

Noise and Vibration Assessment

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Project:	Grenfell Tower
Client:	MHCLG

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REVIEW AND AUTHORISATION

Prepared By Stacey Miller	Position Project Manager	Date 03/12/2025
Reviewed By Emma Howard AISEP, AMIOA	Position Operations Manager and Senior Acoustic Consultant	Date 28/04/2026
Approved By Ian Hooper MSc IEng MIOA	Position Principal Acoustic Consultant	Date 29/04/2026

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ABREVIATIONS	Meaning of abbreviations / Terminology used in this document
Ambient Noise	Noise from all sources present at the time of measurement, usually comprising of sound from many sources near and far, but excluding site noise.
Background Noise	A-weighted sound pressure level of the residual noise at the assessment position that is exceeded for 90% of a given time interval, <i>T</i> measured using time waiting, <i>F</i> , and quoted to the nearest whole number in decibels.
Free Field	An environment where sound waves can travel freely from a source without hitting any surfaces (walls, floor, ceiling) that cause reflections or echoes
BPM	Best Practicable Means
CoCP	Code of Construction Practice
CoPA	Control of Pollution Act 1974
dB (A)	A-weighted decibel, a unit of measurement of sound level weighted to reflect the frequency response of the human ear.
EA	Environment Agency
EHO	Environmental Health Officer
EMP	Environmental Management Plan
EMS	Environmental Management System to EN ISO 14001: 2015
HDV	Heavy Duty Vehicles defined as vehicles with a weight greater than 3.5 tonnes.
LA	Local Authority (Royal Borough of Kensington & Chelsea)
Noise Level	The sound level of noise determined in decibels.
NRMM	Non-Road Mobile Machinery
Section 60 notice	Issued under the Control of Pollution Act 1974 to control noise pollution and nuisance. If issued the conditions must be complied with until revoked or successfully appealed against.
Sensitive Receptors / Noise Sensitive Premises (NSPs)	Receptors that are potentially sensitive to noise, vibration or dust. Examples include dwellings (including gardens), hospitals, schools, community facilities, designated areas (e.g. AONB, National Park, SAC, SPA, SSSI, SAM) and public rights of way, or any other property likely to be adversely affected.
Sustainable development	Bruntland Report: "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs".
MHCLG (Client)	Ministry of Housing, Communities and Local Government
RBKC	Royal Borough of Kensington and Chelsea

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1 Introduction

1.1 Document Purpose

- 1.1.1 This Noise and Vibration Assessment has been prepared for the Deconstruction Phase of works at Grenfell Tower, London (hereafter referred to as the 'Site').
- 1.1.2 The site is located in the Royal Borough of Kensington and Chelsea (RBKC).
- 1.1.3 The project works will be undertaken for a period of 23 months from September 2025 to May 2027.
- 1.1.4 The scope of works for the deconstruction phase include the following:
- Establishing site welfare in garages and removal of cabins.
 - Enabling and piling works for Tower Crane erection.
 - Temporary services installation to accommodate deconstruction.
 - Hoarding lines and exclusion zones to be re-established.
 - Completion of hard standing area.
 - Enabling works to machine routes.
 - Tower Crane tie back at level 9 and concrete base including piling.
 - Investigation works to inform temporary works design.
 - Scaffolding to be adapted to suit deconstruction & installation of additional fan.
 - UKPN update / additional 200amp supply.
 - Lift deconstruction plant on to roof of Grenfell Tower.
 - Deconstruction from plantroom to ground floor slab.
 - Concurrent removal of scaffold and hoist.
 - Once deconstruction is down at level 11, the crane will be stripped down, tie backs removed and monarflex.
 - Clearance of Site.
- 1.1.5 MHCLG, the Client, have commissioned European Environmental Monitoring and Consultancy (EEMC) to prepare a noise and vibration assessment for this phase of the project.
- 1.1.6 EEMC Limited has extensive experience in providing noise, vibration and air quality monitoring and consultancy services to major construction and infrastructure projects and has worked on some challenging developments across London and the UK.

1.2 Site Location and Working Hours

- 1.2.1 The Grenfell Tower project is located at Grenfell Tower, Grenfell Road, W11 1TQ, see Figure 1.0 below.
- 1.2.2 The site is located within Royal Borough of Kensington & Chelsea (RBKC). The site is bordered by residential blocks to the south, and a school and football pitches to the north and a leisure centre to the east.
- 1.2.3 The London Underground viaduct is 70m to the west and Latimer Road Tube station is 200m from the project.

1.2.4 Project hours on site are:

- Monday to Friday

Site Opening Hours – 07:00 – 18:00

Working Hours – 08:30 to 17:00

Saturday- No working hours applicable - *in exceptional circumstances occasional weekend work may be necessary.*



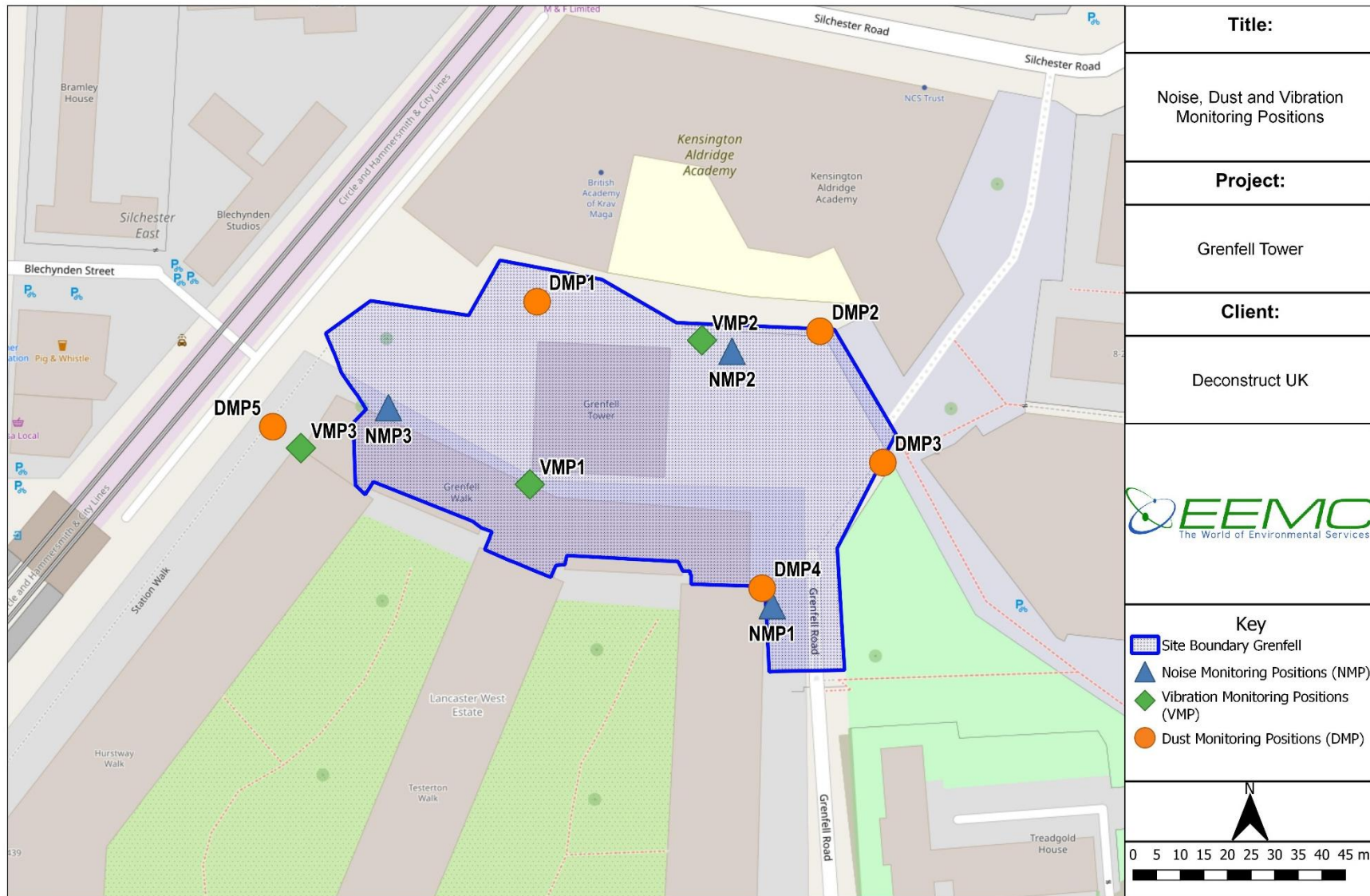


Figure 1.0: Site Layout showing Noise & Vibration Monitoring Locations *Dust locations shown for information only*

2 Legislation and Guidance

2.1 UK Legislation

2.1.1 The Control of Pollution Act 1974 (CoPA) - Sections 60 & 61 – While primarily a mechanism for noise control, CoPA, empowers the Local Authority to dictate the permitted hours of Site operation, thereby strictly regulating the permissible windows for vehicle arrival and departure. The Act requires the adoption of “Best Practicable Means” (BPM) to minimise off site impacts, effectively mandating the use of modern, quieter vehicle fleets and the prohibition of unnecessary engine idling within the Site boundary.

2.2 Local Authority

2.2.1 The Royal Borough of Kensington and Chelsea (RBKC) is the geographic local authority for the Site.

2.2.2 RBKC’s Code of Construction Practice (CoCP) sets strict requirements to minimise construction noise and vibration, with a strong emphasis on Best Practicable Means (BPM) and proactive management.

2.2.3 Key expectations include:

- Plan noisy works carefully – including sequencing, equipment choice, and mitigation.
- Engage with neighbours early – advance notice of noisy phases is mandatory.
- Monitor noise and vibration – where required by site category or risk.
- Comply with permitted hours – RBKC has some of the strictest hours in London: *“All works that can be heard at the site boundary must be carried out only between 8am and 6pm Monday to Friday and not on Saturdays, Sundays or Bank Holidays. Works defined as “extra high impact” must generally be restricted to the hours of 9am-12.30pm and 2pm-5.30pm.”* “Extra high impact” works tend to include activities such as piling and breaking but are to be discussed with RBKC for confirmation.

2.2.4 Section 11 outlines that noise limits must be set using BS5228-1 and a baseline survey, vibration limits must protect both people and buildings using BS5228-2 and BS7385. Continuous monitoring is required for medium and high impact sites or sensitive receptors, the trigger levels must be agreed with the EHO and regular monitoring reports must be submitted to RBKC.

2.2.5 Appendix C strongly advises a Section 61 application should be submitted to protect them from later enforcement.

2.3 Guidance

2.3.1 BS 5228-1: Noise Control on Construction & Open Sites provides methods for predicting, assessing, and controlling noise from construction, demolition, and related activities. It is the UK’s primary reference for construction noise management.

2.3.2 The guidance outlines noise prediction methods, how to establish the existing ambient noise levels through a baseline survey, assessment of potential significance on receptors, best practicable means and community engagement.

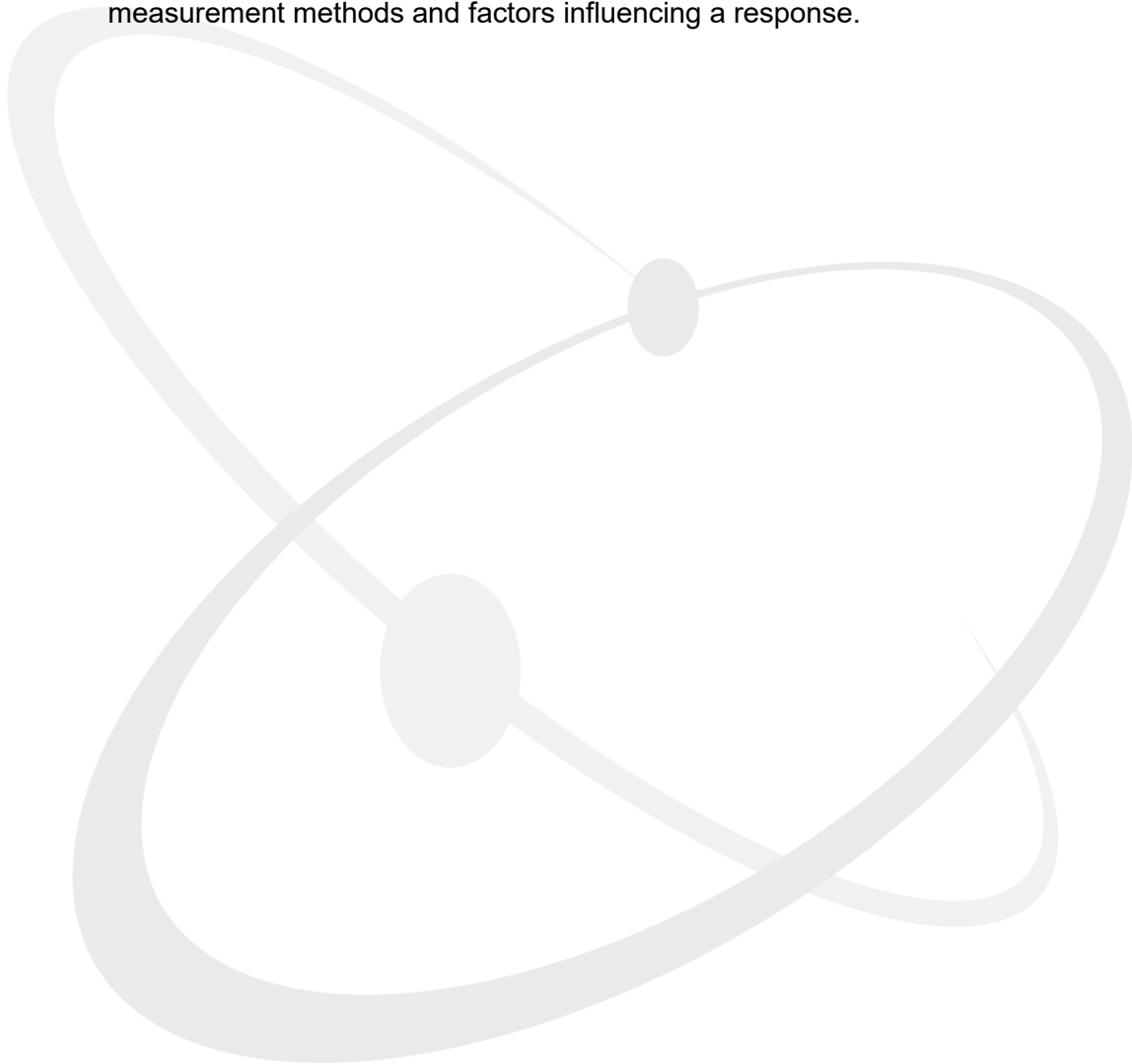
2.3.3 BS 5228-2: Vibration Control on Construction & Open Sites provides guidance on predicting, measuring, and controlling vibration from construction activities such as

piling, compaction, demolition, and tunnelling. This is the primary UK guidance for vibration prediction and control

2.3.4 The guidance outlines vibration prediction methods, human response criteria, building response criteria, monitoring requirements and mitigation measures.

2.3.5 BS 7385-2: Evaluation & Measurement for Vibration in Buildings defines how to assess the risk of building damage from vibration, including construction-related sources such as piling, demolition, and heavy plant. This is the primary UK guidance for building damage from vibration.

2.3.6 The guidance outlines the damage risk thresholds, building classifications, measurement methods and factors influencing a response.



3 Baseline Monitoring

3.1 On Site Baseline Monitoring

- 3.1.1 EEMC have undertaken noise measurements on site since August 2024. Works undertaken have been limited to maintenance and propping and as such provide a suitable measurement of the baseline noise climate on the site.
- 3.1.2 Quarterly noise monitoring reports are provided and a summary of the most recent baseline noise data is provided as Table 2.0.

Table 2.0 – Summary of Measured Baseline Noise Levels

Monitoring Position	dB L _{Aeq, 10hrs}		
	NMP1	NMP2	NMP3
November 2024	58.2	60.2	57.5
December 2024	58.9	60.1	57.0
January 2025	57.6	59.9	57.0

- 3.1.1 Noise measurements have been undertaken at suitable locations to represent nearby sensitive receptors and remain the same as the current monitoring positions shown in Figure 1.1.
- 3.1.2 As assessment has been made of the noise “threshold of potential significance” as per the ABC method of Annex E of BS 5228-1:2009+A1:2014.
- 3.1.3 The site is a Category A site with the threshold of potential significant effect at dwellings at 65 dBA, 16hr free field.
- 3.1.4 It is deemed that following the BPM measures outlined in Table 3.3 that the potential significant effect to all receptors will be minimal. These measures will be constantly reviewed throughout the project to ensure that this remains the case.
- 3.1.5 There are no significant sources of vibration on site. The closest vibration source would be the TfL lines situated to the north-west of the site boundary.
- 3.1.6 A vibration survey was undertaken at the three monitoring positions as per Figure 1.1 and 18th July 2025 – 31st August 2025 and despite a few anomalous spikes at all locations the levels remained predominantly below 1.0 mm/s at VMP1 – VMP3.

4 Sensitive Receptors

4.1 Sensitive Receptors

- 4.1.1 The area surrounding the Site is a mixture of residential dwellings, a secondary school and commercial properties. The Site location and receptors are shown in Figure 4.0 and Table 4.0.
- 4.1.2 It is understood that all residential receptors directly overlooking the site, have been vacated. Our assessment has been undertaken on the basis that these properties are not occupied.
- 4.1.3 Since the NVMP was issued 8-25 Verity Close has been added as a sensitive receptor for completeness. This was not included as an original sensitive receptor given Kensington Aldridge Academy (Receptor A) and Kensington Leisure Centre (Receptor C) are closer than 8-25 Verity Close meaning that if Receptors A & C were compliant then 8-25 Verity Close would also be compliant due to how noise and vibration naturally attenuates with distance.
- 4.1.4 The buildings on the far side of the railway to the west of site have not been counted as sensitive receptors due to the railway itself being the sensitive receptor, compliance for railways and stations are agreed through discussions with TfL. As with 8-25 Verity Close these buildings were not included as in the original list of sensitive receptors because compliance with the railway would indicate compliance for these buildings as noise and vibration naturally attenuate over distance.

Table 4.0 – Sensitive Receptors

Receptor ID	Sensitive Receptor	Building Use
A	Kensington Aldridge Academy	School
B	8-25 Verity Close	Residential
C	Kensington Leisure Centre	Leisure Centre
D	Treadgold House	Residential
E	Barandon Walk	Residential
F	Testerton Walk	Residential
G	Hurstway Walk	Residential

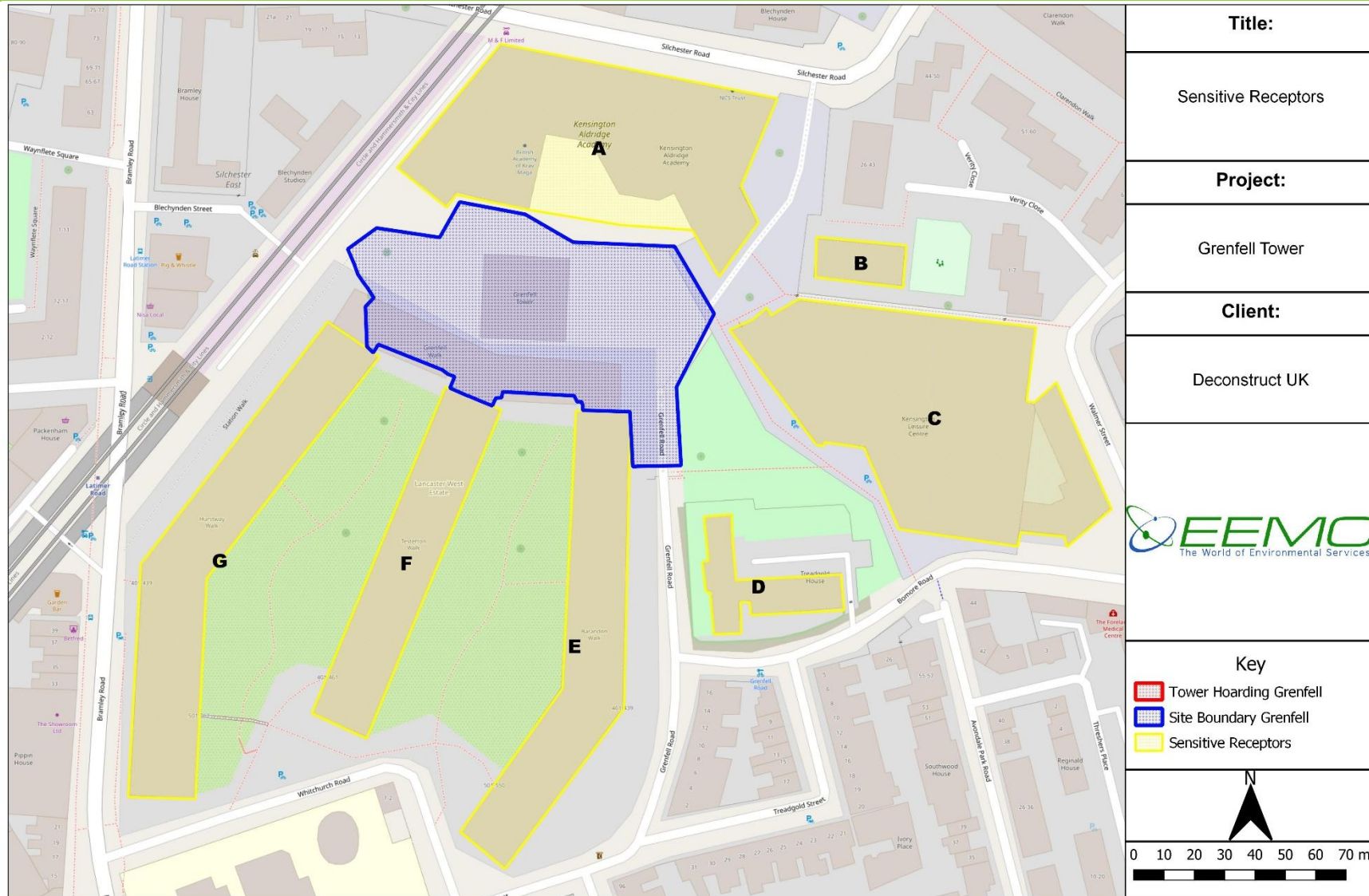


Figure 4.0 - Site Layout Plan Indicating Sensitive Receptors

5 Noise Modelling

- 5.1.1 The noise levels generated during the Deconstruction phase of works experienced by any nearby sensitive receptors, will depend upon several variables, the most significant of which are:
- the noise generated by the individual plant or equipment item used on-site, and the on-site activities, these are expressed as sound power levels (LW);
 - the periods of operation of the plant on the site, known as its 'on-time';
 - the distance between the noise source and the receptor;
 - attenuation provided by ground absorption and any intervening barriers.
- 5.1.2 Work activity noise predictions have been undertaken using CadnaA noise modelling software, which employs the methodology outlined in BS 5228-1: 2009+A1:2014, Code of practice for noise and vibration control on construction and open sites: Part 1: Noise (BSI, 2014).
- 5.1.3 BS 5228-1: 2009+A1:2014 also contains a database of the noise emissions from individual items of equipment, activities, and routines to predict noise from stabilisation and construction activities at identified receptors. The prediction method gives guidance on the effects of different types of ground, barrier attenuation and how to assess the impact of fixed and mobile plant.
- 5.1.4 Predicted noise levels illustrate the cumulative effects of noise (LAeq,10 hour day) from all activities which take place simultaneously from different locations over the site with potential impacts on sensitive receptors. Predicted noise levels are inclusive of a 3dB façade reflection and are presented in Appendix E as period LAeq,10-hour levels.

5.2 Sequences

- 5.2.1 The predicted noise levels from the Deconstruction Phase of works, have been presented in four distinct sequences, however it is noted that sequences 1 and 2 have already been completed, at the issue of this document, the site works will continue:
- *Sequence 1: Enabling Works including Piling for Tower Crane Base - Completed*
 - *Sequence 2: Deconstruction of tower at 67m high (24th floor) - Completed*
 - **Sequence 3: Deconstruction of tower at 50m high (17th floor)**
 - **Sequence 4: Deconstruction of tower at 10m high (3rd floor)**
- 5.2.2 A qualitative review of the predicted noise levels compared to the recorded noise levels during sequences 1 and 2 has been undertaken in Section 5.3.
- 5.2.3 Appendix 5 shows the Contour Plots produced for Sequences 3 and 4 using CadnaA.

5.3 Qualitative Review of Sequences 1 and 2

- 5.3.1 The qualitative review has been carried out by comparing the daily average of the measured noise levels with the predicted noise levels at the nearest sensitive receptor to that noise monitoring location.

Sequence 1 Review

- 5.3.2 The recorded daily average at monitoring positions NMP1 was **63.9 dB L_{Aeq, 10hr}** and the predicated noise level was **68 dB L_{Aeq, 10hr}**.
- 5.3.3 The maximum recorded daily average was **76.5 dB L_{Aeq, 10hr}**.
- 5.3.4 The recorded daily average at monitoring positions NMP2 was **64.4 dB L_{Aeq, 10hr}** and the predicated noise level was **73 dB L_{Aeq, 10hr}**.
- 5.3.5 The maximum recorded daily average was **72.9 dB L_{Aeq, 10hr}**.
- 5.3.6 The recorded daily average at monitoring positions NMP3 was **56.8 dB L_{Aeq, 10hr}** and the predicated noise level was **54 dB L_{Aeq, 10hr}**.
- 5.3.7 The maximum recorded daily average was **60.3 dB L_{Aeq, 10hr}**.
- 5.3.8 These levels are within the acceptable limits and the maximum recorded daily average for NMP1 was due to works being undertaken directly adjacent to the monitoring location resulting in elevated levels.

Sequence 2 Review

- 5.3.9 The recorded daily average at monitoring positions NMP1 was **57.6 dB L_{Aeq, 10hr}** and the predicated noise level was **73 dB L_{Aeq, 10hr}**.
- 5.3.10 The maximum recorded daily average was **68.4 dB L_{Aeq, 10hr}**.
- 5.3.11 The recorded daily average at monitoring positions NMP2 was **60.0 dB L_{Aeq, 10hr}** and the predicated noise level was **72 dB L_{Aeq, 10hr}**.
- 5.3.12 The maximum recorded daily average was **64.8 dB L_{Aeq, 10hr}**.
- 5.3.13 The recorded daily average at monitoring positions NMP3 was **58.9 dB L_{Aeq, 10hr}** and the predicated noise level was **70 dB L_{Aeq, 10hr}**.
- 5.3.14** The maximum recorded daily average was **74.7 dB L_{Aeq, 10hr}**.
- 5.3.15 These levels are within the acceptable limits and the maximum recorded daily average for NMP3 was likely to have been a one off and the daily average for NMP3 is likely to be more indicative of what the nearest sensitive receptors will be experiencing daily.

Uncertainty in Noise Modelling

- 5.3.16 It is essential to consider that modelling is an estimate and real-world measurements may differ greatly. Computer modelling requires a simplification of real-world conditions into basic components. Assumptions also have to be made regarding works and specific locations of plant items etc. For each simplification and assumption a degree of error is added to the model.
- 5.3.17 Sequences 1 and 2 will not be mentioned any further within this report, if required for more information regarding these sequences please refer to the Noise and Vibration Management Plan (ref: EEMC-NVMP003-201 Rev 04 - Grenfell Tower).

5.4 Plant Reference Noise Levels

5.4.1 Reference noise levels for the plant items in use during each Sequence are show in Tables 5.0 through 5.1:

Table 5.0 - Sequence 3: Deconstruction of tower at 50m high (17th floor)

Plant	BS5228 ref (or other source)	No of items	SWL	LAeq @10m	% on time
Waste/ Delivery lorries	T.4 Ref 21	1	105	77	20
Hand tools	Measured	4	97	69	30
Brokk 280	Spec Sheet	1	93	65	40
Diamond Drilling	Measured	1	123	95	40
Tower Crane	T.4 Ref 48	1	104	76	40
Hoist	C.4 Ref 61	1	96	68	30
13T with Bucket	T.2 Ref 24	1	101	73	60
Skid Steer	Measured	2	106	78	40
Generator	T.4 Ref 76	1	89	61	5

Table 5.1 - Sequence 4: Deconstruction of tower at 10m high (3rd floor)

Plant	BS5228 ref (or other source)	No of items	SWL	LAeq @10m	% on time
Waste/ Delivery lorries	T.4 Ref 21	1	105	77	20
Hand tools	Measured	4	97	69	30
Brokk 280	Spec Sheet	1	93	65	40
Diamond Drilling	Measured	1	123	95	40
Tower Crane	T.4 Ref 48	1	104	76	40
Hoist	C.4 Ref 61	1	96	68	30
13T with Bucket	T.2 Ref 24	1	101	73	60
Skid Steer	Measured	2	106	78	40
Generator	T.4 Ref 76	1	89	61	5

5.5 Predicted Noise Levels

- 5.5.1 Predicted noise levels for each Sequence in the Deconstruction Phase are shown in Tables 5.2 through 5.3:
- 5.5.2 The predicted noise levels are based on a typical 10 hour working day. Due to the reduction in working hours for this project (08:30-17:00 Mon-Fri), there will be a likely marginal reduction in predicted construction noise (circa 0.7dB).

Table 5.2 - Sequence 3: Predicted Noise Levels

Receptor		Type	Predicted façade noise levels $L_{Aeq, 10h}$ dB (includes façade reflection)
ID	Location		
A	Kensington Aldridge Academy	School	72
B	8-25 Verity Close	Residential	67
C	Kensington Leisure Centre	Leisure Centre	70
D	Treadgold House	Residential	66
E	Barandon Walk	Residential	70
F	Testerton Walk	Residential	69
G	Hurstway Walk	Residential	70

Table 5.3 - Sequence 4: Predicted Noise Levels

Receptor		Type	Predicted façade noise levels $L_{Aeq, 10h}$ dB (includes façade reflection)
ID	Location		
A	Kensington Aldridge Academy	School	75
B	8-25 Verity Close	Residential	65
C	Kensington Leisure Centre	Leisure Centre	70
D	Treadgold House	Residential	63
E	Barandon Walk	Residential	74
F	Testerton Walk	Residential	75
G	Hurstway Walk	Residential	73

6 Noise Site Risk Assessment (London Authorities Noise Action Forum [LANAF] Methodology)

6.1 Overview

6.1.1 The potential noise impacts from the Grenfell Tower project have been assessed using the LANAF methodology from the London Good Practice Guide: Noise & Vibration Control for Deconstruction and Construction July 2016.

6.2 Risk Assessment A – Locality and Site Information

6.2.1 Table 6.0 shows the locality and site information risk assessment.

Table 6.0 – Risk Assessment A

Assessment Criteria	Risk		
	Low	Medium	High
Full programme duration – estimated at 95 weeks (22 months)			✓
Proximity of nearest sensitive receptors - < 25m – direct neighbouring buildings to the south			✓
Day-time ambient noise level - The Baseline Noise demonstrate the noise level to be ~60 dB LAeq, 10hr, on the site boundary			✓
Working hours – normal site workings hours only <i>this is true given current information regarding site</i>	✓		
Subtotal	1	0	3

6.3 Risk Assessment B – Works Information

6.3.1 Table 6.1 shows the works information risk assessment.

Table 6.1 – Risk Assessment B

Assessment Criteria	Risk		
	Low	Medium	High
Location of works – majority of works external			✓
External deconstruction –greater than 3 months			✓
Groundworks – Limited groundworks	✓		
Piling – Bored piling only <1 week for crane base only	✓		
Vibration generating activities – likely to be greater than 1 month <i>(worst case scenario taken)</i>	✓		
Street management – not required, street is part of project site	✓		
Subtotal	4	0	2

6.4 Total Risk Assessment

- 6.4.1 Table 6.2 shows the combined subtotals for Risk Assessment A and B.
- 6.4.2 The subtotal for Risk Assessment A is carried over as is and the subtotal for Risk Assessment B one tick is added to the column with the highest subtotal, in this case the Low Risk column.

Table 6.2 – Total Risk Assessment

Assessment Criteria	Risk		
	Low	Medium	High
Subtotal from Risk Assessment A	1	0	3
Subtotal from Risk Assessment B <i>(with one added to the highest risk category)</i>	✓		
Subtotal	2	0	3

- 6.4.3 The total risk assessment shows that the site is deemed high risk for noise.

6.5 Good Practice Measures

- 6.5.1 Table 6.3 shows the guidance on mitigation measures for all sites and other good practice measures (from the LANAF guidance).
- 6.5.2 The good practice methods are being applied where appropriate for the methodology and in line with Best Practicable Means (BPM).
- 6.5.3 Where possible these have been tailored to reflect the specific mitigation to be applied for the project.

Table 6.3 – Recommended Good Practice Methods

Phase	Control Measure
General Consideration	Designated site-based staff shall have the authority to take the steps necessary on behalf of the contractor(s) to ensure noise and vibration is adequately controlled and managed, according to the circumstances associated with each worksite.
	At the commencement of their appointment on a project (or prior to start of works on site), all site staff are to be briefed on their responsibilities to the application of BPM to minimise construction noise and vibration and the content of any planning consents, codes of construction or other legal agreements. The performance of the training should then be regularly reviewed and repeated throughout the construction programme as appropriate.
	Site hoarding to be built and maintained to maximise the reduction in noise levels to sensitive buildings and land uses.
	Locate the site access away from noise sensitive receptors.
	Keep internal haul routes well maintained.
	Limit material and plant loading and unloading to normal working hours.
	Reduce loading / unloading heights for muck away and material movement to mitigate impact noise.
	Handle all material in a manner that minimises noise.

Phase	Control Measure
	<p>Join the Considerate Constructors Scheme for the site</p> <p>Consult the respective Authority Code of Construction Practice / Technical Guidance.</p> <p>Submit a Section 61 consent application to the relevant planning authority</p> <p>Adhere to 'quiet hours' as agreed and/or adopted by the local authority.</p> <p>Maximise the screening effect of buildings and temporary stockpiles through programming / phasing of works.</p> <p>Use rubber linings in chutes, dumpers and hoppers to reduce impact noise.</p> <p>Minimise opening and closing of site access gates through good coordination of deliveries and vehicle movements.</p> <p>See Vehicle Activity for additional good practice with regards to the transportation of material.</p>
Plant	<p>Ensure that each item of plant and equipment complies with the noise limits quoted in "The Noise Emission in the Environment by Equipment for use Outdoors Regulations 2001" as per the relevant European Commission Directive 2000/14/EC, United Kingdom Statutory Instrument (SI) 2001/1701.</p> <p>Fit all plant and equipment with appropriate mufflers or silencers of the type recommended by the manufacturer.</p> <p>Follow manufacturer's guidance and measures to operate plant and equipment and use it in a manner which minimises noise.</p> <p>Use all plant and equipment only for tasks for which it has been designed for.</p> <p>Shut down all plant and equipment in intermittent use in the intervening periods between works or throttle it down to a minimum.</p> <p>If possible power all plant and equipment by mains electricity or other quieter technology rather than locally powered sources such as generators.</p> <p>Maximise screening from existing features / structures or employ the use of full or partial enclosures for fixed plant. The enclosures should be well maintained. Fixed plant can include generators, compressors, pumps, batching plant and ventilation plant.</p> <p>Locate and orientate fixed or semi-static plant away from noise sensitive receptors.</p> <p>Consider additional measures to control noise for any plant required to operate on a 24 hour basis; for example, dewatering pumps or generators used to power site security.</p> <p>Vibratory compaction equipment shall be used in a mode which minimises the incident vibration at nearby residential and other sensitive properties. Consideration should be given to engaging concentric weights only when running at speed to avoid run up, run down resonances, the use of smaller equipment, or turning off the mechanical vibration on vibratory rollers and undertaking more passes for areas where there is a particular risk that disruption may occur at neighbouring properties.</p>

Phase	Control Measure
Vehicle Activity	Ensure all vehicle movements occur within normal hours or at agreed times, considering the primary function of sensitive receptors in the vicinity (i.e. avoiding school drop-off/pick-up periods).
	Maximise the reuse of any waste arising on site to minimise vehicle movements.
	Plan deliveries and vehicle movements so that vehicles are not waiting or queuing on the public highway. If waiting or queuing is unavoidable then engines should be turned off.
	Minimise opening and closing of site access through good coordination of deliveries and vehicle movements.
	Plan site layout to ensure that reversing is kept to a practicable minimum, and where practicable eliminated altogether.
	Where reversing is required, use broadband reverse sirens / alarms or, where it is safe to do so, disengage all sirens and alarms and use banksmen.
	Produce a robust Construction Traffic Management Plan which may also be required by the Local Planning Authority to plan, manage and minimise vehicle movements. Avoid unnecessary impact on sensitive receptors, traffic diversions via other sensitive areas or bottlenecks (see TFL guidance).
	Where site space is limited and volume of vehicles attending site is high, seek vehicle holding bay(s) to use with 'Just in time' delivery management systems.
	Space planning for stockpiling of material (over weekends and, evening and nights) within the site to allow removal during normal working hours only.
Consider alternative means of transport, e.g. river and rail.	
Deconstruction	Employ the use of acoustic screening; this can include planning the deconstruction sequence to utilise screening afforded by buildings to be demolished.
	If working out of hours on safety grounds, limit high noise/vibration deconstruction activities to normal hours wherever practicable.
	Avoid deconstruction activities outside of normal working hours through the use of temporary measures, such as safety / protection fences, to enable works to be conducted during normal working hours.
	Utilise low impact deconstruction methods such as non – percussive plant wherever practicable.
	Rather than breaking in-situ, consider the removal of larger sections by lifting them out and breaking them down either in an area away from sensitive receptors or off-site.
Groundworks and Piling	Avoid percussive piling wherever possible.
	If working outside of normal hours on safety grounds, limit major excavation works to normal working hours
	For the installation of the crane base, to adopt the following hierarchy of groundwork / piling methods, in order of preference to minimise the impact of piling, if ground conditions, design and safety allows: <ul style="list-style-type: none"> • Pressed-in methods, e.g. Hydraulic jacking • Auger / bored piling • Diaphragm Walling

Phase	Control Measure
	<ul style="list-style-type: none"> Vibratory piling or vibro-replacement Driven piling or dynamic consolidation
	Consider the location and layout of the piling plant for efficient operation and potential noise control of generators and any electric or hydraulic motors used by plant.
	Where impact piling is the only option, utilise a non-metallic dolly between the hammer and driving helmet, or enclose the hammer and helmet within an acoustic shroud
	Consider concrete pour sizes and pump locations. Plan the start of concrete pours as early as possible within normal working hours to avoid overruns.
	Where obstructions are encountered stop works and review approach; adopt work methods that minimise noise and vibration.
	When using an auger (for bored piling), rather than dislodging material from the auger by rotating the drill back and forth quickly, use alternate methods where safe to do so. For example, some piling rigs are equipped with metal brush to remove spoil as the auger is taken out of ground
	Prepare pile caps using methods / procedures which minimise the use of breakers, e.g. using hydraulic splitters to crack the top of the pile.
	Monitoring
Carry out regular on site observation monitoring and checks/ audits to ensure that BPM is being employed at all times. Such checks should include: <ul style="list-style-type: none"> Hours of working Presence of mitigation measures, equipment (engine doors closed, airlines not leaking, etc.) and screening (location and condition of local screening, etc.) Number and type of plant Construction method, and Where applicable, any specific Section 61 consent conditions. 	
The site reviews should be logged and any remedial actions recorded.	
Monitor noise continuously during deconstruction works at agreed locations and report to the relevant authority at agreed intervals.	
Monitor vibration continuously during deconstruction, piling, excavation and sub-structure works at agreed locations and report to the local authority at agreed intervals.	
Appraise and review working methods, procedures and logistics on a regular basis to ensure continuous development of BPM.	
Establish level trigger alerts in agreement with the local authority and guided by BS5228. Monitor noise and vibration to trigger text alerts; where levels exceed the triggers then inform the local authority, review work practices and agree additional mitigation measures with the local authority.	
Use monitoring equipment with web access capabilities to view and inspect real time measurement and/or audio data.	
Community and Liaison	Develop a Community Liaison Plan. Develop a Complaint Procedure with timescales for responses and a nominated liaison person to engage with residents and to handle complaints. These should be agreed with the relevant authority.

Phase	Control Measure
	Brief all site staff regarding the complaint's procedure and mitigation requirements and their responsibilities to register and escalate complaints received.
	Send regular updates at appropriate intervals to all identified affected neighbours via newsletter and posting information on the site hoarding. Where possible MHCLH to make information available via email when requested.
	Develop and maintain a website to provide information about the project and to receive feedback.
	Arrange regular community liaison meetings at appropriate intervals including prior to commencement of project. Respond to issues raised and report back to attendees.
	Arrange meetings and communicate on a regular basis with neighbouring construction sites to ensure activities are coordinated to minimise any potential cumulative issues.
	Advise neighbours about reasons for and duration of any permitted works outside of normal working hours.
	Arrange meetings and communicate on a regular basis with the local authority to monitor the progress of the works and to consider any concerns or complaints raised by the local community.

7 Vibration Review

7.1 Baseline Vibration Levels Review

- 7.1.1 The vibration baseline was taken at the three monitoring locations outlined in Figure 1.0 between 18 July 2025 to 31 August 2025.
- 7.1.2 Baseline levels were predominately below 1.0 mm/s at VMP1. There were twenty-three (23) isolated events above 1.0mm/s during the baseline period and most of these events occurred on 22 and 25 July 2025. It is unknown the cause of these events, however due the events being isolated they were likely due to accidental disturbances.
- 7.1.3 Baseline levels were predominately below 3.0 mm/s at VMP2, there were fifteen (15) isolated events above 3.0mm/s during the baseline period. It is unknown the cause of these events, however due the events being isolated they were likely due to accidental disturbances.
- 7.1.4 Baseline levels were predominately below 1.0 mm/s at VMP1, there were three (3) isolated events above 1.0mm/s during the baseline period. It is unknown the cause of these events, however due the events being isolated they were likely due to accidental disturbances.

7.2 Vibration Review of Sequence 1 (Enabling Works including piling for Tower Crane Base)

- 7.2.1 The trigger and action levels for the monitoring locations that have been agreed via the Section 61 Application are outlined in Section 8.0 in Table 8.3.
- 7.2.2 There were seven (7) exceedances of the Red Action level (3.0mm/s) at VMP1.
- 7.2.3 There were two (2) exceedances of the Red Action level (5.0mm/s) at VMP2.
- 7.2.4 There were no exceedances of the Red Action level (5.0mm/s) at VMP3.
- 7.2.5 Following investigation into the exceedances at VMP1 it's noted that they were due to monitor being in close proximity to a machinery pathway (a Bobcat). Consequently the monitor has been relocated to ensure it is no longer in the direct path of the tracking vehicles. There were no further exceedances of the Red Action Level during Sequence 1 following the movement of this monitor.
- 7.2.6 The exceedances at VMP2 were isolated and of high magnitude and were most likely caused by accidental disturbances of the sensor.
- 7.2.7 Given the exceedance investigations the vibration monitoring levels remained within acceptable levels, especially considering piling works were also undertaken within this time frame. Piling works are considered to be high impact works that produce high levels of vibration.

7.3 Vibration Review of Sequence 2 (Deconstruction of tower at 67m high (24th floor))

- 7.3.1 During early October there were fourteen (14) Red Action level exceedances across the three monitoring locations which are investigated below. Following this there were no further Red Action level exceedances at any of the monitoring locations. It's noted that this is correct as of the monitoring reports published to date (end date of most recent report: 4th January 2026). These reports are in the public domain and published on the Gov.uk website on a monthly basis.

- 7.3.2 There were two exceedances that occurred outside of site working hours and following an investigation these were most likely due to small mammals e.g. mice/rats/cats or foxes landing on the monitor after climbing a fence or by extreme heavy rainfall. To try and further protect the monitor a wooden box was constructed and placed over the monitors to protect them from small mammals and heavy rainfall. To date, this solution is working.
- 7.3.3 The exceedances at VMP1 were investigated and due to the installation of a scaffolding tower, consequently the monitoring position was investigated to ensure it is not directly in the path of work causing a poor representation of what vibration receptors would have been receiving. There were seven (7) exceedances at this location, one (1) was on 3rd October and six (6) occurred on 8th October 2025.
- 7.3.4 The exceedances at VMP2 were investigated and due to the magnitudes and isolated nature of the majority of these exceedances most of them were likely to have been accidentally disturbed by site personnel during cable installation works within the area. The constructed wooden box covering the monitor has also helped protect this monitor from accidental disturbances. There were five (5) exceedances at this location occurring on 29th September, 24th and 29th October, and two (2) on 17th October 2025.
- 7.3.5 VMP3 only two exceedances occurred on 17th October and these were caused during routine maintenance of the monitor and therefore can be disregarded as erroneous data.
- 7.3.6 Given the investigations and solutions that have been devised during the vibration monitoring within Sequence 2 the levels are remaining within acceptable levels.
- 7.3.7 The vibration levels for sequences 3 and 4 are likely to be similar to that of sequence 2 due to the works being very similar. Therefore there are not predicted to be any issues relating to vibration levels experienced at the nearest sensitive receptors. However, it is noted that at the end of sequence 4 the works will be at ground level causing a potential increase in vibration magnitudes.
- 7.3.8 If there are any signs of potential vibration issues arising then additional vibration surveys can be conducted on site to understand the cause and effect on all relevant stakeholders.

8 Monitoring Plan

8.1 Unattended Monitoring

- 8.1.1 For unattended noise monitoring, continuous-automated web-based monitoring systems have been installed on site.
- 8.1.2 The live system allows EEMC, the Client and the Local Authority (*if required and instructed by client*) to access live monitoring data via a secure web platform.
- 8.1.3 The monitoring systems are configured to send email alerts to the site team should the trigger alert / action levels be reached or exceeded. This approach provides alerts to site personnel to enable an investigation to be undertaken if there are any exceedances. The trigger and action alerts are discussed later in this document.
- 8.1.4 Three (3), HIVE-SOUND™ Class 1 noise monitors have been installed on site, a monitoring map of these locations is shown in Figure 1.1. The specific monitor location will be updated as the site develops to ensure optimum instrument location and safe access for maintenance.
- 8.1.5 The noise monitors are situated externally on the site boundary with the microphones positioned at not less than 3.0m from any acoustically reflective surfaces and at a minimum height of 1.0m above top of hoarding.
- 8.1.6 Three (3) HIVE-VIBE™ vibration monitors are at locations show on Figure 1.1. Three locations are to monitor vibration transfer into the buildings to the south of site (Receptors D-F). The other unit is to the north of site close to Aldridge Academy.
- 8.1.7 Vibration monitors are positioned on a ground bearing concrete floor with a secure connection to the structure using a DIN standard ground mounting plate. The vibration monitor is located in an area where it is unlikely to be accidentally disturbed to prevent erroneous readings.
- 8.1.8 The monitoring is being undertaken conforming with any consents issued. The monitoring regime is considered to provide appropriate and sufficient to determine impact on the identified sensitive receptors, however, the location and number of monitoring stations will be reviewed as required by MHCLG and the Local Authority.

8.2 Noise Monitoring Instrumentation

- 8.2.1 The HIVE-SOUND™ noise monitors are Class 1 instruments in accordance with the requirements set out in IEC61672 Electroacoustics, Sound Level Meters. They are housed in secure environmental enclosures with remote weather-proof microphone systems. Each monitor is fitted with a modem to allow data-streaming to a web portal. The noise monitors measure and record continuously the full range of noise indices over continuous measurement periods and upload this data to the web portal.
- 8.2.2 Refer to Appendix A for information regarding the noise monitoring equipment on site.
- 8.2.3 Maintenance visits are required every 3-months to undertake a manual field calibration and service the instrument.

- 8.2.4 The monitoring systems are set with trigger levels that send email alerts when these levels are reached or exceeded at the monitoring positions. The site management team can then review and identify the reason for the exceedance during this baseline period.

8.3 Vibration Monitoring Instrumentation

- 8.3.1 The HIVE-VIBE™ vibration monitors are fitted with a modem to allow data-streaming to the web portal. The monitors will record peak particle velocity (PPV) in 3 orthogonal axes over 1-minute intervals and will upload this data to the web portal. Further information regarding the vibration monitor can be found [here](#).
- 8.3.2 Refer to Appendix B for details of the vibration monitoring equipment.
- 8.3.3 Monitoring positions are shown in Figure 1.1. Monitoring locations are to protect the neighbouring structure to the south of the site, and the Academy to the north.
- 8.3.4 The monitoring systems will be set with trigger levels that will send email alerts when these levels are reached or exceeded at the monitoring positions. The site management team can then review site activities and identify any available options on practicable further mitigation that could be implemented.

8.4 Noise Trigger and Action Levels

- 8.4.1 In order to manage noise from the activity on site, noise trigger and action levels will be set at the noise monitor positions.
- 8.4.2 The monitoring systems will be set with alert levels that will send emails to site management. When these alert levels are reached or exceeded at the monitoring position. Alerts are usually set with a trigger and action alert level as a dB $L_{Aeq, 1\text{hour}}$. The site management team can then review noise generated from site activities during the working day. The initial trigger alert level and the higher action alert level both require degrees of response from the site management to review the site activities in order to identify any further additional practicable mitigation measures that may be available and could be implemented.
- 8.4.3 Noise monitors are installed on the site boundary. Locations have been chosen to be representative of the sensitive receptors and at practical locations for access and maintenance.
- 8.4.4 The Grenfell Site & Programme Safety Works and Maintenance Contract – Volume 3.1, Annex 21: Environmental Management Plan, version 5, issued November 2020 states the following in Section 4.6 – Noise Management – note this covers the maintenance period of works only:

“All works will be in accordance with the RBKC requirements which identifies BS5228-1:2009 Code of Practice for noise and vibration control on construction and open sites.

As outlined in the RBKC Code and Section 72 of the Control of Pollution Act 1974, the best practical means shall be employed at all locations to reduce noise to a minimum.

A first action trigger level of 73 decibels ($L_{Aeq, 1\text{hr}}$) must be used to ensure daily levels are within the 70 decibels ($L_{Aeq, 10\text{hr}}$) level. The specific times during which noise levels are applied should be confirmed with relevant parties.

The requirements, measures and practices that must be implemented as a minimum are listed in the RBKC Code Section 11. This includes:

Prior to any works starting on a site that requires noise monitoring, a noise survey must be carried out to establish existing ambient noise levels during the hours of construction to determine whether ambient noise levels exceed 65 decibels ($L_{Aeq, 10hr}$)."

- 8.4.5 Noise trigger and action noise levels have been determined using the predicted facade noise levels for the project ($L_{Aeq, 10hr}$ dB), subject to minimum levels in line with those set during the maintenance phase of works.
- 8.4.6 During the deconstruction phase the maximum predicted noise level at the nearest sensitive façade is 75 dB $L_{Aeq, 10hrs}$ in Sequence 4 at the following sensitive receptors:
- Receptors A and E: *Kensington Aldridge Academy and Testerton Walk respectively.*
- 8.4.7 Noise levels at during the other phases are predicted to be marginally lower, with a maximum level at the nearest sensitive façade of 73 dB $L_{Aeq, 10hrs}$ in Sequences 2 and 3.
- 8.4.8 The predicted noise levels are based on a typical 10 hour working day to ensure consistency with guidance and monitoring methodology. Due to the reduction in working hours for this project to 08:30-17:00 Mon-Fri, there will be a marginal reduction in predicted construction noise (circa 0.7dB). This reduction is reflected in the noise Action and Trigger levels.
- 8.4.9 This alerting process will provide the site team with the ability to proactively manage noise from the site.
- 8.4.10 BPM will be implemented and continuously reviewed throughout the works. A method of works has been prepared which uses, as far as it practicable, quiet deconstruction methods and machines.
- 8.4.11 Tables 8.0 through 8.2 show the Action and Trigger Levels for the project at the nearest sensitive facades, based on the predicted noise modelling detailed in Section 5 and continuing the approach established during the maintenance phase of works.

Table 8.0 – NMP1 Noise Action and Trigger Levels

NMP1 Noise Trigger and Action Levels (Façade)				
	Sq 1	Sq 2	Sq 3	Sq 4
Red Action Alert $L_{Aeq, 10hour}$	70	72	70	73
Amber Trigger Alert $L_{Aeq, 1hour}$	73	75	73	76
Green Trigger Alert $L_{Aeq, 10hour}$	65	67	65	68

Table 8.1 – NMP2 Noise Action and Trigger Levels

NMP2 Noise Trigger and Action Levels (Façade)				
	Sq 1	Sq 2	Sq 3	Sq 4
Red Action Alert $L_{Aeq, 10hour}$	72	71	72	74
Amber Trigger Alert $L_{Aeq, 1hour}$	75	74	75	77
Green Trigger Alert $L_{Aeq, 10hour}$	67	66	67	69

Table 8.2 – NMP3 Noise Action and Trigger Levels

NMP3 Noise Trigger and Action Levels (Façade)				
	Sq 1	Sq 2	Sq 3	Sq 4
Red Action Alert $L_{Aeq, 10hour}$	70	71	72	74
Amber Trigger Alert $L_{Aeq, 1hour}$	73	74	75	77
Green Trigger Alert $L_{Aeq, 10hour}$	65	66	67	69

8.4.12 The Noise Trigger and Action alert will be reviewed in consultation with MHCLG and the local authority, as the project progresses to ensure they are working as intended. Noise Action and Trigger Levels are rebased to the installed monitor locations.

8.4.13 The BPM measures to be implemented will be under continuous review throughout the works and measured and recorded noise levels will be routinely scrutinised, and the exceedance protocol will be adopted and followed.

8.5 Vibration Trigger and Action Levels

8.5.1 Vibration Trigger and Action levels are positioned at ground level directly adjacent to receptors for vibration generated during works on site these are shown in Table 8.3.

8.5.2 Vibration monitoring locations have different trigger and action levels depending on if their nearest receptor is residential or commercial.

Table 8.3 - Vibration Trigger and Action Levels (PPV commercial receptors)

Vibration Trigger and Alert Levels				
Monitoring Location	Nearest Receptor	Red Action Level	Amber Trigger Level	Green Trigger Level
VMP1	Residential Receptor: E - Testerton Walk	3mms ⁻¹ PPV	1mms ⁻¹ PPV	
VMP2	Commercial Receptor: A - Kensington Aldridge Academy	5mms ⁻¹ PPV	3mms ⁻¹ PPV	1mms ⁻¹ PPV
VMP3	Adjacent Hammersmith and City and Circle Tube Lines.	5mms ⁻¹ PPV	3mms ⁻¹ PPV	1mms ⁻¹ PPV

9 HGV Routes and Logistics

9.1 Traffic Management and Restrictions

- 9.1.1 The project will employ four, full time traffic marshals trained to CITB standard. All will always be contactable by radio. The maximum speed limit within the site is 5 MPH.
- 9.1.2 All loading/unloading will be carried out within the site curtilage and hoarding. Pedestrian footpaths will remain clear throughout the works.
- 9.1.3 Traffic marshals will greet vehicles and provide assistance during all reversing manoeuvres. They will hold traffic when necessary using clear unambiguous direction. Upon departure, all vehicles carrying material from the site will be sheeted. Traffic marshals will hold traffic as necessary.
- 9.1.4 Deliveries throughout the duration of the project will be consolidated to minimise the volume of traffic attending the site.
- 9.1.5 Restricted access - The movement of heavy goods through Central London may be restricted at certain times. Care must be taken when operating within the one-way system around the site, bus lanes and parking restrictions are also in place on all adjoining roads.

9.2 Vehicle Movement and Material Deliveries

- 9.2.1 A traffic marshal will greet each delivery and ensure its safe passage into the project. Care will be taken to ensure all vehicles are safely segregated from the public and footpath and access ways are kept clear. Vehicles will not be allowed to wait in the adjoining roads and the engine will be turned off when a vehicle has arrived onsite to minimise noise and disruption in this sensitive area.
- 9.2.2 Any large vehicle or off-loading of materials within the site will be subject to the same commercial/operational restrictions as the vehicles on site eg RAMS, Hiab/Lifting assessments, competency checks, PPE etc and are to be notified at least 1 week beforehand to allow sufficient time to review and approve the Risk Assessments.
- 9.2.3 A traffic marshal will greet each delivery/vehicle movement and ensure its safe passage into and through the project by escorting the movement through its entire journey passing the vehicle from one traffic marshal to the next until the vehicle has exited the site or entered the compound. Utmost care will be taken to ensure all vehicles are safely segregated from the public and footpath (physical barriers, signage and traffic marshalling) and all access ways are kept clear.
- 9.2.4 Vehicles will not be allowed to wait in the adjoining roads and the engine will be turned off when a vehicle has arrived onsite to minimise noise and disruption in this sensitive area.

9.3 Access, Egress and Swept Path

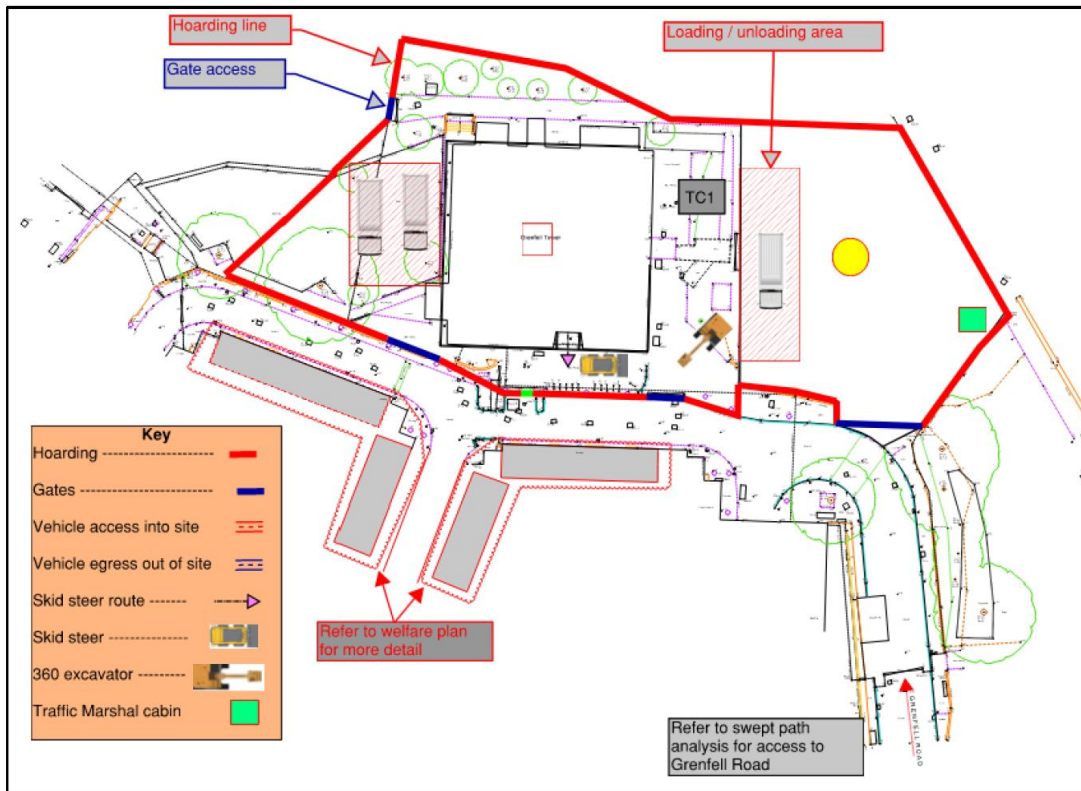


Figure 9.0 – Access and Egress Route



Figure 9.1 - Swept Path Analysis Example

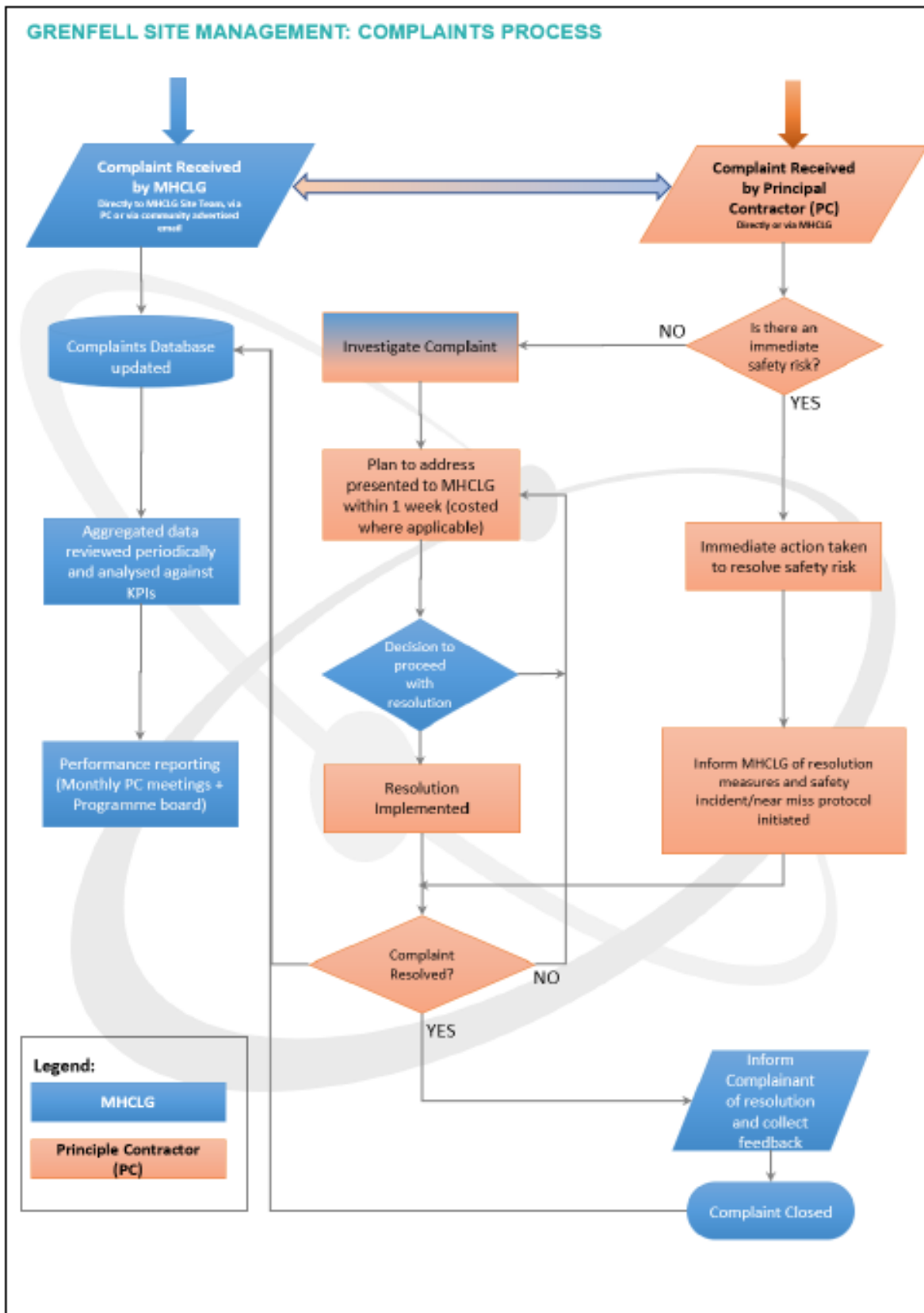
9.4 Qualitative review of construction traffic

- 9.4.1 The noise risk assessment has considered potential noise impacts on nearby sensitive receptors during the deconstruction phase of the project. In addition to the risk assessment, a qualitative review of emissions from construction traffic has been carried out.
- 9.4.2 BS 5228-1 explicitly includes vehicles movements on construction sites as noise sources and the RBKC CoCP treat HGV movements at noisy works and must comply with the borough's reduced hours.
- 9.4.3 BS 5228-2 and BS 7385-2 both cover HGV movements as potentially causing ground-borne vibration , especially on uneven surfaces, and therefore potentially causing building vibration.
- 9.4.4 Following a review of the work schedule and programme, it is anticipated that there would be less than 20 HDV vehicle movements per day and as such it is **not** anticipated that the HGV movements would negatively affect the sensitive receptors through noise or vibration.
- 9.4.5 Based on the estimated maximum HDV flows, it is not considered that a quantitative assessment is required for construction traffic emissions.

Roles and Responsibilities

- 9.4.6 Clear definition and communication of environmental roles and responsibilities are required to facilitate effective environmental management.
- 9.4.7 The contact details for the person accountable for air quality and dust issues will be displayed at the site boundary.
- 9.4.8 Responsibilities will include:
- Stakeholder communication and community engagement before work commences on site.
 - Record and respond to all dust and air quality pollutant emissions complaints.
 - Keep a complaint log and make it available to the local authority when asked.
 - Carry out regular site inspections to monitor compliance with air quality and dust procedures, record the results of the inspection and make an inspection log available to local authority when asked.
 - Increase frequency of site inspections when activities on site have high potential to produce increased dust emissions and during prolonged dry or windy conditions.
 - Record any exceptional incidents that cause dust and air quality emissions on or off site and take action to resolve the situation and record in log book.
 - Make sure all required mitigation measures noted in Table 6.3 are implemented.

Appendix 1 - Grenfell site Management Complaints Procedure



Appendix 2 - Exceedance/ Complaint Recording Form

Exceedance/ Complaints Form	
Exceedance/Complaint Reference No:	Date:
Time:	
YES/NO	Noise:
	Monitor Location:
	Trigger Level: dB(A) (L _{eq} 1 Hour):
	Action Level: dB(A) (L _{eq} 10 Hour):
	Level of Exceedance:
YES/NO	Vibration:
	Monitor Location:
	Trigger Level: PPV mm/s
	Action Level: PPV mm/s
	Level of Exceedance:
YES/NO	Dust:
	Monitor Location:
	Trigger Level: mg/m ³ 15 min
	Action Level: mg/m ³ 15 min
	Action Level mg/m ³ 1 hour
	Level of Exceedance:

Complaint Notification	
Contract/Project Name:	Contract/Project Number:
Date:	Time:
Received by:	
Complainants Name:	Telephone Number:
Complainants Address:	Weather Conditions:

Type of Complaint (Tick Appropriate Box)	
Noise	Dust
Highways	Vibration
Other (Specify)	

Description of Complaint:
Action Taken:

Site Assistance/Advice Requested?	(If Yes Who?)		
Is the Complaint considered:	Justified	Unsubstantiated	Unfounded

Signed:	Print Name	Date	
Copy to:	Project Director	EHO	Client

Appendix 3.1 – HIVE-SOUND™ SV307A Noise Monitor Specification

Sound Level Meter and Analyser

Standards	Class 1: IEC 61672-1:2013, Class 1: IEC 61260:2014
Weighting Filters	A, B, C, Z, LF
RMS Detector	Digital True RMS detector with Peak detection, resolution 0.1 dB
	Time constants: Slow, Fast, Impulse
Microphone	Patented ¹ MEMS design microphone ST30 in 1/2" housing
Preamplifier	Integrated
Linear Operating Range	30 dBA RMS ÷ 126 dBA Peak (in accordance to IEC 61672)
Dynamic measurement range	20 dBA RMS ÷ 126 dBA Peak (typical from noise floor to the maximum level)
Internal Noise Level	less than 20 dBA RMS
Frequency Range	20 Hz ÷ 20 kHz
Meter Mode Results	Elapsed time, Lxy (SPL), Lxeq (LEQ), Lxpeak (PEAK), Lxymax (MAX), Lxymin (MIN), Lxye (SEL), 10 x LN (LEQ STATISTICS), Lden, LEPd, Ltm3, Ltm5
	Simultaneous measurement in three profiles with independent set of filters (x) and detectors (y)
Statistics	L _n (L ₁ -L ₉₀), complete histogram in meter mode and 1/1 & 1/3 octave analysis
	Simultaneous measurement in three profiles with independent set of filters and detectors
1/1 Octave Analysis ²	Real-time analysis meeting class 1 requirements of IEC 61260 (31.5 Hz ÷ 16 kHz)
1/3 Octave Analysis ²	Real-time analysis meeting class 1 requirements of IEC 61260 (20 Hz ÷ 20 kHz)
Data Logger	Logging of summary results (SR) and spectra data with interval step down to 1 second and time history (TH) of selected parameters with shorter interval step down to 100 milliseconds.
Audio Recording ²	Time domain records to wav file format on demand with selectable bandwidth and recording period
Ingress Protection Rating	IP 65
Inputs	Power supply LEMO 4-pin, extended I/O port LEMO 5-pin
Remote system check	Inbuilt reference sound source producing level of 100 dB at 1 kHz ¹
Memory	Micro SD card 16 GB (removable)
Display & Keyboard	OLED colour display 128 x 160 px and 10 push-button keyboard
Communication interfaces	USB, 3G modem
Power Supply	Li-Ion rechargeable battery (non-removable)
	Operation time on battery (8.2V / 10Ah)
	Modem off _____ up to 6 days
	Modem on _____ up to 5 days ³
	Solar Panel (not included) _____ MPPT voltage 17.0 V ÷ 20.0 V
	AC power supply (included) _____ Input 100 ÷ 240 VAC,
	output +15 VDC 2.5 A, IP 67 housing
	External DC source (not included) _____ voltage range 10.5 V – 24 V,
	e.g. 12 V or 24 V accumulator
Environmental Conditions	Temperature _____ from -20 °C to 50 °C (-4 °F to 122 °F)
	Humidity _____ up to 95 % RH
Dimensions	680 mm length; 80 mm diameter (26.8 in; 3.15 in), excluding windscreen (windscreen diameter 130 mm)
Weight	Approx. 1.8 kg (Approx. 3.96 lbs.)

¹patent pending

²optional

³depends on modem usage

The policy of our company is to continually innovate and develop our products. Therefore, we reserve the right to change the specifications without prior notice.

Appendix 3.2 – HIVE-VIBE™ Vibration Monitor Specification S

Omnidots Swarm continuous automated vibration monitor, with web-based data interface

OMNIDOTS
SWARM V2.1 Sensor Vibration Monitoring System


Product Specifications

DATA ACQUISITION

Direction	X, Y, Z
Range frequency	0.5 - 250 Hz
Range velocity	0.0 - 50.0 mm/s (0.0 m/s - 2 km/h)
Measurements	PPV, PPA, PVS, Vrms, Velocity traces
Noise (RMS)	50 µm/s at 250Hz BW (1 mm)
Resolution	1 µm/s (0.04 mm)
Dominant frequency determination	FFT

GPS LOCATION

Sensor type	GPS receiver
Accuracy	30 meter CEP (100 ft CEP)

SENSOR TILT

Maximum velocity level	50 mm/s (1 km/h)
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LOGGING INTERVAL TIME

Range	2 - 6000 seconds
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TRIGGER LEVEL

Range velocity	0.2 - 50mm/s (0.08 - 2 m/s)
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APPLICABLE STANDARDS

ISO-A / DIN4150-3 / BS7385


ALARM SETTINGS

Alarm level curve	SIR curve, DIN curve, Straight line
Type of message	E-mail, SMS and personal dashboard

HONEYCOMB CLOUD SERVICE (personal dashboard)

Displays	PPV, PVS, Velocity traces, FFT
Exports	PPV, PPA, PVS, Vrms, Velocity traces
Velocity	Peak particle velocity
Frequency	Dominant frequency
Traces	1000 samples per second
Number of traces	Unlimited
Data storage	Secure data centre

Rev 03 - Product specifications are subject to change - ©2018 Omnidots

OMNIDOTS


Product Specifications

TIME

Clock Stability	0.01 seconds
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COMMUNICATION

Wireless	WiFi, 4G/LTE
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MODEM

Network	4G/LTE
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INTERNAL MEMORY

Storage	~1 week week storage of log records
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AMBIENT CONDITION

Moist protection	IP55
Operating temperature range	-20° to 70° Celsius (-4° to 158° Fahrenheit)
Storage temperature range	-30° to 90° Celsius (-22° to 194° Fahrenheit)

POWER SUPPLY

Power source	External
Minimal power supply	5V 1A

DIMENSIONS

Dimensions	109 x 130 x 45mm (4.29 x 5.12 x 1.77 inch)
Weight	260 gr (9.17 oz)

SENSOR POSITIONING

Mounting	1 Screw and 1 plug included
Auto levelling: Auto axes alignment	Automatic adjustment by gravity

Mounting in every angle possible with automatic axes alignment

OMNIDOTS | Vibration Systems B.V. | Breda 1, The Netherlands | Tel: 0031-4158 134
 info@omnidots.com | info@omnidots.com | Fax: 0031-4158 134 | Email: sales@omnidots.com

Appendix 4 – Noise Modelling Contour Plots

