The Garden Cinema
39-41 Parker Street, London WC2B 5PQ
Noise Impact Assessment

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On behalf of: Cinecentre Limited
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Contents

1.0 Qualifications and experience

1.1 My name is Richard Vivian. I am the founder and technical director of Big Sky Acoustics Ltd. Big Sky Acoustics is an independent acoustic consultancy that is engaged by local authorities, private companies, public companies, residents' groups and individuals to provide advice on the assessment and control of noise.

1.2 I have a Bachelor of Engineering Degree with Honours from Kingston University, I am a Member of the Institution of Engineering & Technology, the Institute of Acoustics, the Audio Engineering Society and the Institute of Licensing.

1.3 I have thirty years of experience in the acoustics industry and have been involved in acoustic measurement and assessment throughout my career. My professional experience has included the assessment of noise in connection with planning, licensing and environmental protection relating to sites throughout the UK. I have given expert evidence in the courts, in planning hearings, in licensing hearings and at public inquiries on many occasions.

2.0 Introduction

2.1 Big Sky Acoustics Ltd was instructed to carry out an assessment of the impact of noise for the proposed addition of a theatrical performance space at The Garden Cinema, 39-41 Parker Street, London, WC2B 5PQ.

2.2 Planning permission 2013/3792/P granted for this site in 2014 and allowed change of use of basement and part ground floor from office (Class B1) to mixed use primarily office (Class B1) with cinema (Class D2) from 1800hrs to 2330hrs Monday to Sunday with ancillary café/bar. The planning permission included a number of conditions to restrict noise from the site.

2.3 The drawings referenced in planning permission 2013/3792/P included two cinema screens: screen 1 of 80 seats and screen 2 of 38 seats, both located on the lower ground floor.

2.4 A premises licence, reference PREM-LIC\094791, for 39-41 Parker Street London WC2B 5PQ was granted in 2020 under the Licensing Act 2003.

2.5 This report investigates potential noise arising from the operation of an additional theatrical performance space with a capacity of 60 persons in the space previously designated as a canteen.

2.6 A glossary of acoustical terms used in this report is provided in Appendix A.

2.7 All sound pressure levels in this report are given in dB re: 20μPa.

3.0 Site and surrounding area

3.1 The location of the site is shown in Appendix B.

3.2 The site is located on the corner of Parker Street and Newton Street. It is a four storey building with mansard roof extension and basement.

3.3 The current programme of refurbishment of the building includes the fitting of secondary glazing to all the office windows. The glazing system includes a large air-gap (circa 800mm) and a secondary leaf of 6mm glass.

3.4 The building is located within the Seven Dials Conservation Area and is noted within the Seven Dials Conservation Area Statement as making a positive contribution to the conservation area.

3.5 I have carried out many noise measurement surveys and observations in the area (pre-Covid19) and am familiar with the area, the location of existing noise sources and general activity in the area at all hours of the day and night.

3.6 The noise climate at this location is characterised by road traffic from the surrounding roads, plant noise and other commercial activity. Commercial aircraft contribute to the day and evening noise profile too. Great Queen Street is a busy east-west street for traffic with significant pedestrian footfall and this is 60m to the south of the application site. 100m to the east is Kingsway. Parker Street is not as heavily trafficked but is certainly not deserted either: I am not alone in using it as a cut-through from Drury Lane to Kingsway/Holborn tube station simply to avoid a crowded Great Queen Street.

3.7 The site is located within a highly accessible location and has a Public Transport Accessibility Level rating of 6b (excellent). The high PTAL rating would suitably address the transport requirements of patrons.

3.8 It is important when assessing the impact of noise from a new activity in an area that the concept of *additional* noise associated with the new activity is taken into account. The incremental change to noise levels caused by adding a relatively small (60 seat) theatrical performance space contained within an existing cinema building is highly unlikely to impact on average noise levels at this location at any time of the day, or night.

4.0 Criteria

NPPF

4.1 The revised National Planning Policy Framework (NPPF) was published by the Ministry of Housing, Communities and Local Government on 24 July 2018 (last updated 19 February 2019) and sets out the government's planning policies for England and how these are expected to be applied. This revised Framework replaces the previous NPPF published in March 2012.

4.2 Paragraph 80 of the NPPF requires significant weight to be placed on the need to support economic growth and productivity for local business needs.

4.3 References to noise can be found in Section 15 titled "Conserving and enhancing the natural environment". The NPPF states at Paragraph 170 sub-paragraph (e) *"Planning policies and decisions should contribute to and enhance the natural and local environment by 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".

4.4 The NPPF states at Paragraph 180 that *"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; 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".*

4.5 The comments about *adverse impacts on health and quality of life* are referenced[1] to the Noise Policy Statement for England (NPSE) published by the Department for Environment, Food & Rural Affairs in 2010. The NPSE is intended to apply to all forms of noise, including environmental noise, neighbour noise and neighbourhood noise.

4.6 The NPSE sets out the Government's long-term vision to *'promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development'* which is supported by the following aims:

- *Avoid significant adverse impacts on health and quality of life;*
- *Mitigate and minimise adverse impacts on health and quality of life.*

4.7 The NPSE defines the concept of a 'significant observed adverse effect level' (SOAEL) as *'the level above which significant adverse effects on health and quality of life occur'*. The following guidance is provided within the NPSE: *'It is not possible to have a single objective noise-based measure that defines SOAEL that is applicable to all sources of noise in all situations. Consequently, the SOAEL is likely to be different for different noise sources, for different receptors and at different times. It is acknowledged that further research is required to increase our understanding of what may constitute a significant adverse impact on health and quality of life from noise. However, not having specific SOAEL values in the NPSE provides the necessary policy flexibility until further evidence and suitable guidance is available.'*

4.8 The Planning Practice Guidance (PPG) on Noise published by Ministry of Housing, Communities & Local Government in March 2014 (last updated 22 July 2019) is written to support the NPPF with more specific planning guidance on how planning can manage potential noise impacts in new development.

4.9 The PPG reflects the NPSE and states at Paragraph 001 that noise needs to be considered when development may create additional noise, or would be sensitive to the prevailing acoustic environment (including any anticipated changes to that environment from activities that are permitted but not yet commenced). The PPG clarifies at Paragraph 002 that it is important to look at noise in the context of the wider characteristics of a development proposal, its likely users and its

[1] NPPF at footnote 60

surroundings, as these can have an important effect on whether noise is likely to pose a concern.

4.10 The PPG expands upon the concept of SOAEL (together with Lowest Observed Adverse Effect Level, LOAEL and No Observed Effect Level, NOEL) as introduced in the NPSE and provides a table of noise exposure hierarchy for use in noise impact assessments in the planning system.

4.11 Figure 1 is reproduced from PPG Paragraph 005 and summarises the noise exposure hierarchy, based on the likely average response.

Perception	**Examples of Outcomes**	**Increasing Effect Level**	**Action**
No Observed Effect Level (NOEL)			
Not present	No Effect	No Observed Effect	No specific measures required
No Observed Adverse Effect Level (NOAEL)			
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 change in the quality of life	No Observed Adverse Effect	No specific measures required
Lowest Observed Adverse Effect Level (LOAEL)			
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 small actual or perceived change in the quality of life	Observed Adverse Effect	Mitigate and reduce to a minimum
Significant Observed Adverse Effect Level (SOAEL)			
Present and disruptive	The noise causes a material change in 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 behaviour, attitude or other physiological response and/or an inability to mitigate effect of noise leading to psychological stress, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory	Unacceptable Adverse Effect	Prevent

Figure 1: PPG Noise Exposure Hierarchy Table (revision date: 22.07.2019)

4.12 The PPG at Paragraph 005 considers that a noise impact with an effects level which is lower than SOAEL is acceptable but that consideration needs to be given to mitigating and minimising those effects (taking account of the economic and social benefits being derived from the activity causing the noise).

4.13 When the significant observed adverse effect level boundary is crossed noise causes a material change in behaviour such as keeping windows closed for most of the time or avoiding certain activities during periods when the noise is present. If the exposure is predicted to be above this level the planning process should be used to avoid this effect occurring, for example through the choice of sites at the plan-making stage, or by use of appropriate mitigation such as by altering the design and layout. While such decisions must be made taking account of the economic and social benefit of the activity causing or affected by the noise, it is undesirable for such exposure to be caused.

4.14 At the highest extreme, noise exposure would cause extensive and sustained adverse changes in behaviour and/or health without an ability to mitigate the effect of the noise. The impacts on health and quality of life are such that, regardless of the benefits of the activity causing the noise, this situation should be avoided.

The London Plan 2021

4.15 The London Plan 2021 is the Spatial Development Strategy for Greater London. It sets out a framework for how London will develop over the next 20-25 years and the Mayor's vision for Good Growth.

4.16 Policy HC6 promotes the night-time economy[2], where appropriate, particularly in the Central Activities Zone, strategic areas of night-time activity, and town centres where public transport such as the Night Tube and Night Buses are available. It protects and supports evening and night-time cultural venues such as pubs, night clubs, theatres, cinemas, music and other arts venues, and encourages the management of the night-time economy through an integrated approach to planning and licensing.

4.17 Policy D14 addresses the reduction, management and mitigation of noise. It encourages good acoustic design and notes that the management of noise should be an integral part of development proposals and considered as early as possible.

4.18 It recognises that consideration of existing noise sensitivity within an area is important to minimise potential conflicts of uses or activities, for example in relation to internationally important nature conservation sites which contain noise sensitive wildlife species, or parks and green spaces affected by traffic noise and pollution.

[2] The night-time economy refers to all economic activity taking place between the hours of 6pm and 6am, and includes evening uses. Night-time economic activities include eating, drinking, entertainment, shopping and spectator sports, as well as hospitality, cleaning, wholesale and distribution, transport and medical services, which employ a large number of night-time workers - Paragraph 7.6.1 The London Plan 2021.

Camden Local Plan - Policies A4 and A1

4.19 The Camden Local Plan was adopted by Camden Council on 3 July 2017 and has replaced the Core Strategy and Camden Development Policies documents as the basis for planning decisions and future development in the borough. Noise and vibration can have a significant impact on amenity, quality of life and well being.

4.20 Local Plan Policies A4 (Noise and vibration) and A1 (Managing the impact of development) seek to protect residents of both existing and new residential developments and the occupiers of other noise-sensitive developments from the adverse effects of noise and vibration.

4.21 Appendix 3 of the Local Plan supports these policies and sets out expected standard in terms of noise and vibration. Table D proposes noise levels applicable to proposed entertainment premises and indicates that night time noise levels in gardens that does not exceed the higher of 45dB $L_{AEq,5mins}$ or 10dB below the existing $L_{Aeq,5mins}$ would be rated as LOAEL (see Figure 1) and noise that does not exceed the higher of 46-50dB $L_{AEq,5mins}$ or 9-3dB below the existing $L_{Aeq,5mins}$ would be rated as LOAEL to SOAEL. It also proposes internal levels in bedrooms at night (23:00-07:00hrs) that do not exceed NR25 when measured as a 15-min L_{eq}.

Camden Planning Guidance - Amenity

4.22 This guidance document supports the policies in the Camden Local Plan 2017. It is a formal Supplementary Planning Document (SPD), which is therefore a material consideration in planning decisions. It was adopted on 15 January 2021 and replaces the Amenity CPG adopted March 2018 version which replaced the above sections in CPG 6 Amenity (adopted 2011).

4.23 Noise and vibration is addressed in Chapter 6 which states that *"noise mitigation (where appropriate) is expected to be incorporated into developments at the design stage".* The guidance indicates situations where acoustic reports are expected and also suggests a self-certified check-list is required to accompany the acoustic report although these were not available at the time of writing.

4.24 The guidance suggests that food, drink, entertainment and leisure uses can pose particular difficulties in terms of noise and disturbance, as their peak operating time is usually in the evening and late at night. It reccomends that where such uses are proposed, access routes, outdoor standing/seating areas, smoking areas, pub gardens, etc. should be sited away from noise sensitive façades and/or effectively screened. It expects that assessments of noise from entertainment and leisure premises must include consideration of amplified and unamplified music, human voices, footfall, vehicle movements and other general activity.

4.25 In order to manage food, drink, entertainment and leisure noise, the Council will consider the use of planning conditions to control aspects such as (but not limited to): opening times; amplified music (e.g. times when music can be played and maximum volumes); and restrictions on times where outdoor standing/seating areas can be used.

Licensing Act 2003

4.26 The Licensing Act 2003 requires The London Borough of Camden, in its role as Licensing Authority, to carry out its various licensing functions so as to promote the following four licensing objectives:

- The prevention of crime and disorder
- Public safety
- The prevention of public nuisance
- The protection of children from harm

4.27 Each objective is of equal importance. It is important to note that there are no other licensing objectives, therefore these four are of paramount importance at all times. The Licensing Authority must base its decisions in relation to determining applications and attaching any conditions to licences on the promotion of these four licensing objectives.

4.28 When it comes to the evaluation of noise under the Licensing Act an understanding of the concept of public nuisance is essential. Public nuisance is not narrowly defined in the 2003 Act and retains its broad common law meaning. It may include, in appropriate circumstances, the reduction of the living and working amenity and environment of other persons living and working in the area of the licensed premises.

4.29 Once those involved in making licensing decisions are satisfied of the existence of a public nuisance, or its potential to exist, the question is how to address it. Home Office Guidance[3] is useful in this regard and explains that in the context of noise nuisance then conditions might be a simple measure such as ensuring that doors and windows are kept closed after a particular time, or persons are not permitted in garden areas of the premises after a certain time, noting that conditions in relation to live or recorded music may not be enforceable in circumstances where the entertainment activity itself is not licensable.

4.30 The guidance is clear that any conditions appropriate to promote the prevention of public nuisance should be tailored to the type, nature and characteristics of the specific premises and its licensable activities. Licensing authorities should avoid inappropriate or disproportionate measures that could deter events that are valuable to the community.

4.31 The guidance also states that any appropriate conditions should normally focus on the most sensitive periods. For example, the most sensitive period for people being disturbed by unreasonably loud music is at night and into the early morning when residents in adjacent properties may be attempting to go to sleep or are sleeping. (This is why there is still a need for a licence for performances of live music between 11 pm and 8 am even though it is deregulated at other times).

4.32 As with all conditions, those relating to noise nuisance may not be appropriate in circumstances where provisions in other legislation adequately protect those living in the area of the premises.

[3] Revised guidance issued under section 182 of the Licensing Act 2003 (April 2018)

4.33 There is an existing premises licence (PREM-LIC\094791), granted in 2020, for the application site and this does not constrain the operation of a third event space at this premises.

Other relevant legislation

4.34 In addition to the protection afforded under planning controls, and the Licensing Act 2003, members of the public are protected from noise that is a nuisance.

4.35 The Environmental Protection Act 1990 part III deals with statutory nuisance which includes noise. This Act allows steps to be taken to investigate any complaints which may then result in the issuing of an abatement notice and a subsequent prosecution of any breach of the notice. A statutory nuisance is a material interference that is prejudicial to health or a nuisance.

4.36 The Clean Neighbourhoods and Environment Act 2005 deals with many of the problems affecting the quality of the local environment and provides local authorities with powers to tackle poor environmental quality and anti-social behaviour in relation to litter, graffiti, waste and noise. A fixed penalty notice can be issued when noise exceeds the permitted level as prescribed under the Noise Act 1996 as amended by the Clean Neighbourhoods and Environment Act 2005. The permitted noise level using A-weighted decibels (the unit environmental noise is usually measured in) is 34dBA if the underlying level of noise is no more than 24dBA, or 10dBA above the underlying level of noise if this is more than 24dBA.

British Standard 8233

4.37 BS8233:2014 states that for steady external noise sources, it is desirable that the internal ambient noise level in dwellings does not exceed the guideline values in the table shown below.

Activity	**Location**	**07:00 to 23:00**	**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 $L_{Aeq,16hour}$	30dB $L_{Aeq,8hour}$

Figure 2: Indoor ambient noise levels for dwellings (from BS8233 Table 4)

4.38 Annex G of BS8233 informs that windows, and any trickle ventilators, are normally the weakest part of a brick and block façade. Insulating glass units have an insulation of approximately 33 dB R_w and, assuming suitable sound attenuating trickle ventilators are used, the resulting internal noise level ought to be determined by the windows. If partially open windows are relied upon for background ventilation, the insulation would be reduced to approximately 15 dB.

Operational objectives

4.39 The Garden Cinema management team are committed to promoting good relationships with their commercial and residential neighbours and therefore, in addition to all statutory obligations, it is a primary operational objective that noise from the normal operation of the premises at 39-41 Parker Street does not have a detrimental impact on the neighbourhood.

4.40 Operational procedures have been reviewed and updated, and are presented at Appendix C (Noise Management Policy) and Appendix D (Dispersal Policy).

5.0 Balancing planning and licensing noise conditions

5.1 The guidance issued under Section 182 of the Licensing Act 2003 is clear in its general principles (Para 1.16) that *"[licence conditions] should not duplicate other statutory requirements or other duties or responsibilities placed on the employer by other legislation"*. Therefore if the objective of the prevention of public nuisance is satisfactorily upheld because there already exist tests of nuisance through The Environmental Protection Act 1990; The Noise Act 1996; and The Clean Neighbourhoods and Environment Act 2005, then additional conditions on a premises licence that merely duplicates these statutory requirements should not be necessary according to Home Office guidance.

5.2 Similarly planning guidance has, for a long time, stated that additional planning conditions which duplicate the effect of other legislation should not be imposed, and current planning practice guidance is clear that conditions requiring compliance with other regulatory requirements will not meet the test of necessity and may not be relevant to planning.

5.3 It is a material consideration for planning the the application site is regulated as a licensed premises and is subject to the swift and powerful enforcement regime of the The London Borough of Camden in its role as licensing authority.

5.4 The House of Lords in its 2017 post-legislative scrutiny of the Licensing Act found that it is not only permissible, but logical, to look at licensing as an extension of the planning process.

5.5 The pragmatic approach to specifying noise control conditions would be that the more general criteria relating to the principle of the design and use of the site are applied under the planning regime and more specific requirements relating to the operational control of licensable activities such as hours of operation, the requirement for controls on regulated entertainment, or the need for a noise management policy, are more effectively implemented and enforced through the licensing process.

6.0 The existing noise climate

6.1 The noise climate has been documented for the original planning application. An environmental noise survey was carried out by Ove Arup & Partners Ltd at the site as part of the original application process.

6.2 The lowest background noise levels measured during the Arup survey[4] at the application site were $L_{A90,5min}$ 52 dB at 23:10hrs on a Wednesday night.

7.0 Predicted noise breakout from a performance space

7.1 Noise from a theatrical performance space is contained by the building envelope. The operator is highly motivated to ensure that the building envelope is effective at preventing noise *break-in* which could disturb the audience experience and therefore the cinema screens and theatrical performance space are treated to achieve a high level of sound insulation from road traffic, aircraft noise and emergency service sirens that could disturb the audience particularly during quieter passages of a performance.

7.2 In addition to all the previous analysis of noise breakout, carried out by others, one fundamental element of control for amplified regulated entertainment, including film sound tracks, is that the sound system itself can be set, and limited, to ensure that there is no noise breakout. That is to say that unlike so many fixed noise sources (such as most mechanical plant) a modern sound system is entirely controllable and can be set to operate with a pre-defined maximum level that simply cannot be exceeded. Big Sky Acoustics Ltd has consulted on sound system design in theatres and cinemas over three decades and is recognised as an expert in this field having worked with internationally recognised venues successfully ensuring optimum sound system control.

8.0 Predicted noise from additional patrons dispersing

8.1 The three performance areas will, of course, be programmed with different start and finish times so that the full audience capacity of all would not be dispersing from the site all at the same time. In addition the added attraction of a after show bar means that some patrons will remain in the premises after the credits have rolled, and then depart in small numbers as their individual evening, in small social groups, comes to an end.

8.2 In order to assist in the understanding of actual noise levels produced by people leaving the premises at the end of a performance it is important to understand the effects of the noise source (i.e. people talking) and how that noise level increases as the number of people talking increases.

8.3 Referring to data held in our own library; normal conversation is typically in the range of 55-60dBA when measured at 1 metre.

8.4 In assessing for a worst-case condition I have considered a larger than typical group of 20 people leaving as a single group and talking together outside the premises.

8.5 In normal conversation no more than 50% of them would be talking (there will be at least one listener for each talker). If we now consider people to be talking at the upper end of the normal speaking range, and look at a worst case scenarios of half

[4] Environmental Noise Assessment, AAc/231368/R01-nc

of the people talking concurrently at 60dBA then in order to calculate the total noise level we logarithmically sum 10 sources of 60dB as follows:

$$\sum = 10\log\left(n \times 10^{\left(\frac{60}{10}\right)}\right)$$

where n is the number of people talking

8.6 The formula above gives a value for total sound pressure level for a group of 20 people to be 70dBA[5].

8.7 It is important to remember that this is a worst-case value, when 50% of the people are talking simultaneously and loudly. In reality general lulls in the conversation, or conversations where there are more than one listener to each talker mean that less than 50% of an average group will be talking simultaneously. I have also observed that groups will often subdivide into twos as they are walking, and when leaving a cinema or theatre they would talk with with more hushed voices than leaving a music venue after a loud gig.

8.8 70dBA is the predicted noise from a group of 20 people talking loudly outside when measured at 1 metre. Sound is attenuated in air and this effect is noticeable as the listener moves away from the source.

8.9 In calculating distance attenuation, the noise of people talking is assumed to be a number of discreet point sources and therefore is attenuated by 6dB with each doubling of distance. So if the noise source is 70dBA at 1 metre then at 2 metres it becomes 64dBA, at 4 metres 58dBA.

8.10 In a free field for every doubling of distance from a noise source the sound pressure level L_p will be reduced by 6 decibels.

$$L_{p2} - L_{p1} = 10 \log (R_2 / R_1)^2$$
$$= 20 \log (R_2 / R_1)$$

where

L_{p1} = sound pressure level at location 1 (dB)
L_{p2} = sound pressure level at location 2 (dB)
R_1 = distance from source to location 1
R_2 = distance from source to location 2
A "free field" is defined as a flat surface without obstructions.

8.11 Attenuation due to distance means that a separation distance of 8 metres from the noise source to the receiver position will reduce the noise of people talking to the lowest measured background noise level[6] recorded in the historic noise surveys in the area. (Attenuation due to a distance of 8 metres is 18dB).

[5] Alternative calculation method according to Growcott, D (Consideration of Patron Noise from Entertainment Venues, Australian Association of Acoustical Consultants Guideline, Australia, 2009) using LAeq = 21*log(N)+43 gives 70.3dBA.
[6] Arup survey reported lowest $L_{A90,5min}$ of 52dB

8.12 Inside a residential property, or hostel room, all external noise sources are attenuated by the glazing, by the distance from the noise source to the window, and by any physical obstruction of clear line of sight to the noise source.

8.13 Calculations indicate that the resultant noise level will be significantly below the background noise level at the façades of all noise sensitive windows and comfortably in compliance with the relevant standards and guidance, as well as being subjectively inaudible.

9.0 Recommendations for noise control - remedial works

9.1 The building envelope provides a continuous barrier to contain sound from all internal activities including the screens, theatrical performance space and the bar area. No further works are required but additional sound insulation treatment will be added to the theatrical performance space as part of the fit-out.

10.0 Recommendations for noise control - operational

10.1 The increase from an existing 118 cinema seats, to a total audience capacity of 178 seats in total, does not require additional servicing outside of those times already allowed for servicing.

10.2 The additional theatrical performance space does not require additional plant to operate outside of the limits already applied and evaluated for plant noise.

10.3 Due to the staged nature of performance start times and end times there will not be a concurrent dispersal of patrons from all three auditoria, therefore the premises does not attract a full-capacity arrival or dispersal (unlike say a sporting event or a single screen cinema or theatre).

10.4 Operational procedures based on industry best practice have been prepared and can be found at Appendix C and Appendix D.

10.5 Noise management procedures will be an integral part of all employee training and will be regularly reviewed.

11.0 Conclusions

11.1 Big Sky Acoustics Ltd was instructed to carry out an assessment of the impact of noise for the proposed addition of a theatrical performance space at The Garden Cinema, 39-41 Parker Street, London, WC2B 5PQ.

11.2 This assessment makes reference to the National Planning Policy Framework, the Noise Policy Statement for England, Planning Practice Guidance on Noise, Local Planning Policy, the Environmental Protection Act 1990, the Clean Neighbourhoods and Environment Act 2005, the Noise Act 1996, the Licensing Act 2003, British Standard 8233, relevant guidance and the operational objectives of the applicant.

11.3 All noise from activity inside the building is contained by the building envelope. Calculations indicate that noise from patrons as they leave will be below the

existing background noise level for the area and therefore significantly below the Lowest Observed Adverse Effect Level (LOAEL) at the nearest noise sensitive properties and comfortably in compliance with local and national planning policy.

11.4 The operation of two screens at the application site has previously been considered acceptable, and the addition of a relatively small theatrical performance space does not increase the impact on neighbouring uses as performances would be scheduled so that patron arrivals and departures for all three auditoria do not occur concurrently.

11.5 Given the proposed controls, and willingness to take on board further controls if necessary, it is my professional opinion that the normal operation of a theatrical performance space with a capacity for 60 patrons, in an existing building with seated audience capacity of 118 persons, would not result in a detrimental impact to residential amenity.

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Appendix A - Terminology

Sound Pressure Level and the decibel (dB)
A sound wave is a small fluctuation of atmospheric pressure. The human ear responds to these variations in pressure, producing the sensation of hearing. The ear can detect a very wide range of pressure variations. In order to cope with this wide range of pressure variations, a logarithmic scale is used to convert the values into manageable numbers. Although it might seem unusual to use a logarithmic scale to measure a physical phenomenon, it has been found that human hearing also responds to sound in an approximately logarithmic fashion. The dB (decibel) is the logarithmic unit used to describe sound (or noise) levels. The usual range of sound pressure levels is from 0 dB (threshold of hearing) to 140 dB (threshold of pain).

Frequency and Hertz (Hz)
As well as the loudness of a sound, the frequency content of a sound is also very important. Frequency is a measure of the rate of fluctuation of a sound wave. The unit used is cycles per second, or hertz (Hz). Sometimes large frequency values are written as kilohertz (kHz), where 1 kHz = 1000 Hz. Young people with normal hearing can hear frequencies in the range 20 Hz to 20,000 Hz. However, the upper frequency limit gradually reduces as a person gets older.

A-weighting
The ear does not respond equally to sound at all frequencies. It is less sensitive to sound at low and very high frequencies, compared with the frequencies in between. Therefore, when measuring a sound made up of different frequencies, it is often useful to 'weight' each frequency appropriately, so that the measurement correlates better with what a person would actually hear. This is usually achieved by using an electronic filter called the 'A' weighting, which is built into sound level meters. Noise levels measured using the 'A' weighting are denoted dBA. A change of 3dBA is the minimum perceptible under normal everyday conditions, and a change of 10dBA corresponds roughly to doubling or halving the loudness of sound.

C-weighting
The C-weighting curve has a broader spectrum than the A-weighting curve and includes low frequencies (bass) so it i can be a more useful indicator of changes to bass levels in amplified music systems.

Noise Indices
When a noise level is constant and does not fluctuate over time, it can be described adequately by measuring the dB level. However, when the noise level varies with time, the measured dB level will vary as well. In this case it is therefore not possible to represent the noise level with a simple dB value. In order to describe noise where the level is continuously varying, a number of other indices are used. The indices used in this report are described below.

L_{eq} The equivalent continuous sound pressure level which is normally used to measure intermittent noise. It is defined as the equivalent steady noise level that would contain the same acoustic energy as the varying noise. Because the averaging process used is logarithmic the L_{eq} is dominated by the higher noise levels measured.

L_{Aeq} The A-weighted equivalent continuous sound pressure level. This is increasingly being used as the preferred parameter for all forms of environmental noise.

L_{Ceq} The C-weighted equivalent continuous sound pressure level includes low frequencies and is used for assessment of amplified music systems.

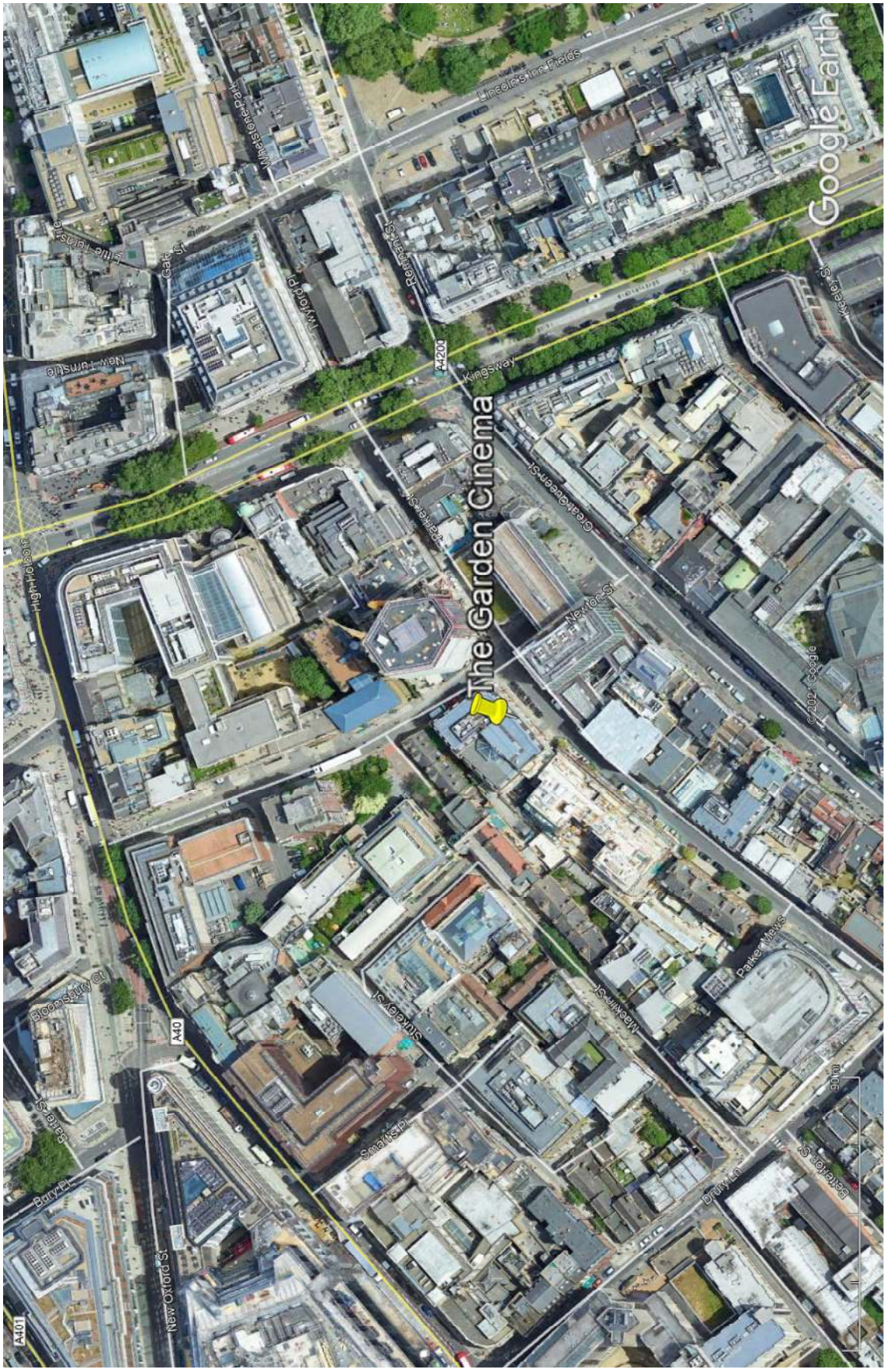
L_{Amax} is the maximum A-weighted sound pressure level during the monitoring period. If fast-weighted it is averaged over 125 ms , and if slow-weighted it is averaged over 1 second. Fast weighted measurements are therefore higher for typical time-varying sources than slow-weighted measurements.

L_{A90} is the A-weighted sound pressure level exceeded for 90% of the time period. The L_{A90} is used as a measure of background noise.

Example noise levels:

Source/Activity	Indicative noise level dBA
Threshold of pain	140
Police siren at 1m	130
Chainsaw at 1m	110
Live music	96-108
Symphony orchestra, 3m	102
Nightclub	94-104
Lawnmower	90
Heavy traffic	82
Vacuum cleaner	75
Ordinary conversation	60
Car at 40 mph at 100m	55
Rural ambient	35
Quiet bedroom	30
Watch ticking	20

Appendix B - Site location



Appendix C - Noise Management Policy

We operate a considerate business. There are both commercial and residential properties in the area around us. We will manage all noise from our premises so we do not disturb people resting and sleeping in their homes or working in their businesses.

We have a comprehensive approach to managing noise from our premises, and from the area outside our building. The following points are critical to our Noise Management Policy and are used in conjunction with our end of night Dispersal Policy:

- We will ensure that noise emanating from our premises will not cause a nuisance at all residential properties.
- Doors and windows will be kept closed save for access and egress after 20:00hrs.
- Arrangements are in place to ensure that deliveries will only take place between the hours of 08:00-20:00hrs, Monday-Saturday except where access at other times is unavoidable and specific procedures are in place to limit disturbance.
- Glass recycling can make noise and so all glass handling is controlled so as to minimise noise. No empty bottles are to be tipped or thrown into outside storage receptacles between 20:00 - 08:00hrs.
- Refuse collections are made at the times allocated for the street. We will ensure that waste is correctly packaged and that refuse can be removed quickly and efficiently.
- Our sound systems include a limiter which is set and locked so that the system cannot operate beyond a preset maximum level.
- No regulated entertainment will take place outside.
- We are proud of the area we work in. We will endeavour to keep the area clean and attractive for our patrons and our neighbours. This means dealing with debris outside that may have nothing to do with us but in the interests of making this a better area we will still clear it up.
- We will constantly review our Noise Management Policy and respond quickly to the needs of our neighbours.

The Garden Cinema Management Team, April 2021

Appendix D - Dispersal Policy

The dispersal policy is designed to ensure that the normal commercial operation of the application site does not have a negative impact on neighbouring properties when people leave the premises.

- A clear notice is prominently displayed by the exit requesting patrons to respect the needs of local residents and businesses and leave the area quietly.
- We will programme events in the three performance areas to avoid concurrent finish times and ensure a gradual dispersal.
- Sale of alcohol on the premises shall cease 30 minutes after the commencement of the final screening of the day.
- No person shall be allowed to leave the premises whilst in possession of an alcoholic beverage.
- Onward transport information will be provided on-line and in the premises.
- There will be clearly signed toilet facilities in the building which will be available for patrons at all times. Employee training includes the provision that any patron in the process of leaving the premises that requests re-admission to use the toilets is allowed to do so. Subject to security and other operational considerations non-patrons will also be allowed access to our toilet facilities.
- All employees are given appropriate instructions and training to encourage customers to leave the premises and the area quietly.
- We will attach the utmost importance to the careful investigation and prompt resolution of any complaint made in respect of the running of the premises. Particular emphasis will be placed on building and maintaining close links with local residents including hosting meetings where necessary to allow our neighbours to raise any issues and for those issues to be quickly resolved. The telephone number of the premises is published on our website and will be provided to all our immediate residential neighbours.
- We will constantly review our Dispersal Policy and respond quickly to the needs of our neighbours.

The Garden Cinema Management Team, April 2021