Rebuttal to the proof of evidence of Mr D Fiumicelli

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1. Introduction

1.1 This document provides rebuttal evidence following receipt of proof of evidence provided by Mr Fiumicelli (CD12.01) acting on behalf of London Borough of Bromley Council.

2. Points of Rebuttal

2.1 It should be noted that only key points of rebuttal have been addressed.

Background Sound Level (CD12.01 Section 6.1)

2.2 The measured representative background sound levels (dB L_{A90}) by Mr Fiumicelli in a resident's garden on Clock House Road and used in RBA's BS4142 assessment are lower than used by WIE Noise Assessment (CD8.03). Table 7 of Mr Fiumicelli proof of evidence provides a comparison (CD12.01).

2.3 The background sound levels used by WIE in the BS4142 assessment (CD8.03) of weekday Masons operations were based on measurements conducted by Clements Acoustics in January 2024 prior to Masons being operational on the Appeal Site at a distance of approximately 15 metres from the railway line. (Clements Acoustics Noise Assessment, Table 4-1 and site drawing 18865-SP1: CD1.05). Given the absence of Masons noise this was considered by WIE to be representative of prevailing baseline noise conditions.

2.4 In comparison, the RBA measured background sound levels in the garden (ground level) of Clock House Road are only +2 to +3dB lower than those measured by Clement Acoustics. This difference may be due to screening of prevailing noise sources (namely of Churchfields reuse and recycling centre (RRC), rail noise, the electricity depot and road traffic noise). It should be noted that the measured residual weekday noise level dB L_{Aeq} (Lr) (residual being all noise except for Masons) measured by Clements Acoustics was +3dB higher than RBAs, which is comparable to the level difference as per the background sound level.

2.5 It is accepted that this difference would affect the BS4142 level difference and therefore BS4142 noise impact (without context). However, I note that the RBA measurements were taken at **ground level**. In my view, the background sound level would be higher at first floor level and above at Clock House Road, which do not benefit from the same level of screening (paragraph 9.2 and 9.3 CD12.01).

2.6 At the weekend day period WIE used the measured background sound level of 40dB L_{A90} measured between 07:30 and 08:00 on a Sunday prior to Masons being operational. On Saturday prior to Masons being operational, between 07:00-07:30 a background sound level of 43dB L_{A90} was measured. Despite this a precautionary approach was taken by WIE for the BS4142 assessment of Saturday operations by using a background sound level of 40dB L_{A90} rather than 43dB L_{A90}. The background sound level on Saturday measured by WIE was +3dB higher than that measured by RBA. Taking account of this differential the lower background sound level on a Sunday of 36dB L_{A90} is not unexpected at **ground level** in the garden of Clock House Road but is not considered to be representative of background at first floor level and above at Clock House Road, due to lack of screening.

2.7 In summary, although I accept the lower prevailing background sound levels at **ground level** in a Clock House Road garden, I considered this is due to screening of noise sources which is not present at first floor and above. Consequently, I consider the measured weekday background sound level by Clements Acoustics and that conducted by WIE at the weekend to be representative of background sound levels at first floor level and above at Clock House Road.

2.8 With regard to background sound levels at Churchfields Road, WIE took a precautionary approach in their Noise Assessment (CD8.03) and used the lower measured background sound levels at the Appeal Site. The prevailing background sound levels at Churchfields Road are higher as supported by noise measurements conducted by WIE (CD8.03 Table 4-2 and CD10.01 Table 4-1) and therefore WIE have overestimated the BS4142 noise impact (without context). Mr Fiumicelli has made no comment on the background sound levels used in the assessment of Masons operational noise on residents on Churchfields Road.

2.9 For example, during the daytime period WIE measured a background sound level at Churchfields Road of 47dB L_{A90} (CD8.03 Table 4-2). The daytime BS4142 was undertaken by WIE against a background sound level of 42dB L_{A90} (as measured by Clements Acoustics on the Appeal Site before Masons operated on the site (CD1.05 Table 4-1), which is 5dB lower. The higher prevailing background sound level on Churchfield Road is also supported by further noise measurements undertaken by WIE proximate to 120 Churchfields Road opposite the access road to Masons, where the measured background sound level (dB $L_{A90,15\ minutes}$) between 06:30 to 07:15 ranged from 46 to 48dB $L_{A90,15\ minutes}$ (CD10.01 Table 4-1). WIE have therefore overestimated the BS4142 impact (without context) for residents on Churchfields Road resultant from daytime Masons operations.

2.10 WIE also used a lower background sound level for the assessment of the pre 06:30 operations (Masons HGVs leaving site) for receptors on Churchfields Road. WIE used a daytime background sound level of 42dB L_{A90} (as measured by Clements Acoustics on the Appeal Site before Masons operated on the site (CD1.05 Table 4-1). Pre 06:30 the measured prevailing background sound level by WIE was 44dB L_{A90} (CD10.01 Table 4-1), +2dB higher. The use of a lower background sound level results in an overestimation of the BS4142 impact (without context) at receptors on Churchfields Road.

2.11 On review of all the information available to date, **Table 1** below presents what I consider to be representative background sound levels that should be used in the BS4142 assessment of Masons operational noise on receptors on Churchfields Road and Clock House Road.

Table 1: Revised Representative Background Sound Levels (dB L_{A90})

Location	Period	WIE Original (CD8.03)	RBA (CD12.01)	WIE Revised
Churchfields Road (HGVs leaving)	06:30-07:00 Monday to Friday	42	42	44
Churchfields Road (Yard operations + HGVs leaving)	08:00-18:30 Monday to Friday	42	42	47
Churchfields Road OOH	Typically 05:00-06:30 or 16:30-23:00	30	30	30 (likely to be higher at this location)
Churchfields Road (Yard loading/unloading only)	08:00-17:00 Saturday	40	40	40
Churchfields Road (Yard loading/unloading only)	08:00-13:00 Sunday	40	40	40
Clock House Road (HGVs leaving)	06:30-07:00 Monday to Friday	42	40	40 Ground Floor 42 Levels above ground

Location	Period	WIE Original (CD8.03)	RBA (CD12.01)	WIE Revised
Clock House Road (Yard operations + HGVs leaving)	08:00-18:30 Monday to Friday	42	39	39 Ground Floor 42 Levels above ground
Clock House Road Churchfields Road OOH	Typically 05:00-06:30 or 16:30-23:00	30	30	30 (very low background)
Clock House Road (Yard loading/unloading only)	08:00-17:00 Saturday	40	40	40 Ground Floor 42 Levels above ground
Clock House Road (Yard loading/unloading only)	08:00-13:00 Sunday	40	36	36 Ground Floor 40 Levels above ground

Acoustic Climate Clock House Road (Paragraph 6.14 & 6.2 CD12.01)

2.12 Mr Fiumicelli (paragraph 6.14 CD12.01) considers that train noise "*does not characterise the acoustic climate of the area because it is short term, intermittent and there are large gaps between "up" and "down" trains when there is no train noise. Consequently, train noise does not define the acoustic character of the neighbourhood.*"

2.13 There are up to 8 trains per hour (paragraph 3.2 CD10.01). Although it is accepted that rail noise is not a constant sound, it is a regular noise experienced by residents of Clock House Road and is considered to be an intrinsic part of the acoustic character of this neighbourhood. This is supported by noise from this railway line being featured in Extrium Noise Maps[1] as illustrated in Figure 1. The blue star indicates the location of Masons (Appeal Site). The noise maps clearly illustrate the contribution that rail noise makes to the prevailing noise climate and therefore is considered to be an intrinsic part of the acoustic character of the neighbourhood at Clock House Road.

2.14 Extrium Strategic noise maps of England are produced under the Environmental Noise (England) Regulations, 2006 (as amended) ("Regulations"). Strategic noise maps are produced for agglomerations with a population of more than 100,000 people; for major roads with more than 3,000,000 vehicle passages per year, and for major railways with more than 30,000 train movements per year. The strategic noise maps are based on the most recently published versions, by Defra.

2.15 Further to this Mr Fiumicelli (paragraph 6.2 CD12.01) describes noise that he heard when installing and collecting the noise equipment from the garden in Clock House Road. He states "On both occasions, "*I clearly heard the sound of metal on metal "clangs" which I **perceived** as coming from scaffolding being bumped together on the Masons site. In addition, during the installation of the noise equipment I heard the sound of a dull thud followed by a scraping sound which was noticeably less loud than the sound of metal on metal I heard*."

2.16 The statements made by Mr Fiumicelli are not conclusive statements. No reference is made to the frequency of occurrence of either of these events. It should be noted that the JCB of the RRC can operate close to the boundary with Masons and its operations give rise to metal on metal clangs

[1] http://www.extrium.co.uk/noiseviewer.html

and loud thud noises. There is also a significant number of empty skips stored on the RRC site which, when being loaded or unloaded can give rise to dull thuds and scraping sounds.

2.17 It is my belief that it was this type of noise event that Mr Fiumicelli has heard and which he has assumed has come from the Masons site. To evidence this, I have included two videos in this rebuttal. They are indicative of the type of activity witnessed at the RRC

Figure 1: Rail Noise Extrium Noise Map Clock House Road

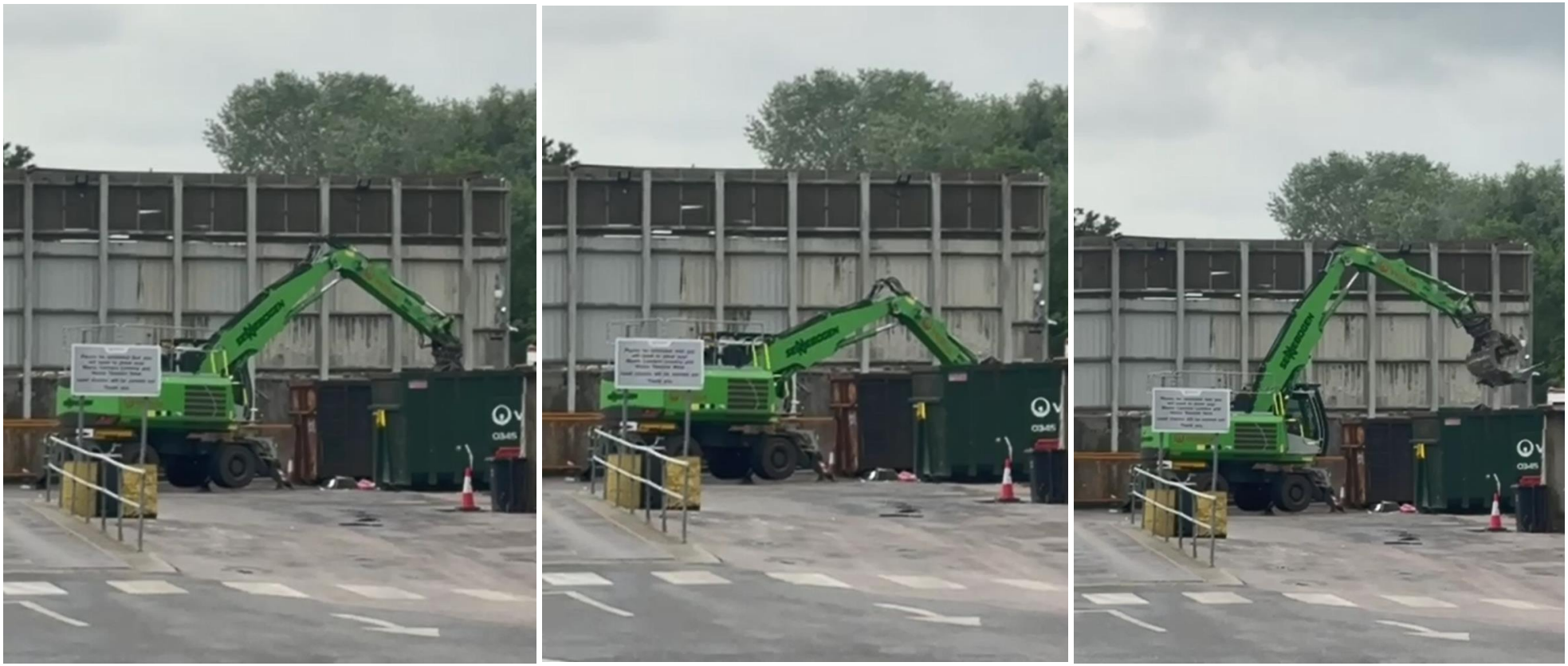
2.18 When played the videos clearly show metal on metal clangs *etc* associated with the activities within the RRC. The videos should be viewed to understand the sudden nature of the metal on metal noise, but also the level of noise that can be heard.

2.19 Video A (see Appendix A and Photographs 1 Series below) shows a JCB at the RRC lifting and then dropping metal bins.

2.20 Video B (see Appendix B and Photographs 2 Series below) shows the RRC JCB bucket thudding down and bagging on the bottom of a skip.

Photographs 1 Series JCB Dropping Metal Bins

Photograph 2 Series JCB Banging Bucket on Bottom of Skip



Heavy Vehicle Noise Churchfields Road (Section 11 CD12.01)

2.21 Mr Fiumicelli considers that the source noise level used for HGVs by WIE is underpredicting the predicted noise level at Churchfields Roads receptors by 16dB, based on noise measurements conducted by WIE (paragraphs 11.1 to 11.4 CD12.01). I disagree with this statement.

2.22 Firstly, the assessment time period for a BS4142 assessment pre 7am is 15-minutes. Only 3 Mason HGVs leave within a 15-minute period, therefore an adjustment for on-time is required. For example, if the HGV noise source is present for a period of 1-minute out of the 15-minute assessment period then an on-time adjustment of -11.8dB is required (10*LOG (60 seconds / 900 seconds)) (BS4142 CD10.08). On this basis the 15-minute measurement from 06:30 to 06:45, as presented in Table 4-1 CD10.01, is not representative of Masons only HGV movements as it also includes noise from all other vehicle movements on Churchfields Road not associated with Masons.

2.23 On review of the 1-minute data sets, there is no significant difference in the measured dB L_{AFmax} when Mason HGVs were leaving the access road at 06:35 and 06:37 compared to a number of other data sets, when Mason HGVs were not present - refer to **Table 2** below. The shaded rows in grey are when HGVs from Mason left the access road. The measured 1-minute L_{Aeq} values are also within the range of those measured outside of Masons HGVs, although as already stated noise from Mason HGVs need to be adjusted for on-time over a 15-minute assessment period as specified by BS4142.

Table 2: 1-Minute Noise Measurements Opposite Access Road Near 120 Churchfields Road

Start Time	dB L_{Aeq}	dB L_{AFmax}	dB L_{A10}	dB LA90
06:30	62.4	77.8	62.0	45.1
06:31	59.2	74.8	58.6	41.8
06:32	55.8	72.5	55.6	41.8
06:33	55.3	61.4	58.5	51.6
06:34	66.2	80.3	69.3	50.5
06:35	64.6	75.9	69.1	51.3
06:36	62.3	75.4	64.5	50.3
06:37	65.9	78.2	69.9	52.4
06:38	63.7	78.7	63.9	50.2
06:39	61.1	76.3	63.9	43.8
06:40	64.4	79.7	67.2	51.2
06:41	65.3	77.7	68.0	53.5
06:42	53.3	64.0	56.7	41.4
06:43	58.7	71.1	62.0	41.8
06:44	60.8	71.6	65.2	50.5

2.24 On this basis the measured L_{AFmax} when Masons HGVs were leaving, as measured and presented in Table 2, is not definitively associated with Masons HGVs as it also captures noise from all other vehicles on Churchfields Road during that 1 minute measurement period. The measured L_{Aeq} during Masons HGV also includes noise from other prevailing sources within the 1-minute measurement period.

2.25 With regard to the potential for causing sleep disturbance, then the L_{AFmax} noise levels during the Masons HGV events are no greater than experienced at times outside the Masons HGV event.

For example, at 06:40 when no Masons HGVs were recorded as leaving the access road the measured L_{AFmax} was 79.7dB L_{AFmax} compared to 78.2 and 75.9dB L_{AFmax} when Mason HGVs were leaving the access road. Further to this, the highest measured L_{AFmax} was recorded as being due to a bus (86dB L_{AFmax} – Table 4-1 CD10.01).

2.26 The Masons HGVs at the end of the access road pre 7am, as detailed in paragraph 6.25 of WIE Noise Assessment report (CD08.03), are predicted to exceed the WHO criteria of 60dB L_{AFmax} external to a bedroom window at 120 Churchfields Road (nearest receptor to the access road) as are other vehicles along Churchfields Road. However, whilst Masons HGVs do add to the number of events experienced from 06:30 onwards it should be noted that HGVs were also recorded as leaving the RRC from 06:30 onwards.

2.27 Secondly, is should be noted that BS4142 is not used in the assessment of sound from the passage of vehicles on public roads (Paragraph 1.3 CD10.08). Section 1 of CD10.09 indicates there may be situations where this exclusion is not adhered to such as *"a public road that passes close to houses, and only serves those houses and an industrial site. Consequently, it has little traffic on it for large parts of the day."* This is not considered to be the situation on Churchfields Road. HGVs other than those associated with Masons use Churchfields Road. In this respect the BS4142 assessment only considers movement of HGVs on the access road and not Churchfields Road.

2.28 Thirdly, the changes in road traffic noise on public roads is normally assessed using Design Manual for Road and Bridges LA111[2] Noise and Vibration using the calculation methodology of Calculation of Road Traffic Noise[3]. For a 1dB increase in road traffic noise, which is considered to be just perceptible and therefore not significant, a 25% increase in traffic volume would be required all things being equal. An increase in the percentage of HGVs also affects the overall road traffic noise level. Given Masons have a fleet of 10 HGVs each making 1 trip in/out (20 HGV movements per day), based on the 12-hour traffic volume on Churchfields Road between 06:30-18:30, Masons vehicles cause a 2.1 percent increase in the overall traffic volume. The percentage of HGVs of the total traffic volume increases by 0.4 percent with Masons 20 HGV movements. In road traffic noise terms this increase in overall traffic volume and increase in percentage HGVs on Churchfields Road is <u>not</u> significant.

2.29 Lastly, although Mr Fiumicelli considers the source noise used for HGVs in the WIE assessment is in the range of a HGV moving at constant speed (10 mph) and no acceleration, he expects that it would be higher when accelerating in a lower gear with higher engine revs from a stop to a higher speed and that a correction of up to around 6dB(A) should be applied for the manoeuvre of Masons HGV leaving the access road and turning onto Churchfields Road (paragraph 11.1 CD12.01). As already stated, BS4142 is not used in the assessment of vehicles on public roads. The measurements presented in Table 4-1 of CD 10.01 illustrate that the measured L_{AFmax} levels at a pavement location opposite the access road proximate to 120 Churchfields Road are no different when Masons HGVs are leaving the access road, to those already experienced outside these events.

2.30 In summary, a BS4142 assessment does not include assessment of noise on public roads. The noise measurements undertaken of road traffic noise on Churchfields Road at a location opposite the site access illustrate that the measured noise levels during the period when Masons HGVs

[2] Highways England. (May 2020). Design Manual for Roads and Bridges. Sustainability & Environmental Appraisal. LA 111 Noise and Vibration (Version 2). Crown Copyright.

[3] DoT. (1988). Calculation of Road Traffic Noise. Crown Copyright.

were leaving the access road, are **not** significantly different to the measured road traffic noise on Churchfields Road when Masons HGVs were absent. The statement that WIE are underpredicting noise from Masons HGVs between 06:30-07:30 is misleading as it does not take account of on-time adjustments required for the 15-minute BS4142 assessment period or have regard to the fact that BS4142 is applicable to noise sources on the Appeal Site and access road.

Noise Modelling Inputs (Section 8 CD12.01)

2.31 Mr Fiumicelli considers that WIE is underpredicting Masons operational noise levels (specific sound level as defined in BS4142), by up to **+5dB** (paragraph 8.14 - **CD 12.01**). The reasons given for the discrepancy are not with regard to the measured and therefore quantified noise source levels for each key operational noise source, as presented in Table 5-1 and Table 5-2 of **CD8.03**, but are with regard to the propagation of noise from source to receptor.

2.32 The overall discrepancy stated as up to +5dB (paragraph 8.14 CD 12.01), is not reflected in RBAs comparison of predicted operational noise levels in Table 9 Churchfields Road (ranging from +1 to +4dB higher than WIE) or Table 10 Clock House Road (ranging from +1 to +3dB higher than WIE). Possibly this is an error and Mr Fiumicelli's intension was to state up to +4dB.

2.33 CadnaA noise modelling software was used to predict the Masons operational noise levels at receptor locations using ISO 9613 (1996) calculation methodology. Mr Fiumicelli considers the prediction methodology to be appropriate (paragraph 8.4 CD12.01) but would use different settings. I consider these points below.

Ground Absorption (Paragraph 8.13.1 CD12.01)

2.34 Mr Fiumicelli disagrees with the setting of absorption to 0.5 (50% absorptive/50% reflective) and considers that it results in underprediction at receptor locations by **+2dB**.

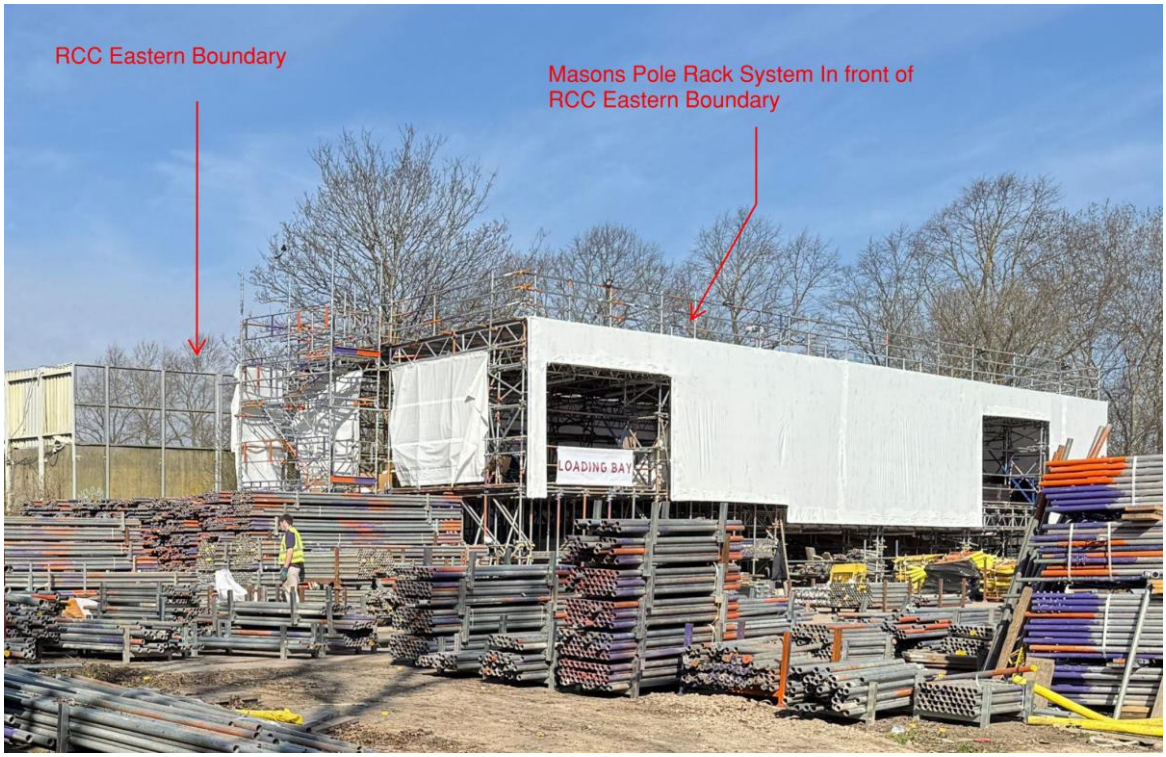
2.35 I have no objection to RBAs approach, namely changing absorption settings to 1 with zero absorption applied to the RRC, the appeal site and roads, as specified by Mr Fiumicelli (paragraph 8.13.1 CD12.01). I accept this change can result in an increase by +2dB at receptors closest to the site.

Barrier Reflection (Paragraph 8.13.2)

2.36 Mr Fiumicelli considers that all barriers around the RRC should be set as reflective and that this would increase predicted operational noise levels at receptors on Clock House Road by **+1dB**.

2.37 Given the location of Masons pole racking system directly in front of the RRC barrier facing Clock House Road (refer to Photograph 3) disrupting any potential reflection of noise from this barrier, I disagree with the suggested assignment of +1dB to predicted noise levels at Clock House Road located approximate 150m from this barrier, due to barrier reflection.

Photograph 3: Looking Toward RRC From Appeal Site



06:00-07:00 Heavy Vehicle Movements (Paragraph 8.13.3 CD12.01)

2.38 Mr Fiumicelli states that 12 HGVs per hour should be in the 06:30-07:00 noise model and not 9 and that this results in under prediction of around **+1dB** from heavy vehicle noise.

2.39 I agree that the noise model should show 12 movements per hour to indicate what the noise level would be in a 15-minute period. This is an accepted error within the noise model that would only affect the predicted noise levels during the early morning period and no other scenarios that have been assessed. It is accepted that this would underestimate the noise from this source by +1dB.

2.40 12 HGVs per hour at face value to a non-acoustic person may appear odd given there are only 10 HGVs in the fleet, however this is correct as the noise model predicts 1-hourly noise level and not 15-minute values, therefore the number of HGVs per hour needs to be increased by a factor of 4 to allow prediction of heavy vehicle noise over a 15-minute period.

2.41 This is only applicable to this scenario (HGVs leaving between 06:30 and 07:00). HGVs for all other scenarios are correct.

On-Time Allocation (Paragraph 8.13.3 CD12.01)

2.42 Mr Fiumicelli considers WIE have underestimated operational noise by around **+1dB** due to the selection of the low end of the time range used for operations, although he considers the duration, regularity and locations input of the various operations to be appropriate.

2.43 Duration is a reflection of on-time. The lower end of the range was selected to allow noise modelling of all operations throughout the Appeal Site within a 1-hour period. To have all operations concurrently with 100% on-time in all areas of the site would be unrealistic and result in an overestimation of noise emissions.

2.44 Further to this the daytime noise model of yard operations includes 4 HGV movements within the site and along the access road. For much of the day there are no HGV movements on the access road therefore WIE assess a worst-case scenario with regard to daytime HGV movements concurrent with yard operations. With inclusion of the HGV movements as well as loading/unloading operations, handling poles, moving stillages, FLT movements, the prediction of daytime operational noise is considered to be robust and likely to be overpredicting operational noise levels. In this respect I disagree with Mr Fiumicelli's comment of underpredicting by +1dB.

Summary CadnaA Model Settings

2.45 In summary I consider that in the 06:30-07:00 noise model WIE may be underpredicting noise levels at Churchfields Road by +3dB (+2 absorption, +1 for 12 HGVs rather than 9 HGVs). For all other scenarios, I consider that the potential increase in predicted noise levels is +2dB due to absorption settings.

Rating Penalties (Sections 4, 6 & 10 CD12.01)

2.46 Mr Fiumicelli agrees with the application of a +3dB rating penalty to general yard operations to take account of 'just' impulsive noise at receptors on Clock House Road, from metal on metal clang from poles with zero rating penalty for vehicle movements (Paragraph 10.4 CD12.01). As illustrated in Table 10 (CD12.01), a rating penalty of zero is applied to residents of Churchfields Road. This is the same approach as WIE, and is due to screening attenuation, distance attenuation and prevailing ambient noise levels.

2.47 During pole cutting operations Mr Fiumicelli agrees with the application of an additional +3dB to the overall predicted noise level to take account of intermittency of this operation. In Mr Fiumicelli's subjective opinion, he regards pole cutting noise to be 'just' tonal at the receptor location on Clock House Road and as minimum considers a further +2dB correction should be applied (Paragraph 10.6 CD12.01). This would result in a rating penalty of +8dB to the overall predicted operational noise during pole cutting.

2.48 The application of a rating penalty is with regard to the acoustic character of the sound at the receptor location and not at source (Section 9.1 General BS4142 CD10.08). It is uncertain as to whether Mr Fiumicelli heard pole cutting noise whilst in the garden at Clock House Road as this is not something which he mentions in paragraph 6.2 CD12.01.

2.49 Based on third octave noise measurements undertaken by WIE of pole cutting operations I do not consider it to be tonal when assessed in accordance with BS4142 Annex C (informative) Objective method for assessing the audibility of tones in sound: One-third octave method (CD10.08). Graph C3 of WIE Noise Assessment CD8.03 - Cutting Scaffolding Poles Using Table Saw - illustrates it is not tonal in accordance with BS4142 Annex C. As detailed in WIE PoE CD10.01 paragraph 4.10, subsequent noise measurements have been undertaken of pole cutting operations following the installation of an acoustic curtain. Paragraphs 4.10 and 4.11 together with Figure 4-2 of WIE PoE CD10.01, provides further support that pole cutting is objectively not tonal as defined in BS4142 Annex C and illustrates how the noise spectrum of the source changes with distance attenuation.

2.50 In light of the above I consider that the rating penalty during pole cutting remains at +6dB for Clock House Road. As already stated as detailed in BS4142 Section 9.1 General, it is the acoustic character at the assessment location (Clock House Road) and not that at source location.

2.51 Table 10 (CD12.01) shows that RBA have applied the same rating penalty of +8dB to the predicted operational noise at receptors on Churchfields Road during pole cutting. I disagree with this due to the screening attenuation (RRC barriers and intervening structures) together with distance attenuation to this source for residents on Churchfields Road. On investigation of WIE's noise model, the main component part of the predicted noise level at receptors on Churchfields Road is due to HGVs on the access road and not Masons yard operations. This is not unexpected given the distance of the access road being closer to residents on Churchfields Road than Masons yard. On this basis I do not agree with the assignment of a rating penalty of +8dB to the predicted operational noise level at receptors on Churchfields Road when pole cutting is being undertaken and still consider it to be zero. Table 10 (CD12.01) supports this by there being no change in the predicted operational noise level by RBA with and without pole cutting at receptors on Churchfields Road – both being 43dB $L_{Aeq,1\ hour}$.

2.52 Mr Fiumicelli has referred to the paragraph in Section 6.3 of the Clements Acoustic report (CD 1.05) which states *"As the proposed plant installation included loading and unloading of metallic items, a certain amount of impulsivity could be expected. A+3dB penalty for **tonal** noise emissions has been included,…"* In my view, the word in bold is a typographical error. I believe this is clear from the very next sentence, which explicitly states that "*No tonal content would be expected from the assessed operations*." In addition, I note that a +3dB subjective penalty for tones would be unusual, given that Table 5.1 of CD1.05 presents subjective rating penalties of +2, +4 and +6 for tones and not +3, which it does for impulsivity.

PVC Acoustic Curtain (Paragraph 7.11 CD12.01)

2.53 Mr Fiumicelli describes the acoustic curtain installed to reduce noise from pole cutting operations as "*woefully inadequate*" and "*effectively acoustically transparent*." (Paragraph 7.11 CD12.01).

2.54 I do not agree with this assessment.

2.55 Although it is accepted that there are other forms of mitigation that would provide greater noise reduction, such as solid screens (the installation of which could, if it were considered necessary in this case, be secured by condition), acoustic pvc curtains are common place in industrial settings to reduce noise around items of plant. In the present case, the fact that the acoustic curtain that has been installed provides a reduction in noise by around 10dB is clearly evidenced by the noise measurements undertaken by WIE as presented in Figure 4-1 of CD10.01. The technical data sheet of the product is attached as **Appendix C** in support of this.

Noise Assessment Criteria (Table 8 CD12.01)

2.56 Table 8 of CD12.01 presents the BS4142 noise assessment criteria (without context) used by WIE and that used by RBA. Mr Fiumicelli considers "*WIE are ascribing effects NOEL, LOAEL and SOAEL at a category of difference between rating level and background noise level above that which RBA are using."*

2.57 It should be noted that Mr Fiumicelli has changed his position and is now in broad agreement with WIE as detailed in the Noise Statement of Common Ground (SoCG). Notwithstanding this below is provided explanation as to why I consider the WIE assessment criteria (without context) to be appropriate.

2.58 I considered the SOAEL (significant adverse effect level) to be a rating level ≥LA90+10dB. This also aligns with Section 11 b) of BS4142 (CD 10.08) which states *"A difference of around +10dB or more is likely to be an indication of a significant adverse impact, depending on **context**."* I also think this aligns with the "*Noticeable and disruptive*" example outcomes as presented in Table 1

(CD12.01) which is referred to as 'present and disruptive" in Planning Practice Guidance Noise Exposure Hierachy Table (CD10.06), "*being at a level that causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during periods of intrusion….having to keep windows closed most of the time because of the noise. Potential for sleep disturbance*…" I am mindful that this is the assigned BS4142 impact **without context** which is an integral part of a BS4142 assessment, and one which RBA and Mr Fiumicelli have not taken account of in their BS4142 assessment.

2.59 It is unclear from Table 8 of CD12.01 where RBA and Mr Fiumicelli consider the rating level to be equivalent to the SOAEL. The table indicates it could be from rating level >LA90 to <LA90+10, which is a large range.

2.60 For a rating level ≤LA90 +5dB I regard this to be "*present and not intrusive*". By this "*Noise can be heard but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life*." I do appreciate that the nearer to the upper limit then there is the potential of the noise becoming "*present and intrusive*" which is where "*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;..closing windows for some of the time because of the noise*…" This is where consideration of context may change the final assigned BS4142 impact.

BS4142 Assessment (without context) (Table 9 and Table 10)

2.61 Table 9 and Table 10 (CD12.01) present RBA's revised predicted noise levels from Masons operations based on changing of the setting in the CadnaA noise model and the inclusion of 12 HGVs on the access road for assessment of the 06:30-07:00 period. It is understood that the main purpose of this is to indicate that WIE are underpredicting operational noise levels and should increase the rating penalty for pole cutting to +8. RBA have also applied RBA classification of impact which does not always reflect that specified in Table 8 of CD12.01.

2.62 Despite it being referred to in Section 4 Planning Policy and Guidance and Section 5 Relevant Noise Standards in Mr Fiumicelli's PoE (CD12.01), neither RBA nor Mr Fiumicelli has given any consideration to context, which is an integral part of a BS4142 assessment (Section 11 BS4142 CD10.08) and the final assigned BS4142 impact.

2.63 As I have already stated, I do not agree with:-

- +2 additional rating penalty to overall noise levels during pole cutting
- +8 rating penalty during pole cutting for residents of Churchfields Road

2.64 To facilitate a review of the BS4142 assessment results, taking into account the changes in CadnaA settings, I have presented the predicted results by RBA as presented in Table 9 and 10 (CD12.01), which are reported by RBA as being the "*upper end of the predicted range*" (paragraph 10.7 CD12.01). I have changed the predicted noise level with pole cutting at Clock House Road to take account of the acoustic curtain and the background sound levels at Churchfields Road based on noise measurements by WIE. In addition to this I have presented what I consider the rating penalties to be, which is unchanged from WIE noise assessment report (CD8.03) and my proof of evidence (CD10.01). Table 3 and 4 present the equivalent effect levels derived from Planning Practice Guidance Noise Exposure Hierachy (CD10.06). I have added another column to take account of **context** and modification of the applied effect level, where considered necessary.

Table 3: BS4142 Churchfields Road – Revised Based on RBA Predicted Noise Levels & Comments

Operational Period	RBA Predicted Specific Sound Level dB $L_{Aeq,T}$	Rating Penalty	Background Sound Level dB L_{A90}	Level Difference	Impact (no context)	Impact with context
06:30-07:00 Monday to Friday	45	+0	44	+1	>NOAEL <LOAEL Present but not intrusive	No suggested change, but should be mindful that measured prevailing LAeq pre 06:30 on Churchfields Road was 60 to 62dB LAeq,T. .
08:00-18:30 Monday to Friday (no pole cutting)	43	+0	47	-4	<NOAEL Present but not intrusive	No suggested change.
08:00-18:30 Monday to Friday (with pole cutting)	43	+0	47	-4	<NOAEL Present but not intrusive	No suggested change.
Saturday 08:00-17:00 (loading/unloading only)	30 [1]	+0	40	-10	NOEL Not present	No suggested change.
Sunday 8:00-13:00 (loading/unloading only)	30 [1]	+0	40	-10	NOEL Not present	No suggested change
OOH (1 HGV movement only)	40	+0	30 [2]	+10	SOAEL Present and intrusive	Change to LOAEL, present but not intrusive. Residents would be indoors and LAeq,15-minutes would reduce by 10-15dB through an open window resulting in an internal noise level of 25-30dB LAeq, which is in-line with WHO criteria.
Note: [1] – WIE level of 28dB +2dB for ground absorption adjustment. [2] – This is a very low background sound level. On Churchfields Road it is likely to be higher.						

Table 4: BS4142 Clock House Road – Revised Based on RBA Predicted Noise Levels & Comments

Operational Period	RBA Predicted Specific Sound Level dB $L_{Aeq,T}$	Rating Penalty	Background Sound Level dB L_{A90}	Level Difference	Impact (no context)	Impact with context
06:30-07:00 Monday to Friday	39	+0	44	-5	<NOAEL Present but not intrusive	No suggested change, but should be mindful that measured prevailing LAeq noise level at ground floor at Clock House Road was 53dB LAeq,T .
08:00-18:30 Monday to Friday (no pole cutting)	43	+3	39 (Ground) 42 (Above Ground)	+7 (Ground) +4 (Above Ground)	>LOAEL (Ground), Present and intrusive <LOAEL (Above Ground – present and not intrusive	≤LOAEL. The predicted absolute noise level is 10dB below the prevailing ambient noise at ground level. This indicates that although the noise is present it is not considered to be intrusive. Consideration should also be given to the absolute noise level.
08:00-18:30 Monday to Friday (with pole cutting mitigated)	43 [1]	+6	39 (Ground) 42 (Above Ground)	+10 (Ground) +7 (Above Ground)	SOAEL (Ground), Present and intrusive <SOAEL (Above Ground, present and intrusive	LOAEL The predicted absolute noise level is 10dB below the prevailing ambient noise at ground level of 53dB LAeq,T. This indicates that although the noise is present it is not considered to be intrusive based on the absolute noise level. For external residential amenity WHO recommends ≤50-55dB LAeq,T. It is significantly below this level. At above ground residents would be indoors so the noise level would be 10 to 15dB lower based on attenuation through an open window.
Saturday 08:00-17:00 (loading/unloading only)	34 [2]	+3	40 (Ground) 42 (Above Ground)	-3 (Ground) -5 (Above Ground)	<NOAEL Present and not intrusive	No suggested change.

Operational Period	RBA Predicted Specific Sound Level dB $L_{Aeq,T}$	Rating Penalty	Background Sound Level dB L_{A90}	Level Difference	Impact (no context)	Impact with context
Sunday 8:00-13:00 (loading/unloading only)	34 [2]	+3	36 (Ground) 40 (Above Ground)	+0 (Ground) -3	≤NOEL Present and not intrusive	No suggested change
OOH (1 HGV movement only)	34	+0	30 [2]	+4	<LOAEL Present and not intrusive	No suggested change
Note: [1] – WIE predicted noise level with pole cutting mitigated same as with no pole cutting. [2] – WIE level of 34dB +2dB for ground absorption adjustment. [3] – This is a very low background sound level and consideration of absolute noise level should be a consideration.						

3. Conclusions

3.1 A BS4142 assessment (without context) is based on the level difference between the rating level (Masons operational noise adjusted for acoustic character where required) and the representative background sound level. Mr Fiumicelli originally considered that WIE were ascribing effects at a category of difference above that which RBA used. Mr Fiumicelli has since changed his position and is now in broad agreement with WIE as detailed in the Noise Statement of Common Ground.

3.2 Consideration of context is an integral part of a BS4142 assessment, such as the absolute level of Masons operational noise, time of day and the character of the noise climate without Mason noise. Neither RBA nor Mr Fiumicelli have considered context. The fact that the measured ambient noise level by RBA in a garden of Clock House Road is significantly unchanged with and without Masons yard being operational is completely overlooked as is the fact that those sensitive receptors closest to the Appeal Site are also exposed to noise associated with the RCC and London Electricity Board Depot in addition to transport noise.

3.3 I accept that the background sound level at ground level at Clock House Road is 3dB lower than used by WIE in the BS4142 assessment, as this is based on a measurement in a garden of a resident at Clock House Road. I do not accept however that this is likely to be representative of the background sound level above ground (first floor level, second floor level) which are locations unscreened from the surrounding noise sources. I therefore consider that it is not unreasonable to assume the measured background sound level by Clements Acoustics, prior to Masons being operational on the Appeal Site, is representative of the background sound level at locations above ground (first floor and second floor level) where residents are indoors and benefit from 10-15dB attenuation through an open window.

3.4 Conversely, I do consider that WIE have overpredicted the noise impact on residents at Churchfields Road by using a lower background sound level than is prevailing, as supported by noise measurements at Churchfields Road by WIE. Daytime background sound level is 5dB higher and the period pre 06:30-07 is 2dB higher than used in the WIE BS4142 assessment.

3.5 I do not agree that WIE have underpredicted noise from Masons by +5dB and that of Masons HGVs by +16dB and have provided additional information to support my rebuttal of these claims. Despite this I have revised the WIE BS4142 assessment based on RBA's predicted Masons operational noise levels (specific sound levels), presented in Tables 9 and 10 of Mr Fiumicelli's proof of evidence (CD12.01), which are stated as being the "*upper end of the predicted range of values*" (paragraph 10.7 CD12.01). I have not however applied the same rating penalties as RBA in all cases, particularly the +8 during pole cutting.

3.6 With regard to the rating penalty, it is noted that Mr Fiumicelli agrees with WIE's application of +3dB rating penalty for 'just impulsive' character for general yard operations for receptors on Clock House Road with zero penalty for HGVs. Application of a rating penalty is regarding the acoustic character of the noise source at the receptor location and not the source location (Section 9 BS4142, CD10.08). I disagree with the application of +8dB rating penalty at receptors on Churchfields Road during pole cutting and have provided additional information to support my rebuttal of this. I also disagree with the application of +8dB rating penalty at receptors on Clock House Road during pole cutting and have provided additional information to support that this should remain as +6dB.

3.7 Further to the above, I disagree with Mr Fiumicelli's comments that the acoustic curtain installed to reduce noise from pole cutting is "*acoustically transparent*" based on measurements conducted by WIE and that this reduction should be included in the BS4142 assessment.

3.8 With application of the increase in the predicted specific sound level as predicted by RBA at **Churchfield Road** receptors, application of zero rating penalty for all scenarios (which is the same as RBA as accepted by Mr Fiumicelli, except during pole cutting which I consider should remain as zero and not +8), together with an update to representative background sound levels at Churchfields Road as measured by WIE, there is no change to conclusions as reported in WIE Noise Assessment report (CD8.03). The impact remains 'low/negligible' with small adverse impact (below LOAEL) when taking account of context during out of hours (OOH) scenario which comprises of 1 HGV movement and residents indoors.

3.9 With application of the increase in the predicted specific sound level as predicted by RBA at **Clock House Road** receptors, taking account of the reduction in pole cutting noise due to instalment of the acoustic curtain, application of zero rating penalty for HGV only scenarios and +3dB rating penalty for yard operations increasing to +6dB during pole cutting (which is the same as RBA as accepted by Mr Fiumicelli, except during pole cutting which I consider should remain as +6 and not +8), together with an update to representative background sound level at Clock House Road ground floor level, there is no change to the conclusions as reported in WIE Noise Assessment report (CD8.03). The impact remains 'low/negligible' for 06:30-07:00 HGV movements, OOH and weekend loading only works. During yard operations without pole cutting, when context is taken account of the impact remains small adverse (below LOAEL). During yard operations with mitigated pole cutting, when context is taken account of the impact is considered NOT to be 'significant adverse' and therefore no change to that presented in WIE Noise Assessment (CE10.01).

3.10 In summary, the BS4142 assessment of Masons operational noise indicates that when context is taken account of, as required by BS4142, the noise levels are at a level that is considered acceptable and not at a level that would significantly adversely impact residential amenity. It is accepted however that provision of additional mitigation to (ad-hoc) pole cutting, such as a solid screen, would provide greater attenuation than afforded by the acoustic curtain.

Appendices

A. RRC JCB Dropping Metal Bins

B. RRC JCB Using Bucket to Bang Bottom of Skip

C. Acoustic Curtain Product Data Sheet

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