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Dear Yasmin

AS12193 146-156 BRIXTON HILL & 5-6 WATERWORKS ROAD, LONDON SW2 1SE**Planning Condition 19 (21/04767/FUL)**

The development includes the demolition of the existing buildings and redevelopment of the site to provide a multi-storey urban industrial and logistics estate comprising 2, two-storey buildings in Use Classes E (research and development of products or processes, or any industrial process suitable in residential areas), B2(General industrial), B8 (Storage or distribution) and Sui Generis (Dark Kitchen).

As part of the planned redevelopment of the site, building services plant will be introduced which could generate potential noise impacts on surrounding noise-sensitive receptors.

Condition 19 of the Decision Notice (21/04767/FUL) requires the following:

19. The operation of any building services plant shall not commence until the following details have been submitted to and approved in writing by the local planning authority:

- a) Assessment of the cumulative acoustic impact arising from the operation of all internally and externally located plant on the Site has been undertaken; and*
- b) A post-installation noise assessment has been carried out to confirm compliance with the noise criteria.*

The assessment of the acoustic impact shall be undertaken in accordance with BS 4142:2014 (or subsequent superseding equivalent) and current best practice and shall include a scheme of attenuation measures to ensure the rating level of noise emitted from the proposed building services plant is 10dB less than background.

The scheme shall be implemented in accordance with the approved details and attenuation measures, and shall be permanently retained and maintained in working order for the duration of the use.

Clarke Saunders Acoustics (CSA) has been commissioned by AG Bloom LML B.V (the Applicant) to provide an assessment demonstrating that the proposed plant installation satisfy the requirements of Condition 19.

1. Introduction

It is understood that mechanical ventilation and heat recovery units (MVHRs) serving the office spaces will be installed within the ceiling void of the offices in each Unit. These will have atmospheric connections onto the facade of the Unit which faces into the courtyard.

Toilets and tea points will be served by separate internal extract fans in each Unit, terminating at a facade louvre which faces into the courtyard.

Air conditioning serving the office spaces will be provided by a series of indoor fan coil units (FCUs) installed within the ceiling void of the office in each unit with a single corresponding outdoor condenser for each office in front of the Unit in the courtyard (A, D and E) or at the rear of the Unit (B and C).

Cumulative noise emissions from all internally and externally mounted plant have been assessed against criteria derived from a survey conducted by CSA at the planning stage, in line both with the methodology stated appropriate by Lambeth Council and with the requirements of *BREEAM UK New Construction 2018 Shell and Core*.

2. Noise Survey

CSA conducted an automated environmental noise survey at the site at the planning stage which is recorded in report AS12193.210811.NIA, submitted with the application.



Figure 1: Site plan showing the five industrial units, nearest receptor, and survey monitoring location.

The location of the monitoring position is indicated in Figure 1, and results of the survey are summarised and provided in Table 1.

ASSESSMENT PERIOD	TYPICAL BACKGROUND SOUND LEVEL $L_{A90, 5MIN}$	AVERAGE NOISE LEVEL $L_{Aeq, T}$
07:00-23:00 hours	46 dB	59 dB
23:00-07:00 hours	43 dB	56 dB

Table 1: Measured average noise levels and typical background sound pressure levels dB re. 20μPa]

Following the results of this survey, CSA has determined appropriate design criteria for proposed plant noise emissions at the nearest noise sensitive receptor (Jebb Avenue). These have been derived in line with the requirements of Lambeth Council as set out in Condition 19. The criteria are given in Table 2.

DAYTIME (07:00 TO 23:00 HOURS)	NIGHT-TIME (23:00 TO 07:00 HOURS)
$L_{A,Tr}$ 36 dB	$L_{A,Tr}$ 33 dB

Table 2: Plant noise emissions criteria ('Rating Noise Level')

[dB re. 20µPa]

3. External Noise Emissions from Mechanical Services

The proposed Internal and external plant for each unit is listed below:

- Unit A: *Ino. Samsung AN050JSKLKN/EU (MVHR)*
HELIOS ITEC-150 (Toilet Extract)
HELIOS RRK 160 (Tea Point Extract)
SAMSUNG AM060BXMDER/EU (Outdoor Condenser)
- Unit B: *Ino. Samsung AN035JSKLKN/EU (MVHR)*
HELIOS ITEC-150 (Toilet Extract)
HELIOS RRK 160 (Tea Point Extract)
SAMSUNG AM040BXMDER/EU (Outdoor Condenser)
- Unit C: *Ino. Samsung AN100JSKLKN/EU (MVHR)*
HELIOS ITEC-150 (Toilet Extract)
HELIOS RRK 160 (Tea Point Extract)
SAMSUNG AM080BXMDER/EU (Outdoor Condenser)
- Unit D: *Ino. Samsung AN050JSKLKN/EU (MVHR)*
HELIOS ITEC-150 (Toilet Extract)
HELIOS RRK 160 (Tea Point Extract)
SAMSUNG AM080BXMDER/EU (Outdoor Condenser)
- Unit E: *Ino. Samsung AN050JSKLKN/EU (MVHR)*
HELIOS ITEC-150 (Toilet Extract)
HELIOS RRK 160 (Tea Point Extract)
SAMSUNG AM080BXMDER/EU (Outdoor Condenser)

Table 3 details the available manufacturer sound levels of each of the proposed mechanical plant.

Location	Description	Octave Band Mid Frequency (Hz)								dB(A)
		63	125	250	500	1k	2k	4k	8k	
Outdoor	SAMSUNG AM060BXMDER/EU	No spectral data available								53dB(A) (L_p @1m)
Outdoor	SAMSUNG AM040BXMDER/EU	No spectral data available								51dB(A) (L_p @1m)
Outdoor	SAMSUNG AM080AXVGGR/EU	No spectral data available								53dB(A) (L_p @1m)
Indoor	HELIOS ITEC-150 outlet	-	75	76	68	61	54	49	50	70dB(A) L_w
Indoor	HELIOS RRK 160 outlet	-	58	59	56	54	51	48	39	59dB(A) L_w
Indoor	SAMSUNG AN035JSKLKN/EU Supply	No ductborne data available								*50dB(A) (L_p @1m)
Indoor	SAMSUNG AN050JSKLKN/EU Supply	No ductborne data available								*50dB(A) (L_p @1m)
Indoor	SAMSUNG AN100JSKLKN/EU Supply	No ductborne data available								*50dB(A) (L_p @1m)

Table 3: Mechanical plant and associated sound levels

[L_p , dB ref. 20µPa / L_w , dB ref. 1pW]

*Suitable manufacturer data unavailable; values here are limiting noise levels.

Toilet extract fans are specified with outlet attenuators, insertion losses are shown in Table 4.

Location	Description	Octave Band Mid Frequency (Hz)							
		63	125	250	500	1k	2k	4k	8k
Unit A	HELIOS ITEC-150 outlet	2	5	11	17	20	19	12	10
Unit B	HELIOS ITEC-150 outlet	2	4	8	12	13	13	9	8
Unit C	HELIOS ITEC-150 outlet	1	2	7	10	11	9	8	7
Unit D	HELIOS ITEC-150 outlet	1	2	7	10	11	9	8	7

Table 4: Insertion losses specified for toilet extract fan outlet

Data provided by the MVHR manufacturer (attached) is limited to a measurement in an anechoic room at 1.5m below the unit. No unit data is provided for ductborne sound on either side of the fan. A limiting noise level is set out above for ductborne sound, which on the basis of the data provided by the manufacturer, appears readily achievable for the proposed installation in this instance.

On this basis, calculations have been conducted with allowance for distance propagation and screening from intervening building structures. These calculations assume continuous operation of the plant throughout daytime and night-time periods no intermittency penalty is applied. Whilst no tonality is expected from these plant items, given the absolute noise levels in comparison with the background sound levels, these plant are not expected to be perceptible at the nearest noise sensitive receptors. The highest anticipated noise level at the nearest noise sensitive receptor, the 'rating level', is provided in Table 5 alongside the plant noise emissions criterion.

PREDICTED LEVEL AT 2 TO 7 JEBB AVENUE	DAYTIME CRITERION	NIGHT-TIME CRITERION
$L_{A,r,Tr}$ 32 dB	$L_{A,r,Tr}$ 36 dB	$L_{A,r,Tr}$ 33 dB

Table 5: Summary of external plant noise emissions

[dB re. 20µPa]

Full calculations are shown at Appendix A.

4. Conclusions

Proposed building services plant noise emissions at 146-156 Brixton Hill and 5&6 Waterworks Road have been assessed and show that new plant should not be perceptible above the background sound level at the nearest noise sensitive receptor.

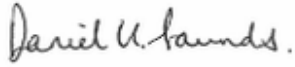
The anticipated rating level at the nearest noise sensitive receptor due to proposed building services plant in this development is 11dB below the night-time background sound level, and complies with the condition 19 requirements.

In respect of Part (b) of the condition, given the absolute and background sound levels in this assessment, it is impractical to try to demonstrate post-installation by measurement at the receptor that the condition requirements have been satisfied.

The building services plant, and where appropriate ductborne silencers, set out in this letter will be installed as per the design and thus, the requirements of the condition have been satisfied.

We trust the above to be of assistance. Please do not hesitate to contact us with any queries you may have.

Your sincerely
for CLARKE SAUNDERS ASSOCIATES



Daniel Saunders MIOA

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Enc.

APPENDIX A

SUMMARY OF EXTERNAL NOISE EMISSIONS

PLANT UNIT	SOUND PRESSURE LEVEL AT 1 M	ATTENUATOR LOSS	DISTANCE TO 2-7 JEBB AVENUE	PROPAGATION LOSS	SCREENING LOSS	TOTAL LEVEL
Unit A - SAMSUNG AM060BXMDER/EU	53 dBA	0	20	-26	-5	22 dBA
Unit B - SAMSUNG AM040BXMDER/EU	51 dBA	0	51	-34	-10	7 dBA
Unit C - SAMSUNG AM080AXVGGR/EU	53 dBA	0	58	-35	-10	8 dBA
Unit D - SAMSUNG AM080AXVGGR/EU	53 dBA	0	37	-31	-5	17 dBA
Unit E - SAMSUNG AM080AXVGGR/EU	53 dBA	0	50	-34	-5	14 dBA
Unit A – TEF discharge	62 dBA	-11	30	-30	0	21 dBA
Unit B – TEF discharge	62 dBA	-9	40	-32	0	21 dBA
Unit C – TEF discharge	62 dBA	-7	70	-37	0	18 dBA
Unit D – TEF discharge	62 dBA	-7	37	-31	-5	19 dBA
Unit E – TEF discharge	62 dBA	0	50	-34	-10	18 dBA
Unit A – TPE discharge	51 dBA	0	30	-30	0	22 dBA
Unit B – TPE discharge	51 dBA	0	40	-32	0	19 dBA
Unit C – TPE discharge	51 dBA	0	45	-33	0	18 dBA
Unit D – TPE discharge	51 dBA	0	47	-33	-5	13 dBA
Unit E – TPE discharge	51 dBA	0	56	-35	-10	6 dBA

PLANT UNIT	SOUND PRESSURE LEVEL AT 1 M	ATTENUATOR LOSS	DISTANCE TO 2-7 JEBB AVENUE	PROPAGATION LOSS	SCREENING LOSS	TOTAL LEVEL
Unit A – MVHR Supply	50 dBA	0	30	-30	0	20 dBA
Unit B – MVHR Supply	50 dBA	0	40	-32	0	18 dBA
Unit C – MVHR Supply	50 dBA	0	70	-37	0	15 dBA
Unit D – MVHR Supply	50 dBA	0	37	-31	-5	12 dBA
Unit E – MVHR Supply	50 dBA	0	50	-34	-10	5 dBA
Unit A – MVHR Extract	50 dBA	0	30	-30	0	20 dBA
Unit B – MVHR Extract	50 dBA	0	40	-32	0	18 dBA
Unit C – MVHR Extract	50 dBA	0	45	-33	0	15 dBA
Unit D – MVHR Extract	50 dBA	0	47	-33	-5	12 dBA
Unit E – MVHR Extract	50 dBA	0	56	-35	-10	5 dBA
Total Level						32 dBA
Typical Background Sound Pressure Level (Daytime / Night-time)						LA90 46 dB / LA90 43 dB
Rating Level - Planning Noise Emission Limit (Daytime / Night-time)						≤ LAeq 36 dB / ≤ LAeq 33 dB

Specifications

ERV

- Energy recovery ventilation unit.
- Cellulose heat exchanger element.
- High Efficiency (F7 class) air filter.
- Optional CO₂ sensor for automatic regulation.

- Bypass operation mode when there's a small temperature difference between indoor and outdoor environment (automatically or manually operated).
- Interlocking with DVM S indoor units.
- Frost formation prevention without electric heater.



Model				AN026JSKLKN/EU	AN035JSKLKN/EU	AN050JSKLKN/EU	AN080JSKLKN/EU	AN100JSKLKN/EU
Power Supply	Φ, #, V, Hz			1Φ, 2, 220~240 V, 50/60 Hz	1Φ, 2, 220~240 V, 50/60 Hz	1Φ, 2, 220~240 V, 50/60 Hz	1Φ, 2, 220~240 V, 50/60 Hz	1Φ, 2, 220~240 V, 50/60 Hz
Performance	Air Volume	m ³ /h		260	350	500	800	1,000
	Temperature Exchange Efficiency	Cooling	Turbo/High/Low	%	70/70/74	70/70/74	70/70/74	70/70/74
		Heating	Turbo/High/Low	%	74/74/75	78/78/79	74/74/75	74/74/75
	Effective Enthalpy Exchange Efficiency	Cooling	Turbo/High/Low	%	50/50/55	50/50/55	50/50/55	50/50/55
		Heating	Turbo/High/Low	%	70/70/76	70/70/76	70/70/76	70/70/76
Power	Power Input	Turbo/High/Low	W	115/80/45	115/80/50	175/120/65	330/230/125	450/280/155
	Current Input	Turbo	A	0.7	0.7	1.1	2.1	2.9
Fan	Airflow Rate	Turbo/High/Low	m ³ /h	260/250/180	350/350/256	500/500/360	800/800/560	1,000/1,000/690
	External Static Pressure	Turbo/High/Low	Pa	100/65/55	155/100/83	165/100/85	155/90/80	155/90/75
Noise Level	Sound Pressure ¹	Turbo/High/Low/ Quiet	dB(A)	31/28/25/22	32/29/26/23	35/32/28/24	36/33/29/25	37/34/30/26
	Sound Power		dB(A)	49	50	53	54	55
Field Wiring	Power Source Wire		mm ²	1.5~2.5	1.5~2.5	1.5~2.5	1.5~2.5	1.5~2.5
	Transmission Cable		mm ²	0.75~1.50	0.75~1.50	0.75~1.50	0.75~1.50	0.75~1.50
Dimensions	Net Weight		kg	28.5	42.5	42.5	67.0	67.0
	Net Dimensions (W x H x D)		mm	600 x 350 x 660	1,012 x 270 x 1,000	1,012 x 270 x 1,000	1,2220 x 340 x 1,135	1,2220 x 340 x 1,135
	Supply/Return/Exhaust/Outside Duct Flange (ø)		mm	150	200	200	250	250
Air Filter				-	Pre filter	Pre filter	Pre filter	Pre filter

Accessories



Differential pressure switch ²	ERV Wired Remote Controller	Wired Remote Controller	CO ₂ Sensor
MOS-P1050	MWR-VH12N	MWR-WG00*N	MOS-C1

¹ Sound level was acquired in an anechoic room. Thus actual noise level may be different depending on the installation conditions.

² Please order MOS-P1050 separately. Differential pressure switch (model code: MOS-P1050) is a mandatory accessory for all ERV and ERV Plus units in EU countries according to Ecodesign Directive 1253/2014.