APPENDIX J

Predicted Noise Levels

PREDICTED NOISE LEVELS

The approach to assess noise levels from the site follows the guidance described in the BS 5228:2009 Part 1.

On this project, we can distinguish:
- noise from demolition and ground works
- noise from construction and general site activities

Plants and equipment are listed in **Tables 2.4 and 2.5**, below.

The site plan shows distances of the adjacent buildings from the centre of the site. 4 points of interest have been identified:
- Guilford Place: Residential buildings – on to the west elevation
- Millman Mews: Residential buildings – on to the south elevation
- Millman Street: Residential buildings – on to the east elevation
- Guilford Street: Garden/Recreation area for charity foundation– on to the north elevation

Limit values:

According to **Camden Council's Environmental Noise Policy from 18/06/2008, Part B. Point 4.2.2 Guidelines for Construction Site Noise:**

- The noise level restrictions for construction activities include but are not limited to the following:

(iii) Construction period greater than 26 weeks:
The LAeq level measured over a period of not less than 15 minutes when the construction site is in operation must not exceed the background level more than 5dB(a).

According to the **London Noise Survey (LNS) and the National Noise Incidence Study (NNIS) in the borough of Camden, 2007**, the LAeq found in several point are:

Time of day	Noise Indicator	Camden (LNS) (2004)	Inner London (LNS) (2004)	Outer London (NNIS) (2000/01)	February 2007 Survey			
					Swiss Cottage	Town Hall	Kentish Town	Highgate
12hr day time (0700-1900)	L_{Aeq} (dB)	62.1	61.4	58.0	74.3	75.6	54.3	51.9
	L_{A10} (dB)	63.9	63.1	59.1	76.9	77.9	56.6	54.0
	L_{A90} (dB)	52.7	52.1	47.2	67.3	67.9	47.2	43.9
4hr evening (1900-2300)	L_{Aeq} (dB)	59.5	58.7	55.1	74.1	75.3	53.8	49.5
	L_{A10} (dB)	61.4	60.4	55.7	75.9	77.0	56.2	50.9
	L_{A90} (dB)	49.5	49.1	44.5	67.9	65.1	45.6	42.9
8hr night (2300-0700)	L_{Aeq} (dB)	55.6	54.6	49.6	72.2	73.4	50.7	48.0
	L_{A10} (dB)	57.1	55.7	47.8	75.2	76.2	52.2	47.6
	L_{A90} (dB)	43	43.9	38.3	64.0	62.6	42.5	40.5
24 Hour average (0000-2400)	L_{Aeq} (dB)	60.5	59.7	56.2	73.7	74.9	53.6	50.6
	L_{A10} (dB)	61.2	60.2	54.8	76.3	77.4	55.6	52.4
	L_{A90} (dB)	48.9	48.8	43.8	66.6	66.3	45.9	43.2

Table 2.1a: Camden LAeq

Since the Camden Town Hall is the closest point to the site location (20 Guildford Street, WC1 1DZ), we will consider the values marked in yellow on the table above as LAeq values for the site area. Thus, following the Camden Council's Environmental Noise Policy we will use this values plus 5dB(A) as limit values.

Noise Level Limits on Site Area			
Period	**Working Hours**	**LAeq (12h)**	**LAeq (24h)**
Monday - Friday	08:00 – 18:00	75.6 + 5 = 80.6 dB(A)	74.9 + 5 = 79.9 dB(A)
Saturday	08:00 – 13:00	75.6 + 5 = 80.6 dB(A)	74.9 + 5 = 79.9 dB(A)

Table 2.2: Considered noise limits

In order to be conservative we could take the lowest value of LAeq on the above as general noise limit during the site working areas (79.9 dB(A)).

Even though, we have decided to reduce impact as much as possible keeping the noise limit in 75 dB(A) at site boundaries.

Production of noise on site:

Considering the site as a defined area, the procedure used to predict LAeg is the "method for activity" for stationary, quasi-stationary and even mobile plant and equipment, with noise emerging from the centre of the site.

Details of calculations are provided in appendixes **Tables 2.4 and 2.5**, below.

The results are compiled in the following tables:

Point of interest	Noise levels Limits LAeq (24h) in dB(A)	L_{Aeq} (10h) Demolition - Ground Works in dB(A)	L_{Aeq} (10h) Construction Works in dB(A)
A – Guilford Place	75	75	75
B –Millman Mews	75	75	75
C – Millman Street	75	72	72
D – Guilford Street	75	72	72

Table 2.2: Noise levels during site working hours

Predicted noise levels are all on the limits set.

However, it must be noted that **worst case scenario hypothesis** have been taken in account (by the method itself or by choice from Erith):

1. Atmospheric absorption is not taken in account in the method → noise levels would be reduced with this factor
2. The type of ground is considered as 100% hard, which provides the lowest distance adjustments → soft ground decreases LAeg values up to 2 dB(A), consequently a mixed ground could probably decrease LAeg values by 1 dB(A) – depending on distances.
3. Plant and equipment LAeg used intermittently have been calculated by estimating the period of use on the high side.
4. Plant and equipment LAeg at 10m are provided by the tables in BS 5228 : 2009 Part 1 (except the generators) where many of these measurements were carried out prior to the introduction of quieter plant as a result of the implementation of European Community noise limits (e.g. Directive 2000/14/EC on Outdoor Machinery).
5. Allowances for barriers have been taken in account only when an existing building is direct line of sight from the point of interest. Trees, storages or enclosures have not been taken in account ever *(on site, cutting wood operations are done in an open-sided plywood shed for example)* as it can be complex to set the sound reduction (materials, joints, lining covers) → depending on the type of enclosure, the sound reduction can be significant.
6. Height of buildings of points of interest has not been taken in account (linked to barriers adjustments), apart from the church which is occupied only at ground floor.
7. As global works carried out on site – limited area, the hypothesis taken by setting the average centre of the site considers that all activities are carried out at this same point, which is not the case in reality.
8. As described in BS 5228 : 2009 Part 1, the estimated noise levels LAeg for mobile plant working in a limited area using the “Method for Activity” tend to err on the high side.

Considering those hypothesis and site location associated to the results of calculated predicted LAeg, the main issues would be with the residential building in Guilford Place and Millman Mews.

Steps to minimise the noise are described below on pages 17-18.

TABLE 2.4	ESTIMATED NOISE

Demolition - Ground works

Plan 1

DRAWING ASSOCIATED :

4b:	A	B	C	D
Name	Guilford Place	Millman Mews	Millman Street	Guilford Street
Distance	30	30	46	42
Screening	-10	-10	-10	-10
Reflection	0	0	0	0

METHOD FOR ACTIVITY

Type of ground :	Hard	Soft	Assessment period :	10	hours
(x if yes)	x	no			

Point	Plant	Laeq (10m)	Distance of Receiver	Adjustments distance	Adjustments Screening	Adjustments Reflection	Adjusted Noise level Laeq	Duration of activity (per day)	Duration of activity as % of period	Correction to Laeq (period)	Activity Laeq (period)	Resultant Noise Level Laeq (period)
		dB	m	dB	dB	dB	dB	h	%	dB	dB	dB
A	Piling 980 kN 7.4 t / 12 m leng	59	30	-10	-10	0	39	7	70	-2	38	38
A	Diesel generator	60	30	-10	-10	0	40	7	70	-2	39	41
A	Vibratory roller 20KW 3 t	67	30	-10	-10	0	47	4	40	-4	43	46
A	Tracked mobile crane 184KW	67	30	-10	-10	0	47	6	60	-2	45	48
A	Lump hammer	69	30	-10	-10	0	49	5	50	-3	46	51
A	Piling 2800 kN 10 t / 13g m len	68	30	-10	-10	0	48	7	70	-2	47	52
A	Fuel tanker pumping — 2500	72	30	-10	-10	0	52	3	30	-5	47	53
A	Drop hammer pile rig	69	30	-10	-10	0	49	7	70	-2	48	54

	power											
A	Road sweeper 70 KW	76	30	-10	-10	0	56	2	20	-7	49	56
A	Telescopic handler 60KWt 10	71	30	-10	-10	0	51	7	70	-2	50	57
A	Vibratory roller 32KW 4.5 t	75	30	-10	-10	0	55	4	40	-4	51	58
A	Vibratory roller 98KW 8.9 t	75	30	-10	-10	0	55	4	40	-4	51	59
A	Tracked excavator 71KW 15 t	73	30	-10	-10	0	53	7	70	-2	52	60
A	Concrete mixer truck (discha	75	30	-10	-10	0	55	5	50	-3	52	60
A	Diesel generator	74	30	-10	-10	0	54	7	70	-2	53	61
A	Tracked mobile crane 240KW	75	30	-10	-10	0	55	6	60	-2	53	62
A	Dumper ж 75KW 9 t	76	30	-10	-10	0	56	7	70	-2	55	63
A	Dumper ж 81KW 7 t	76	30	-10	-10	0	56	7	70	-2	55	63
A	Angle grinder (grinding steel	80	30	-10	-10	0	60	3	30	-5	55	64
A	Tractor (towingж equipment)	80	30	-10	-10	0	60	3	30	-5	55	64
A	Poker vibrator	78	30	-10	-10	0	58	5	50	-3	55	65
A	Tracked excavator 125KW 25	77	30	-10	-10	0	57	7	70	-2	56	65
A	Lorry ж 233KW 32 t	78	30	-10	-10	0	58	6	60	-2	56	66
A	Concrete mixer truck	79	30	-10	-10	0	59	5	50	-3	56	66
A	Truck mounted concrete pum	79	30	-10	-10	0	59	5	50	-3	56	67
A	Tracked excavator 102KW 22	78	30	-10	-10	0	58	7	70	-2	57	67
A	Dozer 179KW 28 t	79	30	-10	-10	0	59	6	60	-2	57	68
A	Lorry ж 235KW 26 t	79	30	-10	-10	0	59	6	60	-2	57	68
A	Concrete mixer truck	80	30	-10	-10	0	60	5	50	-3	57	68
A	Dump truck (tipping fill)K 306	79	30	-10	-10	0	59	7	70	-2	58	69

A	Lump hammer	81	30	-10	-10	0	61	5	50	-3	58	69
A	Hand-held pneumatice break	83	30	-10	-10	0	63	4	40	-4	59	70
A	Lorry ж 242KW 32 t	85	30	-10	-10	0	65	6	60	-2	63	71
B	Piling 980 kN 7.4 t / 12 m leng	59	30	-10	-10	0	39	7	70	-2	38	38
B	Diesel generator	60	30	-10	-10	0	40	7	70	-2	39	41
B	Vibratory roller 20KW 3 t	67	30	-10	-10	0	47	4	40	-4	43	46
B	Tracked mobile crane 184KW	67	30	-10	-10	0	47	6	60	-2	45	48
B	Lump hammer	69	30	-10	-10	0	49	5	50	-3	46	51
B	Piling 2800 kN 10 t / 13g m len	68	30	-10	-10	0	48	7	70	-2	47	52
B	Fuel tanker pumping — 2500	72	30	-10	-10	0	52	3	30	-5	47	53
B	Drop hammer pile rig power	69	30	-10	-10	0	49	7	70	-2	48	54
B	Road sweeper 70 KW	76	30	-10	-10	0	56	2	20	-7	49	56
B	Telescopic handlert 60KW 10	71	30	-10	-10	0	51	7	70	-2	50	57
B	Vibratory roller 32KW 4.5 t	75	30	-10	-10	0	55	4	40	-4	51	58
B	Vibratory roller 98KW 8.9 t	75	30	-10	-10	0	55	4	40	-4	51	59
B	Tracked excavator 71KW 15 t	73	30	-10	-10	0	53	7	70	-2	52	60
B	Concrete mixer truck (discha	75	30	-10	-10	0	55	5	50	-3	52	60
B	Diesel generator	74	30	-10	-10	0	54	7	70	-2	53	61
B	Tracked mobile crane 240KW	75	30	-10	-10	0	55	6	60	-2	53	62
B	Dumper ж 75KW 9 t	76	30	-10	-10	0	56	7	70	-2	55	63
B	Dumper ж 81KW 7 t	76	30	-10	-10	0	56	7	70	-2	55	63

B	Angle grinder (grinding steel	80	30	-10	-10	0	60	3	30	-5	55	64
B	Tractor (towing ж equipment)	80	30	-10	-10	0	60	3	30	-5	55	64
B	Poker vibrator	78	30	-10	-10	0	58	5	50	-3	55	65
B	Tracked excavator 125KW 25	77	30	-10	-10	0	57	7	70	-2	56	65
B	Lorry ж 233KW 32 t	78	30	-10	-10	0	58	6	60	-2	56	66
B	Concrete mixer truck	79	30	-10	-10	0	59	5	50	-3	56	66
B	Truck mounted concrete pum	79	30	-10	-10	0	59	5	50	-3	56	67
B	Tracked excavator 102KW 22	78	30	-10	-10	0	58	7	70	-2	57	67
B	Dozer 179KW 28 t	79	30	-10	-10	0	59	6	60	-2	57	68
B	Lorry ж 235KW 26 t	79	30	-10	-10	0	59	6	60	-2	57	68
B	Concrete mixer truck	80	30	-10	-10	0	60	5	50	-3	57	68
B	Dump truck (tipping fill) K 306	79	30	-10	-10	0	59	7	70	-2	58	69
B	Lump hammer	81	30	-10	-10	0	61	5	50	-3	58	69
B	Hand-held pneumatic breake	83	30	-10	-10	0	63	4	40	-4	59	70
B	Lorry ж 242KW 32 t	85	30	-10	-10	0	65	6	60	-2	63	71
B	Breaker mounted on excavat	90	30	-10	-10	0	70	4	40	-4	66	72
B	Hand-held pneumatic breake	95	30	-10	-10	0	75	4	40	-4	71	75
C	Piling 980 kN 7.4 t / 12 m leng	59	46	-13	-10	0	36	7	70	-2	34	34
C	Diesel generator	60	46	-13	-10	0	37	7	70	-2	35	38
C	Vibratory roller 20KW 3 t	67	46	-13	-10	0	44	4	40	-4	40	42
C	Tracked mobile crane 184KW	67	46	-13	-10	0	44	6	60	-2	42	45
C	Lump hammer	69	46	-13	-10	0	46	5	50	-3	43	47
C	Piling 2800 kN 10 t / 13 g	68	46	-13	-10	0	45	7	70	-2	43	48

	m len											
C	Fuel tanker pumping — 2500	72	46	-13	-10	0	49	3	30	-5	44	50
C	Drop hammer pile rig power	69	46	-13	-10	0	46	7	70	-2	44	51
C	Road sweeper 70 KW	76	46	-13	-10	0	53	2	20	-7	46	52
C	Telescopic handlert 60KW 10	71	46	-13	-10	0	48	7	70	-2	46	53
C	Vibratory roller 32KW 4.5 t	75	46	-13	-10	0	52	4	40	-4	48	54
C	Vibratory roller 98KW 8.9 t	75	46	-13	-10	0	52	4	40	-4	48	55
C	Tracked excavator 71KW 15 t	73	46	-13	-10	0	50	7	70	-2	48	56
C	Concrete mixer truck (discha	75	46	-13	-10	0	52	5	50	-3	49	57
C	Diesel generator	74	46	-13	-10	0	51	7	70	-2	49	57
D	Vibratory roller 20KW 3 t	67	42	-12	-10	0	45	4	40	-4	41	43
D	Tracked mobile crane 184KW	67	42	-12	-10	0	45	6	60	-2	42	46
D	Lump hammer	69	42	-12	-10	0	47	5	50	-3	44	48
D	Piling 2800 kN 10 t / 13g m len	68	42	-12	-10	0	46	7	70	-2	44	49
D	Fuel tanker pumping — 2500	72	42	-12	-10	0	50	3	30	-5	44	50
D	Drop hammer pile rig power	69	42	-12	-10	0	47	7	70	-2	45	52
D	Road sweeper 70 KW	76	42	-12	-10	0	54	2	20	-7	47	53
D	Telescopic handlert 60KW 10	71	42	-12	-10	0	49	7	70	-2	47	54
D	Vibratory roller 32KW 4.5 t	75	42	-12	-10	0	53	4	40	-4	49	55
D	Vibratory roller 98KW 8.9 t	75	42	-12	-10	0	53	4	40	-4	49	56
D	Tracked excavator 71KW 15 t	73	42	-12	-10	0	51	7	70	-2	49	57

D	Concrete mixer truck (discha	75	42	-12	-10	0	53	5	50	-3	50	57
D	Diesel generator	74	42	-12	-10	0	52	7	70	-2	50	58
D	Tracked mobile crane 240KW	75	42	-12	-10	0	53	6	60	-2	50	59
D	Dumper ж 75KW 9 t	76	42	-12	-10	0	54	7	70	-2	52	60
D	Dumper ж 81KW 7 t	76	42	-12	-10	0	54	7	70	-2	52	60
D	Angle grinder (grinding steel	80	42	-12	-10	0	58	3	30	-5	52	61
D	Tractor (towing equipment)	ж 80	42	-12	-10	0	58	3	30	-5	52	61
D	Poker vibrator	78	42	-12	-10	0	56	5	50	-3	53	62
D	Tracked excavator 125KW 25	77	42	-12	-10	0	55	7	70	-2	53	63
D	Lorry ж 233KW 32 t	78	42	-12	-10	0	56	6	60	-2	53	63
D	Concrete mixer truck	79	42	-12	-10	0	57	5	50	-3	54	63
D	Truck mounted concrete pum	79	42	-12	-10	0	57	5	50	-3	54	64
D	Tracked excavator 102KW 22	78	42	-12	-10	0	56	7	70	-2	54	64
D	Dozer 179KW 28 t	79	42	-12	-10	0	57	6	60	-2	54	65
D	Lorry ж 235KW 26 t	79	42	-12	-10	0	57	6	60	-2	54	65
D	Concrete mixer truck	80	42	-12	-10	0	58	5	50	-3	55	65
D	Dump truck (tipping fill) 306	K 79	42	-12	-10	0	57	7	70	-2	55	66
D	Lump hammer	81	42	-12	-10	0	59	5	50	-3	56	66
D	Hand-held pneumatic breake	83	42	-12	-10	0	61	4	40	-4	57	67
D	Lorry ж 242KW 32 t	85	42	-12	-10	0	63	6	60	-2	60	68
D	Breaker mounted on excavat	90	42	-12	-10	0	68	4	40	-4	64	69
D	Hand-held pneumatic breake	95	42	-12	-10	0	73	4	40	-4	69	72

TABLE 2.5	ESTIMATED NOISE

Construction Works

Plan 1

DRAWING ASSOCIATED :

4b:	A	B	C	D
Name	Guilford Place	Millman Mews	Millman Street	Guilford Street
Distance	30	30	46	42
Screening	-10	-10	-10	-10
Reflection	0	0	0	0

METHOD FOR ACTIVITY

Type of ground :	Hard	Soft	**Assessment period :**	10	hours
(x if yes)	x	no			

Point	Plant	Laeq (10m)	Distance of Receiver	Adjustments distance	Adjustments Screening	Adjustments Reflection	Adjusted Noise level Laeq	Duration of activity (per day)	Duration of activity as % of period	Correction to Laeq (period)	Activity Laeq (period)	Resultant Noise Level Laeq (period)
		dB	m	dB	dB	dB	dB	h	%	dB	dB	dB
A	Small cement mixer 2 KW	61	30	-10	-10	0	41	4	40	-4	37	37
A	Diesel generator	60	30	-10	-10	0	40	7	70	-2	39	41
A	Cement mixer truck (idling)	71	30	-10	-10	0	51	1	10	-10	41	44
A	Compressor for hand-held p	65	30	-10	-10	0	45	4	40	-4	41	46

A	Dumper (idling) 75KW 9 t	63	30	-10	-10	0	43	7	70	-2	42	48
A	Diesel scissor lift (idling) 24K	70	30	-10	-10	0	50	2	20	-7	43	49
A	Diesel generator	66	30	-10	-10	0	46	7	70	-2	45	50
A	Lump hammer	69	30	-10	-10	0	49	5	50	-3	46	52
A	Poker vibrator 2.2 KW	69	30	-10	-10	0	49	5	50	-3	46	53
A	Fuel tanker pumping — 2500	72	30	-10	-10	0	52	3	30	-5	47	54
A	Road sweeper 70 KW	76	30	-10	-10	0	56	2	20	-7	49	55
A	Telescopic handler 60KW 10	71	30	-10	-10	0	51	7	70	-2	50	56
A	Cement mixer truck (dischar	75	30	-10	-10	0	55	3	30	-5	50	57
A	Generator for welding	73	30	-10	-10	0	53	5	50	-3	50	58
A	Tracked excavator 71KW 15 t	73	30	-10	-10	0	53	7	70	-2	52	59
A	Concrete mixer truck (discha	75	30	-10	-10	0	55	5	50	-3	52	60
A	Diesel generator	74	30	-10	-10	0	54	7	70	-2	53	61
A	Tracked mobile crane 240KW	75	30	-10	-10	0	55	6	60	-2	53	61
A	Hand-held circular saw (petr	79	30	-10	-10	0	59	3	30	-5	54	62
A	Dumper ж 81KW 7 t	76	30	-10	-10	0	56	7	70	-2	55	63
A	Tower crane 88KW 22 t	76	30	-10	-10	0	56	7	70	-2	55	64
A	Angle grinder (grinding steel	80	30	-10	-10	0	60	3	30	-5	55	64
A	Tractor (towing equipment)	80	30	-10	-10	0	60	3	30	-5	55	65
A	Poker vibrator	78	30	-10	-10	0	58	5	50	-3	55	65
A	Tower crane 51KW 12 t	77	30	-10	-10	0	57	7	70	-2	56	66
A	Tracked excavator 125KW 25	77	30	-10	-10	0	57	7	70	-2	56	66
A	Diesel scissor lift 24KW 6 t	78	30	-10	-10	0	58	6	60	-2	56	67
A	Lorry ж 233KW 32 t	78	30	-10	-10	0	58	6	60	-2	56	67
A	Concrete mixer truck	79	30	-10	-10	0	59	5	50	-3	56	67
A	Truck mounted concrete pum	79	30	-10	-10	0	59	5	50	-3	56	68
A	Tracked excavator 102KW 22	78	30	-10	-10	0	58	7	70	-2	57	68
A	Lorry ж 235KW 26 t	79	30	-10	-10	0	59	6	60	-2	57	68
A	Concrete mixer truck	80	30	-10	-10	0	60	5	50	-3	57	69

B	Cement mixer truck	71	30	-10	-10	0	51	1	10	-10	41	44

	(idling)											
B	Compressor for hand-n held p	65	30	-10	-10	0	45	4	40	-4	41	46
B	Dumper (idling) 75KW 9 t	63	30	-10	-10	0	43	7	70	-2	42	48
B	Diesel scissor lift (idling) 24K	70	30	-10	-10	0	50	2	20	-7	43	49
B	Diesel generator	66	30	-10	-10	0	46	7	70	-2	45	50
B	Lump hammer	69	30	-10	-10	0	49	5	50	-3	46	52
B	Poker vibrator 2.2 KW	69	30	-10	-10	0	49	5	50	-3	46	53
B	Fuel tanker pumping — 2500	72	30	-10	-10	0	52	3	30	-5	47	54
B	Road sweeper 70 KW	76	30	-10	-10	0	56	2	20	-7	49	55
B	Telescopic handlert 60KW 10	71	30	-10	-10	0	51	7	70	-2	50	56
B	Cement mixer truckg (dischar	75	30	-10	-10	0	55	3	30	-5	50	57
B	Generator for welding	73	30	-10	-10	0	53	5	50	-3	50	58
B	Tracked excavator 71KW 15 t	73	30	-10	-10	0	53	7	70	-2	52	59
B	Concrete mixer truck (discha	75	30	-10	-10	0	55	5	50	-3	52	60
B	Diesel generator	74	30	-10	-10	0	54	7	70	-2	53	61
B	Tracked mobile crane 240KW	75	30	-10	-10	0	55	6	60	-2	53	61
B	Hand-held circular saw o (petr	79	30	-10	-10	0	59	3	30	-5	54	62
B	Dumper ж 81KW 7 t	76	30	-10	-10	0	56	7	70	-2	55	63
B	Tower crane 88KW 22 t	76	30	-10	-10	0	56	7	70	-2	55	64
B	Angle grinder (grinding steel	80	30	-10	-10	0	60	3	30	-5	55	64
B	Tractor (towing ж equipment)	80	30	-10	-10	0	60	3	30	-5	55	65

B	Poker vibrator	78	30	-10	-10	0	58	5	50	-3	55	65
B	Tower crane 51KW 12 t	77	30	-10	-10	0	57	7	70	-2	56	66
B	Tracked excavator 125KW 25	77	30	-10	-10	0	57	7	70	-2	56	66
B	Diesel scissor lift 24KW 6 t	78	30	-10	-10	0	58	6	60	-2	56	67
B	Lorry ж 233KW 32 t	78	30	-10	-10	0	58	6	60	-2	56	67
B	Concrete mixer truck	79	30	-10	-10	0	59	5	50	-3	56	67
B	Truck mounted concrete pum	79	30	-10	-10	0	59	5	50	-3	56	68
B	Tracked excavator 102KW 22	78	30	-10	-10	0	58	7	70	-2	57	68
B	Lorry ж 235KW 26 t	79	30	-10	-10	0	59	6	60	-2	57	68
B	Concrete mixer truck	80	30	-10	-10	0	60	5	50	-3	57	69
B	Dump truck (tipping fill) K 306	79	30	-10	-10	0	59	7	70	-2	58	69
B	Lump hammer	81	30	-10	-10	0	61	5	50	-3	58	69
B	Lorry ж 242KW 32 t	85	30	-10	-10	0	65	6	60	-2	63	70
B	Breaker mounted on excavat	90	30	-10	-10	0	70	4	40	-4	66	72
B	Hand-held pneumatic breake	95	30	-10	-10	0	75	4	40	-4	71	75
C	Small cement mixer 2 KW	61	46	-13	-10	0	38	4	40	-4	34	34
C	Diesel generator	60	46	-13	-10	0	37	7	70	-2	35	38
C	Cement mixer truck (idling)	71	46	-13	-10	0	48	1	10	-10	38	41
C	Compressor for hand-n held p	65	46	-13	-10	0	42	4	40	-4	38	42
C	Dumper (idling) 75KW 9 t	63	46	-13	-10	0	40	7	70	-2	38	44
C	Diesel scissor lift (idling) 24K	70	46	-13	-10	0	47	2	20	-7	40	45

C	Diesel generator	66	46	-13	-10	0	43	7	70	-2	41	47
C	Lump hammer	69	46	-13	-10	0	46	5	50	-3	43	48
C	Poker vibrator 2.2 KW	69	46	-13	-10	0	46	5	50	-3	43	49
C	Fuel tanker pumping — 2500	72	46	-13	-10	0	49	3	30	-5	44	50
C	Road sweeper 70 KW	76	46	-13	-10	0	53	2	20	-7	46	52
C	Telescopic handlert 60KW 10	71	46	-13	-10	0	48	7	70	-2	46	53
C	Cement mixer truckg (dischar	75	46	-13	-10	0	52	3	30	-5	47	54
C	Generator for welding	73	46	-13	-10	0	50	5	50	-3	47	54
D	Small cement mixer 2 KW	61	42	-12	-10	0	39	4	40	-4	35	35
D	Diesel generator	60	42	-12	-10	0	38	7	70	-2	36	38
D	Cement mixer truck (idling)	71	42	-12	-10	0	49	1	10	-10	39	41
D	Compressor for hand-n held p	65	42	-12	-10	0	43	4	40	-4	39	43
D	Dumper (idling) 75KW 9 t	63	42	-12	-10	0	41	7	70	-2	39	45
D	Diesel scissor lift (idling) 24K	70	42	-12	-10	0	48	2	20	-7	41	46
D	Diesel generator	66	42	-12	-10	0	44	7	70	-2	42	47
D	Lump hammer	69	42	-12	-10	0	47	5	50	-3	44	49
D	Poker vibrator 2.2 KW	69	42	-12	-10	0	47	5	50	-3	44	50
D	Fuel tanker pumping — 2500	72	42	-12	-10	0	50	3	30	-5	44	51
D	Road sweeper 70 KW	76	42	-12	-10	0	54	2	20	-7	47	52
D	Telescopic handlert 60KW 10	71	42	-12	-10	0	49	7	70	-2	47	53
D	Cement mixer truckg (dischar	75	42	-12	-10	0	53	3	30	-5	47	54
D	Generator for welding	73	42	-12	-10	0	51	5	50	-3	48	55

D	Tracked excavator 71KW 15 t	73	42	-12	-10	0	51	7	70	-2	49	56
D	Concrete mixer truck (discha	75	42	-12	-10	0	53	5	50	-3	50	57
D	Diesel generator	74	42	-12	-10	0	52	7	70	-2	50	58
D	Tracked mobile crane 240KW	75	42	-12	-10	0	53	6	60	-2	50	59
D	Hand-held circular saw (petr	79	42	-12	-10	0	57	3	30	-5	51	59
D	Dumper ж 81KW 7 t	76	42	-12	-10	0	54	7	70	-2	52	60
D	Tower crane 88KW 22 t	76	42	-12	-10	0	54	7	70	-2	52	61
D	Angle grinder (grinding steel	80	42	-12	-10	0	58	3	30	-5	52	61
D	Tractor (towing equipment)	ж 80	42	-12	-10	0	58	3	30	-5	52	62
D	Poker vibrator	78	42	-12	-10	0	56	5	50	-3	53	62
D	Tower crane 51KW 12 t	77	42	-12	-10	0	55	7	70	-2	53	63
D	Tracked excavator 125KW 25	77	42	-12	-10	0	55	7	70	-2	53	63
D	Diesel scissor lift 24KW 6 t	78	42	-12	-10	0	56	6	60	-2	53	64
D	Lorry ж 233KW 32 t	78	42	-12	-10	0	56	6	60	-2	53	64
D	Concrete mixer truck	79	42	-12	-10	0	57	5	50	-3	54	64
D	Truck mounted concrete pum	79	42	-12	-10	0	57	5	50	-3	54	65
D	Tracked excavator 102KW 22	78	42	-12	-10	0	56	7	70	-2	54	65
D	Lorry ж 235KW 26 t	79	42	-12	-10	0	57	6	60	-2	54	65
D	Concrete mixer truck	80	42	-12	-10	0	58	5	50	-3	55	66
D	Dump truck (tipping fill)	К 79	42	-12	-10	0	57	7	70	-2	55	66
D	Lump hammer	81	42	-12	-10	0	59	5	50	-3	56	66
D	Lorry ж 242KW 32 t	85	42	-12	-10	0	63	6	60	-2	60	67

D	Breaker mounted on excavat	90	42	-12	-10	0	68	4	40	-4	64	69
D	Hand-held pneumatic breake	95	42	-12	-10	0	73	4	40	-4	69	72

STEPS TO MINIMISE NOISE AND VIBRATION

This Section details the activities that could generate noise pollution and the potential actions that could be implemented on site for the management of noise issues. The mitigation measures are listed under the activities where it may occur. This summarises the Best Practicable Means applicable on this site.

Activity	Mitigation Measures
1. Initial noise survey	Baseline noise survey of the area has been carried out without ongoing works to provide basis for determining acceptable noise level for the site.
2. Site installation	The site is surrounding by a solid 2.4m high plywood frame hoarding and inspected regularly. Site access gates are maintained and will remain closed other than for periods during access and egress. Site offices and workers facilities, will be powered initially by generator then by TBS.
3. Vehicles/plant	a. All vehicles comply with EU/UK regulation and highway act b. The site access/egress road is along Guilford Street through one vehicular access gate. For the access/egress Erith will operate a 1 way traffic flow avoiding any reversing manoeuvres. c. During concrete works, most of the concrete pouring will start around 9:00 and stop at 18.00. d. Vehicles will switch the engine off while stationary on site

4. Building works	Personnel will be instructed on BPM to reduce noise and vibration as part of their induction training and as required prior to specific work activities. Plant not being used will be shut down and not left to idle. Noisy activities generated by Trades such as cutting, grinding, welding, will be done inside the building as far as practicable.
5. Vibration	Due to the nature of the works in the period of demolition and ground works, we expect some activities to produce vibration. We are targeting to have vibration rates not bigger than 6mm/s, which is far below the limit accepted by BS228:2009 (15mm/s). Moreover, vibration monitoring will be undertaken in response to request from the local authority.
6. Monitoring	Noise and vibration monitoring will be undertaken at locations representative of the following noise sensitive receptors, (location of the stations showed in Appendix 6: Monitoring). A long-term continuous monitoring site throughout the duration of the works will be undertaken in order to record peaks of noise and vibration levels which may occur.
	Weekly noise and vibration monitoring will be carried out on site during the day for short period of time and/or punctual measurement. Extra noise monitoring shall be undertaken if required by the local authority. In order to ensure a proper monitoring, one specialized company has been appointed to follow this monitoring. Specifications of equipment and standard of services provided are enclosed on Appendix 6: Monitoring
7. Movement of vehicles	Vehicles will be controlled so that they do not conflict with local traffic alongside Guilford Street. A curfew will be used to ensure deliveries and other heavy goods vehicles will be held at an appropriate location that does not conflict with local accesses at busy commuting time, typically before 9:00 and after 17:00.