CITY AIRPORT DEVELOPMENT PROGRAMME
(CADP1) S73 APPLICATION

ENVIRONMENTAL STATEMENT

VOLUME 2: APPENDICES

DECEMBER 2022

Pell Frischmann

City Airport Development Programme (CADP1) S73 Application

Volume 2: Appendices
Appendix 8.6 Construction Noise

December 2022

Appendix 8.6 Construction Noise

This appendix details the assumptions and methodology used in the calculation of construction noise at London City Airport. The figures listed in Table 8.6.1 below are also provided in this appendix.

Table 8.6.1 Appendix 8.6 Figures

Reference	Description
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A computer model of the airport and surrounding area has been prepared using the environmental noise prediction software CadnaA (version 2022 MR2). Figure 8.6.1 illustrates the limits of the construction noise study area, which extends approximately 1.5 km east and west and 0.5 km north and south of the runway centre, and the representative locations used in the assessment.

The CadnaA computer model implements the methodology set out in ISO 9613[1] for the calculation of sound propagation outdoors. Although, BS 5228[2] has also been consulted, this advises that at distances over 300 m noise predictions must be treated with caution as meteorological effects are not accounted for. ISO 9613 includes meteorological effects and is therefore considered more appropriate given the receiver distances to be modelled.

Local topography, including building heights, has been incorporated into the model using the Environment Agency LIDAR Composite DTM and DSM 2020 datasets and OpenStreetMap building footprints. 10 m spatial resolution has been used for the CadnaA terrain model. Buildings and barriers within the airport site, or that will be constructed within the airport site, have been included depending on the assessment scenario and based on plans and schedules provided by the airport.

[1] *ISO 9613-2:1996 Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation*, International Organization for Standardization (1996).
[2] *BS 5228-1:2009 + A1:2014 Code of practice for noise and vibration control on construction and open sites – Part 1: Noise*, British Standards Institution (2014).

The Ordnance Survey AddressBase Plus product has been used to create the residential receptor set of 3,673 dwellings. Where this database identifies dwellings as flats or residential education (e.g. UEL halls of residence), the number of dwellings meeting the assessment criteria within the same building has been estimated as directly proportional to the area of the building façade meeting the criteria. For all other dwellings, the maximum noise exposure on any façade has been used.

Noise levels have been predicted at 1 m from the relevant façade location but are free-field levels and do not include a façade correction.

Construction noise sources have been modelled at a nominal 1.5 m height and located centrally on each site. The proportion of the assessment period that each plant item is in use is accounted for as '%-on time'. Where this is higher than 100%, the value relates to multiple items of plant. In all OOOH (out of operational hours) assessment scenarios, it has been assumed that there will be 2 heavy vehicles using the haul road (Hartmann Road eastern access) during the 15-minute assessment period.

It has been assumed that 3 m site hoardings will be used as standard and that the existing 3 m temporary noise construction barrier along Hartmann Road will remain in place for the duration of construction works. For works in the western compound (West Energy Centre and West Terminal Extension), it has been assumed that site hoarding of sufficient height can be used to fill the space below the elevated DLR track, which will in turn provide a higher effective barrier.

Table 8.6.2 through Table 8.6.8 detail the plant assumptions used for the daytime construction noise assessment. Table 8.6.9 outlines the OOOH assessment schedule based on the revised OOOH programme detailed in Chapter 6 and Table 8.6.10 through Table 8.6.14 details the corresponding OOOH plant assumptions.

Table 8.6.2 Daytime Construction Noise Plant Assumptions, Site Prep. & Compound

Plant	% on-time	L_{WA} (dB)	Octave Band L_p @ 10 m (dB)								L_{Aeq} @ 10 m (dB)
			63	125	250	500	1k	2k	4k	8k	
Articulated dump truck	10	108	94	76	77	75	76	73	68	63	80
Tug boat for barges	10	112	48	48	79	78	79	78	75	75	84
Mobile generators	100	93	78	71	66	62	59	55	56	49	65
Mobile floodlights with generators	600	93	78	71	66	62	59	55	56	49	65
Tracked mobile crane	75	95	81	77	66	62	59	57	51	46	67
Hand-held saw	10	113	85	74	72	70	72	76	82	77	85
Core drill (electric)	10	113	75	74	75	72	74	75	80	80	85

Table 8.6.3 Daytime Construction Noise Plant Assumptions, Buildings – Site Prep. & Excavation

Plant	% on-time	L_{WA} (dB)	Octave Band L_p @ 10 m (dB)								L_{Aeq} @ 10 m (dB)
			63	125	250	500	1k	2k	4k	8k	
Tracked excavator	100	104	78	70	72	68	67	66	73	65	76
Articulated dump truck	10	108	94	76	77	75	76	73	68	63	80
Tracked excavator	100	104	78	70	72	68	67	66	73	65	76
Diesel generator	100	89	80	74	57	54	53	48	45	37	61

Table 8.6.4 Daytime Construction Noise Plant Assumptions, Buildings – Auger Piling

Plant	% on-time	L_{WA} (dB)	Octave Band L_p @ 10 m (dB)								L_{Aeq} @ 10 m (dB)
			63	125	250	500	1k	2k	4k	8k	
Hand-held pneumatic breaker	10	111	83	83	81	74	73	76	78	77	83
Steel pile casing by vibration	10	116	83	82	79	82	84	82	77	67	88
Gas cutters for pile steel casing	10	96	74	74	72	61	60	58	56	56	68
Piling rig – rotary bored	75	107	81	81	78	76	74	72	68	63	79
Tracked mobile crane	75	95	81	77	66	62	59	57	51	46	67
Mobile generators	100	93	78	71	66	62	59	55	56	49	65
Water pumps	100	93	73	68	62	62	61	56	53	41	65
Mobile floodlights with generators	1200	93	78	71	66	62	59	55	56	49	65

Table 8.6.5 Daytime Construction Noise Plant Assumptions, Buildings – Sub- & Superstructure

Plant	% on-time	L_{WA} (dB)	Octave Band L_p @ 10 m (dB)								L_{Aeq} @ 10 m (dB)
			63	125	250	500	1k	2k	4k	8k	
Tracked mobile crane	75	95	81	77	66	62	59	57	51	46	67
Mobile telescopic crane	75	106	80	79	73	74	73	73	64	55	78
Concrete placing boom	75	93	63	68	65	62	59	53	53	49	65
Concrete mixer trucks	10	108	83	74	66	69	70	78	60	55	80
Truck mounted concrete pump	75	106	84	76	70	71	73	73	66	58	78
Poker vibrators	50	106	82	80	80	73	69	72	70	65	78
Air compressors	50	93	84	73	64	59	57	55	58	47	65
Articulated dump truck	10	108	94	76	77	75	76	73	68	63	80
Site lift for workers	50	94	68	63	64	63	59	60	58	51	66
Diesel generator	100	89	80	74	57	54	53	48	45	37	61

Table 8.6.6 Daytime Construction Noise Plant Assumptions, Buildings – Envelope & Fit-Out

Plant	% on-time	L_{WA} (dB)	Octave Band L_p @ 10 m (dB)								L_{Aeq} @ 10 m (dB)
			63	125	250	500	1k	2k	4k	8k	
Tracked mobile crane	75	95	81	77	66	62	59	57	51	46	67
Mobile telescopic crane	75	106	80	79	73	74	73	73	64	55	78
Concrete placing boom	75	93	63	68	65	62	59	53	53	49	65
Site lift for workers	50	94	68	63	64	63	59	60	58	51	66
Core drill (electric)	10	113	75	74	75	72	74	75	80	80	85
Hand -held saw	10	113	85	74	72	70	72	76	82	77	85
Angle grinder (grinding steel)	10	108	57	51	52	60	70	77	73	73	80
Diesel generator	100	89	80	74	57	54	53	48	45	37	61

Table 8.6.7 Daytime Construction Noise Plant Assumptions, Landside Infrastructure – Concrete & General Works

Plant	% on-time	L_{WA} (dB)	Octave Band L_p @ 10 m (dB)								L_{Aeq} @ 10 m (dB)
			63	125	250	500	1k	2k	4k	8k	
Tracked excavator	50	104	78	70	72	68	67	66	73	65	67
Tracked excavators with pulverisers	50	104	75	72	71	73	70	69	66	59	78
Wheeled backhoe loaders	50	96	74	66	64	64	63	50	59	50	65
Wheeled backhoe loaders with breakers	50	120	79	82	81	82	86	86	86	85	66
Hand-held pneumatic breaker	50	111	83	83	81	74	73	76	78	77	85
Articulated dump truck	10	108	94	76	77	75	76	73	68	63	85

Table 8.6.8 Daytime Construction Noise Plant Assumptions, Reference Noise levels & Receiver Distances

Source	L_{Aeq} @ 10 m (dB)	Distance to Receiver (m)										
		A	B	C	D	E	F	G	H	I	J	K
Site Prep. & Compound	81	1500	1400	1120	780	1040	600	800	115	530	710	235
Buildings – Site Prep. & Excavation	80	400	300	120	150	650	180	722	540	810	1140	1180
Buildings – Auger Piling	83	400	300	120	150	650	180	722	540	810	1140	1180
Buildings – Sub- & Superstructure	81	400	300	120	150	650	180	722	540	810	1140	1180
Buildings – Envelope & Fit-Out	79	400	300	120	150	650	180	722	540	810	1140	1180
Landside Infrastructure Concrete & General Works	93	400	300	120	150	650	180	722	540	810	1140	1180

Table 8.6.9 OOOH Construction Noise Assessment Schedule

Scenario	Location	Plant Assumptions
Year 1 – 2025 – Q1	-	No OOOH
Year 1 – 2025 – Q2	-	No OOOH
Year 1 – 2025 – Q3	New Eastern Pier	Buildings – Civils
Year 1 – 2025 – Q4	New Eastern Pier	Buildings – Frame
Year 2 – 2026 – Q1	New Eastern Pier	Buildings – Envelope
	Eastern Terminal Extension	Buildings – Civils
Year 2 – 2026 – Q2	New Eastern Pier	Buildings – Envelope
	Eastern Terminal Extension	Buildings – Frame
Year 2 – 2026 – Q3	New Eastern Pier	Buildings – Envelope
	Eastern Terminal Extension	Buildings – Envelope
Year 2 – 2026 – Q4	Western Energy Centre	Buildings – Civils
	Eastern Terminal Extension	Buildings – Envelope
Year 3 – 2027 – Q1	Western Energy Centre	Buildings – Frame
	Eastern Terminal Extension	Buildings – Envelope

Year 3 – 2027 – Q2	-	No OOOH
Year 3 – 2027 – Q3	-	No OOOH
Year 3 – 2027 – Q4	Forecourt & Hartmann Road Utilities	Landside Infrastructure - Roadworks
Year 4 – 2028 – Q1	Forecourt & Hartmann Road Utilities	Landside Infrastructure - Roadworks
Year 4 – 2028 – Q2	Forecourt & Hartmann Road Utilities	Landside Infrastructure - Roadworks
Year 4 – 2028 – Q3	-	No OOOH
Year 4 – 2028 – Q4	-	No OOOH
Year 5 – 2029 – Q1	Airfield Services	Airside Infrastructure – Stand Reconfig.
	Western Terminal Extension	Buildings – Civils
Year 5 – 2029 – Q2	Airfield Services	Airside Infrastructure – Stand Reconfig.
	New Eastern Pier	Buildings – Civils
	Western Terminal Extension	Buildings – Frame
Year 5 – 2029 – Q3	Airfield Services	Airside Infrastructure – Stand Reconfig
	New Eastern Pier	Buildings – Frame
	Eastern Terminal Extension	Buildings – Civils
	Western Terminal Extension	Buildings – Envelope
	Dockside & Surface Car Parks	Landside Infrastructure – Roadworks
Year 5 – 2029 – Q4	Eastern Terminal Extension	Buildings – Frame
	Dockside & Surface Car Parks	Landside Infrastructure – Roadworks
Year 6 – 2030 – Q1	Forecourt & Hartmann Road Utilities	Landside Infrastructure - Roadworks
	Dockside & Surface Car Parks	Landside Infrastructure – Roadworks
Year 6 – 2030 – Q2	Airfield Services	Airside Infrastructure – Stand Reconfig
	Forecourt & Hartmann Road Utilities	Landside Infrastructure - Roadworks
Year 6 – 2030 – Q3	Airfield Services	Airside Infrastructure – Stand Reconfig
Year 6 – 2030 – Q4	-	No OOOH

Table 8.6.10 OOOH Construction Noise Plant Assumptions, Buildings – Civils

Plant	% on-time	L_{WA} (dB)	Octave Band L_p @ 10 m (dB)								L_{Aeq} @ 10 m (dB)
			63	125	250	500	1k	2k	4k	8k	
Tracked mobile crane	50	95	82	77	66	62	59	57	51	46	67
Truck mounted crane	100	91	73	64	55	55	60	56	50	43	63
Articulated dump truck	50	108	94	76	77	75	76	73	68	63	80
Forklift	100	103	77	74	71	71	71	68	62	60	75
Flat bed truck	100	91	73	64	55	55	60	56	50	43	63
Excavator	100	103	82	84	75	69	69	67	62	57	75
Vibratory roller	100	103	90	82	73	72	70	65	59	54	75
Compressors	100	93	84	73	64	59	57	55	58	47	65
Drill	10	113	75	74	75	72	74	75	80	80	85

Table 8.6.11 OOOH Construction Noise Plant Assumptions, Buildings – Frame

Plant	% on-time	L_{WA} (dB)	Octave Band L_p @ 10 m (dB)								L_{Aeq} @ 10 m (dB)
			63	125	250	500	1k	2k	4k	8k	
Tracked mobile crane	50	95	82	77	66	62	59	57	51	46	67
Truck mounted crane	100	91	73	64	55	55	60	56	50	43	63
Articulated dump truck	50	91	73	64	55	55	60	56	50	43	63
Forklift	100	103	77	74	71	71	71	68	62	60	75

Plant	% on-time	L_{WA} (dB)	Octave Band L_p @ 10 m (dB)								L_{Aeq} @ 10 m (dB)
			63	125	250	500	1k	2k	4k	8k	
Flat bed truck	100	91	73	64	55	55	60	56	50	43	63
Excavator	100	103	82	84	75	69	69	67	62	57	75
Vibratory roller	100	103	90	82	73	72	70	65	59	54	75
Compressors	100	93	84	73	64	59	57	55	58	47	65
Drill	10	113	75	74	75	72	74	75	80	80	85

Table 8.6.12 OOOH Construction Noise Plant Assumptions, Buildings – Envelope

Plant	% on-time	L_{WA} (dB)	Octave Band L_p @ 10 m (dB)								L_{Aeq} @ 10 m (dB)
			63	125	250	500	1k	2k	4k	8k	
Tracked mobile crane	75	95	82	77	66	62	59	57	51	46	67
Mobile telescopic crane	75	106	80	79	73	74	73	73	64	55	78
Articulated dump truck	10	91	73	64	55	55	60	56	50	43	63
Concrete mixer truck	10	108	83	74	66	69	70	78	60	55	80
Concrete placing boom	75	93	63	68	65	62	59	53	53	49	65
Concrete pump	75	106	84	76	70	71	73	73	66	58	78
Site lift for workers	50	94	68	63	64	63	59	60	58	51	66
Poker vibrator	50	106	82	80	80	73	69	72	70	65	78
Compressors	50	93	84	73	64	59	57	55	58	47	65
Diesel generator	100	89	80	74	57	54	53	48	45	37	61

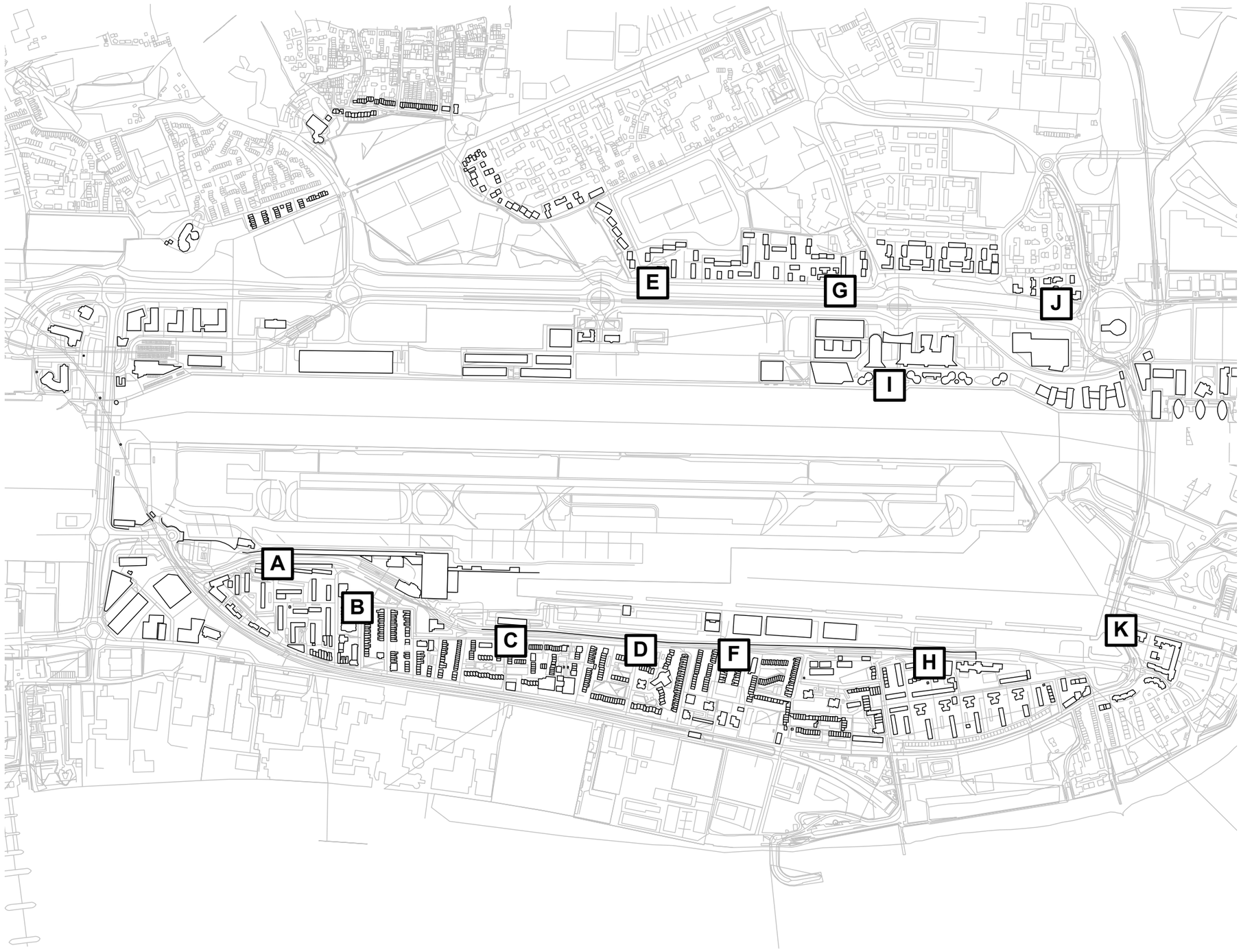
Table 8.6.13 OOOH Construction Noise Plant Assumptions, Landside Infrastructure – Roadworks

Plant	% on-time	L_{WA} (dB)	Octave Band L_p @ 10 m (dB)								L_{Aeq} @ 10 m (dB)
			63	125	250	500	1k	2k	4k	8k	
Tracked excavator	50	104	78	70	72	68	67	66	73	65	76
Tracked excavator	50	104	78	70	72	68	67	66	73	65	76
Articulated dump truck	10	108	94	76	77	75	76	73	68	63	80
Pnreumatic breaker	10	111	83	83	81	74	73	76	78	77	83
Mobile floodlights with generators	100	93	78	71	66	62	59	55	56	49	65
Mobile floodlights with generators	100	93	78	71	66	62	59	55	56	49	65
Mobile floodlights with generators	100	93	78	71	66	62	59	55	56	49	65
Mobile floodlights with generators	100	93	78	71	66	62	59	55	56	49	65

Table 8.6.14 OOOH Construction Noise Plant Assumptions, Airside Infrastructure – Stands Reconfiguration

Plant	% on-time	L_{WA} (dB)	Octave Band L_p @ 10 m (dB)								L_{Aeq} @ 10 m (dB)
			63	125	250	500	1k	2k	4k	8k	
Tracked excavator	50	104	78	70	72	68	67	66	73	65	76
Articulated dump truck	10	108	94	76	77	75	76	73	68	63	80
Flat bed truck	100	91	73	64	55	55	60	56	50	43	63

Plant	% on-time	L_{WA} (dB)	Octave Band L_p @ 10 m (dB)								L_{Aeq} @ 10 m (dB)
			63	125	250	500	1k	2k	4k	8k	
Mobile painting rig	100	91	73	64	55	55	60	56	50	43	63
Core drill	10	113	75	74	75	72	74	75	80	80	85
Circular saw	10	113	85	74	72	70	72	76	82	77	85
Mobile floodlights with generators	100	93	78	71	66	62	59	55	56	49	65
Mobile floodlights with generators	100	93	78	71	66	62	59	55	56	49	65
Mobile floodlights with generators	100	93	78	71	66	62	59	55	56	49	65
Mobile floodlights with generators	100	93	78	71	66	62	59	55	56	49	65



Legend:

[X] Representative Locations

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Figure 8.6.1

Construction Noise
Representative Locations

Drawn: MP **Checked: DC**

Date: November 2022 **Scale: 1:12,500 @ A4**

Figure Ref.:

A11407_10_CA002_1.0 (03)

Legend:

Grid: 10 m x 10 m x 4 m

LAeq,15min dBA

- **45 <= ... < 50**
- **50 <= ... < 55**
- **55 <= ... < 60**
- **60 <= ... < 65**
- **65 <= ...**

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Figure 8.6.2

Construction Noise Contours
OOOH 2025 Q3

Drawn: MP **Checked: DC**

Date: November 2022 **Scale: 1:12,500 @ A4**

Figure Ref.:

A11407_08_CA004_1.0 (01)

Legend:

Grid: 10 m x 10 m x 4 m

LAeq,15min dBA

- **45 <= ... < 50**
- **50 <= ... < 55**
- **55 <= ... < 60**
- **60 <= ... < 65**
- **65 <= ...**

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Construction Noise Contours
OOOH 2025 Q4

Drawn: MP **Checked: DC**

Date: November 2022 **Scale: 1:12,500 @ A4**

Figure Ref.:

A11407_08_CA004_1.0 (02)

Legend:

Grid: 10 m x 10 m x 4 m

LAeq,15min dBA

- **45 <= ... < 50**
- **50 <= ... < 55**
- **55 <= ... < 60**
- **60 <= ... < 65**
- **65 <= ...**

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Construction Noise Contours
OOOH 2026 Q1

Drawn: MP **Checked: DC**

Date: November 2022 **Scale: 1:12,500 @ A4**

Figure Ref.:

A11407_08_CA004_1.0 (03)

Legend:

Grid: 10 m x 10 m x 4 m

LAeq,15min dBA

- **45 <= ... < 50**
- **50 <= ... < 55**
- **55 <= ... < 60**
- **60 <= ... < 65**
- **65 <= ...**

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Construction Noise Contours
OOOH 2026 Q2

Drawn: MP **Checked: DC**

Date: November 2022 **Scale: 1:12,500 @ A4**

Figure Ref.:

A11407_08_CA004_1.0 (04)

Legend:

Grid: 10 m x 10 m x 4 m

LAeq,15min dBA

- **45 <= ... < 50**
- **50 <= ... < 55**
- **55 <= ... < 60**
- **60 <= ... < 65**
- **65 <= ...**

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Construction Noise Contours
OOOH 2026 Q3

Drawn: MP **Checked: DC**

Date: November 2022 **Scale: 1:12,500 @ A4**

Figure Ref.:

A11407_08_CA004_1.0 (05)

Legend:

Grid: 10 m x 10 m x 4 m

LAeq,15min dBA

- **45 <= ... < 50**
- **50 <= ... < 55**
- **55 <= ... < 60**
- **60 <= ... < 65**
- **65 <= ...**

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Construction Noise Contours
OOOH 2026 Q4

Drawn: MP **Checked: DC**

Date: November 2022 **Scale: 1:12,500 @ A4**

Figure Ref.:

A11407_08_CA004_1.0 (06)

Legend:

Grid: 10 m x 10 m x 4 m

LAeq,15min dBA

- **45 <= ... < 50**
- **50 <= ... < 55**
- **55 <= ... < 60**
- **60 <= ... < 65**
- **65 <= ...**

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Figure 8.6.8

Construction Noise Contours
OOOH 2027 Q1

Drawn: MP **Checked: DC**

Date: November 2022 **Scale: 1:12,500 @ A4**

Figure Ref.:

A11407_08_CA004_1.0 (07)

Legend:

Grid: 10 m x 10 m x 4 m

LAeq,15min dBA

- **45 <= ... < 50**
- **50 <= ... < 55**
- **55 <= ... < 60**
- **60 <= ... < 65**
- **65 <= ...**

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Figure 8.6.9

Construction Noise Contours
OOOH 2027 Q4

Drawn: MP **Checked: DC**

Date: November 2022 **Scale: 1:12,500 @ A4**

Figure Ref.:

A11407_08_CA004_1.0 (08)

Legend:

Grid: 10 m x 10 m x 4 m

LAeq,15min dBA

- **45 <= ... < 50**
- **50 <= ... < 55**
- **55 <= ... < 60**
- **60 <= ... < 65**
- **65 <= ...**

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Figure 8.6.10

Construction Noise Contours
OOOH 2028 Q1

Drawn: MP **Checked: DC**

Date: November 2022 **Scale: 1:12,500 @ A4**

Figure Ref.:

A11407_08_CA004_1.0 (09)

Legend:

Grid: 10 m x 10 m x 4 m

LAeq,15min dBA

- **45 <= ... < 50**
- **50 <= ... < 55**
- **55 <= ... < 60**
- **60 <= ... < 65**
- **65 <= ...**

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Figure 8.6.11

Construction Noise Contours
OOOH 2028 Q2

Drawn: MP **Checked: DC**

Date: November 2022 **Scale: 1:12,500 @ A4**

Figure Ref.:

A11407_08_CA004_1.0 (10)

Legend:

Grid: 10 m x 10 m x 4 m

LAeq,15min dBA

- **45 <= ... < 50**
- **50 <= ... < 55**
- **55 <= ... < 60**
- **60 <= ... < 65**
- **65 <= ...**

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Figure 8.6.12

Construction Noise Contours
OOOH 2029 Q1

Drawn: MP **Checked: DC**

Date: November 2022 **Scale: 1:12,500 @ A4**

Figure Ref.:

A11407_08_CA004_1.0 (11)

Legend:

Grid: 10 m x 10 m x 4 m

LAeq,15min dBA

- **45 <= ... < 50**
- **50 <= ... < 55**
- **55 <= ... < 60**
- **60 <= ... < 65**
- **65 <= ...**

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Figure 8.6.13

Construction Noise Contours
OOOH 2029 Q2

Drawn: MP **Checked: DC**

Date: November 2022 **Scale: 1:12,500 @ A4**

Figure Ref.:

A11407_08_CA004_1.0 (12)

Legend:

Grid: 10 m x 10 m x 4 m

LAeq,15min dBA

- **45 <= ... < 50**
- **50 <= ... < 55**
- **55 <= ... < 60**
- **60 <= ... < 65**
- **65 <= ...**

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Figure 8.6.14

Construction Noise Contours
OOOH 2029 Q3

Drawn: MP **Checked: DC**

Date: November 2022 **Scale: 1:12,500 @ A4**

Figure Ref.:

A11407_08_CA004_1.0 (13)

Legend:

Grid: 10 m x 10 m x 4 m

LAeq,15min dBA

- **45 <= ... < 50**
- **50 <= ... < 55**
- **55 <= ... < 60**
- **60 <= ... < 65**
- **65 <= ...**

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Figure 8.6.15

Construction Noise Contours
OOOH 2029 Q4

Drawn: MP **Checked: DC**

Date: November 2022 **Scale: 1:12,500 @ A4**

Figure Ref.:

A11407_08_CA004_1.0 (14)

Legend:

Grid: 10 m x 10 m x 4 m

LAeq,15min dBA

- **45 <= ... < 50**
- **50 <= ... < 55**
- **55 <= ... < 60**
- **60 <= ... < 65**
- **65 <= ...**

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Figure 8.6.16

Construction Noise Contours
OOOH 2030 Q1

Drawn: MP **Checked: DC**

Date: November 2022 **Scale: 1:12,500 @ A4**

Figure Ref.:

A11407_08_CA004_1.0 (15)

Legend:

Grid: 10 m x 10 m x 4 m

LAeq,15min dBA

- **45 <= ... < 50**
- **50 <= ... < 55**
- **55 <= ... < 60**
- **60 <= ... < 65**
- **65 <= ...**

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Figure 8.6.17

Construction Noise Contours
OOOH 2030 Q2

Drawn: MP **Checked: DC**

Date: November 2022 **Scale: 1:12,500 @ A4**

Figure Ref.:

A11407_08_CA004_1.0 (16)

Legend:

Grid: 10 m x 10 m x 4 m

LAeq,15min dBA

- **45 <= ... < 50**
- **50 <= ... < 55**
- **55 <= ... < 60**
- **60 <= ... < 65**
- **65 <= ...**

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Figure 8.6.18

Construction Noise Contours
OOOH 2030 Q3

Drawn: MP **Checked: DC**

Date: November 2022 **Scale: 1:12,500 @ A4**

Figure Ref.:

A11407_08_CA004_1.0 (17)