



CBRE Global Investors

Proposed Brewery, Piccadilly Trading Estate

Noise Impact Assessment

9511120/rmg/R1/v4 – 8th September 2020

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1 Introduction

- 1.1 Bureau Veritas was instructed by CBRE Global Investors to undertake a noise impact assessment to support a proposed change of use for an existing warehouse at 12-18 Piccadilly Trading Estate, Manchester.
- 1.2 It is understood that the proposals are to change the use of a former Parcel Force sorting facility which did not have consent for B8 use (storage and distribution). The proposal will be to support a planning application to change the use of Units 12-18 to Class B8 to regularise the present usage. Planning permission is also sought for Use Class B2 (general industrial) at Units 17 and 18 to accommodate a new microbrewery.
- 1.3 This noise assessment has been carried out to assess the potential impact of the new microbrewery operations and HGV loading / unloading activities at nearby residential receptors.
- 1.4 The assessment focusses on the potential noise impact on proposed dwellings which will be located within the Portugal Street East study area in the future. It should be noted at the moment these are used as offices / industrial. It is understood that 7 new blocks will be formed (Blocks A-G) and residential development is envisaged throughout the study area. Block D is located closest to the proposed development and hence is likely to be exposed to the highest noise levels from the proposed new development.

Figure 1.1: Portugal Street East Study Area



- 1.5 The current nearest residential receptors at the time of writing are located at the X1 Eastbank Tower on Great Ancoats Street.
- 1.6 The assessment has been facilitated by preparing a noise model in order to assess the noise propagation from the new brewery. Noise measurements at the existing Track microbrewery on Sheffield Street, Manchester have been used to establish typical noise levels of machinery. These have been used to inform our noise model.
- 1.7 A glossary of acoustic terminology is included in Appendix One.

2 Criteria for Assessment

Assessment Methodology

- 2.1 The following noise sources have been considered:
- Noise generated by HGV loading/unloading at the proposed site
 - Noise generated from the proposed microbrewery inside the warehouse with all roller shutter doors open.
- 2.2 The assessment considers the potential impact of the above activities occurring during daytime (07:00-23:00) and night-time (23:00-07:00) periods.
- 2.3 The potential noise impacts at proposed sensitive receptors have been assessed with reference to the following current guidance:
- National Planning Policy Framework (NPPF) 2019 and the supplementary Planning Practice Guidance for Noise (PPGN) 2014 (as amended);
 - British Standard 4142; 2014+A1:2019, “*Methods for rating and assessing industrial and commercial sound*” (BS4142); and
 - British Standard 8233: 2014, “*Guidance on sound insulation and noise reduction for buildings*”.

National Planning Policy Framework, 2019

- 2.4 The Revised NPPF (Feb 2019) sets out the Government’s planning policies for England. It states:
- “170. Planning policies and decisions should contribute to and enhance the natural and local environment by: ...*
- e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and ...”*
- 2.5 It goes on to state:
- “180. Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:*
- a) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life [NPSE – see below];*
- b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason; and ...”*
- 2.6 The terms ‘significant adverse impact’ and other adverse impacts are defined in the explanatory notes of the ‘Noise Policy Statement for England (NPSE)’, which states:
- There are two established concepts from toxicology that are currently being applied to noise impacts, for example, by the World Health Organisation. They are:*

NOEL – No Observed Effect Level

This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life

LOAEL – Lowest Observed Adverse Effect Level

This is the level above which adverse effects on health and quality of life can be detected.

Extending these concepts for the purpose of this NPSE leads to the concept of a significant observed adverse effect level.

SOAEL – Significant Observed Adverse Effect Level

This is the level above which significant adverse effects on health and quality of life occur

- 2.7** It should be noted that specific noise limits for LOAEL and SOAEL have not yet been specifically defined, and would be specific to different sectors. However, guidance from other acoustic standards may be employed to determine suitable levels within the overall principle of the NPPF.
- 2.8** The Planning Practice Guidance for Noise (PPGN) provides further detail about how the effects of noise can be categorised. Table 2.1 summarises the noise exposure hierarchy.

Table 2.1: National Planning Practice Guidance Noise Exposure Hierarchy

Perception	Examples of Outcomes	Increasing Effect Level	Action
Not present	No Effect	No Observed Effect	No specific measures required
Present and not intrusive	Noise can be heard, but does not cause any change in behaviour, attitude or other physiological response. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life	No Observed Adverse Effect	No specific measures required
Lowest Observed Adverse Effect Level			
Present and intrusive	Noise can be heard and causes small changes in behaviour, attitude or other physiological response, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
Significant Observed Adverse Effect Level			
Present and disruptive	The noise causes a material change in the behaviour, attitude or other physiological response, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area	Significant Observed Adverse Effect	Avoid
Present and very disruptive	Extensive and regular changes in the behaviour, attitude or other physiological response and/or an inability to mitigate effect of noise leading to psychological stress of physiological effects, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory	Unacceptable Adverse Effect	Prevent

'Agent of Change' Principle

- 2.9 The nearest noise-sensitive receptors (new-build residential assisted-living accommodation on Woodlands Road) were constructed adjacent to the established business park, and therefore paragraph 182 of the revised NPPF was a relevant consideration for the decision to approve the flats, which states:

"Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed."

- 2.10 In response to this item, paragraph 6.4.18 of the planning committee report for the assisted-living accommodation (Application Ref. P/4648/18) addressed the issue of potential noise impacts from the units on the Crystal Centre with reference to The ACA Report. Specifically it stated:

"The application has been accompanied by an Acoustic Assessment [Ref: 180909-R001A]. The survey of the existing area as detailed in the report notes that the daytime sound climate is low, primarily consisting of traffic, while the levels of noise from the industrial units was generally low, with some audible noise from extract machinery. Nonetheless, the report considers that the context of the proposal, which is bringing new residential to an area with existing industrial uses, reduces the likelihood of adverse impacts. The report provides recommended measures for façade sound insulation and mechanical ventilation, which it considers sufficient to mitigate noise vis-à-vis the proposed residential dwellings."

- 2.11 Harrow Council therefore concluded that, with the proposed glazing specification and whole-house ventilation system (to negate the requirement to open windows for ventilation), current noise from industrial operations at the Crystal Centre noise would not result in an adverse impact on residential amenity.

British Standard 4142: 2014+A1:2019 'Method for rating and assessing industrial and commercial sound'

- 2.12 The potential impact of the operational activities of the proposed retail unit at sensitive residential receptors has been assessed in accordance with BS4142. The Standard provides a method for assessing whether a sound from industrial or commercial premises (e.g. fixed mechanical and electrical (M&E) plant, loading activities etc.) is likely to cause a disturbance to persons living in the vicinity of the site.
- 2.13 BS4142 assesses potential significance of effect by comparing the 'specific sound level' of an industrial source to the typically representative background sound level (L_{A90}). Certain acoustic features can increase the potential for a sound to attract attention, and therefore increase its relative significance than that expected from a simple comparison between the specific sound level and the background sound level. In particular, BS4142 identifies noise that contains discrete impulses and/or audible tonal qualities and in these cases recommends that a correction be added to the specific sound level. The specific sound level along with any applicable correction is referred to as the 'rating level'.
- 2.14 The greater the difference between the rating level and the background sound level; the greater the likelihood of complaints. The assessment criteria given by BS4142 are as follows:

- A difference of +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.
- A difference of +5 dB could be an indication of an adverse impact, depending on the context.
- The lower the rating level is relative to the measured background sound level, the less likely it is that there will be an adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.
- Also to take into account the absolute level, risk that it will cause annoyance/interference with everyday activities, context of the sound, frequency and temporal variations to the sound.

2.15 During the daytime and evening, BS4142 requires that sound levels are assessed over 1-hour periods. During the night-time, because sleep disturbance is the important issue and individual sound events are, therefore, more important, sound levels are assessed over 15-minute periods.

British Standard 8233: 2014 'Guidance on Sound Insulation and Noise Reduction for Buildings'

- 2.16** BS 8233:2014 provides guidance for the control of noise in and around buildings. It is applicable to the design of new buildings, or refurbished buildings undergoing a change of use.
- 2.17** The World Health Organisation (WHO) 'Guidelines for community noise' (GCN) provides recommendations aimed to limit the adverse effects of noise on health.
- 2.18** With regards to external sound sources affecting habitable residential spaces, Table 4 of BS 8233:2014 provides guideline values that it is desirable to not exceed during daytime and night time periods. These guideline values are based on guidelines issued by the WHO, and are reproduced in Table 2.2.

Table 2.2: Indoor Ambient Sound Levels for Dwellings

Activity	Location	Daytime (07:00 to 23:00)	Night-time (23:00 to 07:00)
Resting	Living Room	35 dB $L_{Aeq,16hour}$	-
Dining	Dining room/area	40 dB $L_{Aeq,16hour}$	-
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq,16hour}$	30 dB $L_{Aeq,8hour}$

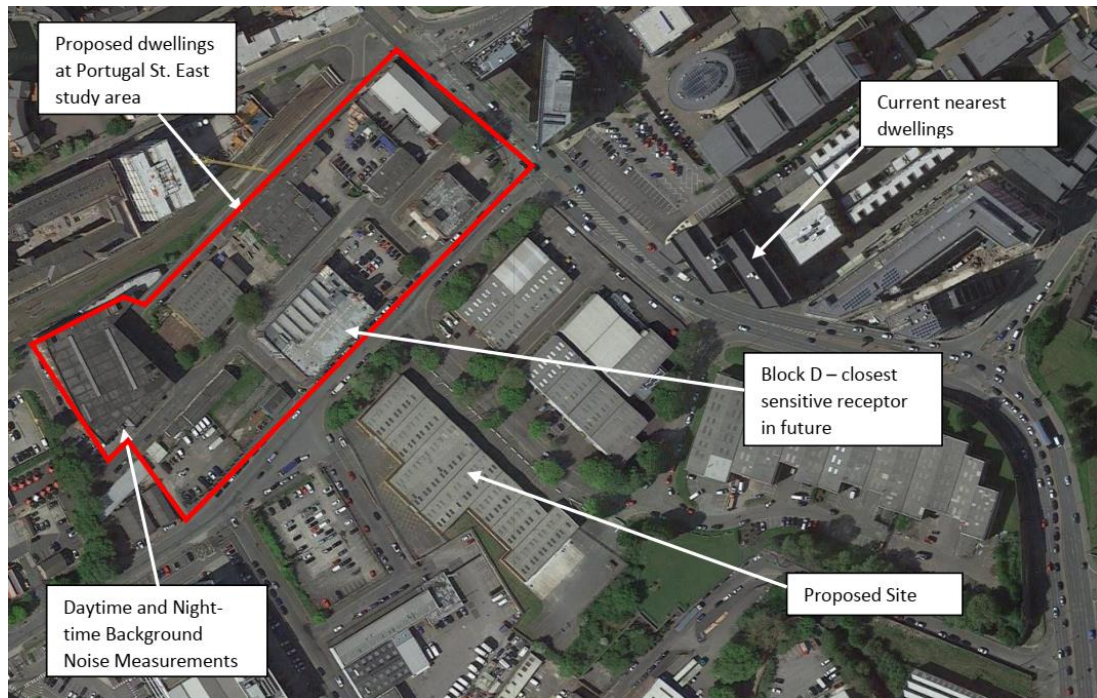
- 2.19** The internal sound requirements are not intended to be met with open windows, although BS 8223:2014 states that the internal sound levels should take account of the building ventilation.
- 2.20** For traditional external areas that are used for amenity space, such as gardens and patios, BS8233 states that it is desirable that the external sound level does not exceed 50 dB $L_{Aeq,T}$, with an upper guideline value of 55 dB $L_{Aeq,T}$ which would be acceptable in noisier environments.

3 Baseline Sound Level Survey

Background Noise Assessment

- 3.1 Attended daytime and night-time background noise surveys were conducted between the 20th and 21st July 2020. Figure 3.1 below shows the extent of the study area and measurement locations.

Figure 3.1: Sound Level Survey Locations



- 3.2 The noise monitoring equipment was calibrated before and after the measurement surveys using an acoustic calibrator, which had itself been calibrated against a reference set traceable to National and International Standards. It is considered that no unusual events occurred during the survey periods and the measurement data are considered to be a true and a fair representation of the industrial and ambient noise levels. No significant drift in calibration level was observed.
- 3.3 The sound level meter was set to record 1 hour interval values for the daytime and 15 minute intervals for the night-time, for the L_{A90} , L_{Aeq} and L_{Amax} indices.
- 3.4 Ambient noise measurements were made in free-field conditions with the sound level meter mounted on a tripod 1.5m above local ground level. The weather was dry and sunny with a breeze of <5m/s and considered conducive to environmental noise monitoring. A protective windshield was also fitted to the microphone.
- 3.5 The background noise climate was dominated by distant and local road traffic noise, railway noise, tram noise, sporadic noise from industrial units, lorry movements and sporadic construction noise from building works on Baird Street (daytime only). The results from the background sound level survey are detailed in Table 3.1 below.

Table 3.1: Background Sound Level Measurements

Period	Start Time (hh:mm)	Duration	L_{Aeq} (dB)	L_{A90} (dB)	$L_{Amax, Fast}$ (dB)
Daytime	13:30	1h	55.0	50.0	76.6
Night-time	00:00	15min	46.6	41.3	64.1
Night-time	00:39	15min	43.4	38.7	54.1

Industrial Noise from Existing Track Brewery

- 3.6 Bureau Veritas undertook a detailed noise assessment at the existing microbrewery operated by Track Brewing on Sheffield Street, Manchester on the 22nd July 2020. The results of the noise assessment has informed our noise model by establishing noise levels of various equipment typical of a brewery of this nature. The results of the noise survey can be found in Table 3.2.

Table 3.2: Industrial Noise Levels taken at Track Brewery

Meas. No.	Measurement Description	L_{Aeq} (dB)	$L_{Amax, Fast}$ (dB)
1	At kettle warming up to boil 2m away with 2 pumps operational	63.7	65.4
2	Can filling machine with compressor and conveyor belt active 1m away	76.4	80.4
3	At compressor of can filling machine no conveyor belt active 1 m away	77.8	79.4
4	Air compressor airline for tanks active in centre of brewery - active 2-3 times a day for 1 minute each time	74.6	75.8
5	At cask washer cleaning casks 1m away	82.6	89.9
6	Fork Lift Truck moving pallets 3m away - the delivery drivers just drop pallets off Track do all movements with electric FLT so this is considered noisiest bit of delivery - 1-2 deliveries a week	65.3	75.3
7	Ambient 5m from opening of brewery shutters with standard activity happening inside unit - shutters open (30min)	57.3	61.2

- 3.7 It is understood that the brewery was operating as normal during the time of the site visit. Much of the equipment runs sporadically and for short durations as necessary. It is therefore considered that measurement 7 provides a good average of all the machinery operational over a typical hour and shows how noise propagates through an open roller shutter doorway.

4 Noise Model

- 4.1 An acoustic model has been created for the proposed development site using CadnaA noise mapping software. The model calculates the noise propagation for HGV loading / unloading as well as the impact of break-out noise from brewery operations.
- 4.2 The new brewery equipment proposed is steam generated and has condensing units so there is no ventilation or fume exhaust requirements for the brewery itself. Therefore no external plant is proposed. The break-out noise from the warehouse has been assumed with roller doors open as a worst case scenario.
- 4.3 The model predicts noise levels based on hemispherical propagation, atmospheric absorption, ground effects, in plant reflections, screening and directivity based on the procedure detailed in ISO 9613-2, "Acoustics -- Attenuation of sound during propagation outdoors -- Part 2: General method of calculation".
- 4.4 The model has been run using a receiver height of 1.5 metres above grade, equivalent to ear level at standing height, ground floor levels. The model accounts for equal sound radiation of noise sources in all directions.
- 4.5 ISO 9613-2 gives the estimated accuracy of the noise model as ± 3 dB, for the calculation of broadband A-weighted sound levels, for receiver distances of up to 1 km. The standard also states that errors in the calculation of individual octave bands may be somewhat larger than the estimated errors given for broadband A-weighted sound levels.

Noise Inputs

- 4.6 The noise model has been prepared using the scaled site plans provided by CBRE Ltd.
- 4.7 Noise levels made at the existing Track Brewery on Sheffield Street (Table 3.2) have been used to inform our noise assessment. As a worst case scenario, a doubling of noise has been considered to account for any additional equipment.
- 4.8 Based on Bureau Veritas' experience of similar developments, the main sound sources related to deliveries / collections are considered to be the opening and closing of doors (driver's and tailgate), beeping of reversing alarms, steel cages/pallets travelling from lorry to store, engine noise, cab-mounted chiller power unit noise (if temperature controlled) and the raising and lowering of the tail lift. Delivery times may vary but are typically between 30 minutes and 1 hour. Bureau Veritas' library noise data for a delivery to a retail unit are detailed in Table 4.1.

Table 4.1: Typical Sound Levels Associated with Deliveries

Description and Duration of Delivery Activity	Measured Activity Sound Power Level, L_w
Store delivery comprising: Vehicle arriving; Unloading (engine off, chiller power unit operating); Vehicle leaving; Total duration: 40 minutes	85 dBA

Assumptions

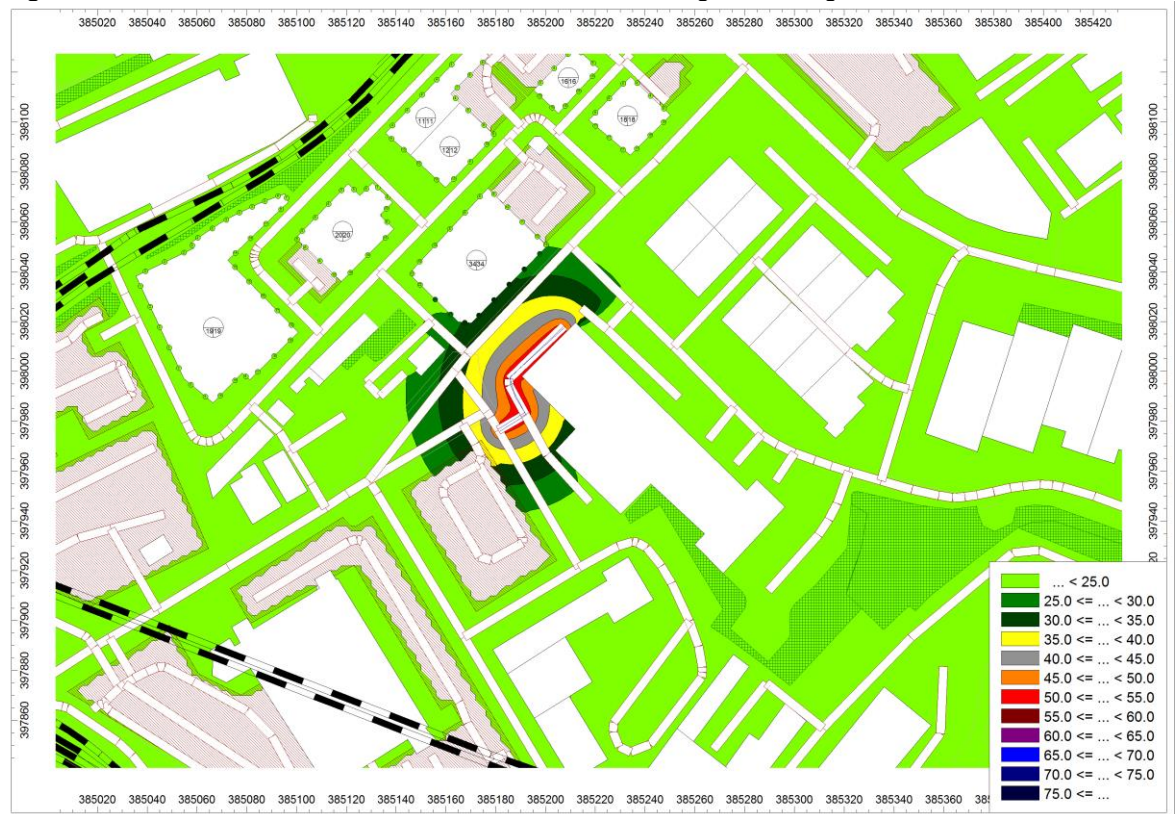
- 4.9 In terms of ground effect, a low ground absorption was used, i.e. hard terrain. Conservative climatic conditions, favourable to noise propagation were selected, i.e. downwind conditions. It is envisaged however that due to the short propagation distance with which the receptors lie, atmospheric conditions will have very little impact on sound propagation. The assessment was undertaken with the shutter doors open as a worst case scenario.

5 Noise Assessment

BS 4142 Assessment: HGV Loading/Unloading

- 5.1 The sound level contours, using CadnaA modelling software, for HGV loading / unloading activities are shown in Figure 5.1. The results indicate that the highest noise levels predicted at the proposed Portugal Street East study area will be 34 dB $L_{Aeq,T}$ at Block D. It should be noted that this noise level is not time weighted and therefore is considered to be a worst case level.

Figure 5.1: Prediction of Sound Levels due to HGV Loading/Unloading



- 5.2 Table 5.1 below provides a daytime BS4142 assessment at the potential new houses located at the Portugal Street East study area for the loading/unloading of HGVs at the proposed development site. The highest noise levels were found to be at Block D.

Table 5.1: Daytime BS4142 HGV Assessment

Assessment Calculation Parameters	Assessment Values, dB	Commentary
Specific sound level at receptor, dB $L_{Aeq,T}$	34	HGV loading/unloading at microbrewery (highest level predicted at Block D)
Acoustic feature correction, dB	0	No correction as levels are predicted to be imperceptible above background.
Rating Level, dB $L_{Ar,Tr}$	34	
Background sound level at nearest receptor, dB $L_{A90,T}$	50	From Table 3.1
Excess of rating over background sound level, dB	-16 dB	
Assessment outcome	Low	The assessment indicates very little likelihood of adverse impact
Uncertainty of the assessment	Uncertainty unlikely to significantly affect outcome, due to rating level being significantly below the background	

- 5.3 Table 5.2 below provides a night-time BS4142 assessment at the potential new houses located at the Portugal Street East study area for the loading/unloading of HGVs at the proposed microbrewery.

Table 5.2: Night-time BS4142 HGV Assessment

Assessment Calculation Parameters	Assessment Values, dB	Commentary
Specific sound level at receptor, dB $L_{Aeq,T}$	34	HGV loading/unloading at microbrewery (highest level predicted at Block D)
Acoustic feature correction, dB	0	No correction as levels are predicted to be imperceptible above background.
Rating Level, dB $L_{Ar,Tr}$	34	
Background sound level at nearest receptor, dB $L_{A90,T}$	39	From Table 3.1
Excess of rating over background sound level, dB	-5 dB	
Assessment outcome	Low	The assessment indicates very little likelihood of adverse impact
Uncertainty of the assessment	Uncertainty unlikely to significantly affect outcome, due to rating level being significantly below the background	

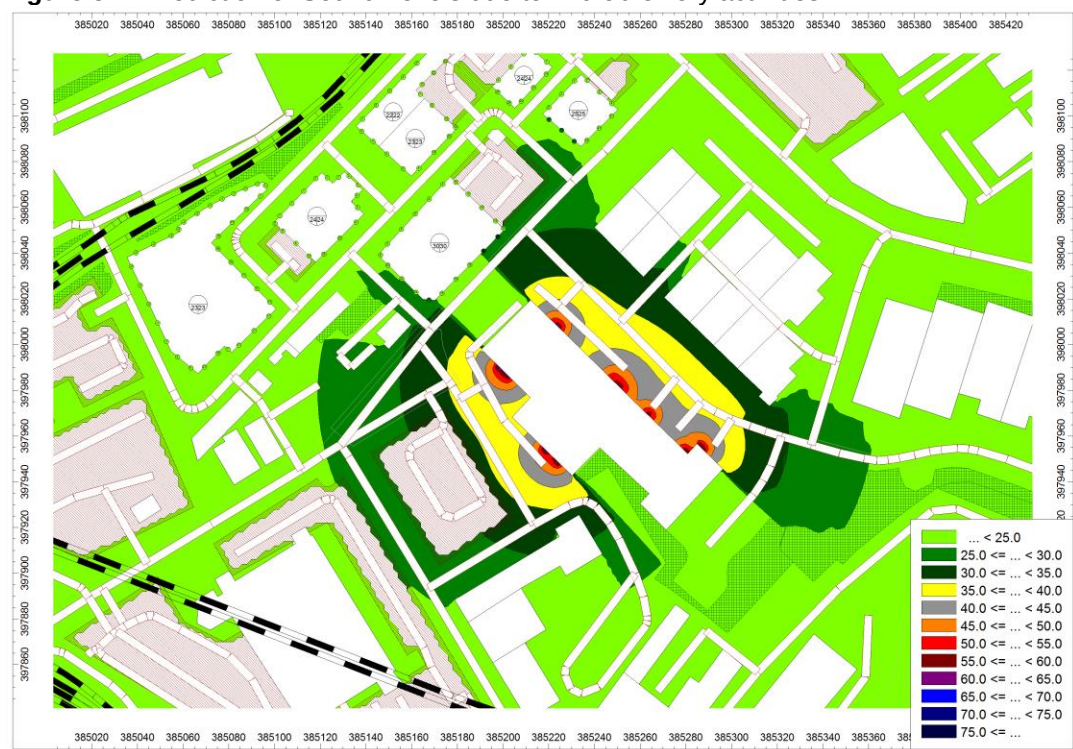
- 5.4 The results in Table 5.1 and 5.2 indicate that the Rating Level generated by HGVs will be 16 dB and 5 dB below the existing background sound level during the daytime and night-time respectively.
- 5.5 BS 4142 stipulates that, *“The lower the rating level is relative to the measured background sound level, the less likely it is that there will be an adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.”*

- 5.6 Due to the large separation distance and the high background sound level, the rating level at the nearest proposed dwellings at the Portugal Street East study area is expected to be below the background during the daytime and night-time. Given the context, it is likely that HGV noise will be masked therefore, the impact will be low. It is considered that due to the X1 Eastbank Tower apartments being located further afield, the impact will be lower still.

BS 4142 Assessment: Microbrewery Noise

- 5.7 To provide a worst case assessment of noise break-out from activities within the microbrewery, the noise propagation was modelled with open roller shutter doors and it was assumed that there will be double the equipment that is currently present at the existing Track Microbrewery located on Sheffield Street.
- 5.8 The resulting sound level contours, using CadnaA modelling software, are shown in Figure 5.2 below. The results indicate that the highest noise levels predicted at the proposed dwellings within the Portugal Street East study area will be 30 dB $L_{Aeq,T}$ at Block D. It should be noted that this noise level is not time weighted and therefore is considered to be a worst case level.

Figure 5.2: Prediction of Sound Levels due to Microbrewery activities



- 5.9 Table 5.3 below shows a daytime BS4142 assessment of typical brewing activities with open roller shutter doors within Unit 17-18 of Piccadilly Trading Estate.

Table 5.3: Daytime BS4142 Microbrewery Noise Assessment

Assessment Calculation Parameters	Assessment Values, dB	Commentary
Specific sound level at receptor, dB $L_{Aeq,T}$	30	All equipment operational within microbrewery with roller shutters doors open (highest level predicted at Block D)
Acoustic feature correction, dB	+0	No correction as levels are predicted to be imperceptible above background.
Rating Level, dB $L_{A,r,Tr}$	25	
Background sound level at nearest receptor, dB $L_{A90,T}$	50	From Table 3.1
Excess of rating over background sound level, dB	-20 dB	
Assessment outcome	Low	The assessment indicates very little likelihood of adverse impact
Uncertainty of the assessment	Uncertainty unlikely to significantly affect outcome, due to rating level being significantly below the background	

- 5.10 Table 5.4 below shows a night-time BS4142 assessment of typical brewing activities with open roller shutter doors within Unit 17-18 of Piccadilly Trading Estate.

Table 5.4: Night-time BS4142 Microbrewery Noise Assessment

Assessment Calculation Parameters	Assessment Values, dB	Commentary
Specific sound level at receptor, dB $L_{Aeq,T}$	30	All equipment operational within microbrewery with roller shutters doors open (highest level predicted at Block D)
Acoustic feature correction, dB	+0	No correction as levels are predicted to be imperceptible above background.
Rating Level, dB $L_{A,r,Tr}$	30	
Background sound level at nearest receptor, dB $L_{A90,T}$	39	From Para 3.6
Excess of rating over background sound level, dB	-9 dB	
Assessment outcome	Low	The assessment indicates very little likelihood of adverse impact
Uncertainty of the assessment	Uncertainty unlikely to significantly affect outcome, due to rating level being significantly below the background	

- 5.11 The results in Tables 5.3 and 5.4 indicate that the Rating Level generated by the microbrewery operations will be 20 dB and 9 dB below the existing background sound level during the daytime and night-time, respectively.
- 5.12 BS 4142 stipulates that, *“The lower the rating level is relative to the measured background sound level, the less likely it is that there will be an adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.”*

- 5.13** Due to the large separation distance and the high background noise level, the rating level at the nearest proposed dwellings at the Portugal Street East study area is expected to be significantly below the background during the night-time. Given the context, it is likely that the brewery operations will be masked and inaudible, therefore the impact will be low. It is considered that due to the X1 Eastbank Tower apartments being located further afield, the impact will be lower still.

Internal and External Noise Criteria

- 5.14** The highest façade noise levels calculated at the proposed dwellings at the Portugal Street East study area for HGVs loading / unloading and the microbrewery operations for the daytime and night-time have been used to show compliance with BS8233 noise limits.
- 5.15** It is generally accepted that a partially open window for ventilation provides around 10 – 15 dB attenuation. In order to predict internal noise levels with an open window, we have assumed a 13 dB reduction. The results are shown in the Table 5.4 below.

Table 5.4: Calculated Internal Noise Levels

	Daytime HGVs	Night-time HGV	Daytime Brewery Ops	Night-time Brewery Ops
Highest External Level $L_{Aeq,t}$ dB	34	34	30	30
Open Window Attenuation dB	-13	-13	-13	-13
Internal Level $L_{Aeq,t}$ dB	21	21	17	17
BS 8233 Criteria $L_{Aeq,t}$ dB	35	30	35	30
Criteria Met?	✓	✓	✓	✓

6 Conclusions

- 6.1 Bureau Veritas was instructed by CBRE Global Investors to undertake a noise impact assessment to support a proposed change of use for an existing warehouse at Unit 12-18 Piccadilly Trading Estate, Manchester.
- 6.2 The assessment focusses on the potential noise impact on proposed dwellings which will be located at the Portugal Street East study area. It should be noted at the moment these are used as offices / industrial. The current nearest residential receptors at the time of writing are located at the X1 Eastbank Tower on Great Ancoats Street.
- 6.3 This noise assessment has been carried out to determine the potential noise impact of deliveries servicing the new microbrewery and any potential noise generated by new operations and equipment associated with the brewing process at the proposed development site. The area is already dominated by B8 Use activities within the industrial estate and road traffic noise.
- 6.4 To assist with the impact assessment, a noise model was prepared using the CadnaA noise mapping software and colour contour noise plots were prepared.
- 6.5 The results of the modelling found that noise levels of 34 dB $L_{Aeq,T}$ would be experienced at Block D of the Portugal Street East study area due to HGV activities (this is a worst case assessment as the noise levels are not time weighted). In line with BS4142, it is considered that the impact would be low during both the daytime and night-time, due to the rating level being below the background noise level.
- 6.6 Furthermore the results of the modelling found that noise levels of 30 dB $L_{Aeq,T}$ would be experienced at Block D of the Portugal Street East study area due to brewery operations (this is a worst case assessment as the noise levels are not time weighted). In line with BS4142, it is considered that the impact would be low during both the daytime and night-time, due to the rating level being below the background noise level.
- 6.7 It is considered unlikely that the proposed new microbrewery will operate at night (i.e. between 23:00 – 07:00) however the results indicate that the impact would be low regardless.
- 6.8 In line with BS8233 internal noise levels have been calculated at the nearest proposed dwellings. The results indicate that with a partially open window, all daytime and night-time noise guidelines will be met for activities associated with the new microbrewery.
- 6.9 In summary, due to the separation distance and the high background sound levels (due to existing B8 activities within the industrial estate), the predicted noise impact of the proposed Use Class B8 operations at units 12-16 and Use Class B2 and B8 operations at units 17-18 will be low at the nearest proposed new dwellings to be located at Block D of the Portugal Street East study area. Furthermore as the X1 Eastbank Tower apartments are located further afield, the impact will be even lower. It is therefore Bureau Veritas' opinion that the new microbrewery can operate without causing adverse impact.

Appendix One – Glossary of Acoustic Terminology

"A" Weighting (dB(A))	The human ear does not respond uniformly to different frequencies. "A" weighting is commonly used to simulate the frequency response of the ear. It is used in the assessment of the risk of damage to hearing due to noise.
Decibel (dB)	The range of audible sound pressures is approximately 2×10^{-5} Pa to 200 Pa. Using decibel notation presents this range in a more manageable form, 0 dB to 140 dB.
Ambient sound level, $L_{Aeq,T}$	equivalent continuous A-weighted sound pressure level of the totally encompassing sound in a given situation at a given time, usually from many sources near and far, at the assessment location over a given time interval, T. NOTE The ambient sound level is a measure of the residual sound and the specific sound when present.
Background sound level, $L_{90,T}$	A-weighted sound pressure level that is exceeded by the residual sound at the assessment location for 90% of a given time interval, T, measured using time weighting F and quoted to the nearest whole number of decibels.
Maximum sound level, $L_{Amax,T}$	The maximum RMS A-weighted sound pressure level occurring within a specified time period.
Noise	Unwanted sound.
Ambient sound	Totally encompassing sound in a given situation at any given time composed of noise from many sources, near and far.
Residual sound	Ambient sound remaining at the assessment location when the specific sound source is suppressed to such a degree that it does not contribute to the ambient sound.
Rating level	Specific sound level plus any adjustment for the characteristic features of the sound.