

## Appendix F: Noise and Vibration

### Assumptions and Limitations of Noise Calculations

#### Construction Noise

Calculations of construction noise have been carried out in accordance with BS 5228 Part 1 in order to calculate the likely noise levels at varying receptor distances during the worst-case construction period. Construction plant has been based on indicative typical plant and equipment provided by the Applicant and is presented in **Table 1** below.

The assessment includes assumed likely percentage on times from similar schemes for the construction plant and assumes screening provided by site hoarding where required.

**Table 1 – Typical types of plant and equipment associated with the construction phases**

Plant and Equipment	Stage of Works				
	Enabling and Excavation	Substructure	Superstructure	Envelope	Fit-out
Tracked excavator	✓	✓	✓		
Tower cranes			✓	✓	✓
Cutters, drills and small tools	✓	✓	✓	✓	✓
Fork lift truck		✓	✓	✓	✓
Benders and cutters			✓	✓	
Lorries and vans	✓	✓	✓	✓	✓
Mobile lorry mounted concrete pump			✓	✓	
Ready mixed concrete lorry			✓	✓	
Concrete crusher	✓				

Plant and Equipment	Stage of Works				
	Enabling and Excavation	Substructure	Superstructure	Envelope	Fit-out
Scaffolding and mobile hydraulic podiums	✓		✓	✓	✓
Tipper lorry	✓	✓	✓	✓	
Flat bed articulated lorry	✓	✓	✓	✓	✓
Large rigid lorry	✓	✓	✓	✓	✓
Piling rigs			✓		
Mobile attendance crane	✓	✓	✓		
Dust suppression equipment	✓	✓	✓		
Haulage and muck away vehicles	✓	✓	✓		
Jet wash	✓	✓	✓	✓	✓
Lifting equipment	✓	✓	✓	✓	✓
Mobile elevating work podiums (MEWPS) – boom and scissor				✓	✓
Mortar silos			✓	✓	
Pallet trucks					✓
Placing booms			✓	✓	
Skips (placing and waste removal – boat skips)	✓	✓	✓	✓	✓

Plant and Equipment	Stage of Works				
	Enabling and Excavation	Substructure	Superstructure	Envelope	Fit-out
Survey equipment - levels - lasers - total stations etc	✓	✓	✓	✓	✓
Temporary support materials - props, tables	✓	✓	✓	✓	
Tower lights	✓	✓	✓	✓	✓
Waste compactor	✓	✓	✓	✓	✓
Water pumps			✓		
Welding equipment			✓	✓	
Wheel wash	✓	✓	✓	✓	✓

Table 2 below shows noise data used regarding the plant for the construction activities presented.

**Table 2 – Construction Noise calculations input information**

CMP Plant Category	BS5228 Description	BS5228 Reference	BS5228 $L_{eq@10m}$	Assumed Quantity	% On-Time
Excavator	Tracked Excavator	C.2.2	77	1	25
Drills / Cutters	Hand-held circular saw (petrol)	C.5.36	87	1	25
Forklift Truck	Site Fork Lift Trucks	D.7.93	76	2	25
Haulage Vehicle	Tipper Lorry	C.8.20	79	4	10
Concrete Pump	Concrete Pump	C.3.26	85	2	25
Piling Rig	Large Rotary Bored Piling Rig	C.3.14	80	1	10
Mobile Crane	Tracked Mobile Crane	C.4.52	65	2	25
Dust Supression	Diesel Generator	C.4.76	61	1	10
Jet Wash	Water Jet Wash	C.3.13	63	2	10
Waste Compactor	Waste Compactor	C.8.1	80	1	10
Concrete Crusher	Tracked crusher	C.1.14	82	1	25
Articulated Truck	Site Fork Lift Trucks	D.7.93	76	2	25
Lifting Platform	Lifting Platform	C.4.57	63	1	25

## Construction and Operational Traffic Assumptions

For traffic assessments, the traffic consultants provided 18-hour flows for light vehicles and HGVs for construction year 2027 and operational year 2030.

**Figure 1** shows the traffic data survey locations from the data provided by WSP.

Figure 1 – Traffic Data Survey Locations

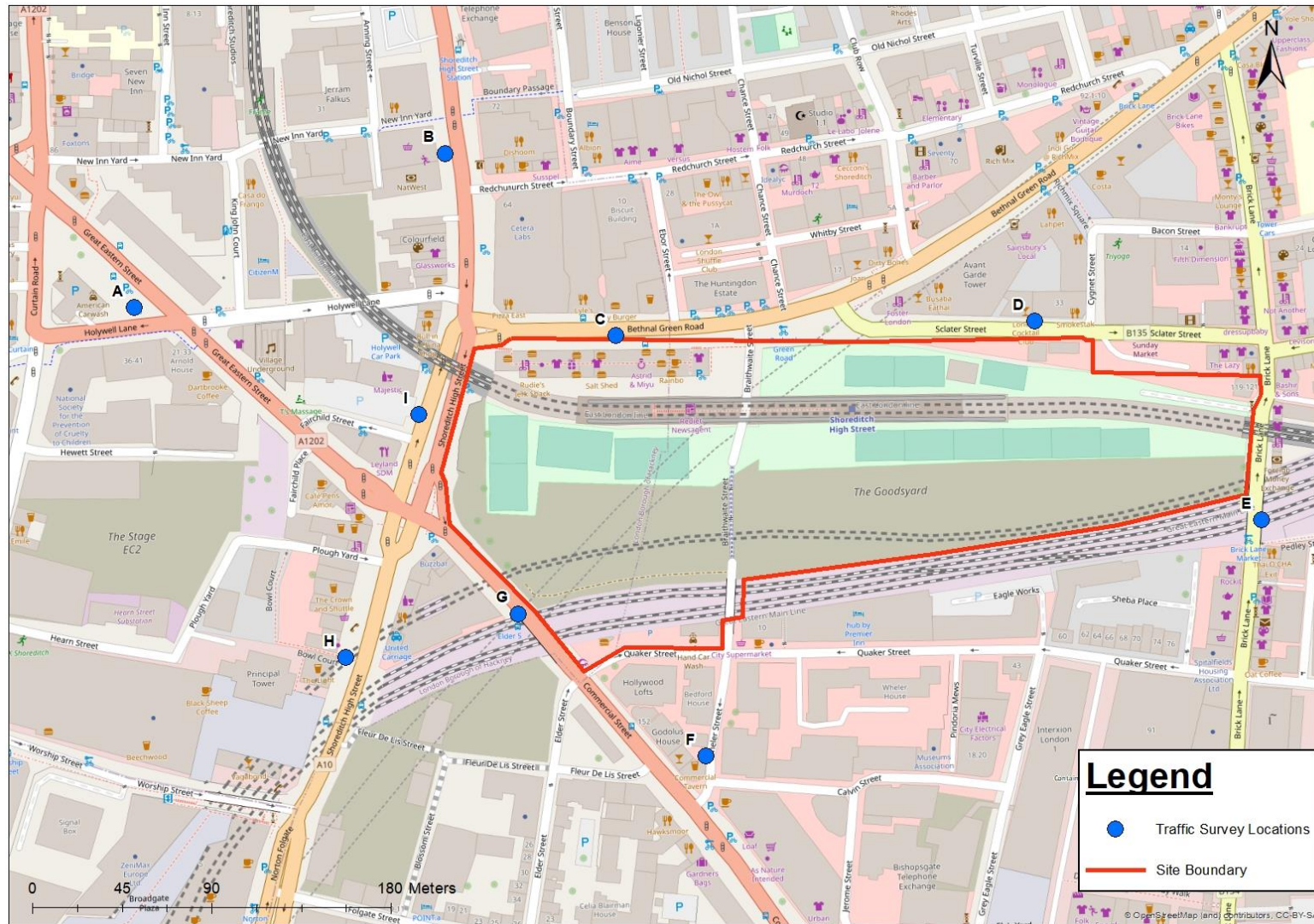


Table 3 shows peak construction road traffic noise assessment against baseline for construction year 2027.

**Table 3 – Peak Construction Road Traffic Noise Assessment**

Road Name	AAWT (18hr) V base	AAWT (18hr) Q Base	AAWT (18hr) F Base	AAWT (18hr) V Future	AAWT (18hr) Q Future	AAWT (18hr) F Future	Base Basic noise level corrected LA <sub>10,dB</sub> 18hr	Future Basic noise level corrected LA <sub>10,dB</sub> 18hr	Change in Traffic Noise Level dB
Site A	31	24845	2543	31	24845	2543	72.5	72.5	0.0
Site B	30	10341	2381	30	10372	2412	71.2	71.3	0.1
Site C	26	12921	1443	26	12951	1474	70.1	70.2	0.1
Site D	23	2253	336	23	2253	336	63.4	63.4	0.0
Site E	22	2905	578	22	2905	578	65.9	65.9	0.0
Site F	29	607	239	29	637	269	60.9	61.4	0.5
Site G	34	22593	2879	34	22624	2910	72.7	72.7	0.0
Site H	28	14044	3576	28	14044	3576	73	73	0.0
Site I	26	22048	3939	26	22048	3939	73.9	73.9	0.0
Bethnal Green Road east of Sclater Street	26	8569	735	26	8599	766	67.6	67.7	0.1
Brick Lane (north)	22	2905	578	22	2905	578	65.9	65.9	0.0

Road Name	AAWT (18hr) V base	AAWT (18hr) Q Base	AAWT (18hr) F Base	AAWT (18hr) V Future	AAWT (18hr) Q Future	AAWT (18hr) F Future	Base Basic noise level corrected L <sub>A10,dB 18hr</sub>	Future Basic noise level corrected L <sub>A10,dB 18hr</sub>	Change in Traffic Noise Level dB
Brick Lane (south)	22	3512	817	22	3512	817	67.3	67.3	0.0
Holywell Lane	20	3651	482	20	3651	482	65.9	65.9	0.0

Table 4 shows operational road traffic noise assessment in the operational year 2030 against 2030 baseline without scheme.

**Table 4 – Operational Road Traffic Noise Assessment**

Road Name	AAWT (18hr) V base	AAWT (18hr) Q Base	AAWT (18hr) F Base	AAWT (18hr) V Future	AAWT (18hr) Q Future	AAWT (18hr) F Future	Base Basic noise level corrected L <sub>A10,dB 18hr</sub>	Future Basic noise level corrected L <sub>A10,dB 18hr</sub>	Change in Traffic Noise Level dB
Site A	31	24845	2543	31	24845	2543	72.5	72.6	-0.1
Site B	30	10341	2381	30	10372	2412	71.3	71.2	-0.2
Site C	26	12921	1443	26	12951	1474	70.2	70.3	0.0
Site D	23	2253	336	23	2253	336	63.4	64.1	0.5
Site E	22	2905	578	22	2905	578	65.9	66	-0.1
Site F	29	607	239	29	637	269	61.1	61.7	0.6
Site G	34	22593	2879	34	22624	2910	72.7	72.8	-0.1



Road Name	AAWT (18hr) V base	AAWT (18hr) Q Base	AAWT (18hr) F Base	AAWT (18hr) V Future	AAWT (18hr) Q Future	AAWT (18hr) F Future	Base Basic noise level corrected LA10,dB 18hr	Future Basic noise level corrected LA10,dB 18hr	Change in Traffic Noise Level dB
Site H	28	14044	3576	28	14044	3576	73	73	-0.2
Site I	26	22048	3939	26	22048	3939	73.9	73.9	-0.2
Bethnal Green Road east of Sclater Street	26	8569	735	26	8599	766	67.7	67.6	-0.2
Brick Lane (north)	22	2905	578	22	2905	578	65.9	65.9	-0.2
Brick Lane (south)	22	3512	817	22	3512	817	67.3	67.4	-0.1
Holywell Lane	20	3651	482	20	3651	482	65.9	66	-0.1