BlueTreeAcoustics

11 Colley Road • Sheffield • S5 9GT
T: +44 (0)7594 293 486
E: admin@bluetreeacoustics.co.uk
W: www.bluetreeacoustics.co.uk

10/09/2020

Nick Child
Barmston Developments Ltd
10 South Parade
Leeds
LS1 5QS

By email only: nick.child@wiltondevelopments.co.uk

Dear Nick

Site name: **Unit 1, Enterprise 36, Tankersley, Barnsley**
Doc ref: **03432-790100**
Re: **Service yard noise level assessment for noise-related planning conditions**

Further to our recent site visit to undertake acoustic measurements and assessment with regard to planning condition requirements for the above development, please see our findings set out below.

Criteria

We understand that the following noise-related conditions are attached to the planning permission pertaining to the development:

"Condition 25

Prior to occupation of the building, a noise and traffic management plan for the Service Yard for Unit 1 shall be submitted to and approved in writing by the Local Planning Authority. This should consider noise generated from deliveries, loading/unloading activities, along with general service yard activities, and consideration of any mitigation measures required in order to comply with Condition 20 of this permission. The development shall thereafter be carried out in accordance with the approved details, which shall be retained and adhered to at all times.

Condition 20

The level of noise emitted from the site shall not exceed 49dB LAeq(15 mins) between 0700 and 2300, as measured at the boundary of the nearest neighbouring property.

The level of noise emitted from the site shall not exceed 44dB LAeq(15 mins) between 2300 and 0700, as measured at the boundary of the nearest neighbouring property."

Assessment

A visit to the existing premises of the new Unit 1 tenant (USL Group) was undertaken during daytime on Tuesday 01/09/2020 in order to measure source sound levels of the various noise sources expected to operate in the Unit 1 service yard.

The measurement instrumentation used during the surveys was 1no Rion NA-28 Type 1/Class 1 Integrating Sound Level Meter. The meter was within a valid period of laboratory calibration. Calibration checks were carried out both before and after the measurements, with no variance observed. A proprietary environmental windshield was fitted to the microphone of the sound level meter. Weather conditions throughout the survey periods were dry and calm. The measurement results are detailed in Appendix I below.

Based on the measured USL Group and Ekspan source noise levels, along with manufacturer's data for the proposed new external extractor units (as shown in Appendix III), calculations have been undertaken to ascertain compliance with the noise criteria set out in Condition 20.

The calculations are detailed in Appendix II and summarised in Table 1 below.

Table 1: Comparison of predicted sound levels with planning condition criteria

Period	Predicted Unit 1 sound level	Condition 20 criterion	Conclusion
Day (0700-2300 hours)	37dB $L_{Aeq,15min}$	≤ 49dB $L_{Aeq,15min}$	Criterion met
Night (2300-0700 hours)	25dB $L_{Aeq,15min}$	≤ 44dB $L_{Aeq,15min}$	Criterion met

Table 1 shows that the predicted noise levels from the USL Group and Ekspan operations proposed for Unit 1 are below the Condition 20 noise limits and therefore satisfy the requirements of the planning conditions.

Mitigation and Noise Management Plan (NMP)

The existing mitigation in terms of the acoustic bund and barrier arrangement along the eastern boundary of the Unit 1 site, together with the relative topography between the service yard and nearby residential receptors to the east, provide beneficial noise attenuation sufficient to meet the planning condition requirements. Therefore, additional noise mitigation measures are not necessary for the proposed USL Group operation.

Notwithstanding the above, it is advisable that good practice measures be incorporated into the Noise Management Plan (NMP) required by Condition 25, to ensure that noise emissions are reduced as far as practicable. Such measures are outlined as follows:

1) Where possible, noise levels at source are to be reduced by the careful selection of plant and equipment with low operating noise levels, and be kept in a good state of repair.

2) Siting fixed noise sources and plant items such that they are as remote as possible from the residential receptors to the east.

3) Wherever practicable, position noise sources within buildings.

4) Machines in intermittent use should be shut down in the intervening periods between work, or throttled down to a minimum.

5) Vehicles not left idling unnecessarily.

6) Utilise traffic management to keep vehicle speeds low and avoid excessive engine revving.

7) Regular and effective maintenance of static and mobile plant by trained personnel to reduce noise from machinery.

8) Locating noisy plant and equipment as far away from noise-sensitive receptors as reasonably practicable, and carry out external works and loading or unloading in those more remote areas, where practicable.

9) Orientating plant or equipment known to emit noise strongly in one direction such that the noise is directed away from noise-sensitive receptors, where possible.

10) Observe good neighbour procedures and deal with any complaints in a speedy and sympathetic manner.

11) On receiving a noise-related complaint, inform a nominated Manager who will be responsible for administering a defined Complaints Procedure. Where deemed necessary, a noise assessment will be undertaken to investigate the noise source and assess noise attenuation/control measures to ensure noise levels are not exceeding agreed trigger levels.

In summary, it is predicted that the Unit 1 service yard's operational noise levels will not exceed the environmental noise limits defined in Condition 20. The good practice measures outlined above should be incorporated into a Noise Management Plan to satisfy Condition 25 in order to help control and minimise noise emissions. On this basis, we consider that the planning condition requirements are met and can be discharged.

Please do not hesitate to email the below address if you require anything further.

Yours sincerely



Owen Downey BSc(Hons) MIOA
Senior Consultant

APPENDIX I – NOISE MEASUREMENT RESULTS

Tuesday 01/09/2020 – USL Group and Ekspan premises, Sheffield

Rion NA-28 sound level meter

All values dB(A)

USL Group premises – Panama House, 184 Attercliffe Road, Sheffield, S4 7WZ						
Time	**Duration (mm:ss)**	**L_{Aeq}**	**L_{Amax}**	**L_{A10}**	**L_{A90}**	**Comment**
10:14	00:30	54.3	59.4	56.5	51.8	Residual level in yard
10:16	00:09	65.9	75.2	69.0	52.6	Spray wagon startup, 3m
10:16	00:33	69.3	74.9	71.5	66.3	Spray wagon reverse, 3m
10:16	00:05	68.3	72.4	69.8	66.2	Spray wagon forward, 3m
10:17	00:17	69.9	75.2	70.9	68.6	Spray wagon reverse, 3m
10:17	02:00	69.7	72.2	70.2	69.1	Spray wagon idle, 2m
10:23	00:12	73.0	77.0	74.9	70.2	Diesel forklift forward, 1m
10:24	00:14	74.8	78.7	77.0	69.6	Diesel forklift pickup pallet, 1m
10:25	00:14	77.6	84.3	80.4	73.3	Diesel forklift reverse with beeper alarm, 1m
10:26	01:30	57.3	65.8	60.1	51.1	Residual level in yard
10:29	00:24	71.8	76.8	74.8	67.7	Bridge joint truck forward, 3m
10:29	00:22	72.2	79.7	74.8	68.7	Bridge joint truck reverse, 3m
10:34	00:21	51.8	64.3	55.7	49.0	Residual level in yard
10:34	00:30	75.1	79.3	77.2	73.2	Compressor at 1m
10:45	01:02	62.7	63.6	63.0	62.4	Tank farm internal near door, general level
10:50	02:04	68.9	80.7	72.6	62.1	As above, tank farm pumps running
10:57	00:08	75.4	84.5	78.6	69.5	Gas forklift forward, 1m
10:57	00:12	82.0	94.2	83.7	72.1	Gas forklift reverse with beeper alarm, 1m
10:58	01:05	55.4	64.2	57.6	52.7	Residual level in yard
11:02	00:30	75.8	78.2	76.9	74.5	Jet wash at 1m
11:06	01:00	81.0	81.7	81.2	80.7	Generator mounted on wagon, 1m

Ekspan premises – 410 Brightside Lane, Sheffield, S9 2SP						
Time	**Duration (mm:ss)**	**L_{Aeq}**	**L_{Amax}**	**L_{A10}**	**L_{A90}**	**Comment**
11:23	00:33	50.8	58.3	52.3	48.6	Residual level in yard
11:36	00:26	73.6	75.0	74.2	72.8	Flatbed delivery wagon idling, 1m
11:38	00:30	72.4	75.7	73.8	71.2	Flatbed delivery wagon forward, 2m
11:39	01:01	73.1	75.5	74.1	72.0	Flatbed delivery wagon reverse, 2m; no alarm fitted
11:45	01:03	71.6	84.5	70.8	69.3	In open workshop door, flatbed delivery wagon idling inside workshop
11:49	05:00	73.4	84.8	75.3	69.8	In open workshop door, machines running
11:59	01:02	55.5	71.7	56.7	49.1	Residual level in yard
12:04	00:07	73.5	83.0	74.1	67.2	Gas forklift forward, 1m
12:05	00:09	73.3	80.9	77.5	66.6	Gas forklift reverse with beeper alarm, 1m
12:05	00:14	68.1	77.0	71.1	66.1	Gas forklift, idle 1m
12:07	00:13	82.3	93.3	88.6	63.0	Gas forklift entering workshop beeping horn,1m; also bumping over lock in entrance
12:13	03:06	54.2	65.9	57.8	48.9	Residual level at workshop door
12:27	05:00	66.9	80.2	71.6	52.6	In open workshop door, crane operating, loading flatbed; intermittent beep

APPENDIX II – NOISE CALCULATIONS

Calculations are undertaken to the boundary of nearest residential receptor at 33 Carr Lane. Barrier calculations are as detailed in Blue Tree Acoustics' letter ref. 03432-590103 dated 11/12/2019.

The USL Group and Ekspan source noise level measurements were sufficiently greater than the residual noise levels that a correction for residual noise has not been applied.

Daytime (0700-2300 hours) Calculation

Based on information provided by USL Group, the calculation assumes that the activities listed in the table below all occur in the same 15-minute period. We understand that typical daily working times are 0730-1730 hours.

Item	Source level (dB L_{Aeq})	Measurement distance (m)	Receptor distance (m)	Distance attenuation (dB)	Barrier attenuation (dB)	On-time (sec)	On-time correction to 15-minute (dB)	Resulting sound level at receptor (dB L_{Aeq})
Ekspan workshop machines running breakout open door	73.4	1.0	105.0	-40.4	-12.0	900	0.0	21.0
Ekspan workshop wagon idling breakout open door	71.6	1.0	106.0	-40.5	-12.0	900	0.0	19.1
Ekspan workshop crane loading breakout open door	66.9	1.0	109.0	-40.7	-12.0	900	0.0	14.2
Tank farm workshop breakout open door	68.9	1.0	115.0	-41.2	-12.0	900	0.0	15.7
Tank farm workshop breakout open door	68.9	1.0	120.0	-41.6	-12.0	900	0.0	15.3
Jet wash	75.8	1.0	65.0	-36.3	-12.0	900	0.0	27.5
Spray wagon startup	69.3	3.0	75.0	-28.0	-12.0	9	-20.0	9.3

Item	Source level (dB L_{Aeq})	Measurement distance (m)	Receptor distance (m)	Distance attenuation (dB)	Barrier attenuation (dB)	On-time (sec)	On-time correction to 15-minute (dB)	Resulting sound level at receptor (dB L_{Aeq})
Spray wagon forward	68.3	3.0	75.0	-28.0	-12.0	60	-11.8	16.6
Spray wagon reverse	69.9	3.0	75.0	-28.0	-12.0	60	-11.8	18.2
Bridge joint truck startup	69.3	3.0	75.0	-28.0	-12.0	9	-20.0	9.3
Bridge joint truck forward	71.8	3.0	75.0	-28.0	-12.0	60	-11.8	20.1
Bridge joint truck reverse	72.2	3.0	75.0	-28.0	-12.0	60	-11.8	20.5
Diesel FLT forward	73.0	1.0	80.0	-38.1	-12.0	300	-4.8	18.2
Diesel FLT pickup pallet	74.8	1.0	80.0	-38.1	-12.0	300	-4.8	20.0
Diesel FLT reverse with beeper	77.6	1.0	80.0	-38.1	-12.0	300	-4.8	22.8
Gas FLT forward	75.4	1.0	80.0	-38.1	-12.0	600	-1.8	23.6
Gas FLT reverse with beeper	82.0	1.0	80.0	-38.1	-12.0	300	-4.8	27.2
Compressor	75.1	1.0	75.0	-37.5	-12.0	900	0.0	25.6
Truck generator	81.0	1.0	75.0	-37.5	-12.0	900	0.0	31.5
Ekspan flatbed delivery forward	72.4	2.0	90.0	-33.1	-12.0	60	-11.8	15.6
Ekspan flatbed delivery reverse	73.1	2.0	90.0	-33.1	-12.0	60	-11.8	16.3
Ekspan flatbed delivery idling	73.6	1.0	90.0	-39.1	-12.0	60	-11.8	10.8

Item	Source level (dB L_{Aeq})	Measurement distance (m)	Receptor distance (m)	Distance attenuation (dB)	Barrier attenuation (dB)	On-time (sec)	On-time correction to 15-minute (dB)	Resulting sound level at receptor (dB L_{Aeq})
Ekspan gas FLT forward	73.5	1.0	75.0	-37.5	-12.0	600	-1.8	22.2
Ekspan gas FLT reverse with beeper	73.3	1.0	75.0	-37.5	-12.0	300	-4.8	19.0
Ekspan gas FLT beeping	82.3	1.0	105.0	-40.4	-12.0	78	-10.6	19.3
Donaldson Downflo extractor unit 1	75.0	1.0	139.0	-42.9	-13.0	900	0.0	19.1
Donaldson Downflo extractor unit 2	75.0	1.0	160.0	-44.1	-20.0	900	0.0	10.9
							Total sound level dB $L_{Aeq,15min}$	**36.6**

Email: admin@bluetreeacoustics.co.uk
Blue Tree Acoustics

Nighttime (2300-0700 hours) Calculation

Based on information provided by USL Group, the calculation assumes that the activities listed in the table below all occur in the same 15-minute period, i.e. 2no wagons enter the site, maneuver, and park up. We understand that other working activities are during daytime only.

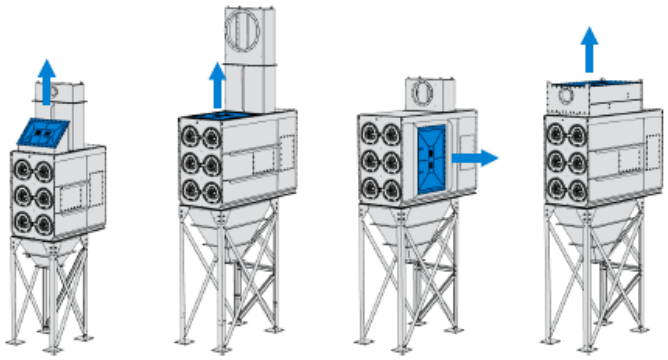
Item	Source level (dB L_{Aeq})	Measurement distance (m)	Receptor distance (m)	Distance attenuation (dB)	Barrier attenuation (dB)	On-time (sec)	On-time correction to 15-minute (dB)	Resulting sound level at receptor (dB L_{Aeq})
Spray wagon startup	69.3	3.0	75.0	-28.0	-12.0	9	-20.0	9.3
Spray wagon forward	68.3	3.0	75.0	-28.0	-12.0	60	-11.8	16.6
Spray wagon reverse	69.9	3.0	75.0	-28.0	-12.0	60	-11.8	18.2
Bridge joint truck startup	69.3	3.0	75.0	-28.0	-12.0	9	-20.0	9.3
Bridge joint truck forward	71.8	3.0	75.0	-28.0	-12.0	60	-11.8	20.1
Bridge joint truck reverse	72.2	3.0	75.0	-28.0	-12.0	60	-11.8	20.5
Total sound level dB $L_{Aeq,15min}$								**25.3**

Email: admin@bluetreeacoustics.co.uk
Blue Tree Acoustics

APPENDIX III – MANUFACTURER'S NOISE DATA

The below images originate from the Donaldson Downflo manufacturer's brochure for the proposed new external extraction units – 1no unit is to be positioned on the northern elevation of the Unit 1 building, whilst the other unit is to be positioned on the western elevation of the Unit 1 building.

DFE VENTED



top vent single deep | top vent extension spool | side vent extension spool | top vent HIFLO

Configuration	Vent panel small 578 x 851 mm area 0.495 m²	Vent panel large 851 x 1162 mm area 0.985 m²
DFE 2-4	top / side	-
DFE 2-8	side	top
DFE 2-12	side	top
DFE 3-6	top / side	-
DFE 3-12	-	top / side
DFE 3-18	-	top / side
DFE 4-16	-	top / side
DFE 4-24	-	top / side
DFE 5-20	-	top / side
DFE 5-30	-	top / side

max Kst Pmax=10 - steep hopper - Pred=0,4* 1 vent opening		
Configuration	STD inlet	HIFLO inlet
DFE 2-4	525	391
DFE 2-8	525	473
DFE 2-12	486	346
DFE 3-6	451	294
DFE 3-12	525	400
DFE 3-18	525	294
DFE 4-16	525	348
DFE 4-24	525	257
DFE 5-20	525	310
DFE 5-30	470	230

ELECTRICAL REQUIREMENTS

Fully automatic cleaning mechanism: C-Controller
Pulse interval time: 12 s
Control box protection class: IP65
Input voltage: 230 / 115 VAC - 24 VD
Fan: 400 V Δ 50 Hz

PULSE NOISE LEVEL

LpAeq,s: <75 dB(A) (with soundproofing pack)
(A-weighted equivalent continuous sound pressure)
Measurement according 2006/42/EC at 1 metre distance and 1.6 metres above base level, with 6 bar compressed air pressure and 12 second pulse interval, in semi-free field conditions.

MANIFOLD DESIGN DETAILS

MANIFOLD DESIGN DETAILS

Pressure Strength: 7 bar
Pressure Test: 10,5 bar
Temperature: -20 to 200 °C
Rating of pressure relief device: 25 dm³/s at 7,1 bar (factory set at 7,1 bar) (not supplied as standard)
Product of pressure PS and Volumetric capacity V:
2-high 52,70 bar. l
3-high 88,18 bar. l
4-high 118,68 bar. l
5-high 149,18 bar. l
Material used for manifold construction: According to EN13445 with extra Charpy when required

COMPRESSED AIR REQUIREMENTS

Clean air (max. particle size 50 µm)
Free of condensate at working temperature
Max. oil concentration: ISO8573-1 class 3 =< 1 mg/m³
Approximate compressed air usage*: ±45 Nlitres per pulse (± 16.2 Nm3/h for 10 s pulse interval at 7 bar)
Approximate compressed air usage: see table below

* The indicated value is the consumption per valve

Install safety valve directly in contact with the manifold.

Make sure to use at least 1 inch supply line to avoid large pressure drops in the cleaning system.

Email: admin@bluetreeacoustics.co.uk
Blue Tree Acoustics