

Manchester Business Park, Aviator Way

Acoustics Planning Assessment

2nd December 2025

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Comments

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Revision		Status	
P*nn*	Preliminary (shared; non-contractual)	S1	Coordination
C*nn*	Contractual	S2	Information
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1. Introduction

Waterman Infrastructure & Environment Ltd (Waterman) has been instructed by Ask Real Estate MBP Limited (hereafter the 'Client') to undertake a noise impact assessment in support of a full planning application for a commercial development at Aviator Way, Manchester Business Park (the 'Site'), ahead of a potential planning application.

This report sets out the findings of baseline environmental noise surveys at the Site, sets noise limiting criteria for any new items of fixed mechanical building services plant, and assesses the potential adverse impacts of noise from HGV movements associated with the operation of the Proposed Development. Where applicable advice relating to potential noise mitigation has been provided.

A glossary of acoustic terms is included as **Appendix A** to this report.

1.1 Site, Setting and Development Proposals

The Site is bounded to the north by residential housing along Thornsgreen Road, to the east by existing Manchester Business Park office units, to the south by Aviator Way and the A555 Ringway Road West, and to the west by Woodhouse Lane and existing Manchester Business Park units beyond this.

An outline planning permission for Manchester Business Park was originally granted on 10 July 1997 for a new business park for B1 business use comprising 62,709 sqm floorspace (application reference 051847/OO/SOUTH3/97). Subsequently, various planning applications have been submitted and approved for Plots 2000 and 2500 which together form the Site, to vary the original outline application, for B1 use, although to date, no scheme has been developed on this Site.

The Proposed Development comprises:

'Redevelopment comprising of B2 and B8 land use development of circa 9,886qm GIA (106,412sq ft) across nine units with ancillary office space, associated parking and new access arrangement.'

The proposals seek to provide a commercial development comprising circa 9,886 sqm GIA of B2 (General Industry) or B8 (Storage and Distribution) land use (hereafter referred to as 'Option 05'), with the exact nature and quantum of development to be provided on-site to be determined in consultation with the appointed team to firm up scheme options.

Figure 1 illustrates the proposed Site layout for the Development including the planning application (red-line) boundary.

1.2 Site, Setting and Development Proposals

The scheme has been deliberately designed with the units bordering the rear boundary with the residential properties, as the buildings themselves provide excellent acoustic screening. The units them selves will be constructed from twin skin insulated metal cladding to minimise noise breakout from the units.

Where there are gaps between the buildings, acoustic fences at 4.5 and 3m in height (refer to Figure 1) will be used to maintain a complete acoustic screen.

Figure 1: Proposed Site Plan (Ask Real Estate Drawing Titled *13502-AEW-SI-XX-DR-A-05010*)



2. Planning Policy & Guidance

2.1 National Planning Policy Framework

The National Planning Policy Framework[1] (NPPF) promotes 'good design' as part of 'sustainable development' and advocates 'preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of ……. noise pollution…'

Paragraph 198 of NPPF states *'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;'

Paragraph 200 of the NPPF introduces the '*Agent of change principle'*. '*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*.'

The NPPF reflects advice within Noise Policy Statement for England (NPSE) in that they promote the avoidance of significant adverse impacts and reduction of other adverse impacts on health and quality of life; set within the context of the Government's policy on sustainable development.

2.2 Noise Policy Statement for England

Through the effective management and control of environmental, neighbour and neighbourhood noise, within the context of Government policy on sustainable development the Noise Policy Statement For England[2], (NPSE) aims to:

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.

It introduces the concept of noise "*effect levels*" although it does not equate these to a specific level of noise as this is likely to be different for different noise sources, receptors and time of day. The effect levels are as follows:

NOEL – No Observed Effect Level: Level below which no effect on health and quality of life due to noise can be detected;

LOAEL – Lowest Observed Adverse Effect Level: Level above which adverse effects on health and quality of life can be detected;

SOAEL – Significant Observed Adverse Effect Level: Level above which significant adverse effects on health and quality of life occur.

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[1] Ministry of Housing Communities & Local Government. (December 2024) National Planning Policy Framework. HMSO. Available at https://assets.publishing.service.gov.uk/media/675abd214cbda57cacd3476e/NPPF-December-2024.pdf

[2] Defra. (2010) Noise Policy Statement For England (NPSE) [accessed 4/4/25].

Predominantly, guidance is drawn from the World Health Organisation (WHO) when setting specific noise levels to the above effect levels, which essentially have been transposed into various British Standards, Policy and Guidance.

2.3 Local Planning Policy

In accordance with **Manchester City Council's Planning and Noise Technical Guidance (October 2022)**, noise from industrial and commercial developments should be controlled to protect residential amenity. The guidance specifies:

- For industrial/commercial activity, the rating level (LAr,Tr) should be at least 5 dB below the representative background sound level (LA90) at the nearest noise-sensitive receptor when assessed in accordance with BS 4142:2014+A1:2019.
- For fixed plant installations, the rating level should not exceed the background sound level (LA90) at the nearest receptor. In some cases, a margin below background may be required depending on site context and cumulative impacts.
- These limits align with the principle of achieving a low impact under BS 4142 and comply with Manchester City Council's expectations for good acoustic design.

2.4 Consultation

See **Appendix B** for Waterman's consultation attempt with Manchester City Council on 23rd October 2025

3. Noise Assessment Criteria

3.1 Fixed External Plant and Industrial Operations

The primary source of guidance in relation to noise which is industrial in nature, such as fixed building services plant, industrial and commercial operations, is provided in BS 4142:2014+A1:2019[3]. BS 4142 states that the potential impact from industrial / commercial sound is based on the level difference between the source, known as the '*specific sound level*' ($L_{Aeq,Tr}$), compared with the '*background sound level*' ($L_{A90,T}$) that exists in the absence of the source in question. Where the sound contains any acoustic characteristics such as tonality, impulsiveness, and intermittency then the specific sound level is adjusted in-line with BS 4142 to determine the '*rating level*' ($L_{Ar,Tr}$).

Typically, the greater the difference between the rating level and the background sound level the greater the potential of an adverse impact. BS 4142 states:

- A difference of +10dB or more is likely to be an indication of a significant adverse impact, depending on the context;
- A difference of +5dB or more is likely to be an indication of an adverse impact, depending on the context; and
- 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.

BS4142 further states; "*Adverse impacts include, but are not limited to, annoyance and sleep disturbance. Not all adverse impacts will lead to complaints and not every complaint is proof of an adverse impact*."

Context is an important consideration of a BS4142 assessment, and the impact may require modification due to context, which may include:

- The absolute level of sound;
- The character and level of the residual sound compared to the character and level of the specific sound; and
- Design measures that secure good internal and / or outdoor acoustic conditions, such as: façade insulation treatment; ventilation and / or cooling techniques which reduce the need to have open windows and acoustic screening.

BS 4142 standard is not intended to be applied to the assessment of indoor sound levels.

3.1.1 Manchester City Council Planning and Noise Technical Guidance

Manchester City Council Planning and Noise Technical Guidance[4] provides design criteria for Industrial / Commercial Developments and for Fixed Plant Installations:

Industrial / Commercial Developments

"For new industrial or commercial developments, the rating level ($L_{Ar,Tr}$) of noise from the development should be at least 5 dB below the representative background sound level ($L_{A90,T}$) at the nearest noise-sensitive receptor, when assessed in accordance with BS 4142:2014+A1:2019."

[3]British Standard Institute (BSI) (2019) BS4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound. BSI.
[4] Manchester City Council (2022). Planning and Noise – Technical Guidance. (Environmental Protection – Environmental Health – The Neighbourhoods Service – Manchester City Council)

Fixed Plant Installations

For fixed building services plant associated with developments, the rating level should not exceed the background sound level ($L_{A90,T}$) at the nearest noise-sensitive receptor, when assessed in accordance with BS 4142:2014+A1:2019. In some cases, a margin below background may be required depending on site context and cumulative impacts."

3.2 Comparative Noise Assessment

Given the Site was formerly in industrial use and would have contributed to the noise climate at the surrounding residential areas and to provide context as allowed under BS4142:2014+A1:2019, an assessment of the change in the ambient noise level is also undertaken, which also allows context of the Proposed Development to be taken account of. The significance of the predicted change in noise level due to the proposal is presented in **Table 3-1** and is generally reflective of human response to changes in environmental noise levels.

Table 3-1: Significance of Change in Prevailing Noise Level

Change in prevailing noise level (dB)	Significance
< 3	Negligible
3 to 5	Minor
6 to 10	Moderate
> 10	Major

3.3 Road Traffic Noise

The calculation methodology of Calculation of Road Traffic Noise[5] (CRTN), based on the 18-hour Annual Average Weekday Traffic (AAWT), percentage heavy goods vehicles (HGVs) and speed in kilometres per hour, is used to predict the basic noise level (dB $L_{A10,18\ hour}$), which is the noise level 10 metres from the road edge. The significance of change in road traffic noise level as a result of a proposed development is derived from information within the Design Manual for Road and Bridges[6] (DMRB LA 111) as presented in **Table 3-2**. CRTN also has the calculation algorithm to predict the 1-hour basic noise level (BNL), based on vehicle flow, percentage HGVs and speed.

Table 3-2: Significance of Change in Road Traffic Noise

Short-term change in dB $L_{A10,18hr}$ Noise Level	Significance
<1.0	Negligible
1.0 – 2.9	Minor
3.0 – 4.9	Moderate
≥5.0	Major

5 DoT. (1988) Calculation of Road Traffic Noise. HMSO.
6 Highways England. (May 2020) LA 111 Design Manual for Road and Bridges. Noise and Vibration – Rev 2. HE.

4. Baseline Environmental Conditions

4.1 Nearest Sensitive Receptors

Following a review of the Site and its surrounds, the nearest sensitive receptors (SRs) to the Site have been identified and are presented as

Table 4-1.

Table 4-1: Nearest Potentially Noise Sensitive Receptors.

Receptor	Type of Receptor	Description / Name
SR A	Residential	Dwellings along Thornsgreen Road, Lincombe Road and Woodhouse Lane (at least approximately 10m north of northern Site boundaries)
SR B	Commercial	Costain along Aviator Way (approximately 20m east of eastern Site boundary)
SR C	Commercial	Various commercial premises within Manchester Business Park (approximately 60m west of western Site boundary)

4.2 Baseline Noise Environment

2x baseline environmental noise surveys were undertaken, the first between Wednesday 15th January and Thursday 16th January 2025 and the second between Thursday 16th January and Friday 17th January 2025, each survey over a representative weekday 24hr period. Noise measurements were taken to establish the representative background sound levels experienced at the SR's identified in **Table 4-1**. The dominant noise sources were road traffic contributions from Ringway Road West and aircraft flyover given proximity to Manchester Airport (roughly 415m northwest of nearest runway).

Two long-term environmental noise loggers were installed at monitoring locations LT1 and LT2 to establish the representative background sound levels at receptor locations. The noise measurements locations are described in **Table 4-2** and illustrated in Figure 2.

A summary of the measured noise levels is presented as **Table 4-3** with full survey details provided within **Appendix C**.

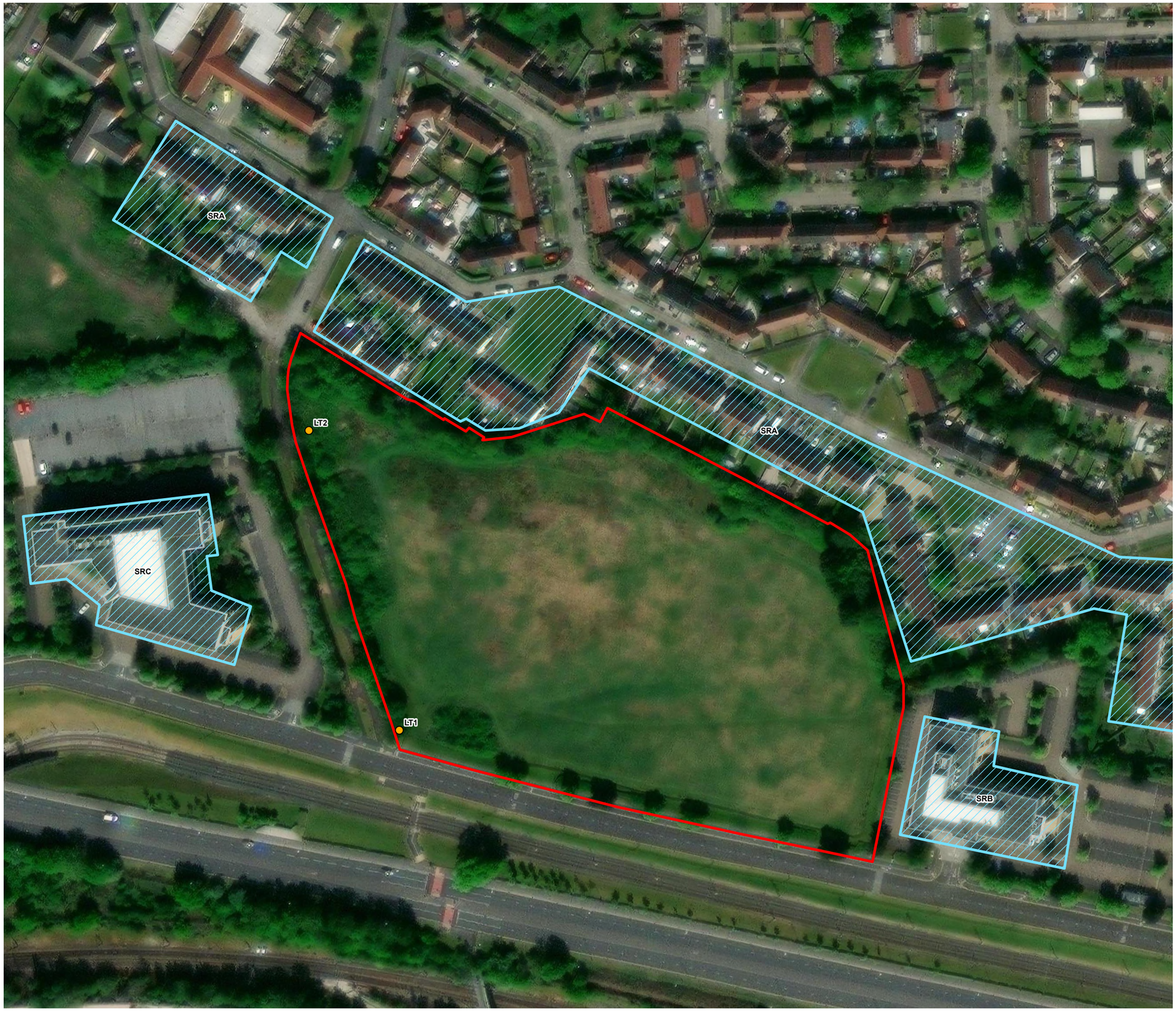
Table 4-2: Description of Noise Monitoring Locations

Ref Figure 2	Location	Description
LT1	Free-field noise measurement at w3w (what 3 words) location ///cowering.veal.march within Site boundary, approximately 17m and 65m north of Aviator Way and Ringway Road West respectively. Microphone set up at a height of 1.5m above ground level (AGL).	Noise climate dominated by road traffic noise from Ringway Road West and aircraft fly-over noise from Manchester Airport.
LT2	Free-field noise measurement at w3w (what 3 words) location ///beaker.mocking.vintages within Site boundary, approximately 120m and 170m north of Aviator Way and Ringway Road West respectively. Microphone set up at a height of 1.5m above ground level (AGL).	Noise climate dominated by road traffic noise from Ringway Road West and aircraft fly-over noise from Manchester Airport.

Table 4-3: Summary of measured noise levels

Location	Date	Period	dB L_{Aeq}[1]	dB L_{Amax} (90th percentile)	dB $L_{A10,T}$[2]	dB L_{A90} mode[3]	dB L_{A90} minimum
LT1	Wednesday 15th January 2025	Day (0950 – 2300, 0700 - 1235)	61	77	62	55	49
		Night (2300 – 0700)	59	72	58	45	42
LT2	Thursday 16th January 2025	Day (1245 – 2300, 0700 - 1235)	59	79	60	50	45
		Night (2300 – 0700)	54	71	52	38	34

Notes [1]Logarithmic average, [2]Arithmetic average, [3]Modal average, established through review of histogram plots of measured L_{A90} noise levels, detailed within **Appendix C**.



Maxar, Microsoft

Site Boundary

Sensitive Receptors

Long Term Noise Monitoring Location

N

0 5 10 20 30 40 50
m

Project Details	WIE21347-103: Aviator Way
Figure Title	Figure 2: Noise Monitoring Locations & Sensitive Receptor Locations
Figure Ref	21347103-WAT-XX-XX-GS-N-710001_P01
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5. Assessment

5.1 Limiting Criteria for Industrial / Commercial Noise Emissions

Limiting criteria at the nearest SRs have been recommended for any new proposed plant, structures, or buildings capable of emitting noise associated with the facility. This excludes noise associated with vehicle movements within the Site which is assessed specifically against BS4142:2014+A1:2019 criteria in Section 5.2.3.

The limits below are based on the Rating Level ($L_{Ar,Tr}$) being 5dB below the representative background sound level (L_{A90}) for industrial / commercial activity and not exceeding the background sound level (L_{A90}) for fixed plant noise. These would ensure low adverse impact at the nearest sensitive receptors, as per the guidance within BS 4142:2014+A1:2019. Controlling noise emissions as described is compliant with the guidance of Manchester City Councils Planning and Noise Technical Guidance.

Considering industrial and commercial activity, where the prevailing background sound level is less than 40dB L_{A90} a minimum value of 35dB $L_{Ar,Tr}$ is however recommended. A noise limit of this magnitude during the night-time period when residents are inside, would adequately safeguard residential amenity, even with windows open. Further to this, at all locations, 35dB $L_{A,Tr}$ is also considerably less than 5 dB below the prevailing ambient (dB $L_{Aeq,T}$) noise levels. Recommended limits are presented as **Table 5-1** for commercial / industrial operations and for fixed plant**.**

Rating Level noise limits are given for SR B and SR C during daytime periods only due to these receptors being commercial in nature and not in operation during night-time hours (2300-0700).

Table 5-1: Recommended Plant Noise Limits

Location	Period	Representative Modal Background Sound Level dB L_{A90}	Rating Level Noise Limit dB $L_{Ar,Tr}$	
			Industrial / Commercial Activity	Fixed Plant Noise
SR A	Day	50	≤45	≤50
	Night	38	≤35	≤38
SR B and SR C	Day	50	≤45	≤50

5.2 Noise Management

5.2.1 Fixed Plant & Building Services

As plant items have not yet been finalised, it should be possible to select ‘quiet’ plant and / or provide mitigation to ensure noise emissions at receptor locations are compliant with Manchester City Councils Planning and Noise Technical Guidance. This should be achievable through implementation of the following measures where required:

- Procurement of low noise and non-tonal plant;
- Enclosures, acoustic screens;
- In-duct attenuators, splitters, acoustic louvres;
- Isolation of plant from building (flexible connectors, isolation mounts [springs/neoprene];
- Strategic location of plant away from sensitive receptors.

5.2.2 Break-Out Noise from Factory Units

Break-out noise from the industrial buildings may be adequately controlled through construction of the facades, roof, and doors of the buildings with consideration towards the sound insulation of the building materials. It is understood that the roof and wall construction of those facades closest to sensitive receptors would be twin skin built up insulated metal profiled cladding which has a typical acoustic performance as set out below.

Table 5-2: Typical sound insulation performance twin skin cladding

Item	Sound insulation, dB R_w							Overall, dB R_w (C_{tr})
	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	
twin skin built up insulated metal profiled cladding	17	24	37	45	52	54	64	47 (-9)

Such a construction is likely to be adequate for internal noise levels of up to 80dB(A). Where noise levels in excess of this are predicted further acoustic treatment such as an internal wall lining would be explored as part of the fitout works.

5.2.3 Operational Noise On-Site – OGV Movements, Loading/Unloading

Noise from OGVs movements in/out and within the Site together with loading/unloading operations have the potential to adversely impact the nearest sensitive receptors. The noise impact of the operational activities depends on the number of HGVs, on-site manoeuvres (including reverse alarms), type of loading/unloading operations (via loading dock/side unloading), operational hours screening and inherent mitigation measures.

A preliminary indicative assessment has been undertaken based on a predicted total number of OGV vehicle movements per hour as per the details received by the Transport Team of Waterman Infrastructure & Environment (WIE).

Assuming a worst-case in terms of B2 or B8 Scenarios, there are predicted to be a maximum of 3x OGV arrivals and 3x OGV departures from the Site within a 1hr timeframe during daytime hours (0700-2300) and a maximum of 1x OGV arrival and 1x OGV exit within a 1hr timeframe during night-time hours (2300-0700). Swept Path Analysis plots have also been provided by the Transport Team of WIE and are shown as **Appendix E**.

As shown within the Swept Path Analysis drawings, there are 16 potential routes for OGVs to take when arriving / departing the Site. Based on the information provided, the assessment of noise generated by OGV movements has been made assuming:

- 3 no. OGV arrivals and 3 no. OGV departures from the Site (per hour during daytime hours as a worst-case assessment);
- 1 no. OGV arrivals and 1 no. OGV departures from the Site (per hour during night-time hours as a worst-case assessment);

CadnaA noise modelling software has been used to build a 3-dimentional noise model of the proposed Development. The modelling enables the prediction of noise arising from the movement of OGVs along the access road surrounding the factory building as per the routes detailed within the Swept Path Analysis plots shown as **Appendix E**. Noise source levels used in the CadnaA noise model are presented as **Table 5-3.**

Table 5-2: CadnaA Noise Source Input Parameters

Item	Number per hour	Sound power dB(A)	Source	Assumed minutes of operation per hour
OGV Arriving	27	95	Waterman Previous Direct Measurements	N/A[1]
OGV Departing	26	96		N/A[1]
Lorry Reversing Alarms	1 (per arrival / departure location)	79	Brigade bbs-tek alarm	30 secs/hour

Notes: [1]OGV movements were modelled as moving point sources, travelling at a minimum of 5 mph (worst-case) within an hour period

Table 5-4 presents the predicted noise levels at SRA, SRB and SRC from the indicative predicted OGV operational noise at Site, together with the results of the preliminary BS 4142 assessment. It is noted that the worst-case night-time noise levels at residential receptors is predicted to be from OGV movements to and from the 1B Eastern Bay (refer to **Appendix E** for swept path analysis).

Table 5-3: BS 4142 assessment summary (without context)

SR	Period	Predicted Operational Noise Level[1], dB $L_{Aeq,T}$	Rating Penalty, dB	Rating Noise Level, dB $L_{Aeq,T}$	Representative Background Sound Level, dB L_{A90}	Rating Level Minus Background Sound Level, dB	Meets Criteria of Table 5-1 yes/no
SR's A	Daytime 0700 – 2300	30	0	30	50	-20	yes
	Night-time 2300 - 0700	35	0	35	38	-3	yes
SR's B	Daytime 0700 – 2300	35	0	38	50	-15	yes
SR's C	Daytime 0700 – 2300	39	0	42	50	-11	yes

Notes [1]Worst affected receiver; All figures rounded to the nearest whole number.

Zero rating penalty was applied based on predicted specific sound levels being below both the prevailing background sound level and prevailing ambient noise levels and therefore unlikely to be discernible.

From the above assessment, it is predicted that at SR locations the rating level from OGV movements is at least 11 dB and 3 dB below representative background noise levels during daytime and night-time respectively and therefore meets the criteria of MCC. The noise levels from the OGV movements are considered to be of **Low Impact**, depending on context.

5.2.4 Context

Context is an important consideration of BS 4142 and therefore key elements have been presented with regards to the proposed Development.

Character of Neighbourhood

The area surrounding the Site is commercial in character, with a significant flow of traffic due to Manchester Airport links. It is considered that the operational noise of the Site will be similar to that of the surrounding area.

Absolute Sound Level

The indicative predicted sound levels resultant from operational noise of OGV movements around the Site under worst-case conditions are not regarded as high given the activity surrounding the Site from the surrounding road networks, with all predicted rating levels of the OGV movements being well below 55dB $L_{Aeq,1\text{-}hour}$ at SR locations when assessed in the context of the WHO guideline criteria of ≤55dB $L_{Aeq,16h,}$ which is used as a benchmark as being suitable for residential amenity.

In addition, the rating level of the operational noise of the Site is below the prevailing noise levels measured during the survey in all instances, therefore it is not regarded that the operational noise on Site would result in an increase to the prevailing noise levels at SR locations.

5.3 Road Traffic Noise

Table 5-5 presents the predicted change in road traffic noise in the year of completion 2030 of the development. Full calculation details are presented in **Appendix C**.

Table 5-4: Road Traffic Noise Assessment

Scenario (Opening Year)	Road Link (Refer to Appendix D for Plan)		BNL dB $L_{A10,\ 18hr}$			Magnitude of Change
			No Development 2030	With Development 2030	Change	
B2 Scenario (2030)	1	Aviator Way - East of Site	51.9	51.9	0.0	Negligible
	2	Aviator Way - West of Site	58.7	60.7	2.0	Small
	3	Enterprise Way - North of AW	66.8	66.8	0.0	Negligible
	4	Enterprise Way - South of AW	67.1	67.5	0.4	Negligible
	5	A555 Ringway Road West - East of EW	75.3	75.3	0.0	Negligible
	6	A555 Ringway Road West - West of EW	74.6	74.7	0.1	Negligible
	7	M56 - West of Outwood Lane	80.9	80.9	0.1	Negligible
	8	Outwood Lane	70.1	70.1	0.0	Negligible
B8 Scenario (2030)	1	Aviator Way - East of Site	51.9	51.9	0.0	Negligible
	2	Aviator Way - West of Site	58.7	59.8	1.1	Small
	3	Enterprise Way - North of AW	66.8	66.8	0.0	Negligible

Scenario (Opening Year)	Road Link (Refer to Appendix D for Plan)		BNL dB $L_{A10, 18hr}$			Magnitude of Change
			No Development 2030	With Development 2030	Change	
	4	Enterprise Way - South of AW	67.1	67.3	0.2	Negligible
	5	A555 Ringway Road West - East of EW	75.3	75.3	0.0	Negligible
	6	A555 Ringway Road West - West of EW	74.6	74.7	0.0	Negligible
	7	M56 - West of Outwood Lane	80.9	80.9	0.0	Negligible
	8	Outwood Lane	70.1	70.1	0.0	Negligible
B2 Scenario (2035)	1	Aviator Way - East of Site	52.2	52.2	0.0	Negligible
	2	Aviator Way - West of Site	58.9	60.8	1.9	Small
	3	Enterprise Way - North of AW	67.0	67.0	0.0	Negligible
	4	Enterprise Way - South of AW	67.3	67.6	0.3	Negligible
	5	A555 Ringway Road West - East of EW	75.5	75.5	0.0	Negligible
	6	A555 Ringway Road West - West of EW	74.8	74.9	0.1	Negligible
	7	M56 - West of Outwood Lane	81.0	81.1	0.1	Negligible
	8	Outwood Lane	70.3	70.3	0.0	Negligible
B8 Scenario (2035)	1	Aviator Way - East of Site	52.2	52.2	0.0	Negligible
	2	Aviator Way - West of Site	58.9	60.0	1.0	Small
	3	Enterprise Way - North of AW	67.0	67.0	0.0	Negligible
	4	Enterprise Way - South of AW	67.3	67.4	0.2	Negligible
	5	A555 Ringway Road West - East of EW	75.5	75.5	0.0	Negligible
	6	A555 Ringway Road West - West of EW	74.8	74.9	0.0	Negligible
	7	M56 - West of Outwood Lane	81.0	81.1	0.0	Negligible

Scenario (Opening Year)	Road Link (Refer to Appendix D for Plan)	BNL dB $L_{A10, 18hr}$			Magnitude of Change
		No Development 2030	With Development 2030	Change	
	8 Outwood Lane	70.3	70.3	0.0	Negligible

On the majority of road links the predicted short-term change in road traffic noise in the year of completion 2030 or 2035 is negligible, with small increases predicted on Aviator Way - West of Site. Increases in road traffic noise of this level are **not** significant.

6. Summary, Conclusions and Recommendations

This noise impact assessment has been prepared by Waterman Infrastructure & Environment Ltd on behalf of Ask Real Estate MBP Limited in support of the Proposed Development at Aviator Way, Manchester Business Park. The report presents the results of baseline environmental noise surveys, establishes noise limiting criteria for new fixed mechanical building services plant, and assesses potential noise impacts from operational activities including OGV movements and road traffic.

Noise limits have been recommended in accordance with BS 4142:2014+A1:2019 and Manchester City Council Planning and Noise Technical Guidance to ensure a low adverse impact at the nearest sensitive receptors. These limits apply separately for daytime (07:00–23:00) and night-time (23:00–07:00) periods and cover cumulative emissions from any new plant or industrial/commercial operations.

Fixed Plant & Building Services

Compliance with the recommended limits should be achievable through measures such as:

- Selection of low-noise, non-tonal plant;
- Acoustic enclosures, screens, and in-duct attenuators;
- Isolation mounts and flexible connectors;
- Strategic plant location away from sensitive

receptors. Break-Out Noise from Units
To safeguard residential amenity, façades and roof panels of units have been designed to control noise breakout to within an acceptable level. Should an occupier which generates significant levels of noise take a unit, further acoustic treatment would be included at the fitout stage.

Operational Noise (OGV Movements)

Predicted noise levels from HGV movements and loading/unloading operations when allowing for mitigation inherent in the design are well below background sound levels and considered to have a low impact. The site's commercial context and intervening screening further reduce potential adverse effects.

Road Traffic Noise

Assessment of road traffic noise indicates negligible changes on surrounding road links, with only small increases on Aviator Way (west of site). These changes are not significant in the context of DMRB guidance.

Summary

Overall, the Proposed Development is considered appropriate for its location in terms of noise. Provided the recommended mitigation measures are incorporated into the design, noise emissions can be controlled to an acceptable level, ensuring compliance with relevant standards and safeguarding residential amenity.

Appendices

A. Acoustic Glossary

Ambient sound	The totally encompassing sound in a given situation at a given time, usually composed of sound from all sources near and far.
Assessment period	The period in a day over which assessments are made.
A-weighting	A frequency weighting applied to measured or predicted sounds levels in order to compensate for the non-linearity of human hearing.
Background noise	Background noise is the term used to describe the noise measured in the absence of the noise under investigation. It is described as the average of the minimum noise levels measured on a sound level meter and is measured statistically as the A-weighted noise level exceeded for ninety percent of a sample period. This is represented as the L_{90} noise level (see below).
Broadband	Containing the full range of frequencies.
Decibel [dB]	The level of noise is measured objectively using a Sound Level Meter. This instrument has been specifically developed to mimic the operation of the human ear. The human ear responds to minute pressure variations in the air. These pressure variations can be likened to the ripples on the surface of water but of course cannot be seen. The pressure variations in the air cause the eardrum to vibrate and this is heard as sound in the brain. The stronger the pressure variations, the louder the sound that is heard. The range of pressure variations associated with everyday living may span over a range of a million to one. On the top range may be the sound of a jet engine and on the bottom of the range may be the sound of a pin dropping. Instead of expressing pressure in units ranging from a million to one, it is found convenient to condense this range to a scale 0 to 120 and give it the units of decibels. The following are examples of the decibel readings of every day sounds: Four engine jet aircraft at 100m 120 dB Riveting of steel plate at 10m 105 dB Pneumatic drill at 10m 90 dB Circular wood saw at 10m 80 dB Heavy road traffic at 10m 75 dB Telephone bell at 10m 65 dB Male speech, average at 10m 50 dB Whisper at 10m 25dB Threshold of hearing, 1000 Hz 0dB
dB(A): A-weighted decibels	The ear is not as effective in hearing low frequency sounds as it is hearing high frequency sounds. That is, low frequency sounds of the same dB level are not heard as loud as high frequency sounds. The sound level meter replicates the human response of the ear by using an electronic filter which is called the 'A' filter. A sound level measured with this filter switched on is denoted as dB(A). Practically all noise is measured using the A filter. The sound pressure level in dB(A) gives a close indication of the subjective loudness of the noise.
Façade Noise Level	A noise level measured or predicted at the façade of a building, typically at a distance of 1m, containing a contribution made up of reflections from the façade itself (+3dB).
Free Field Noise Level	A noise level measured or predicted which is unaffected by reflections, generally taken as being 3m from any reflecting surface excepting the ground.
L_{Amax} noise level	This is the maximum noise level recorded over the measurement period.
$L_{Aeq,T}$ noise level	This is the 'equivalent continuous A-weighted sound pressure level, in decibels' and is defined in British Standard 7445 as the 'value of the A-weighted sound pressure level of a continuous, steady sound that, within a specified time interval, T, has the same mean square sound pressure as a sound under consideration whose level varies with time'. It is a unit commonly used to describe construction noise, noise from industrial premises and is the most suitable unit for the description of other forms of environmental noise.

L_{A90} noise level	This is the noise level that is exceeded for 90% of the measurement period and gives an indication of the noise level during quieter periods. It is often referred to as the background noise level and is used in the assessment of disturbance from industrial noise.
Sound Reduction Index (R)	The sound reduction index is a single-number rating of the sound reduction through a wall or other building element. Since the sound reduction may be different at different frequencies, test measurements are subjected to a standard procedure which yields a single number that is about equal to the average sound reduction in the middle of the human hearing range.
Weighted Sound Reduction Index (R_W)	Single number rating used to describe the laboratory airborne sound insulation properties of a material or building element over a range of frequencies, typically 100-3150Hz.
C_{TR}	An adjustment to the Rw scale to take account of the lower performance against a typical spectrum of road traffic noise dominated by low frequencies.
Rating Level dB $L_{Ar,Tr}$	The Rating Level is the specific sound level plus any adjustment for the characteristic features of the sound as per BS4142.
Residual Sound	Ambient sound remaining at the assessment location when the specific sound source is supressed to such a degree that it does not contribute to the ambient sound source.
Specific Sound Level dB $L_{Aeq,Tr}$	The Specific Sound Level is equivalent continuous A-weighted sound pressure level produced by the specific sound source at the assessment location over a given reference time interval.
Specific Sound Source	The sound source being measured.

B. Consultation with Manchester City Council

Email sent by Waterman to Manchester City Council to agree upon Noise Impact Assessment strategy 23/10/2025:

Dear Environmental Health,

We have recently undertaken a feasibility noise assessment for a proposed B2 (General Industry) or B8 (Storage and Distribution) land use at Aviator Way, Manchester Business Park. We are now progressing to planning and seek your approval in principle with regard to our adopted baseline approach and our proposed rating level noise limit criteria for fixed plant associated with the proposed development.

By way of background information, outline planning permission for Manchester Business Park was originally granted on 10 July 1997 for a new business park (Use Class B1) comprising approximately 62,709 m² of floorspace (Application Reference: 051847/OO/SOUTH3/97). Since then, various planning applications have been approved for Plots 2000 and 2500. As stated, the current application will be for either B2 or B8 use and not B1.

Baseline Survey

Two baseline environmental noise surveys were undertaken, the first between Wednesday 15th January and Thursday 16th January 2025 and the second between Thursday 16th January and Friday 17th January 2025, each survey over a representative weekday 24hr period. Noise measurements were taken to establish the representative ambient and background sound levels experienced at the nearest sensitive receptors. See attached Figure illustrating the noise measurement locations.

The dominant noise sources were road traffic contributions from Ringway Road West and aircraft flyover given proximity to Manchester Airport (roughly 415m northwest of nearest runway). There was also occasional noise from tram-pass by's

The table below presents the results of the baseline survey and attached Figure illustrates the noise monitoring and sensitive receptor locations.

Table 4-3: Summary of measured noise levels

Location	Date	Period	dB L_{Aeq}[1]	dB L_{Amax} (90th percentile)	dB $L_{A10,T}$[2]	dB L_{A90} mode[3]	dB L_{A90} minimum
LT1	Wednesday 15th January 2025	Day (0950 – 2300, 0700 - 1235)	61	77	62	55	49
		Night (2300 – 0700)	59	72	58	45	42
LT2	Thursday 16th January 2025	Day (1245 – 2300, 0700 - 1235)	59	79	60	50	45
		Night (2300 – 0700)	54	71	52	38	34

Notes [1]Logarithmic average, [2]Arithmetic average, [3]Modal average, established through review of histogram plots of measured L_{A90} noise levels, detailed within **Appendix C**.

The table below provides a description of the identified sensitive receptors which are also illustrated on the Figure.

Table 4-1: Nearest Potentially Noise Sensitive Receptors.

Receptor	Type of Receptor	Description / Name
SR A	Residential	Dwellings along Thornsgreen Road, Lincombe Road and Woodhouse Lane (at least approximately 10m north of northern Site boundaries)
SR B	Commercial	Costain along Aviator Way (approximately 20m east of eastern Site boundary)
SR C	Commercial	Various commercial premises within Manchester Business Park (approximately 60m west of western Site boundary)

Could you please confirm if you agree in principle with our baseline approach and the sensitive receptors identified for noise impact assessment.

Rating Level Criteria – Fixed Plant

In accordance with **Manchester City Council's Planning and Noise Technical Guidance**, we have derived the following rating level noise limits for industrial/commercial activity and fixed plant noise based on measured **modal background noise levels LA90**. Where the prevailing background sound level is below **40 dB LA90**, a minimum rating level of **35 dB LAr,Tr** is recommended.

Based on our experience, a limit of this magnitude during the night-time period, when residents are indoors with windows open, would provide adequate protection of residential amenity. Furthermore, at all assessed locations, **35 dB LAr,Tr** is at least **19 dB below** the prevailing ambient noise levels (LAeq,T).

The table below presents our recommended rating level criteria for fixed plant associated with the proposed development.

Table 5-1: Recommended Plant Noise Limits

Location	Period	Representative Modal Background Sound Level dB L_{A90}	Rating Level Noise Limit dB $L_{Ar,Tr}$	
			Industrial / Commercial Activity	Fixed Plant Noise
SR A	Day	50	≤45	≤50
	Night	38	≤35	≤38
SR B and SR C	Day	50	≤45	≤50

Could you please confirm if you agree in principle with our proposed rating level criteria for fixed plant.

As part of our noise assessment, we are also addressing the potential impact from break-out noise from the proposed B2 or B8 units as well as potential changes to road traffic noise.

Could you please confirm if there is anything else that you would like for us to consider.

Please do contact me should you wish any additional information or indeed call.

Thanks in advance and kind regards,

Stefan Fox-Marshall

Senior Acoustic Consultant

Waterman Infrastructure & Environment Ltd

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C. Baseline Noise Survey Details

Table C1 presents the equipment detail used for the baseline noise survey.

Table C1: Equipment Detail

Location	Description	Serial Number	Date of Last Calibration Before Baseline Noise Survey
LT1 & LT2	Rion NL-52 Type 1 Sound Level Meter	01143565	25th January 2023 Certificate Number TCRT23/1080
	Rion NH-25 Pre-amplifier	43407	
	Rion UC-59 Microphone	06864	
All Locations	Acoustic Calibrator Cirrus CR:513A	029778	29th May 2024 Certificate Number TCRT24/1399

The equipment was field calibrated at the beginning and end of the noise survey with no significant drift in calibration.

The weather during the survey was recorded remotely at weather station ICHEAD17[7] located approximately 2.5km north-east of north-eastern most point of Site boundary. Within the noise survey period (Wednesday 15th January to Friday 17th January 2025) wind speeds were consistently below 5 m/s and no periods of rainfall were recorded.

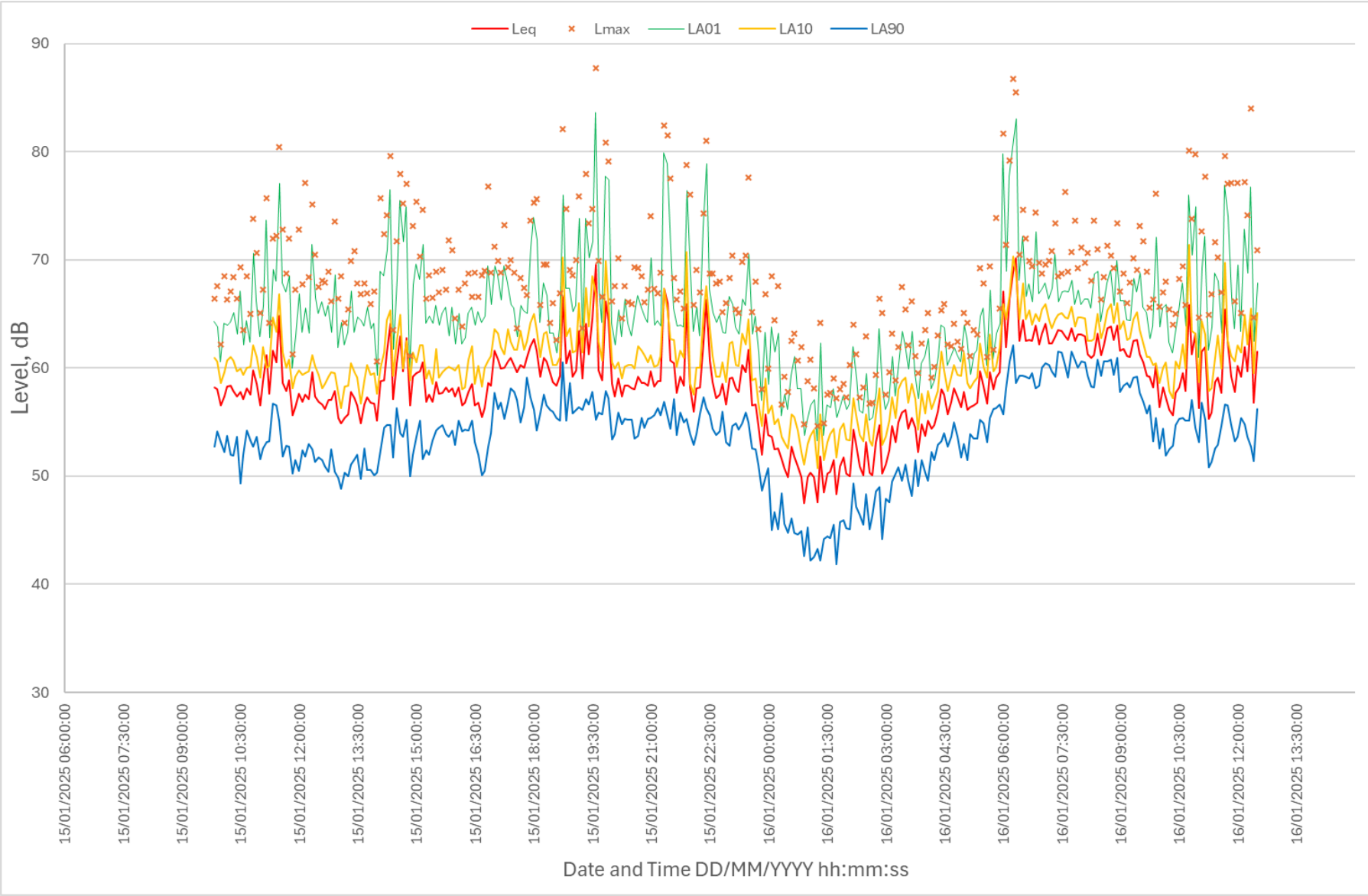
Graph C1 and **Graph C2** presents the time history plot of measured noise levels at monitoring location LT1 and LT2 respectively.

Graph C3 and **Graph C4** presents the histogram plots of measured 5-min period background noise levels L_{A90} at LT1 for daytime and night-time periods, respectively.

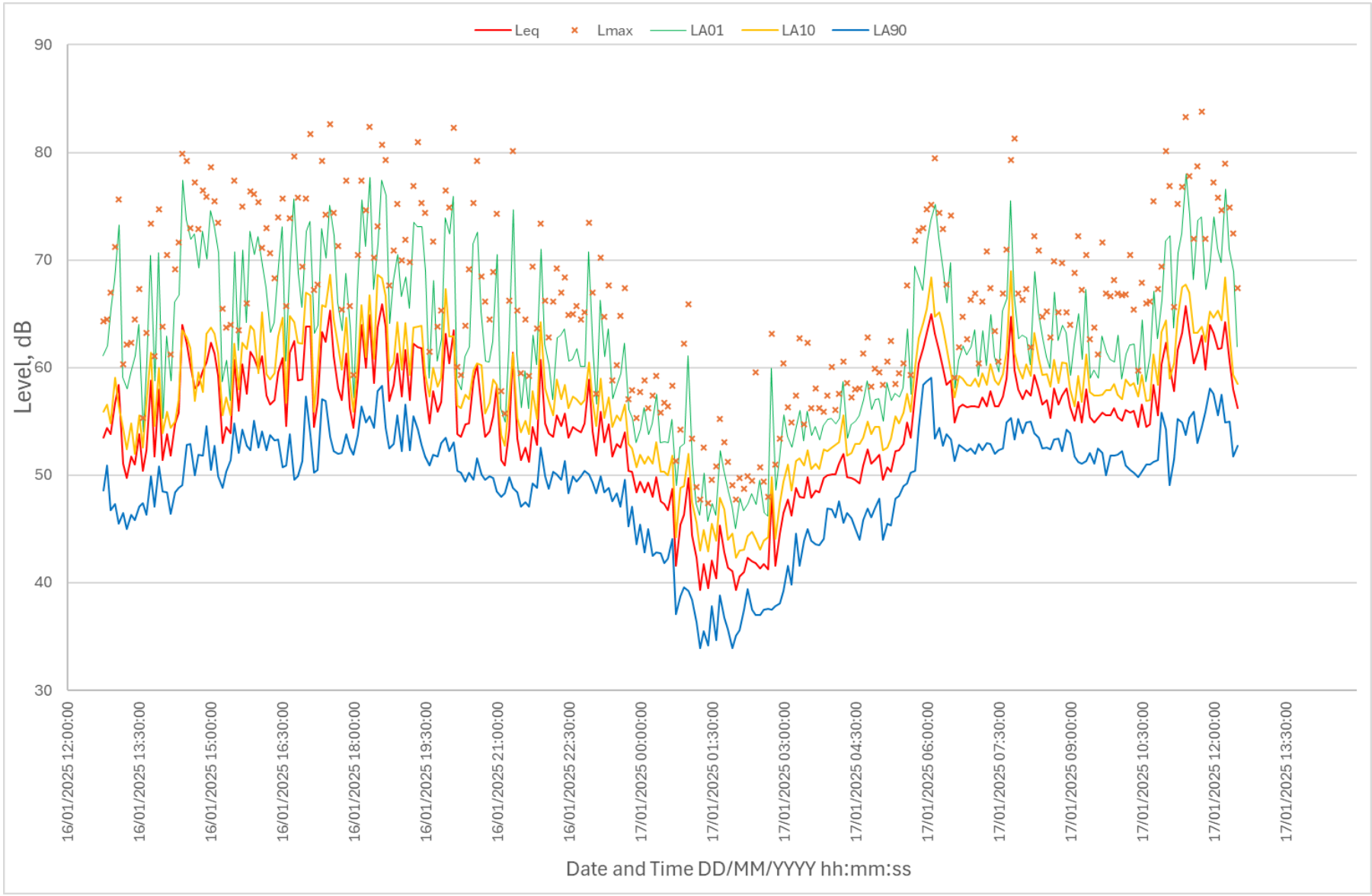
Graph C5 and **Graph C6** presents the histogram plots of measured 5-min period background noise levels L_{A90} at LT2 for daytime and night-time periods, respectively.

[7] Personal Weather Station Dashboard | Weather Underground (wunderground.com).

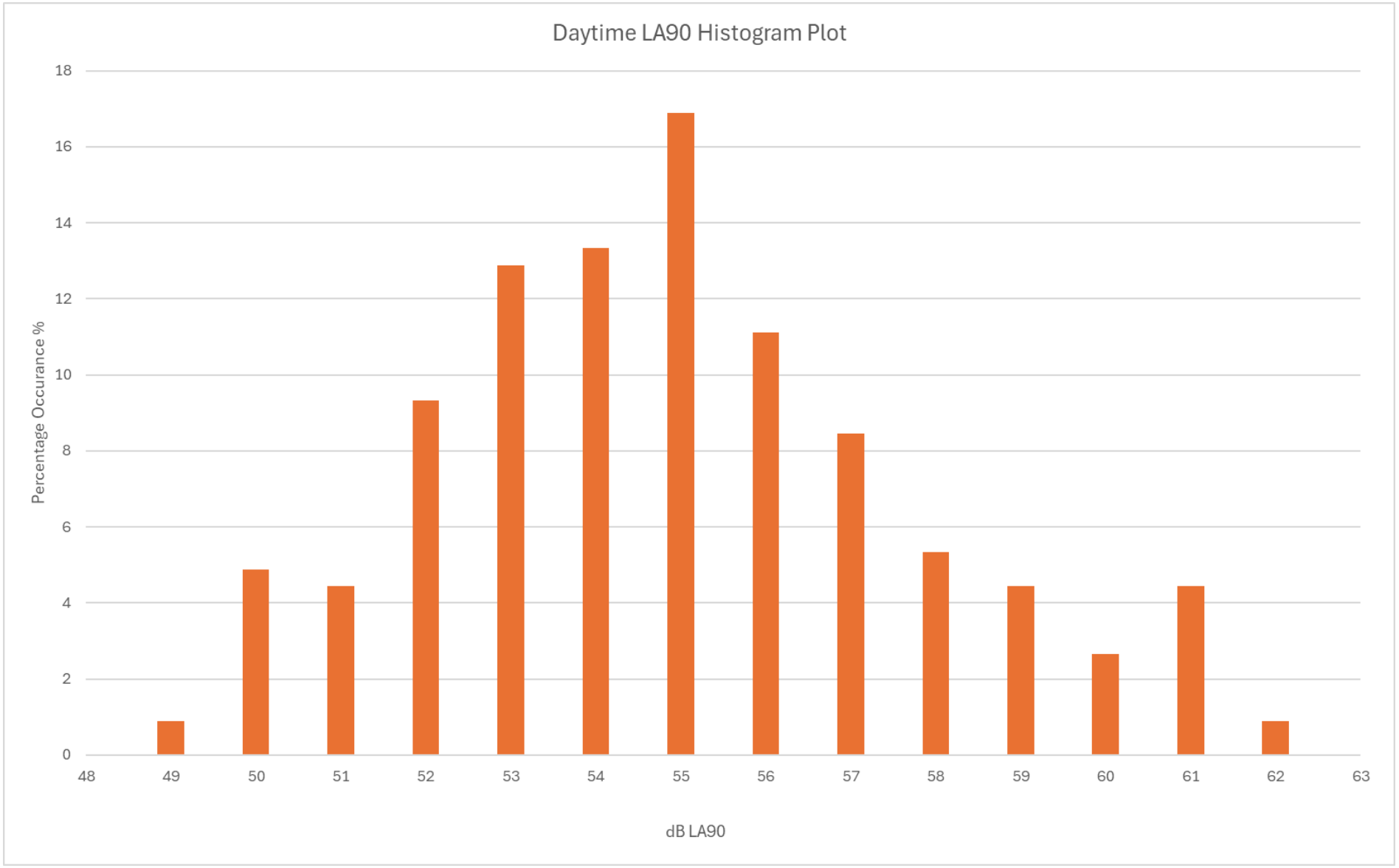
Graph C1: Time-History Plot of Measured Noise Levels at Noise Monitoring Location LT1



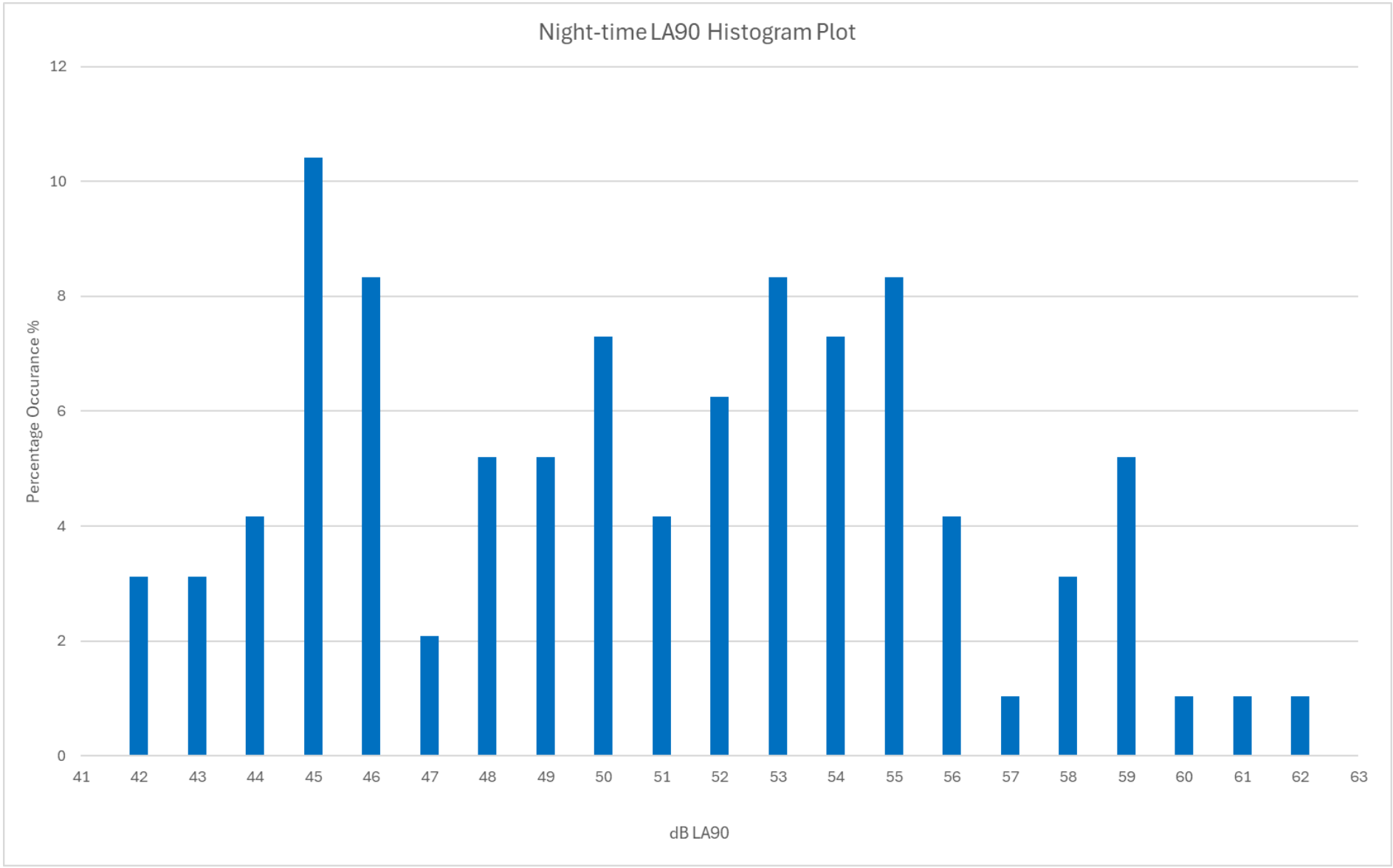
Graph C2: Time-History Plot of Measured Noise Levels at Noise Monitoring Location LT2



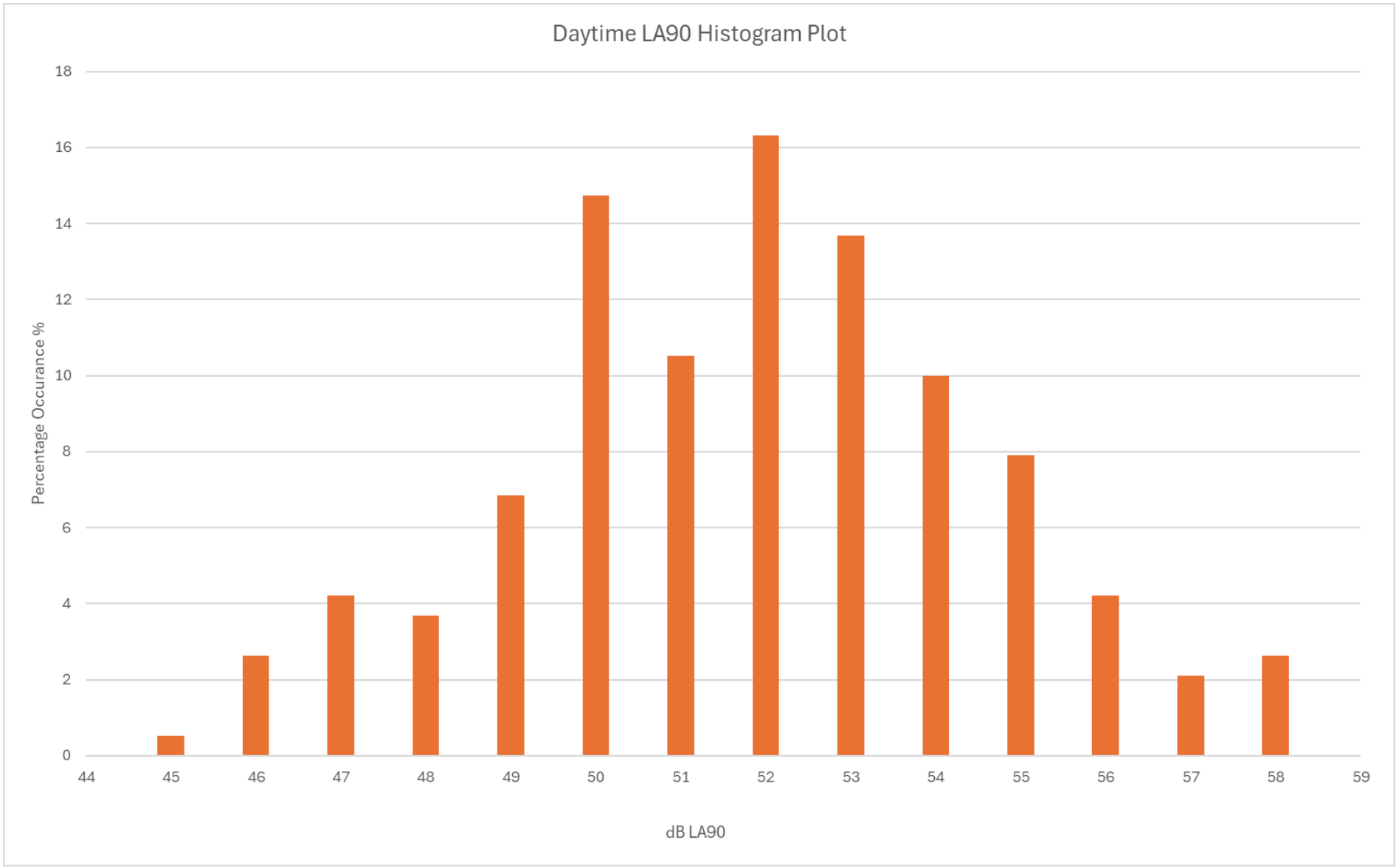
Graph C3: Histogram Plot of Measured L_{A90} During Daytime at Noise Monitoring Location LT1



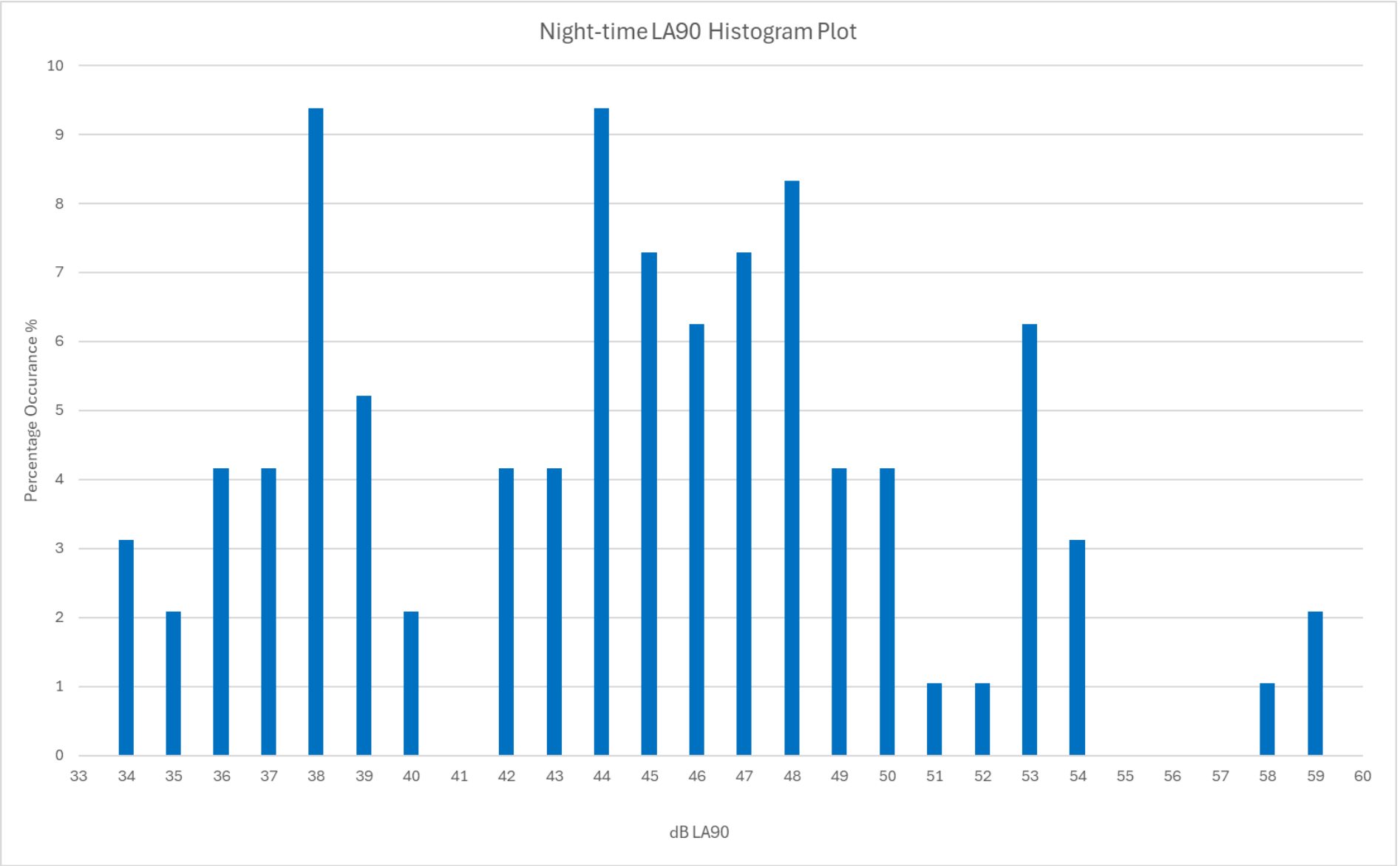
Graph C4: Histogram Plot of Measured L_{A90} During Night-time at Noise Monitoring Location LT1



Graph C5: Histogram Plot of Measured L_{A90} During Daytime at Noise Monitoring Location LT2



Graph C6: Histogram Plot of Measured L_{A90} During Night-time at Noise Monitoring Location LT2



D. Road Traffic Noise Assessment Calculations

Table D1: Road Traffic Noise Assessment Calculations – **B2 Scenario 2030 Opening Year**

Road		Assessment of L_{A10} 18-hour Basic Noise Levels at 10m from Road									
		2030 Without Development			2030 With Development			% Flow Change	2030 Without	2030 With	Change
		% HGV	Speed kph	Flow	% HGV	Speed kph	Flow				
1	Aviator Way - East of Site	0.7	40	1021	0.7	40	1021	0.0	51.9	51.9	0.0
2	Aviator Way - West of Site	0.0	40	2912	1.5	40	3803	30.6	58.7	60.7	2.0
3	Enterprise Way - North of AW	2.6	48	11677	2.6	48	11736	0.5	66.8	66.8	0.0
4	Enterprise Way - South of AW	2.4	48	12733	2.6	48	13565	6.5	67.1	67.5	0.4
5	A555 Ringway Road West - East of EW	4.3	64	51308	4.3	64	51416	0.2	75.3	75.3	0.0
6	A555 Ringway Road West - West of EW	4.4	64	43881	4.4	64	44605	1.6	74.6	74.7	0.1
7	M56 - West of Outwood Lane	3.4	113	56159	3.4	113	56883	1.3	80.9	80.9	0.1
8	Outwood Lane	5.8	48	19885	5.8	48	19885	0.0	70.1	70.1	0.0

Table D2: Road Traffic Noise Assessment Calculations – **B8 Scenario 2030 Opening Year**

Road		Assessment of L_{A10} 18-hour Basic Noise Levels at 10m from Road									
		2030 Without Development			2030 With Development			% Flow Change	2030 Without	2030 With	Change
		% HGV	Speed kph	Flow	% HGV	Speed kph	Flow				
1	Aviator Way - East of Site	0.7	40	1021	0.7	40	1021	0.0	51.9	51.9	0.0
2	Aviator Way - West of Site	0.0	40	2912	1.7	40	3048	4.7	58.7	59.8	1.1
3	Enterprise Way - North of AW	2.6	48	11677	2.6	48	11686	0.1	66.8	66.8	0.0
4	Enterprise Way - South of AW	2.4	48	12733	2.7	48	12860	1.0	67.1	67.3	0.2
5	A555 Ringway Road West - East of EW	4.3	64	51308	4.3	64	51324	0.0	75.3	75.3	0.0
6	A555 Ringway Road West - West of EW	4.4	64	43881	4.5	64	43991	0.3	74.6	74.7	0.0
7	M56 - West of Outwood Lane	3.4	113	56159	3.4	113	56269	0.2	80.9	80.9	0.0
8	Outwood Lane	5.8	48	19885	5.8	48	19885	0.0	70.1	70.1	0.0

Table D3: Road Traffic Noise Assessment Calculations – **B2 Scenario 2035 Opening Year**

Road		Assessment of L_{A10} 18-hour Basic Noise Levels at 10m from Road									
		2030 Without Development			2030 With Development			% Flow Change	2030 Without	2030 With	Change
		% HGV	Speed kph	Flow	% HGV	Speed kph	Flow				
1	Aviator Way - East of Site	0.7	40	1063	0.7	40	1063	0.0	52.2	52.2	0.0
2	Aviator Way - West of Site	0.0	40	3033	1.4	40	3924	29.4	58.9	60.8	1.9
3	Enterprise Way - North of AW	2.6	48	12163	2.6	48	12222	0.5	67.0	67.0	0.0
4	Enterprise Way - South of AW	2.4	48	13264	2.6	48	14096	6.3	67.3	67.6	0.3
5	A555 Ringway Road West - East of EW	4.3	64	53444	4.3	64	53553	0.2	75.5	75.5	0.0
6	A555 Ringway Road West - West of EW	4.4	64	45708	4.4	64	46432	1.6	74.8	74.9	0.1
7	M56 - West of Outwood Lane	3.4	113	58498	3.4	113	59221	1.2	81.0	81.1	0.1
8	Outwood Lane	5.8	48	20713	5.8	48	20713	0.0	70.3	70.3	0.0

Table D4: Road Traffic Noise Assessment Calculations – **B8 Scenario 2035 Opening Year**

Road		Assessment of L_{A10} 18-hour Basic Noise Levels at 10m from Road									
		2030 Without Development			2030 With Development			% Flow Change	2030 Without	2030 With	Change
		% HGV	Speed kph	Flow	% HGV	Speed kph	Flow				
1	Aviator Way - East of Site	0.7	40	1063	0.7	40	1063	0.0	52.2	52.2	0.0
2	Aviator Way - West of Site	0.0	40	3033	1.7	40	3169	4.5	58.9	60.0	1.0
3	Enterprise Way - North of AW	2.6	48	12163	2.6	48	12172	0.1	67.0	67.0	0.0
4	Enterprise Way - South of AW	2.4	48	13264	2.7	48	13390	1.0	67.3	67.4	0.2
5	A555 Ringway Road West - East of EW	4.3	64	53444	4.3	64	53461	0.0	75.5	75.5	0.0
6	A555 Ringway Road West - West of EW	4.4	64	45708	4.5	64	45819	0.2	74.8	74.9	0.0
7	M56 - West of Outwood Lane	3.4	113	58498	3.4	113	58608	0.2	81.0	81.1	0.0
8	Outwood Lane	5.8	48	20713	5.8	48	20713	0.0	70.3	70.3	0.0

E. Swept Path Analysis Drawings – Waterman Transport Team



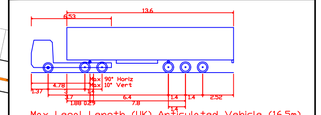


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Rev.	Date	Description	By	Chk
P01	19.02.25	ISSUED	CW	AB

Amendments

Project
AVIATOR WAY, MANCHESTER BUSINESS PARK

Title
UNIT 1A SWEPT PATH ANALYSIS (EXISTING LOADING BAY LOCATION)

Client
ASK REAL ESTATE

waterman
5th Floor One Cornwall Street Birmingham B3 2DX
t 0121 212 7700
mail@watermangroup.com www.watermangroup.com

Work Stage	STAGE 2 Concept design		RIBA
Suitability	INFORMATION		S2
Designed By	CW	Director AB	Waterman Ref WIE21347
Drawn By	CW	Date FEBRUARY 2024	Scales @ A1 1:500

Project | Originator | Functional | Spatial | Form | Discipline | Number: 21347101-WAT-HGN-ZZ-XX-DR-H-050101
Revision: P01

A1-Wat-ISO-S-2023

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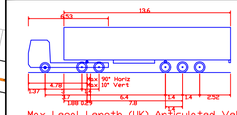


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Max Legal Length (UK) Articulated Vehicle (16.5m)

Overall Length	16.500m
Overall Width	2.550m
Overall Body Height	3.681m
Min Body Ground Clearance	0.411m
Max Track Width	2.500m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	6.530m

Rev.	Date	Description	By	Chk
P01	19.02.25	ISSUED	CW	AB

Amendments

Project
AVIATOR WAY, MANCHESTER BUSINESS PARK

Title
UNIT 1A SWEPT PATH ANALYSIS (PROPOSED LOADING BAY LOCATION)

Client
ASK REAL ESTATE

waterman
5th Floor One Cornwall Street Birmingham B3 2DX
t 0121 212 7700
mail@watermangroup.com www.watermangroup.com

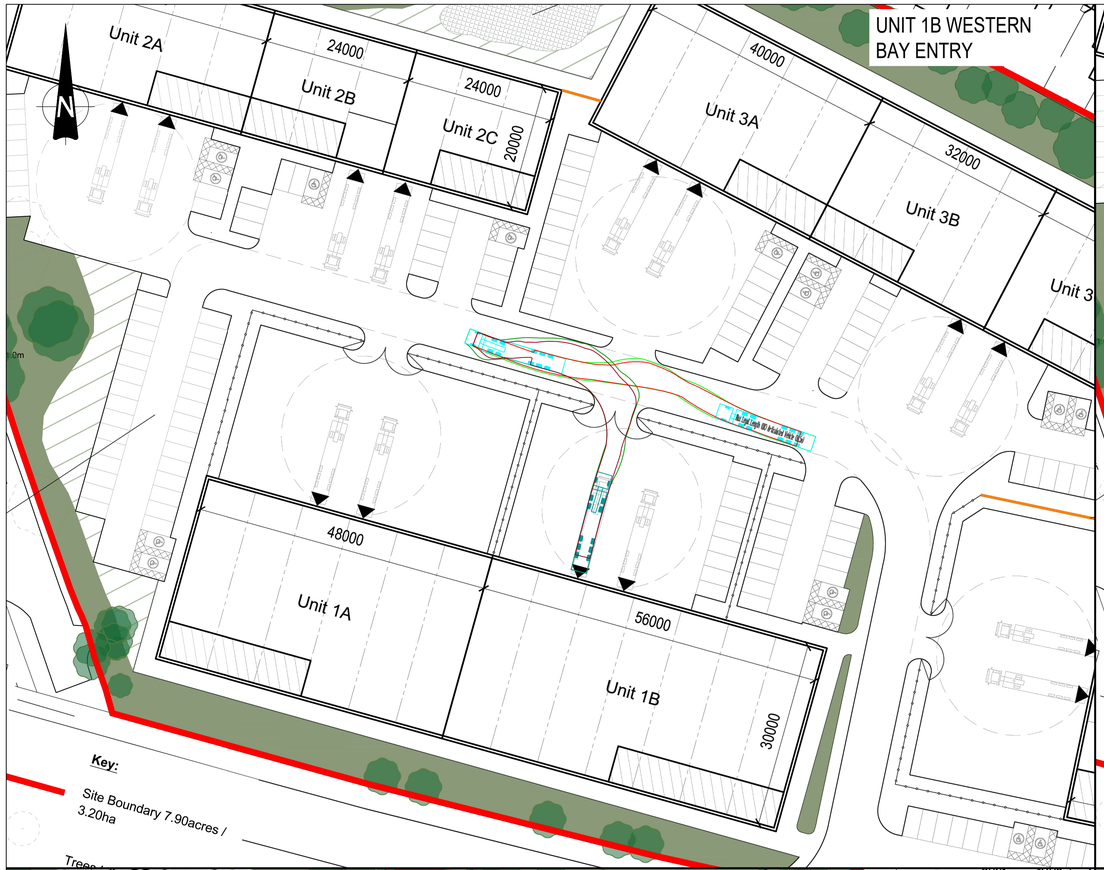
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Suitability	INFORMATION		S2
Designed By	CW	Director AB	Waterman Ref WIE21347
Drawn By	CW	Date FEBRUARY 2024	Scales @ A1 1:500

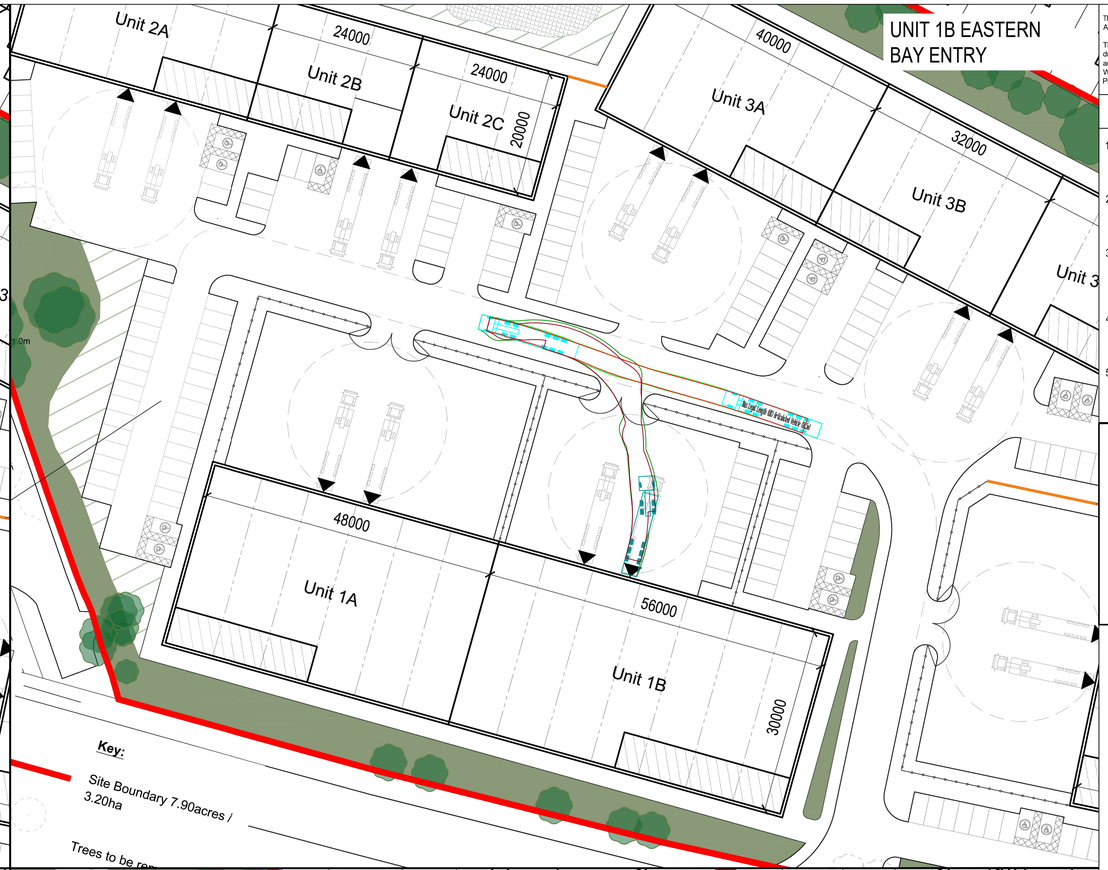
Project | Originator | Functional | Spatial | Form | Discipline | Number: 21347101-WAT-HGN-ZZ-XX-DR-H-050102

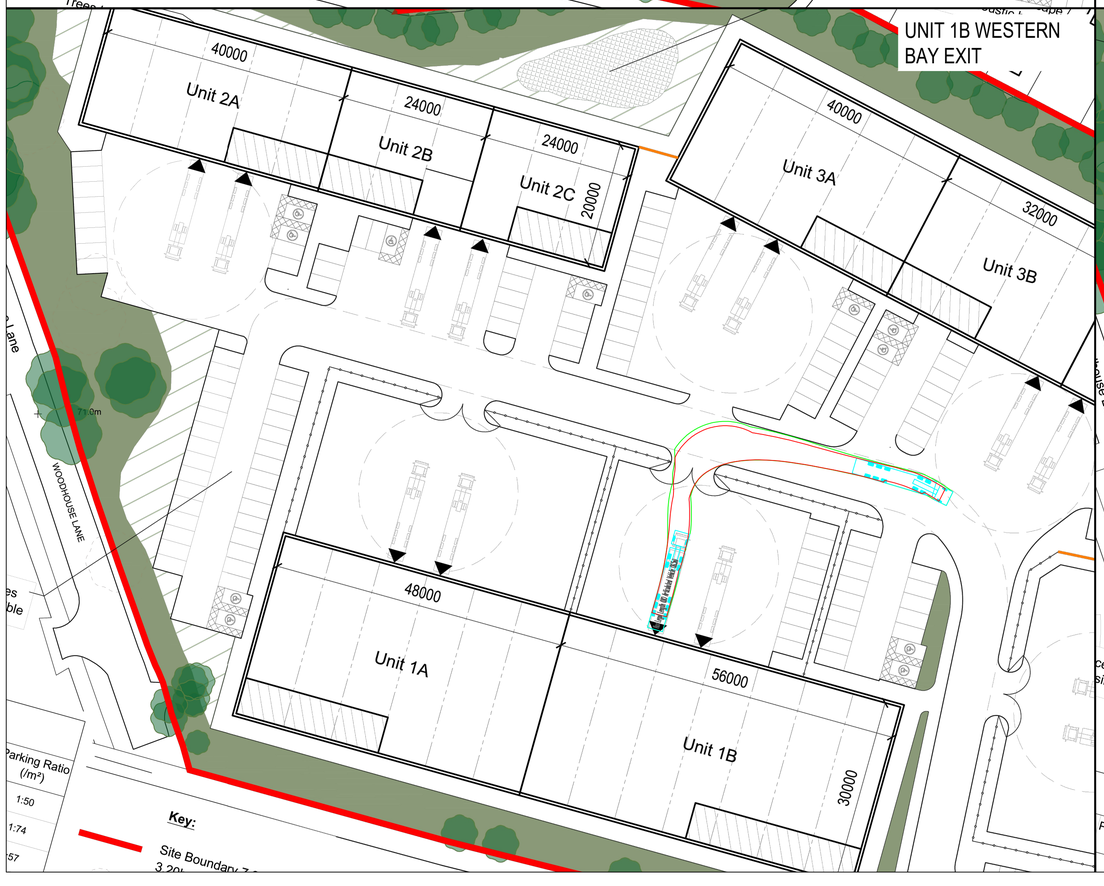
Revision: P01

File Path: G:\Projects\WIE21347\101\101_Deliverables\01_WIP\DR\05\

A1-Wat-ISO-S-2023







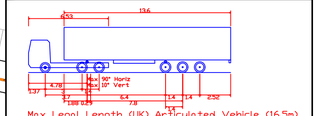


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Max Legal Length (UK) Articulated Vehicle (16.5m)

Overall Length	16.500m
Overall Width	2.550m
Overall Body Height	3.681m
Min Body Ground Clearance	0.411m
Max Track Width	2.500m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	6.530m

Rev.	Date	Description	By	Chk
P01	19.02.25	ISSUED	CW	AB

Amendments

Project
AVIATOR WAY, MANCHESTER BUSINESS PARK

Title
UNIT 1B SWEPT PATH ANALYSIS

Client
ASK REAL ESTATE

5th Floor One Cornwall Street Birmingham B3 2DX
t 0121 212 7700
mail@watermangroup.com www.watermangroup.com

Work Stage	STAGE 2 Concept design		RIBA S2
Suitability	INFORMATION		
Designed By	CW	Director AB	Waterman Ref WIE21347
Drawn By	CW	Date FEBRUARY 2024	Scales @ A1 1:500

Project | Originator | Functional | Spatial | Form | Discipline | Number
21347101-WAT-HGN-ZZ-XX-DR-H-050103

Revision P01

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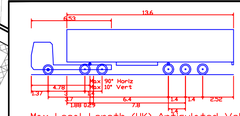


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Max Track Width	2.500m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	6.530m

Rev	Date	Description	By	Chk
P01	19.02.25	ISSUED	CW	RW

Amendments

Project
AVIATOR WAY, MANCHESTER BUSINESS PARK

Title
UNIT 2A
SWEPT PATH ANALYSIS

Client
ASK REAL ESTATE

waterman
5th Floor One Cornwall Street Birmingham B3 2DX
t 0121 212 7700
mail@watermangroup.com www.watermangroup.com

Work Stage	STAGE 2 Concept design		RIBA
Suitability	INFORMATION		S2
Designed By	CW	Director AB	Waterman Ref WIE21347
Drawn By	CW	Date FEBRUARY 2024	Scales @ A1 1:500

Project | Originator | Functional | Spatial | Form | Discipline | Number
21347101-WAT-HGN-ZZ-XX-DR-H-050104

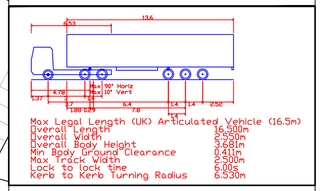
Revision P01

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File Path

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Rev	Date	Description	By	Chk
P01	19.02.25	ISSUED	CW	AB

Amendments

Project
AVIATOR WAY, MANCHESTER BUSINESS PARK

Title
UNIT 2B & 2C
SWEPT PATH ANALYSIS

Client
ASK REAL ESTATE

5th Floor One Cornwall Street Birmingham B3 2DX
t 0121 212 7700
mail@watermangroup.com www.watermangroup.com

Work Stage	STAGE 2 Concept design		RIBA
Suitability	INFORMATION		S2
Designed By	CW	Director AB	Waterman Ref WIE21347
Drawn By	CW	Date FEBRUARY 2024	Scales @ A1 1:500

1:500 0 10m 20m 30m 40m 50m
1:1 0 10 20 30 40 50 60 70 80 90 100

Project | Originator | Functional | Spatial | Form | Discipline | Number	Revision
21347101-WAT-HGN-ZZ-XX-DR-H-050105	P01

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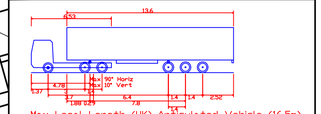


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Max Legal Length (UK) Articulated Vehicle (16.5m)

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Overall Body Height	3.681m
Min Body Ground Clearance	0.411m
Max Track Width	2.500m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	6.530m

Rev	Date	Description	By	Chk
P01	19.02.25	ISSUED	CW	AB

Amendments

Project
AVIATOR WAY, MANCHESTER BUSINESS PARK

Title
UNIT 3A
SWEPT PATH ANALYSIS

Client
ASK REAL ESTATE

waterman
5th Floor One Cornwall Street Birmingham B3 2DX
t 0121 212 7700
mail@watermangroup.com www.watermangroup.com

Work Stage	STAGE 2 Concept design		RIBA
Suitability	INFORMATION		S2
Designed By	CW	Director AB	Waterman Ref WIE21347
Drawn By	CW	Date FEBRUARY 2024	Scales @ A1 1:500

1:500 0 10m 20m 30m 40m 50m
1:1 0 10 20 30 40 50 60 70 80 90 100

Project	Originator	Functional	Spatial	Form	Discipline	Number	Revision
21347101-WAT-HGN-ZZ-XX-DR-H-050106							P01

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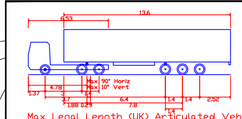


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Max Track Width	2.500m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	6.530m

Rev	Date	Description	By	Chk
P01	19.02.25	ISSUED	CW	AB

Amendments

Project
AVIATOR WAY, MANCHESTER BUSINESS PARK

Title
UNIT 3B & 3C
SWEPT PATH ANALYSIS

Client
ASK REAL ESTATE

5th Floor One Cornwall Street Birmingham B3 2DX
t 0121 212 7700
mail@watermangroup.com www.watermangroup.com

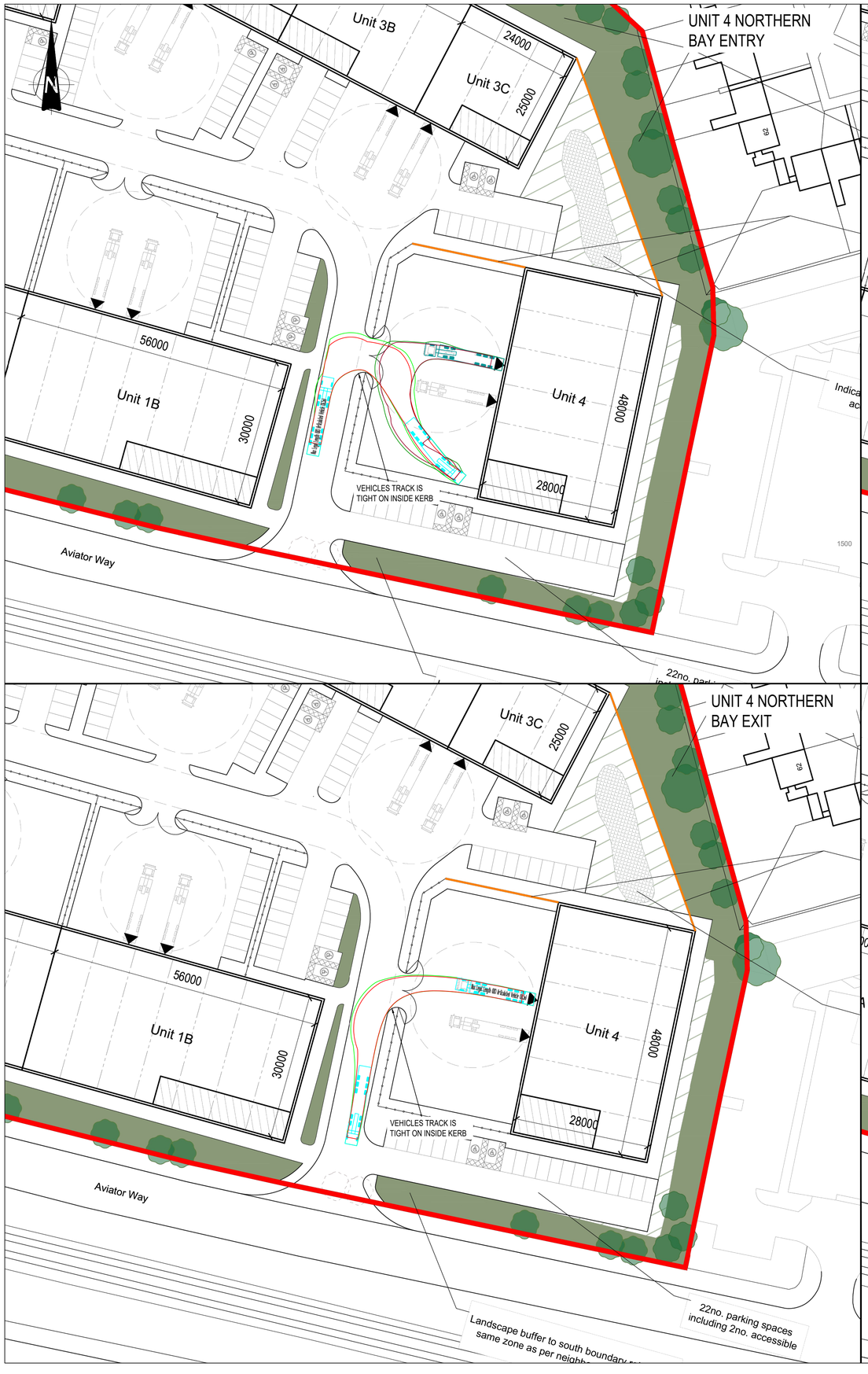
Work Stage	STAGE 2 Concept design		RIBA
Suitability	INFORMATION		S2
Designed By	CW	Director AB	Waterman Ref WIE21347
Drawn By	CW	Date FEBRUARY 2024	Scales @ A1 1:500

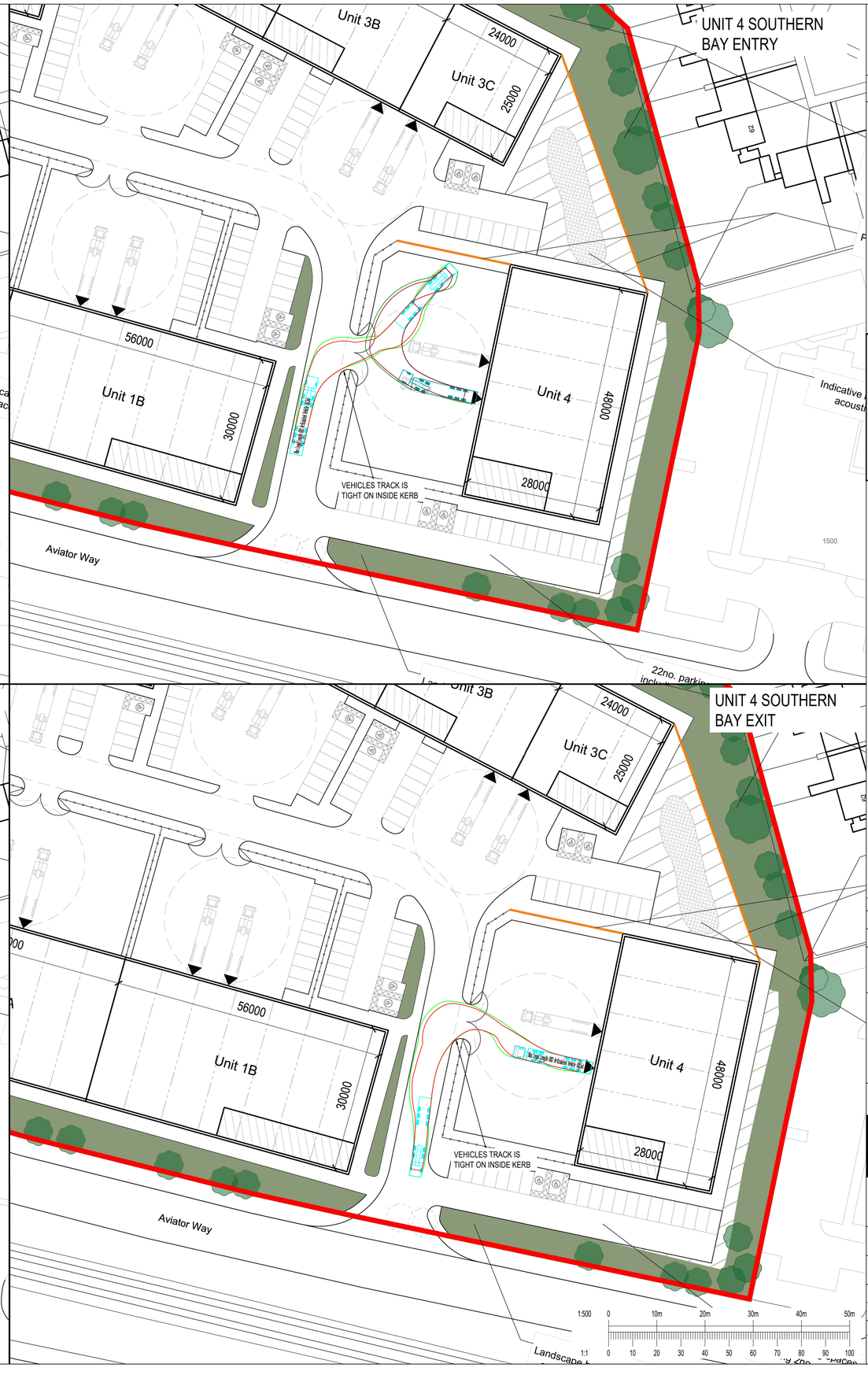
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1:1 0 10 20 30 40 50 60 70 80 90 100

Project	Originator	Functional	Spatial	Form	Discipline	Number	Revision
21347101-WAT-HGN-ZZ-XX-DR-H-050107							P01

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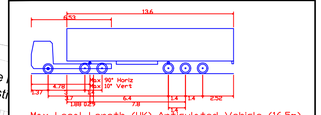


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Rev	Date	Description	By	Chk
P01	19.02.25	ISSUED	CW	AB

Amendments

Project
AVIATOR WAY, MANCHESTER BUSINESS PARK

Title
UNIT 4 SWEPT PATH ANALYSIS

Client
ASK REAL ESTATE

5th Floor One Cornwall Street Birmingham B3 2DX
t 0121 212 7700
mail@watermangroup.com www.watermangroup.com

Work Stage	STAGE 2 Concept design		RIBA
Suitability	INFORMATION		S2
Designed By	CW	Director AB	Waterman Ref WIE21347
Drawn By	CW	Date FEBRUARY 2024	Scales @ A1 1:500

Project	Originator	Functional	Spatial	Form	Discipline	Number	Revision
21347101-WAT-HGN-ZZ-XX-DR-H-050108							P01

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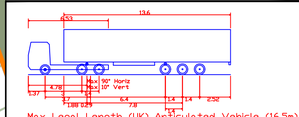


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Kerb to Kerb Turning Radius	6.530m

Rev	Date	Description	By	Chk
P01	19.02.25	ISSUED	CW	AB

Amendments

Project
AVIATOR WAY, MANCHESTER BUSINESS PARK

Title
SERVICE ROAD
SWEPT PATH ANALYSIS (HGV'S PASSING) - SHEET 1 OF 2

Client
ASK REAL ESTATE

5th Floor One Cornwall Street Birmingham B3 2DX
t 0121 212 7700
mail@watermangroup.com www.watermangroup.com

Work Stage	STAGE 2 Concept design	RIBA
Suitability	INFORMATION	S2

Designed By	CW	Director AB	Waterman Ref WIE21347
Drawn By	CW	Date FEBRUARY 2024	Scales @ A1 1:250

1:250 0 5m 10m 15m 20m 25m
1:1 0 10 20 30 40 50 60 70 80 90 100

Project | Originator | Functional | Spatial | Form | Discipline | Number — Revision

21347101-WAT-HGN-ZZ-XX-DR-H-050109 — P01

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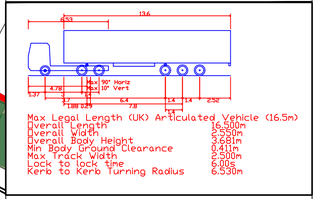


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Rev	Date	Description	By	Chk
P01	19.02.25	ISSUED	CW	AB

Amendments

Project
AVIATOR WAY, MANCHESTER BUSINESS PARK

Title
SERVICE ROAD SWEPT PATH ANALYSIS (HGV WITHIN ACCESS ROAD) - SHEET 2 OF 2

Client
ASK REAL ESTATE

waterman
5th Floor One Cornwall Street Birmingham B3 2DX
t 0121 212 7700
mail@watermangroup.com www.watermangroup.com

Work Stage	STAGE 2 Concept design	RIBA	
Suitability	INFORMATION	S2	
Designed By	CW	Director	AB
Drawn By	CW	Date	FEBRUARY 2024
Waterman Ref	WIE21347		
Scales @ A1	1:500		

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1:1 0 10 20 30 40 50 60 70 80 90 100

Project | Originator | Functional | Spatial | Form | Discipline | Number: 21347101-WAT-HGN-ZZ-XX-DR-H-050110
Revision: P01

A1-Wat-ISO-S-2023

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We deliver progressive, sustainability-driven environmental and engineering consultancy services across every sector. We think differently, and we're harnessing our collective expertise to deliver greener, healthier and well-connected communities, networks and built environments.

Based in strategic locations throughout the UK and Ireland, our team of specialists is at the forefront of tackling the climate emergency and forging a path to a Net Zero built environment.

UK & Ireland Office Locations

