators and long-term health outcomes at the population level remains tentative' and therefore does not make any recommendations for single event noise indicators. However, guideline values for community noise in specific environments are presented in the WHO's 'Guidelines for Community Noise'[iii] document and replicated below:

Specific Environment	Critical Health Effect(s)	dB $L_{Aeq,T}$	Time Base hours	dB $L_{Amax,F}$
Outdoor living area	Serious annoyance, daytime and evening	55	16	-
	Moderate annoyance, daytime and evening	50	16	-
Dwelling indoors	Speech intelligibility and moderate annoyance, daytime and evening	35	16	-
Inside bedrooms	Sleep disturbance, night-time	30	8	45

Table 2: WHO Guideline Noise Values

Notes[1]: For a good sleep, the WHO states that indoor sound pressure levels should not exceed approximately 45 dB LAmax more than 10–15 times per night.

The Night Noise Guidelines (NNG) for Europe[iv] is described as an extension of the WHO Guidelines for Community Noise publication. The threshold levels of noise exposure presented in the document are described as milestones in the process of evaluating the health consequences of environmental exposure. The health-based guideline values for the assessment and control of night noise exposure were derived from a review of available scientific evidence on the health effects of night noise. These include the effects and threshold levels for night time $L_{Amax,F}$, which are lower than those presented in the WHO community noise guidelines. These revised levels are presented in Table 3 below.

Specific Environment	Critical Health Effect(s)	dB $L_{Aeq,T}$	Time Base hours
Sleep Quality	Waking up in night and/or too early in the morning	dB $L_{Amax,F}$	42

Table 3: WHO Night-Time Noise Guidelines

4 Environmental Noise Survey

4.1 Existing Site Noise Levels

Detailed noise data for the site is included in the Environmental Statement completed in 2016. The measurements were taken between 21st January 2016 and 26th January 2016. The ES states that the noise levels at the site were generally influenced by road traffic and the railway line.

A summary of the results from this report are presented in Figure 1.7 of Appendix 1

The monitoring locations from this report are shown in Figure 1.8 of Appendix 1.

4.2 Attended Noise Survey

Attended Environmental Noise Measurements

Supplementary attended short-term noise measurements were obtained at locations ST1, ST2, and ST3, as shown on Figure 1.1 of Appendix 1, to validate the ES noise data.

The locations were chosen as they were representative of the long-term measurements taken in the ES survey.

The attended measurements were undertaken between 10:21hrs and 12:27hrs on Wednesday 14th June 2026. The microphone was approximately 1.5 m above local ground floor level in free-field conditions. The sound level meter was configured to measure A-weighted noise indices, which included $L_{Amax,F}$, $L_{Aeq,15min}$ and $L_{A90,15min}$ levels.

The equipment was calibrated before and after the survey.

The equipment used during the survey is as presented in Table 2 below.

Monitoring Location	Façade/Free-Field	Manufacturer	Model No.	Description	Serial No.	Calibration Date
ST1-ST3	Free-field	Norsonic	Nor140	Sound Level Meter	1403236	February 2028
-	-	Larson Davis	CAL200	Acoustic Calibrator	12981	March 2027

Table 2: Noise Monitoring Equipment

Weather Conditions

Weather Conditions during the noise measurements are presented below in Table 3.

Site Visit	Date and Time	Weather Conditions
Attended Noise Measurements	24/06/2026 10:21 to 12:27hrs	Dry; 34°C; 59% humidity; windspeed <0.5/s.

Table 3: Weather Conditions for Site Visit

Attended Noise Observations

Attended noise observations undertaken during the survey identified that road traffic was the dominant source of noise at all three locations. At ST2 and ST3, intermittent train passes were also noted. At ST3, some noise from the waste and recycling centre was audible, but this was not considered to be significant above the prevailing road and rail noise.

No significant commercial noise sources were observed during the surveys. There was some construction noise ongoing, but this was not considered to materially influence the acoustic environment at the time of the measurements.

Attended Noise Measurement Results

The results of the attended noise measurements are presented in Table 4 below.

Monitoring Location	Date	Start Time	Dur. (mins)	Measured Free-Field Noise Levels, dB			Observations
				$L_{Amax,F}$	$L_{Aeq,T}$	$L_{A90,T}$	
ST1 (ES LT1)	14/06/2026	10:22	15	74.1	54.9	46.2	Occasional building noise from site opposite, occasional idling cars/slamming doors, distant train passes.
ST2 (ES LT3)		10:39	15	84.2	62.8	45.2	Road and railway noise. Approx 7no. train passes in 15 minutes
ST3 (ES LT2)		10:56	15	72	58.7	50.1	Noise from recycling plant not noticeable above road noise
ST1 (ES LT1)		11:13	15	77.6	57.5	46.6	Occasional building noise from site opposite, occasional idling
ST2 (ES LT3)		11:30	15	75.7	62.1	48	Road and railway noise. Approx 7no. train passes in 15 minutes
ST3 (ES LT2)		11:46	15	88.9	63.4	49.6	Noise from recycling plant not noticeable above road noise
ST1 (ES LT1)		12:12	15	77.7	58.2	46.4	Occasional building noise from site opposite, occasional

Table 4: Summary Of Attended Noise Measurements – Wednesday 14th June 2026

A comparison of the two data sets shows that the noise levels are broadly similar, although the ES data shows slightly higher levels at ST1 and ST2. Professional judgement indicates that the datasets are sufficiently similar that the original ES data can be used in confidence, and because the original data shows slightly higher noise levels, this can be considered a conservative approach.

5 Internal Noise Level Assessment – Detailed Façade Calculations (Condition 28)

5.1 Introduction

The detailed calculation method described in Annex G of BS 8233:2014 has been used to predict noise levels inside a selection of 'worst-case' habitable rooms (i.e. largest window size and smallest room volume), to determine whether the proposed glazing and ventilation systems are suitable for providing adequate sound reduction to meet desirable internal noise levels within habitable rooms.

The calculation method enables composite façade sound reductions to be calculated taking into consideration the sound reduction afforded by the external walls, roof and window elements plus any ventilation apertures in the façade.

The acoustic algorithm used to calculate the façade sound reduction and the internal noise levels is reproduced below.

$$L_{eq,2} = L_{eq,ff} + 10log_{10}\left(\frac{A_0}{S}10^{\frac{-D_{n,e}}{10}} + \frac{S_{wi}}{S}10^{\frac{-R_{wi}}{10}} + \frac{S_{ew}}{S}10^{\frac{-R_{ew}}{10}} + \frac{S_{rr}}{S}10^{\frac{-R_{rr}}{10}}\right) + 10log_{10}\left(\frac{S}{A}\right) + 3$$

$L_{eq,ff}$	is the equivalent, free-field, continuous sound pressure level outside the room elements under consideration;
A_0	is a reference absorption area of 10 m² and is independent of frequency;
$D_{n,e}$	is the insulation of the trickle ventilator measured according to BS EN ISO 10140;
S_{wi}	is the area in square metres (m²) of the windows of the room;
R_{wi}	is the sound reduction index (octave band value) of the window;
S_{ew}	is the area in square metres (m²) of the external wall of the room;
R_{ew}	is the sound reduction index (octave band value) of the external wall;
S_{rr}	is the area in square metres (m²) of the ceiling of the room;
R_{rr}	is the sound reduction index (octave band values) of the roof/ceiling;
S_f	is the total façade area in square metres (m²) of the room in question;
S	is the total area in square metres (m²) of elements through which sound enters the room, i.e. S_f + S_{rr};
A	is the equivalent absorption area of the receiving room being considered; and
+3	is a correction factor

5.2 Construction Assumptions

The facades of the development will be constructed using the wall construction detailed below.

WALL TYPE NOTES

Type	Drawing note
WT1	SOLTHERM BRICK SLIP EXTERNAL WALL: Soltherm Dynamic Brick-ID brick slip finish on 200mm Soltherm MW 036 mineral wool EWI, 12mm cement particle board, 89mm SFS framing fully filled with mineral wool insulation, 2 layers 15mm Gyproc Soundbloc Board plasterboard (or equal approved), 50mm internal service void, 15mm plasterboard and 3mm plaster skim. Soltherm system, fixings, reinforcement, membranes, cavity barriers and interfaces strictly to manufacturer's project-specific specification.

The sound reduction for this type of wall construction has been modelled using INSUL V9. The SRI of the wall construction is presented below in Table 5.

Building Element	Source	1/1-Octave Band Frequency, Sound Reduction Index, dB					
		125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz
Wall – WT1	Insul	44	64	78	88	101	104

Table 5: Building Element Sound Reduction Index (SRI)

An initial assessment of the predicted internal noise levels suggests that a standard glazing system providing a sound reduction of at least 32 dB $R_{w,}$ would be sufficient to achieve the desired internal sound levels (subject to being paired with appropriate trickle vents). The glazing specification used in the calculation is presented in Table 6 below.

Building Element	Source	R_w	1/1-Octave Band Frequency, Sound Reduction Index, dB					
			125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz
Glazing	Velfac	32	20	19	29	38	39	35

Table 6: Glazing Element Sound Reduction Index (SRI)

It is understood that the development will incorporate standard trickle vents. The 1/1 octave band sound reduction values for a typical standard trickle ventilation system, when open, and used for calculation purposes, are presented in Table 7 below.

Building Element	Source	$D_{n,e}$ dB	1/1-Octave Band Frequency, Sound Reduction Index, dB					
			125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz
Trickle Vent	Titon Standard Vent/C25	35	36	38	36	32	37	39

Table 7: Standard Trickle Vent Element Sound Reduction Index (SRI)

The L_{eq} noise spectrums summarised below in Table 8 are the logarithmic averages of the L_{eq} octave band noise levels measured during the attended noise surveys. The night-time L_{eq} and night-time $L_{max,F}$ levels have been derived by using the measured diurnal changes in noise levels recorded in the ES data.

Receptor	Representative Monitoring location	Period	dB (A)	Noise Level (dB) at Octave band centre frequency (Hz)					
				125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz
R1 (North/East)	ST1 (LT1)	Day	57	56	55	54	51	50	45
		Night	51	50	49	48	45	44	39
		Night*	70	74	69	64	63	64	59
R2 (South)	ST3 (LT2)	Day	56	55	54	53	50	49	44
		Night	50	49	48	47	44	43	38
		Night*	69	73	68	63	62	63	58
R3 (West)	ST2 (LT3)	Day	51	50	49	48	45	44	39
		Night	45	44	43	42	39	38	33
		Night*	64	68	63	58	57	58	53

Table 8: Spectral Characteristics Used for Assessment - Note: * L_{Amaxf} Noise Levels

5.3 Assessment of Internal Noise Levels

A noise assessment was carried out for the development as part of the ES submitted alongside the planning application (Barton Willmore report ref 21650/A5/ES2017). Design criteria for acceptable noise levels in acoustically sensitive areas of the development were adopted based on the recommended levels given in BS8233:2014.

BS 8233:2014 contains recommended daytime guideline levels of 35 dB $L_{Aeq,T}$ for resting inside bedrooms and living rooms during the daytime, 40 dB $L_{Aeq,T}$ for dining areas and 30 dB $L_{Aeq,T}$ for sleeping inside bedrooms at night.

With respect to the night-time L_{AFmax} dB noise criterion, the WHO Night Noise Guidelines (NNG) for Europe indicates that indoor sound pressure levels should not exceed approximately 42 dB L_{AFmax} more than 10-15 times per night'.

Based on the calculated composite faced sound reductions, predicted ambient noise levels inside a selection of worse-case habitable rooms for dwellings on Block E1 are summarised below in Table 9.

Façade	Period	Room	Floor	Free-Field External Noise Level, dB $L_{Aeq,T}$	Calculated Internal Noise Level, dB $L_{Aeq,T}$	BS 8233 / WHO Guideline Level, dB $L_{Aeq,T}$	Guideline Level Achieved
R1 (North/East)	Daytime (07:00 to 23:00 hrs)	Bedroom	1st	57	29	35	Y
	Night-time (23:00 to 07:00 hrs)			51	23	30	Y
				70	42	42	Y
R2 (South)	Daytime (07:00 to 23:00 hrs)	Bedroom	1st	56	28	35	Y
	Night-time (23:00 to 07:00 hrs)			50	22	30	Y
				69	41	42	Y
R3 (West)	Daytime (07:00 to 23:00 hrs) Night-time (23:00 to 07:00 hrs)	Bedroom	1st	51	23	35	Y
				45	17	30	Y
				64	36	42	Y

Table 9: Summary of External to Internal Calculations
Note: * $L_{Amax,F}$ levels

Based on the assumptions stated and sound reductions calculated for each building element, the proposed scheme using the façade elements detailed above is of a build that is sufficient to meet the internal desirable internal noise levels, in compliance with the requirements of Planning Condition 28.

6 Internal Noise Level Assessment – Sound Insulation Commercial (Condition 29)

6.1 Introduction

There are 6 no. commercial units split across the ground and first floors of Block E1. The locations of these units are presented in Figure 1.9 of Appendix 1. The units on the first floor are located directly below residential units above and adjacent to residential units on the same floor.

To comply with Planning Condition 29, a sufficient level of sound insulation between the commercial units and residential units should be provided.

At this stage, the specific future uses of the units are unknown. Although the units have a flexible use consent, it is envisaged that the units will be used as retail spaces or offices.

For the purposes of the assessment, the noise levels that are considered typical worst case average noise levels within each type of commercial unit, are presented below in Table 10.

Use Class	Type/Activity	Average Noise Level ($L_{Aeq,T}$)	Operating Period
E	Offices (busy)	70 dB	Normally daytime only (0700-1900 hrs)
E	Shops (busy convenience store with low level background music)	75 dB	Normally daytime, possibly evening (0700-2300 hrs)

Table 10: Typical Noise Levels For Commercial Uses

The noise levels in Table 10 above have been used to assess the design of the separating floors between the commercial units on the first floor and the residential units above.

6.2 Design Criteria

Building Regulations Part E requires that separating walls and floors between commercial and residential uses achieve a minimum airborne sound insulation level of 45 dB $D_{nTw}+C_{tr}$. However, it is normally appropriate to provide a higher level of sound insulation, where residential space adjoins commercial uses to reduce the likelihood of residents being disturbed.

In the absence of any specific criteria in Planning Condition 29, it is suggested that the separating floor is designed to achieve the sound insulation levels presented below in Table 11.

Use Class	Receiver Unit	Sound Insulation Target for Separating Floor ($D_{nTw}+C_{tr}$)
E (Offices)	Residential	Min. 50
E (Shops)	Residential	Min. 50

Table 11: Sound Insulation Target Level for Separating Walls and Floors

6.3 Construction Assumptions

Separating Floor between Commercial and Residential Space

The proposed construction for the floor separating the first-floor level commercial units from the residential is shown below in Figure 5.1. The build-up consists of:

- Final floor finish over proprietary resilient impact layer;
- 50mm cementitious screed;
- 16mm Lewis deck;
- 250mm SFS floor joists (fully filled with mineral wool insulation, min density 45kg/m3
- 2 x layers of 15mm SoundBloc plasterboard on resilient bars
- 300mm service void with MF suspended ceiling, finished with 12.5mm plasterboard,

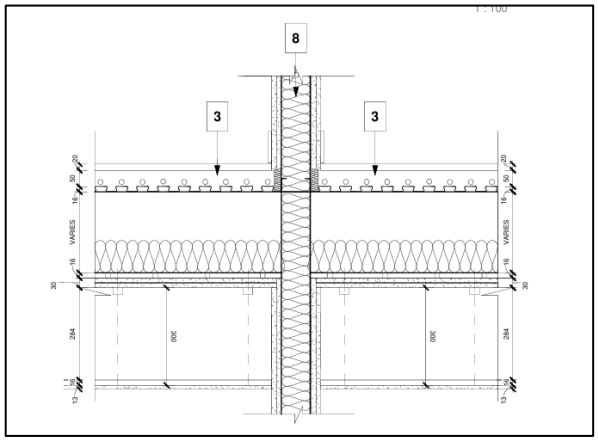


Figure 5.1: Proposed Separating Floor Build-Up

The expected sound insulation on the above specification has been predicted using INSUL modelling software. The calculation predicts Rw+Ctr 66dB +/- 3dB). Allowing for a conservative 8dB difference between a R_w value and a D_{nTw} value, this would indicate an expected DnTw+Ctr value of 58dB, which exceeds the sound insulation target presented in Table 11.

Separating Wall between Commercial and Residential Space

The proposed construction for the walls separating the commercial units from residential units above is shown below in Figure 5.2. The build-up consists of:

- 89mm SFS stud filled with mineral wall
- 2 x 15mm Gyproc SoundBloc Board
- 16mm resilient bar each side
- 12.5mm plasterboard on each side;

WT8	89mm SFS fully filled with mineral wool, 2 × 15mm Gyproc Soundbloc Board plasterboard (or equal approved) each side, 16mm resilient bar each side, 12.5mm plasterboard service lining each side and 3mm skim both sides.

Figure 5.2: Proposed Separating Wall Build-Up

The expected sound insulation on the above specification has been predicted using INSUL modelling software. The calculation predicts R_w+C_{tr} 58dB +/- 3dB), which would indicate an expected $D_{nTw}+C_{tr}$ value of 50dB, which meets the sound insulation target presented in Table 11.

The above shows that the proposed specification exceed Part E for the separating walls and floors between commercial and residential.

7 Conclusion

NRG Consulting has undertaken a detailed acoustic assessment to support the discharge of noise-related planning conditions for the residential development at of Land at the Chocolate Factory and Parma House, 5 Clarendon Road, Haringey, N22 6XJ.

Planning Condition 28

Façade noise calculations have been completed for representative worst-case habitable rooms. Detailed calculations have shown that a standard glazing system that provides a sound reduction of at least 32 dB $R_{w,}$, along with trickle ventilators that provide a sound reduction of at least 35dB $D_{n,e}$, will ensure that the guideline values set out in BS 8233:2014 are achieved.

Additionally, predicted night-time $L_{Amax,F}$ levels within habitable rooms do not exceed the WHO night-time guideline noise level of 42 dB, confirming the suitability of the proposed façade and ventilation design.

Planning Condition 29

The proposed separating walls and floors between the commercial and residential space will provide a sound insulation level of at least 50 dB $D_{nTw}+C_{tr}$ and should therefore adequately protect residential amenity.

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Based on the details contained within this report, the proposed scheme is compliant with the requirements of Planning Condition 28 and 29.

[i] British Standard BS 8233: 2014. Guidance on sound insulation and noise reduction in buildings.

[ii] World Health Organisation. 2018. Environmental Noise Guidelines for the European Region.

[iii] World Health Organisation. 1999. Guidelines for Community Noise.

[iv] World Health Organisation. Night Noise Guidelines for Europe. 2009..

Appendix 1





Figure 1.1: Location Of Proposed Development Site and Monitoring Locations



Figure 1.2: Proposed East Elevation



Figure 1.3: Proposed South Elevation



Figure 1.4: Proposed West Elevation



Figure 1.5: Proposed North and West B Elevation

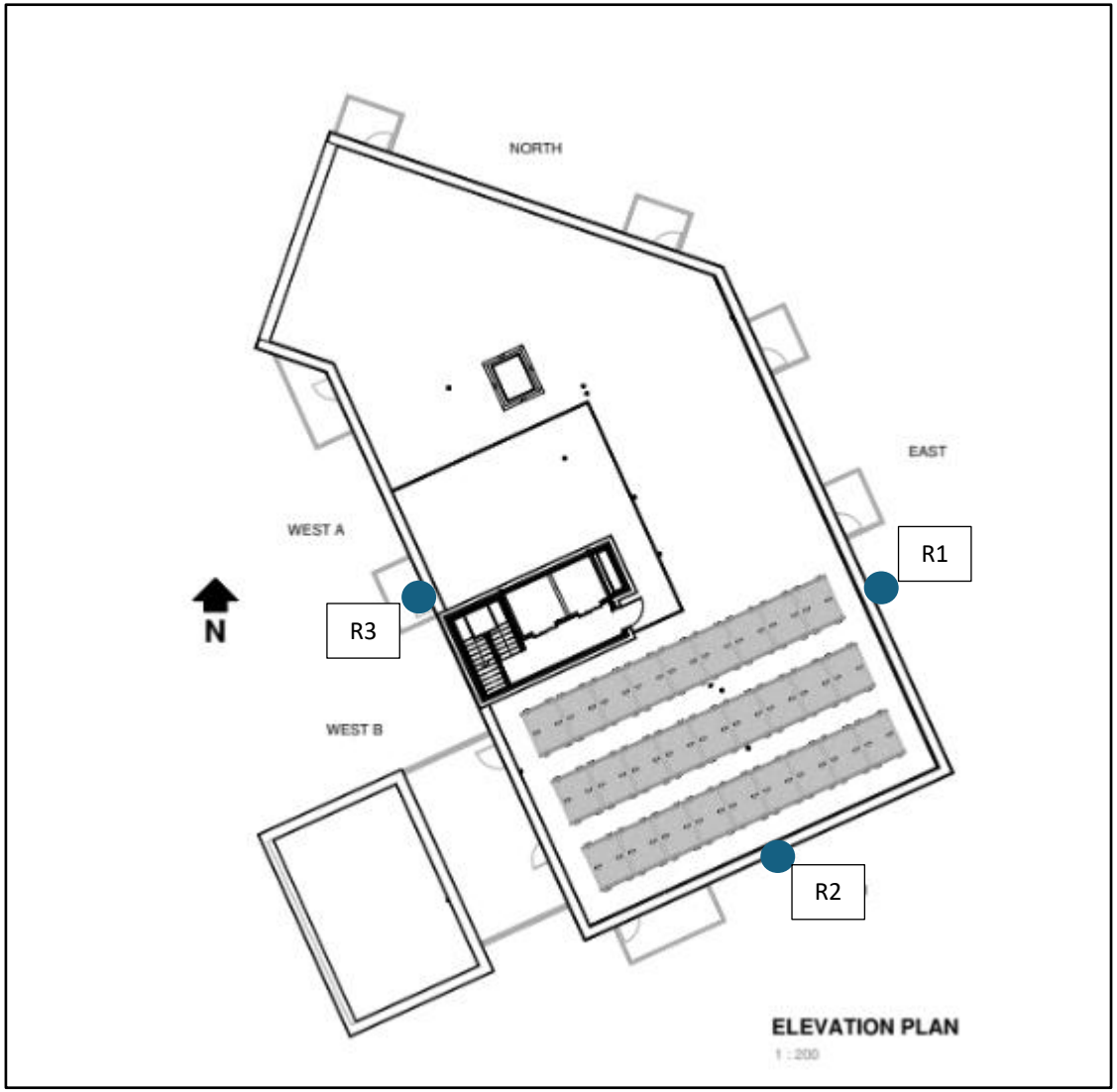


Figure 1.6: Plan showing receptor locations

Table 14.12: Summary of Unattended (Long Term) Baseline Noise Measurements (free-field)

Monitoring Location (Figure 14.1)	Period	Duration	$L_{Aeq,T}$ dB	$L_{A10,T}$ dB	$L_{A90,T}$ dB		$L_{AFmax,5min}$ dB	
			Ave[1]	Ave[2]	Range	Ave[2]	Range	90th Percentile[3]
LT1	Day	12 hr	61	63	45-64	53	54-89	78
	Evening	4 hr	59	61	46-57	50	55-85	76
	Night	8 hr	54	54	41-56	46	49-86	71
LT2	Day	12 hr	59	61	44-60	51	54-88	78
	Evening	4 hr	57	59	44-54	49	57-85	75
	Night	8 hr	53	53	40-55	45	48-78	70
LT3	Day	12 hr	65	67	46-65	51	55-110	82
	Evening	4 hr	64	61	46-53	49	62-107	81
	Night	8 hr	56	55	44-57	48	50-90	78
ST1	Day	30 min	55	57	50-51	51	66-79	76
ST2	Day	30 min	63	66	54-56	55	74-82	81
ST3	Day	30 min	64	68	50-52	50	77-82	81
CRTN 1	Day	3 hr	61	62	48-60	54	65-88	83
CRTN 2	Day	3 hr	71	75	58-66	62	78-93	88

Figure 1.7: Detailed noise data from 2016 ES Chapter

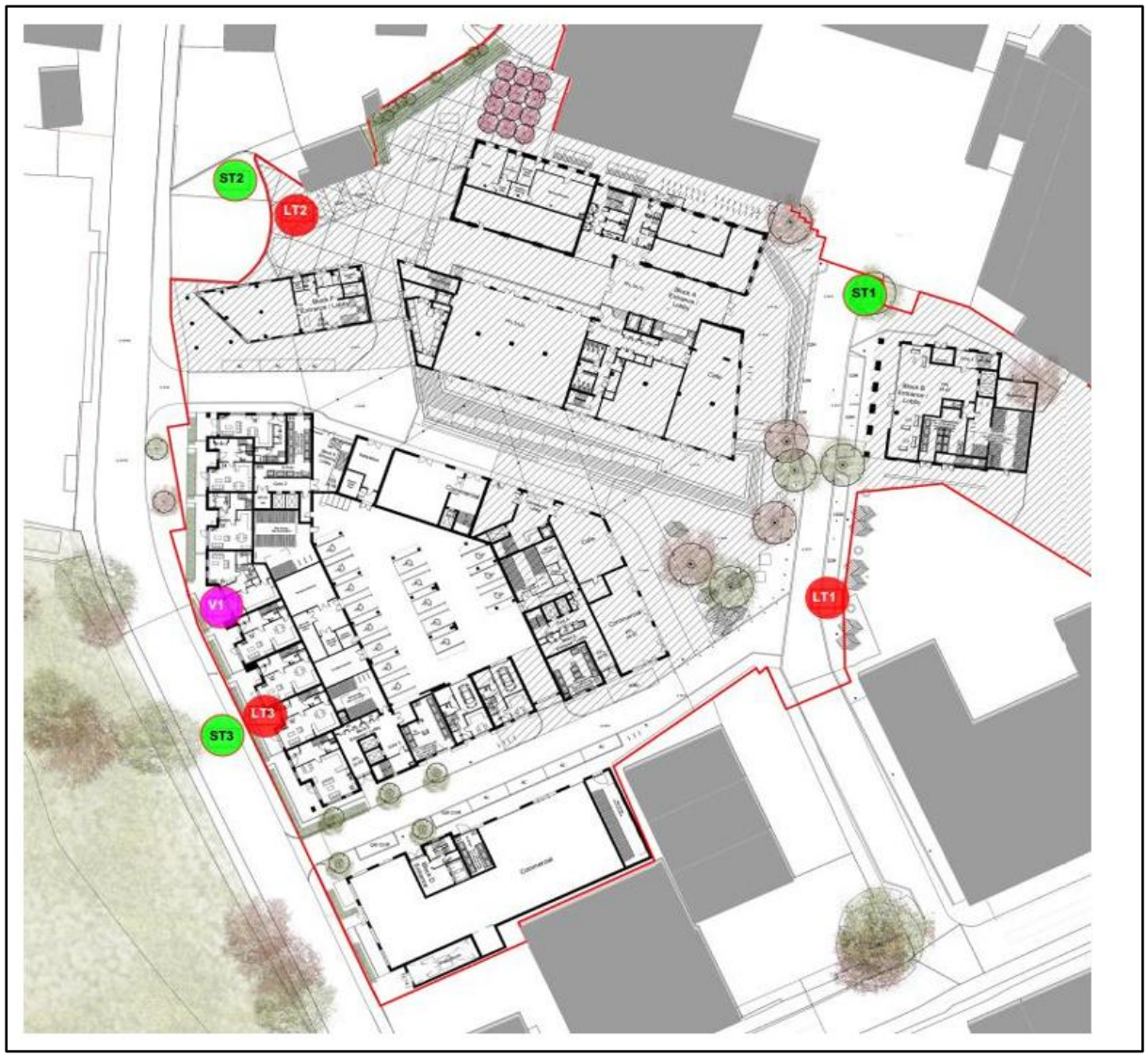


Figure 1.8: Monitoring Locations From 2016 ES Chapter

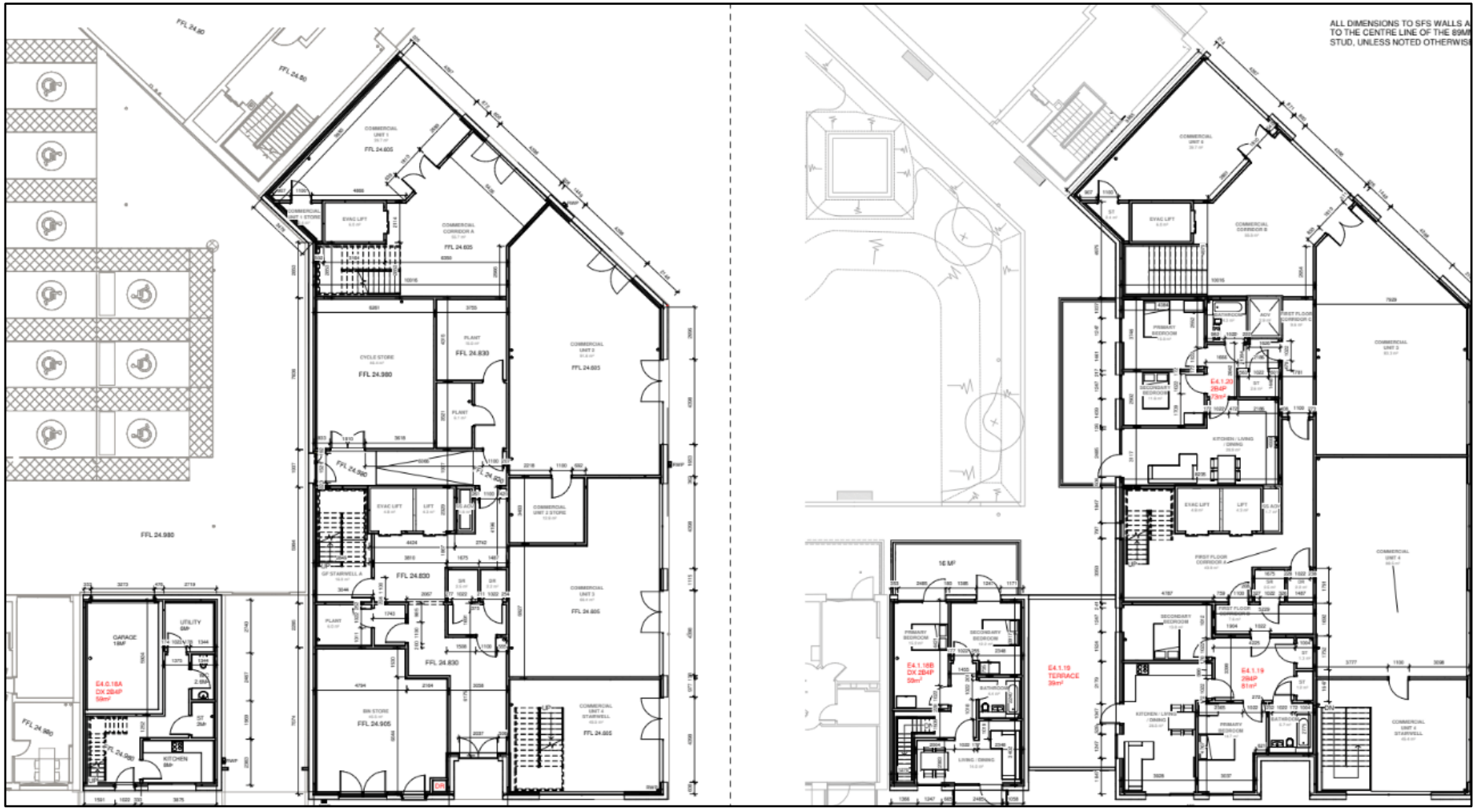


Figure 1.9: Location of Commercial Units