



Site at Former B&Q, Great Stone Road,  
Trafford

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**Inquiry Evidence**  
**Noise - Main Proof**

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Prepared For: Accrue (Forum) 1 LLP

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10<sup>th</sup> December 2021

Document Reference: HA2021046/AC/9/B/REV1  
e: james@holtzacoustics.uk  
t: 07881 291 320

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## 1.0 Introduction and Background

- 1.1 This Proof of Evidence has been prepared by James Patterson BEng, MSc MIOA, Director of Holtz Acoustics. I have 12 years' experience in Building Acoustics and Planning Noise. I am an elected member of the Institute of Acoustics and hold a Master's Degree in Engineering Acoustics. Holtz Acoustics were appointed by Accrue (Forum) 1 LLP ('the Appellant') in 2017 to provide noise advice in support of an application for planning permission for residential development at the site of the former B&Q store off Great Stone Road, Stretford.
- 1.2 The appeal seeks outline planning permission for:
- "The demolition of existing retail unit and associated structures; erection of buildings for a mix of use including: 333 apartments (use class C3) and communal spaces ancillary to the residential use; flexible space for use classes A1, A3, D1 and/or D2; undercroft car parking; new public realm; and associated engineering works and infrastructure."* ('the Appeal Proposal')
- 1.3 The application for planning permission, which was submitted by the Appellant in 2020, was supported by an Acoustic Design Statement, Vibration Assessment and Plant Noise Limits Report prepared by Holtz Acoustics.
- 1.4 Trafford Council ('the Council') did not determine the application within the time period for doing so. The Appellant appealed against non-determination of the application. Subsequently, the Council resolved on the 15<sup>th</sup> October 2020 that it would have refused the application for the Appeal Proposal had it not been appealed on seven grounds. None of the reasons for refusal related to noise or vibration. Subsequently, on the 27<sup>th</sup> of October 2021 a Statement of Common Ground was signed between the Council and the Appellant confirming that the Council did not object to the application on the grounds of noise or vibration. However, I understand that on 9<sup>th</sup> December 2021 the Council elected nonetheless to introduce a new 'putative' reason for refusal, relating to noise.
- 1.5 Lancashire County Cricket Club (LCCC) provided a Statement of Case ('SoC') within which it set out its objections to the scheme. Some of its objections relate to noise and it is in response to LCCC's position that this Proof of Evidence has been prepared. Owing to the date on which the Council indicated that it wished to contest the appeal on the basis of noise related issues, I have not been able to engage with its witness/understand its case in time for me to respond in this proof. I will however address the Council's position in my evidence before the Inquiry.
- 1.6 Returning to the position adopted by LCCC, in paragraph 1.7 of its SoC, LCCC states that one of their principal objections is that the Appeal Proposal will conflict with LCCC's operations because of the noise generated by those operations.
- 1.7 LCCC is principally concerned that noise generated from sports events and concerts at Emirates Old Trafford ('EOT') will give rise to complaints from future residents and potentially adversely impact on their business activities. These two sources of noise are considered in turn in this Proof of Evidence.

- 1.8 Section 4 of its SoC provides details of its objection regarding noise. The Section 6 of this Proof of Evidence will directly address the points raised in LCCC's SoC.

## **2.0 Statements of Common Ground**

### Statement of Common Ground between the Appellant and the Council

- 2.1 The Appellant and the Council have produced a statement of common ground ('SoCG').
- 2.2 In that document the parties indicate that they are in agreement on all aspects of noise affecting the development.
- 2.3 There are no matters of dispute relating to noise identified in the SoCG.
- 2.4 Paragraph 6.1.76 summarises that:

*' ... it is agreed that there are no reasons to refuse the appeal proposal on grounds of noise or vibration'.*

### Statement of Common Ground between the Appellant and LCCC

- 2.5 The Appellant and LCCC have also entered into a SoCG.
- 2.6 There are no matters agreed relating to noise. Matters in dispute relating to noise are as follows:
- The parties dispute the predicted concert noise levels at the proposed facades.
  - The parties dispute the effects of noise from activities at the cricket ground including (cricket matches, concerts and soundchecks) upon residents of the proposed development, whether or not any mitigation is required, and to what extent the agent of change principle is invoked.
  - The parties dispute whether the sound checks occur on separate days to the music concerts.

## **3.0 Noise From Cricket Matches**

- 3.1 A wide range of match types and their frequency were outlined in the 'Review of Noise Issues' report prepared by Vanguardia for the LCCC. In order to give the most robust assessment I use the worst-case scenario detailed in this report, that is, a music and crowd level of up to 85 dB  $L_{Aeq}$  in the stands.
- 3.2 This would be, for example, a high attendance match with music 'stings' for boundaries and wickets such as an International T20 which would run into the evening.
- 3.3 Noise levels from cricket matches have been modelled at the proposed facades. It is understood that the predicted levels are not in dispute but the methodology will be presented here to inform

the discussion. These noise levels have been used to calculate noise ingress via a typical glazing and ventilation scheme.

- 3.4 British Standard BS8233:2014 states that it is desirable that internal noise levels do not exceed the following guideline values shown below in Figure 1. BS8233:2014 does not specifically mention entertainment or sports noise in its scope but it is the nearest applicable standard in the case of all day regular cricket noise.

**Figure 1. Guideline internal noise levels taken from BS8233:2014**

Table 4 Indoor ambient noise levels for dwellings

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

- 3.5 The value in focus when assessing the cricket noise will be 35 dB  $L_{Aeq,16\text{hour}}$  in living areas and bedrooms as the matches do not run past 2300hrs.
- 3.6 It should be noted that the above value is the 'equivalent' level spread over 16 hours. As matches don't typically last for this duration the internal noise calculations overestimate the internal noise levels and therefore represent a worst-case scenario.
- 3.7 Details of the noise mapping system and configuration are included in Appendix A.
- 3.8 The levels at the proposed façade with and without the temporary stand were calculated and a summary of the results is shown below in Tables 2 and 3.

**Table 2. Summary of façade cricket noise levels predicted by the noise map with the temporary stand in place**

Facade	Highest predicted level on facade	Floor at which this level predicted
North East	66 $L_{Aeq}$	Level 7
North West	66 $L_{Aeq}$	Level 7
South East	61 $L_{Aeq}$	Level 4
South West	57 $L_{Aeq}$	Level 6

**Table 3. Summary of façade cricket noise levels predicted by the noise map with the temporary stand removed.**

Facade	Highest predicted level on facade	Floor at which this level predicted
North East	63 $L_{Aeq}$	Level 7
North West	63 $L_{Aeq}$	Level 7
South East	57 $L_{Aeq}$	Level 4
South West	56 $L_{Aeq}$	Level 6

- 3.9 As the temporary stand was modelled as a noise source, when it is removed from the model the predicted façade noise levels are reduced.
- 3.10 The highest cricket noise level calculated was on the 7<sup>th</sup> floor with the main contribution coming from the temporary stand. The octave band noise spectrum at this receiver position was used to calculate the internal noise levels in accordance with the methodology from BS8233:2014.
- 3.11 The calculation was based on a solid brickwork external wall, a standard (but higher specification) double glazing unit and acoustically rated trickle or façade vents for background ventilation. Full details of the calculation parameters and methods are included in the Appendix B.
- 3.12 The calculated internal noise level at this worst affected point on the façade with windows closed was 28 dB L<sub>Aeq</sub>. This is comfortably under the internal noise level recommendations for living areas in the day (0700-2300hrs) of 35 dB L<sub>Aeq</sub>.
- 3.13 The primary means of noise control is keeping windows closed. The final design should therefore incorporate suitable whole dwelling ventilation to allow windows to be shut during cricket matches whilst maintaining appropriate ventilation and thermal comfort.
- 3.14 LCCC are concerned that crowd and music noise from cricket matches may give rise to complaints from the new residents and unduly burden their business operations. In the SoCG LCCC take issue with the means by which noise from cricket matches will be controlled to the required standards. They do not agree that keeping windows shut as the principal method of noise control results in satisfactory development.
- 3.15 It should be noted that cricket noise levels at the north east façade are at around the same level as those experienced at the south east façade which results from traffic noise.
- 3.16 LCCC have no concerns regarding closed windows being used to control road traffic noise at the same noise levels. In addition there are very few urban developments near busy roads where at least one façade does not rely on closed windows to control road traffic noise. For example the recent apartment complex at 27-29 Ellesmere Street, Manchester which relies on closed windows to meet recommended internal noise level from road traffic.
- 3.17 Pro PG: Planning and Noise Supplementary Document 2 Good Acoustic Design (ProPG)<sup>2</sup> is clear that.
- ‘Ideally, internal design noise levels should be met with windows open. However in noisy locations, windows will need to be closed and fitted with high quality acoustic seals in order to achieve them. In this scenario, any systems used to provide “whole dwelling ventilation” should be in the open position when noise levels are assessed’*
- 3.18 I can confirm that acoustically rated trickle vents were used in the calculation of noise levels in the open positions. There are numerous alternative acoustically treated ventilation systems that could be used in the final design.

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<sup>2</sup> Working Group, ProPG: Planning and Noise, May 2017

- 3.19 LCCC's report, 'Review of Noise Issues', criticizes the lack of an overheating study. Such a study would normally be worked up during the detailed design phase where the specification of building elements is decided. The building will be designed to meet all required standards for ventilation and heating.
- 3.20 At this stage it has been shown that suitable internal noise levels from cricket noise can be readily achieved with standard design strategies, therefore there will be no adverse impacts from cricket match noise on the future residents.
- 3.21 I would recommend that the development is conditioned to ensure that the internal noise levels from road, tram and cricket matches meet the recommended levels in BS8233:2014 with the final detailed design.
- 3.22 A separate version of the cricket noise model was run with the building being significantly taller, 14 stories, 42m, to determine whether the height of the building had a significant impact on the façade noise levels. The results showed that there was a slight increase in noise levels above the 7<sup>th</sup> floor. The noise level peaked at the 12<sup>th</sup> floor before reducing again up to the 14<sup>th</sup> floor.
- 3.23 The peak level for this hypothetical building was 70 dBA at the 12<sup>th</sup> floor and was focused on a small area of the façade nearest the temporary stand. This level could be controlled to meet the internal noise levels of BS8233:2014 using acoustic glazing and acoustically treated ventilation systems. Therefore, the height of the building should not be a determining factor in the decision.

## 4.0 External Amenity Areas

- 4.1 The impact from cricket noise on the external amenity areas was raised by LCCC. Noise impact on outdoor amenity spaces from road and tram sources has already been covered in the 'Acoustic Design Statement' submitted with the planning application.
- 4.2 This has now been reviewed to include for cricket noise and there are no material changes to the impact on outdoor spaces.
- 4.3 BS8233:2014 states that 'the acoustic environment of external amenity areas that are an intrinsic part of the overall design should be assessed and noise levels should ideally not be above 50-55 dB  $L_{Aeq,T}$ .
- 4.4 When assessing cricket noise, balconies on the south west, north west and around half of the balconies on the north east façade exceed this criterion as well as two of the roof terraces nearest the cricket ground.
- 4.5 This exceedance is based on the noisier forms of cricket (International matches, 20/20 and 100) as estimated in LCCC's 'Review of Noise Issues' report. For the less noisy types (Test matches, county, women's, reserve/second eleven) the recommended noise levels are met in all external amenity areas.

- 4.6 ProPG: Planning and Noise states that the guideline values it sets out may not be achievable in all circumstances where development might be desirable. In such a situation, development should be designed to achieve the lowest practicable noise levels in these external amenity spaces.
- 4.7 For the private balconies, there is no practicable way to further lower the noise levels with the balcony design.
- 4.8 In my view the removal of the balconies from the scheme would result in a significant loss of amenity when compared to the number of days of the year where recommended noise levels will be exceeded.
- 4.9 Likewise the terraces already include balustrades or planters to provide additional screening. The terraces that exceed the BS8233 criteria are those nearest the cricket ground where cricket noise is the dominant noise source.
- 4.10 The areas detailed above have already been designed to achieve the lowest practicable noise levels.
- 4.11 ProPG: Planning and Noise states that if this is the case then the impact may be partially offset if the residents are provided with access to *'a relatively quiet, protected, nearby, external amenity space for sole use by a limited group of residents as part of the amenity of their dwellings'*.
- 4.12 There are numerous public and private outdoor amenity areas proposed in the development which would fit this criterion.
- 4.13 The noise levels predicted in these areas and are shown on the graphical noise map in Appendix C. This includes contributions from the cricket match modelled in Section 4 and the road traffic noise along Great Stone Road.
- 4.14 This shows that there is ample substitute outdoor amenity space included in the scheme that meets the BS8233:2014 noise criterion.

## **5.0 Concert Noise**

- 5.1 The Holtz assessment submitted with the planning application stated that it is not possible to fully mitigate live noise through scheme design. By way of explanation in order to 'fully mitigate' noise in this case, concert noise would need to be inaudible inside the proposed building. This is the only way to guarantee absolutely no noise complaints. I accept that it is not possible to 'fully mitigate' concert noise in this way.
- 5.2 It was on this basis and given the relative infrequency of concerts (the licence allows for a maximum of seven, as noted in Section 7, and the number of concerts which have actually taken place is far less than that) that a Noise Management Plan was proposed by the Appellant (and accepted by the Council) as a mitigation measure. In this regard I note that there are many non-acoustic factors that determine the likelihood of a complaint; for example it is known that when



a resident is engaged and forewarned about a noisy event, they are less likely to complain<sup>3</sup>. Absolute noise levels are not, therefore, the only factor in determining the likelihood of a noise complaint.

- 5.3 The use of a Noise Management Plan was accepted by the Council's Environmental Health Officer (EHO) Pete Belfield, when considering the merits of the application, who stated in email correspondence that

*'...In view of the above I do not consider that outdoor events at EOT need to be a constraint on the development, subject to the implementation of the Plan as a condition of any Planning Permission granted'*

The full correspondence is included in Appendix D.

- 5.4 Following the submission of Appeal, LCCC instructed a noise consultant (Vanguardia) to review the Holtz assessment. The key points raised by this assessment were included in LCCC's SoC and are addressed in Section 7 of this report.

- 5.5 LCCC are concerned that the proposed development will unreasonably impact the operation of their business by placing limitations on the staging of occasional concerts. It is assumed that they believe this impact could be in the form of noise complaints from future residents being upheld and enforcement action or review of licensing conditions undertaken by the Council.

- 5.6 Paragraph 187 of the NPPF July 2021 advises that:

*'... 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 building or community facility could have a significant adverse effect on the new development (including changes of use) in its vicinity, the applicant (or 'agent of changes') should be required to provide suitable mitigation before the development has been completed.'*

- 5.7 The licensing conditions for the EoT state that for outdoor concerts with a capacity of more than 5,000 ticket holders.

*'The music noise level outside the Licensed Premises, when measured at 1 metre from the windows of the façade at 23-37 Trent Bridge Walk, 30 Greatstone Road and 19 Barlow Road will not exceed 80dB(A) at any period of 15 minutes in the case of outdoor concerts where the audience may exceed 5,000.'*

- 5.8 It should be noted that there are no clauses in the licence that refer to any other properties new or existing. Therefore, as matters currently stand any noise level in exceedance of 80dB(A) at the proposed development would not be in breach of the existing licence conditions.

- 5.9 In this context I note that the Hilton Garden Inn overlooks the cricket pitch. A hotel is regarded by Local Authorities as having noise sensitive windows as it contains rooms used for sleep and

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<sup>3</sup> Attitudes towards environmental noise from concerts (NANR 292), 2011, Ipsos MORI Social Research Institute.

rest. The predicted noise level at said windows in fact significantly exceeds 80dB(A) as confirmed by both LCCC's and my own acoustic models.

- 5.10 There was no mention of concert noise in the noise assessment submitted with either the original hotel application on the recent hotel extension application.
- 5.11 Without breaching licensing conditions, it is unlikely that enforcement action or review of licensing would result.
- 5.12 It is understood that the licencing level at EOT was increased from the standard 75dB(A) recommended in the Noise Council's Code of Practice on Environmental Noise Control at Concerts<sup>4</sup>, to 80dB(A) and up to 7 concerts a year following an appeal of the refusal to grant a Public Entertainment Licence that was heard at Sale Magistrates Court in 2003.
- 5.13 There are many existing dwellings already in close proximity to the EOT. However, there does not appear to have been any changes to noise clauses in the licence since 2003. This indicates a lack of sustained complaint and/or a relatively low level of dissatisfaction with the noise generated by concerts held at the EOT. A visual inspection of nearby houses shows that they typically only have standard double glazing, so that the occupants are generally satisfied with non-building based mitigation measures.
- 5.14 As the license terms haven't since been reviewed this suggests that the uplift has not adversely impacted the residents. This is further evidence that absolute noise levels are not the only driver in a noise complaint.
- 5.15 A concert noise survey and modelling procedure was undertaken with a view to predicting the noise levels at the proposed façade.
- 5.16 Detailed survey and modelling methodology is included in Appendix E.
- 5.17 A summary of the predicted noise levels based on the survey data available is shown below in Table 4.

**Table 4. Summary of façade Music Noise Levels (MNLs) predicted by the noise map**

Facade	Highest predicted level on facade	Floor at which this level predicted
North East	78 $L_{Aeq,15min}$	Level 2 Upwards
North West	78 $L_{Aeq,15min}$	Level 4 Upwards
South East	74 $L_{Aeq,15min}$	Level 5
South West	73 $L_{Aeq,15min}$	Level 8

- 5.18 At no point on any façade was the 80  $L_{Aeq,15min}$  limit exceeded in the model, a graphical representation is shown in Appendix F. This is a strong indication that the noise level in LCCCs licensing condition would not be breached and along with the proposed Noise Management Plan will help safeguard the LCCC from any potential noise complaints impacting their business.

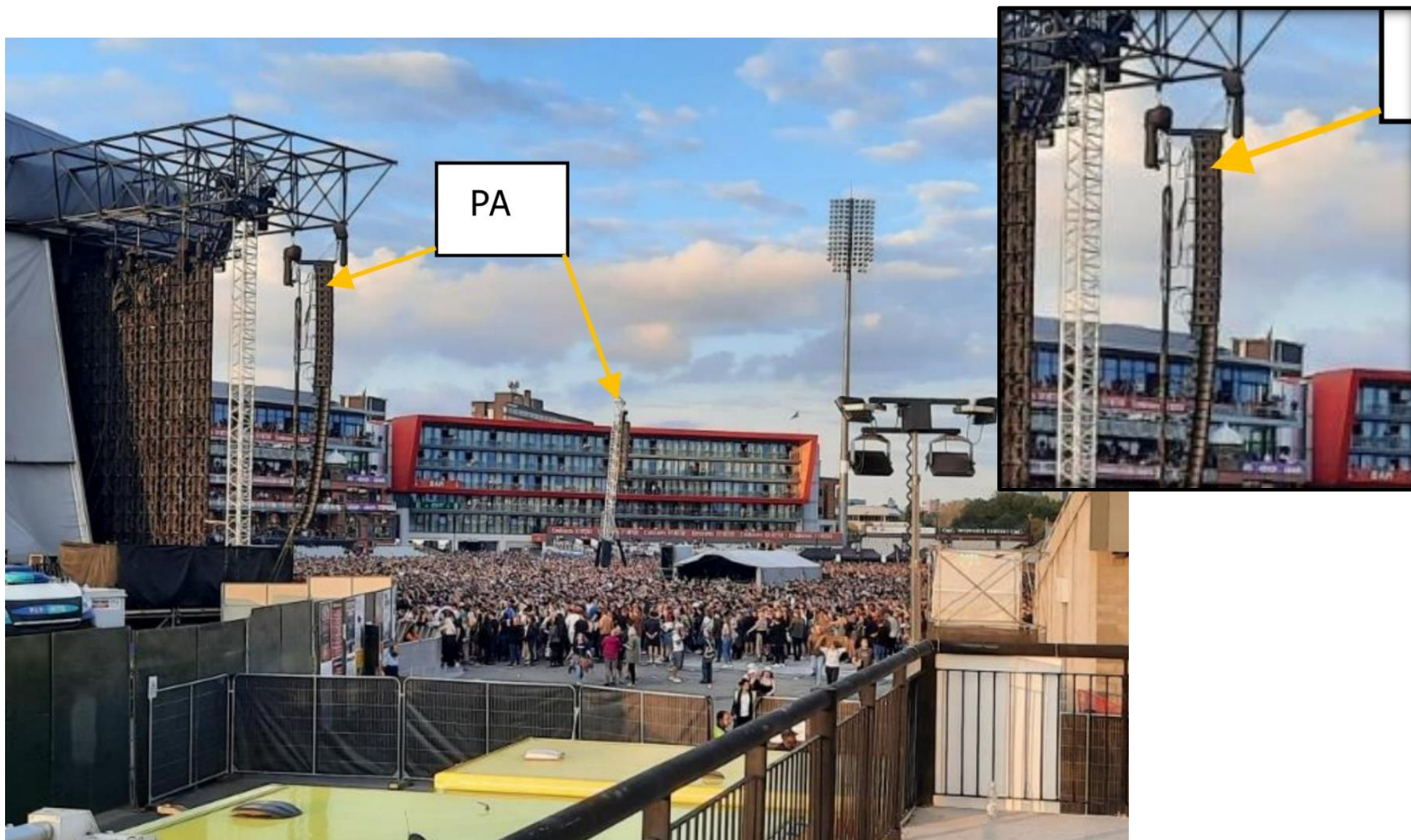
<sup>4</sup> Code of Practice on Environmental Noise Control at Concerts, The Noise Council, 1995

- 5.19 It should be noted that it is mainly only two facades that are subject to significant MNLs. Many of the apartments on the south east and south west façades benefit from significant acoustic screening from other parts of the buildings.
- 5.20 In addition, the noise map shows that there will be a benefit to existing residents as the proposed building will reduce noise levels to existing dwellings located to the south of the site. In the areas directly to the south of the proposed building a reduction of approximately 5-10dB is predicted at ground floor level. This is up to a halving of subjective MNL at the existing properties. The graphical noise maps in Appendix G and H demonstrate where the reductions may be achieved.

### **Vanguardia Assessment**

- 5.21 I have recently been provided with the results of a survey undertaken by Vanguardia during the same recent concert which predicts higher levels at the proposed façade.
- 5.22 Whilst I do not dispute the methodology of their survey and welcome the additional data, the noise levels do not match those in my survey when corrected for location. This may suggest localised effects at either survey position.
- 5.23 I note that the Vanguardia survey was unattended, so it is not possible to determine whether contributions from other sources may have elevated their readings. In particular, I note that the survey was set up near an access door and ambulance bay.
- 5.24 I also note that the sound system configuration used at the event seems unusual. There appears to be an additional smaller line array at high level pointing back towards the proposed development. This is shown in the photo taken from Vanguardia's Project Note on Noise From Concerts at LCCG in Figure 1 below.

Figure 1. View from Vanguardia survey location showing line array appearing to point back at development.



- 5.25 I understand that additional line arrays are used to project to audience at the sides of the cricket ground, but the long array in the photo already serves that purpose. The smaller array could be serving the stands to the right but these are typically unoccupied as they have no view of the stage.
- 5.26 The above suggests that small changes to the sound system could have a significant impact on noise levels at the development. As such a modest alteration would decrease the noise levels experienced, without imposing an unreasonable restriction on LCCC and its operations.
- 5.27 It should be noted that noise levels at the proposed façade benefit from moderate noise screening on the lower floors due to the existing cricket shop. However, above this level the north east and north west facades have a direct line of sight to the speaker systems.
- 5.28 This means that the above the height of approximately 8m the noise level does not change significantly as the building increases with height. This is confirmed by my modelling, see Appendix F, and by the calculations from Vanguardia's Project Note, see Table 2, which shows no change in noise level at 10m and 30m elevation.
- 5.29 If the building were higher than currently proposed there would be no additional noise impact from concert noise over the current proposal. Therefore, the height of the building should not be a determining factor in the decision.

## **6.0 Response to LCCC's Statement of Case**

- 6.1 LCCC's SoC raises the following four main issues:

That the Appellant did not monitor and assess all of the different forms of cricked played at EOT;

That the impact of the temporary stand may have influenced the survey results; and

That the Appellant has underestimated the number of concerts that are typically held at EOT.

Lack of noise mitigation measures included in the scheme

These issues, and the Appellant's response to them, are considered in turn below.

### **Assessment of All Different Forms of Cricket**

- 6.2 The SoC criticises the lack of noise monitoring of all the different forms of cricket played at EOT and states that not all forms of cricket were assessed. I did undertake a noise monitoring survey during a one-day county cricket match and do not consider it necessary to assess each and every format of match played at the venue, and for the purposes of this report I have assumed the worst case scenario identified by Vanguardia.

## Temporary Stand

- 6.3 LCCC's SoC states that the temporary stand may have influenced the survey results as it screened noise from EOT. The temporary stand itself when occupied is a noise source as well as a screen. The modelling detailed in Section 4 was run with and without the temporary stand and found that cricket noise levels at the proposed façade were higher with the temporary stand in place. At no point during the concert noise modelling was the temporary stand included.

## Number of Concerts Typically Held at EOT

- 6.4 LCCC contest the idea that 1-2 concerts per annum is typical at EOT and state that they intend to run more concerts per annum up to the seven permitted in their licence. They state that five concerts are already planned for next year.
- 6.5 It my understanding that the following number of concerts have been undertaken in the past, information was taken from a concert tracking website<sup>5</sup>.

**Table 1. Number of concerts per annum for the past 10 years at EOT**

Year	Number of Concerts
2021	1
2020	0
2019	1
2018	1
2017	3
2016	2
2015	1
2012-14	0
2011	2

## Lack of Noise Mitigation Measures

- 6.6 The SoC suggests that concert noise should be reduced to the recommended internal noise levels in BS8233:2014 'Sound Insulation and Noise Reduction for Buildings'<sup>6</sup> via building design. Noise from concerts and one-off events is not covered in the scope of BS8233:2014 which is aimed at continuous noise sources. I therefore this standard is applicable to this specific situation. BS8233:2014 states in section 6.9 'Other sources of noise' that:

*'Other noise sources exist, many of which originate from leisure activities, e.g. model aircraft, sports and entertainment. Codes of practice give guidance on likely noise levels, assessment and*

<sup>5</sup> Emirates Old Trafford gigography available at <https://www.songkick.com/venues/3606-emirates-old-trafford/gigography>

<sup>6</sup> Guidance on sound insulation and noise reduction for buildings, BSI, 2014

*frequency of occurrences for most of these noise sources [for example, 25,26,27]. Specialist advice might be required,*

- 6.7 Reference 27 in the above text refers to the Noise Council's Code of Practice on Environmental Noise Control at Concerts. This is the primary resource used to assess the impact of noise from open air concerts.
- 6.8 A good proportion of the existing dwellings around EOT would likely to exceed the recommended levels in BS8233:2014 with windows closed. It could however be argued that BS8233:2014 could be applied to noise from cricket matches which can take place over full consecutive days.
- 6.9 The SoC then makes reference to the NPPF and 'agent of change' principle. It highlights that the Applicant should
- 'define clearly the mitigation being proposed to address any potential significant adverse effects that are identified'*
- 6.10 The mitigation of cricket noise being proposed is noise control via double glazing with provision for acoustically rated ventilation systems. The mitigation of concert noise being proposed is a Noise Management Plan as formerly accepted by Trafford Council.
- 6.11 Calculations show that with a suitable glazing and ventilation scheme any adverse effects from cricket noise will be mitigated.
- 6.12 For concert noise it is not possible to identify any potential significant adverse effects based on a technical assessment as there is no relevant assessment methodology.
- 6.13 It is my opinion that given the low number of concerts per annum, given also the fact that the licensing provisions require they do not run past 10:30pm, and given also that a Noise Management Plan will be implemented then any significant adverse effects will be mitigated. Until 9<sup>th</sup> December the Council also agreed with this conclusion.

## **7.0 Ways Forward**

- 7.1 Whilst the evidence presented here shows that noise levels at the proposed façade will not exceed 80dB(A) I also appreciate that LCCC does not agree. Should the Appellant not reach agreement with LCCC, the following approach provides a way of moving forward positively.
- 7.2 On the basis that the MNL limit of 80dB(A) at those facades identified in the licence has not resulted in significant complaints (otherwise, one could expect that the licence would have been reviewed), I suggest any exceedance of this level at the proposed façade is offset by the provision of acoustic glazing to those dwellings where Vanguardia show 80dB(A) may be exceeded.
- 7.3 From images of the existing dwellings surrounding EOT it is understood that they have standard double glazing. The industry standard 4/20/4 double glazing pane configuration has a typical laboratory sound insulation index of  $R_w = 33\text{dB}$ .

- 7.4 If acoustic double glazing were introduced to the scheme, such as a 6.4lam/12/8 with an acoustic laminate with an  $R_w = 38\text{dB}$  then up to 7dB of additional mitigation could be introduced. Calculations showing the possible reduction are included in Appendix I.
- 7.5 In addition I believe that additional MNL reductions at the proposed façade could be made by reconfiguring the sound system, these changes could be made without an 'unreasonable restrictions' being placed on LCCC.
- 7.8 There may be scope to reduce noise levels at the façade with sound system placement. I raise this point as based on Vanguardia's survey photographs it appears that one part of the speaker system was facing directly at the proposed development (Figure 1). It is my view that additional small reductions in noise level could be achieved via sound system configuration without placing unreasonable restrictions on LCCC.

## 8.0 Conclusions

- 8.1 Until last week the Council had no objections to the development on the grounds of noise. Noise was not a putative reason for refusal.
- 8.2 All parties agreed that noise from road and trams has been adequately assessed.
- 8.3 LCCC disputes the impacts of noise from cricket matches on the proposed development. This evidence shows, using the noise levels provided by LCCC's consultant, that the recommended internal noise levels in BS8233:2014 will be met. Therefore, there will be no adverse impacts from cricket noise. I recommend that the scheme is conditioned to ensure that the final glazing and ventilation result in these levels being met.
- 8.4 LCCC object to the use of closed windows to mitigate noise from cricket matches, this evidence shows that the use of closed windows does result in satisfactory development provided that provisions are made for adequate acoustically rated ventilation which can be secured by condition.
- 8.5 LCCC's position is that the current design does not adequately mitigate cricket noise affecting the amenity of balconies facing the cricket ground. The current design represents good design and best practical measures have been taken to mitigate the noise. It is my view that the loss of amenity from removal of balconies outweighs the possible loss of amenity from slightly elevated noise levels during infrequent International, T20 and 100 forms of cricket.
- 8.6 LCCC has concerns that concert noise levels at the proposed façades may result in unreasonable restrictions being placed on their business activities. There are multiple reasons why I do not believe this to be the case:

-Results from my survey and modelling suggest that the 80dB(A) criteria reference in LCCC license is unlikely to be exceeded.

-In addition, I do not believe that the terms of the license apply to the proposed development.



-On the basis that the number of concerts is capped at a low figure of seven (in previous years there has typically been only 1-2 concerts a year), and they do not operate past 10:30pm into sleeping hours, I do not believe there is significant reason to suggest that there would be sufficient future complaints to give rise to a licence review.

-Similarly there is no significant reason to suggest any significant adverse impact on future residents from occasional concerts.

-The currently proposed Noise Management Plan will mitigate the likelihood of complaint as supported by Trafford Council.

-Even if the 80dB(A) level is slightly exceeded measures can be put in place by both the LCCC and the Applicant to mitigate any exceedance, although I consider this unnecessary.

-The Appeal should consider that absolute noise levels are not the only factor in the likelihood of complaints.

- 8.7 Given the above I do not consider that the Appeal Proposal would result in 'unreasonable restrictions' being placed upon the business activities of the LCCC and there is no reason for the noise objection by LCCC to be sustained.