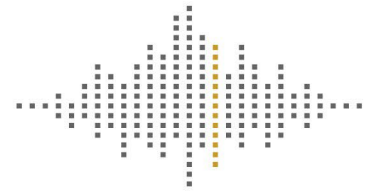


SHARPS REDMORE

ACOUSTIC CONSULTANTS ▪ Established 1990



Report

Noise Assessment

Shinfield Studios Limited –
Backlot 3

Prepared by

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This report has been prepared with all reasonable skill, care and diligence commensurate with an acoustic consultancy practice under the terms and brief agreed with our client at that time. Sharps Redmore provides no duty or responsibility whatsoever to any third party who relies upon its content, recommendations or conclusions.

1.0 Introduction

- 1.1 Sharps Redmore (SR) has been instructed to carry out an environmental noise assessment for the proposed studio backlot at the existing Shinfield Studios, at land south of Oldhouse Farm, Shinfield. The site location is shown in Figure 1 below:

FIGURE 1: Site Location



- 1.2 The site is part of the studio backlot area, which is located to the south of the existing Shinfield Studios within the administrative area of Wokingham Borough Council (WBC). The Site (Backlot 3) had prior notice approval which expired in April 2026. A further prior approval application has been submitted to the WBC requesting a further three month period (until end of July 2026). Temporary planning consent is being sought to enable the continued use of the area known as Backlot 3 for filming, in connection with the western part of the site which was granted temporary use for 5 years in 2024 for use as a backlot area.
- 1.3 In terms of noise the main activities will be the construction and erection of film sets which will be formed predominantly from timber and plaster. This will involve the use of plant including cranes, fork lift trucks and telehandlers. There will be traffic movements arising from the process of erecting film sets with further vehicle movements comprising of vans, production vehicles and minibuses to transfer personnel between the film backlot and rest of the site. Vehicles will access the site via Cutbush Lane and Oldhouse Lane in the same manner as traffic associated with the commercial operations at the Oldhouse Farm Estate.
- 1.4 The purpose of this report is to consider the impact of use of the Backlot on the surrounding noise sensitive properties, including any residential properties on Cuthouse Lane East which are located to the west of the site. The report has regard to national and local policy and relevant noise guidance, which is discussed in section 2.0 of this report.
- 1.5 Section 3.0 contains details of an environmental noise survey which was carried out to determine existing baseline levels. The impact of noise from the site operation is considered in section 4.0 with the report conclusions summarised in Section 5.0.

2.0 Assessment methodology and criteria

National Policy

- 2.1 The National Planning Policy Framework (NPPF), December 2024, sets out the Government's planning policies for England and "these policies articulate the Government's vision of sustainable development." In respect of noise, Paragraph 198 of the NPPF states the following:

"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; and*
- c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation."*

- 2.2 Guidance on the interpretation of the policy aims contained within the NPPF is contained within National Planning Policy Guidance (NPPG) (paragraph reference ID 30-005-20190722). The NPPG introduces the concept of a noise exposure hierarchy based on likely average response. The guidance contained in the NPPG is summarised in the table below:

TABLE 1: Noise Exposure Hierarchy

Response	Examples of Outcomes	Increasing Effect Level	Action
No Observed Effect Level			
Not noticeable	No Effect	No Observed Effect	No specific measures required
No Observed Adverse Effect Level			
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			
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.	Observed Adverse Effect	Mitigate and reduce to a minimum

Response	Examples of Outcomes	Increasing Effect Level	Action
	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.		
Significant Observed Adverse Effect Level			
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

- 2.3 The NPPF and NPPG reinforce the March 2010 DEFRA publication, “Noise Policy Statement for England” (NPSE), which states three policy aims, as follows:

“Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

avoid significant adverse impacts on health and quality of life;

mitigate and minimise adverse impacts on health and quality of life; and

where possible, contribute to the improvement of health and quality of life.”

- 2.4 Together, the first two aims require that no significant adverse impact should occur and that, where a noise level which falls between a level which represents the lowest observable adverse effect and a level which represents a significant observed adverse effect, then according to the explanatory notes in the statement:

“... all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life whilst also taking into consideration the guiding principles of sustainable development. This does not mean that such effects cannot occur.”

Local Policy

- 2.5 Wokingham Borough Council’s (WBC) planning policy relating to noise is set out within the Wokingham Borough Adopted Managing Development Delivery Plan (2014) Policy CC06 which states:

1. *Proposals must demonstrate how they have addressed noise impacts to protect noise sensitive receptors (both existing and proposed) from noise impacts in line with Appendix 1 of the MDD;*
 2. *Noise impact of the development must be assessed. Where there is no adverse impact (No observed effect level) then noise will not be a material consideration;*
 3. *Where there is an adverse effect (Lowest Observed Adverse Effect Level to Significant Observed Adverse Effect Level) the:*
 - a) *The development layout must be reviewed. Where this results in there no longer being adverse impact then design and mitigation measures should be incorporated accordingly;*
 - b) *Where there is still an adverse impact then internal layout must be reviewed. Where this results in no longer being an adverse impact then the design and measures should be incorporated accordingly;*
 - c) *Where there is still an adverse impact then physical measures such as barriers/mechanical ventilation must be reviewed. Where this results in there no longer being an adverse impact then design and mitigation measures should be incorporated accordingly; and*
 - d) *Where there is still an adverse impact and the development falls within the significant observed adverse effect level then planning permission will normally be refused.*
- 2.6 Policy CC06 is consistent with the aims of the NPPF and NPSE. Taking an overview of national policy aims and guidance it is clear that when considering the impact of noise that the fact can be heard and causes impact, is not reason to refuse planning permission.

Noise Guidance

National Noise Guidance

- 2.7 There are a number of guidance documents that contain recommended guideline noise values. These are discussed below.
- 2.8 British Standard 8233:2014 is principally intended to assist in the design of new dwellings; however, the Standard does state that it may be used in the assessment of noise from new sources being brought to existing dwellings.
- 2.9 The original BS 8233 was based on the advice contained in the draft World Health Organisation document "Guidelines for Community Noise". This document was released in final form in 2000. The World Health Organisation guidance is referenced in the NPSE.
- 2.10 The WHO advice is the most useful, comprehensive, and pertinent advice in this case, because it is not specific to the circumstances of the assessment. Instead, it provides guidance on acceptable limits in, for example, schools, dwellings and offices.
- 2.11 The WHO guideline values are appropriate to what are termed "critical health effects". This means that the limits are at the lowest noise level that would result in any psychological, physiological or sociological effect. They are, as defined by NPSE, set at the Lowest Observed Adverse Effect Level (LOAEL), but do not define the level above which effects may be considered significant (SOAEL). Compliance with the LOAEL should, therefore, be seen as a robust aim.
- 2.12 The WHO LOAEL guideline values are summarised in the following table.

TABLE 2: WHO Guidelines

Document	Level	Guidance
World Health Organisation "Community Noise 2000"	$L_{AeqT} = 55 \text{ dB}$	Serious annoyance, daytime and evening. (Continuous noise, outdoor living areas)
	$L_{AeqT} = 50 \text{ dB}$	Moderate annoyance, daytime and evening. (Continuous noise, outdoor living areas).
	$L_{AeqT} = 35 \text{ dB}$	Moderate annoyance, daytime and evening. (Continuous noise, dwellings, indoors)
	$L_{AeqT} = 30 \text{ dB}$	Sleep disturbance, night-time (indoors)
	$L_{AMAX} = 60 \text{ dB}$	Sleep disturbance, windows open at night. (Noise peaks outside bedrooms, external level).
	$L_{AMAX} = 45 \text{ dB}$	Sleep disturbance at night (Noise peaks inside bedrooms, internal level)

- 2.13 For L_{AeqT} criteria the time base (T) given in the document is 16 hours for daytime limits and 8 hours for night time limits. When assessing impact, this has the tendency to smooth out the hourly variations in noise level. As such, our calculations are carried out to a 1-hour time base, which is more stringent assessment than is given in the guidance but is reflective of the actual duration of the delivery process.
- 2.14 In 2018 the WHO published the "Environmental Noise Guidelines for the European Region" (ENGER). The new WHO Environmental Noise Guidelines (page 28) explain that *"The current environmental noise guidelines for the European Region supersede the CNG from 1999. Nevertheless, the GDG (Guideline Development Group) recommends that all CNG indoor guideline values and any values not covered by the current guidelines (such as industrial noise and shopping areas) should remain valid."* Hence the CNG remain relevant to this assessment.
- 2.15 The WHO ENGER brings together the latest research on the effects of specific types of noise on health in relation to transportation noise sources (road, rail and aircraft noise exposure), wind turbines and leisure noise. Hence in direct relation to the specific proposal that this noise assessment considers, the new WHO ENGER are not of material consideration.

Changes in noise level

- 2.16 Changes in noise levels of less than 3 dBA are not perceptible under normal conditions and changes of 10 dB are equivalent to a doubling of loudness. This guidance has been accepted by Inspectors, at Inquiry, to encompass changes in noise levels in the index $L_{Aeq,T}$ in relation to road traffic noise and therefore if of limited use in this case.
- 2.17 The following table shows the response to changes in noise level (known as the Semantic Scale).

TABLE 3: Change in noise level

Change in noise level L_{AeqT} dB	Response	Impact
<3	Imperceptible	None
3 - 5	Perceptible	Slight
6 - 10	Up to a doubling	Significant
11 – 15	More than a doubling	Substantial
> 15	-	Severe

BS 4142:2014+A1:2019

2.18 As discussed, this BS described a method for rating and assessing sound of industrial and/or commercial nature according to the following summary process:

- i) Carry out a numerical assessment of the noise, taking into the character and areas of uncertainty, by comparing the noise against the existing background noise level. The greater the difference between the two, the greater the impact.
- ii) By considering the noise impact against the context in which it is placed. There are many contextual points to consider when considering an assessment of sound impact including the following:
 - The absolute level of sound.
 - The character and level of the specific sound compared to the existing noise climate.
 - The sensitivity of the receptors.
 - The time and duration that the specific sound occurs. The conclusions of assessments undertaken using alternative assessment methods, for example WHO guideline noise values or change in noise level.
 - The ability to mitigate the specific sound through various methods, for example by screening, the selection of quiet plant equipment, the use of attenuators, through the imposition of noise management plans and good practice, façade design and layout/orientation.
 - The form and scale and scale of a development. For example, does not the proposed development involve a new industrial/commercial premise or is the proposal the installation of new plant or an extension to an existing premise?

2.19 It is therefore entirely possible that whilst the numerical outcome of a BS 4142 assessment is indicative of adverse or even significant adverse impact, when the proposal is considered in context the significance of the impact is reduced to an acceptable level.

Local Design Guidance

2.20 Local design guidance is contained within Appendix 1 of the MDDP. In line with the approach outlined in the NPSE the guidance makes reference to concept of noise effect levels. For new noise sources near noise sensitive receptors (NSR's) it is recommended:

Where a new noise industrial or commercial development is proposed near a residential area, the effect of new noise source on the surrounding area shall be assessed in accordance with currently available and appropriate standards. External noise levels at the nearest NSR's should be meet the NOEL levels set out below:

Noise Source	NOEL	LOAEL	SOAEL
Environmental noise	(L _{AeqT}) dB	(L _{AeqT}) dB	(L _{AeqT}) dB
Daytime (0700 – 2300 hrs)	<55	56 - 69	>70
Night time (2300 – 0700 hrs)	<45	46 - 64	>65

- 2.21 Annex 2 provides information on noise from different sources, in relation to noise from industrial and commercial developments the guidance refers to BS 4142 and advises that *“if the predicted impact of the development is 5dB above background it would be considered to be the LOEL and 10 dB above would be SOAEL and could be refused.”*

3.0 Noise Survey Details

- 3.1 A site visit was carried out to determine the location of any noise sensitive receptors close to the site. The nearest noise sensitive properties have therefore been identified as follows:

FIGURE 2: Receptor and Monitoring Locations



TABLE 5 Locations of Noise Sensitive Receptors

Reference	Description	Distance to centre of Backlot
R1	Cutbush Manor, Cutbush Barn and Badger Cottage	450m
R2	Grange Cottage	450m
R3	Residential Properties on Whitehorn, west of Shinfield Eastern Relief Road	500m

- 3.2 To determine existing noise levels a series of attended measurements were carried out two locations (location A and location B). The locations were chosen to be representative of the noise receptors identified above. At location A the sound level meter was set up of the boundary of the site. Measurements were carried out using Norsonic Type 1 sound level meters from 13:10 on 30 April to 09:15 on 1 May 2025. At location B attended measurements were recorded at location in front of 27 Bland Way. Measurements were recorded from 14:00 hours to 15:20 hours, when the sound level meter was set up in the landscaped area in front of the properties. This was closer to the road and therefore ambient noise levels were higher than recorded in front of the properties by around 10 dB.
- 3.3 Weather conditions during the survey were dry, warm with light winds. Weather conditions were suitable for taking sound level measurements. The results of the survey are shown in Figures 3 and 4 below and summarised in Table 6.

FIGURE 3: Survey Results – Location A

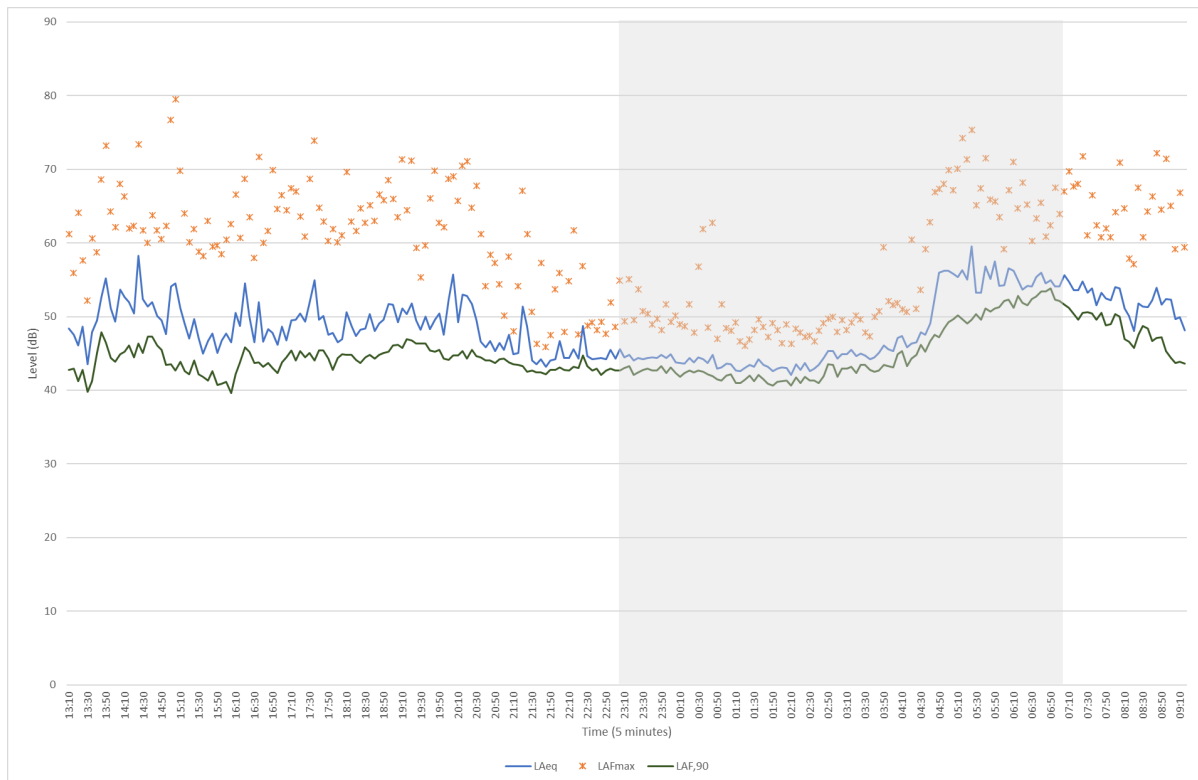


FIGURE 4: Survey Results – Location B

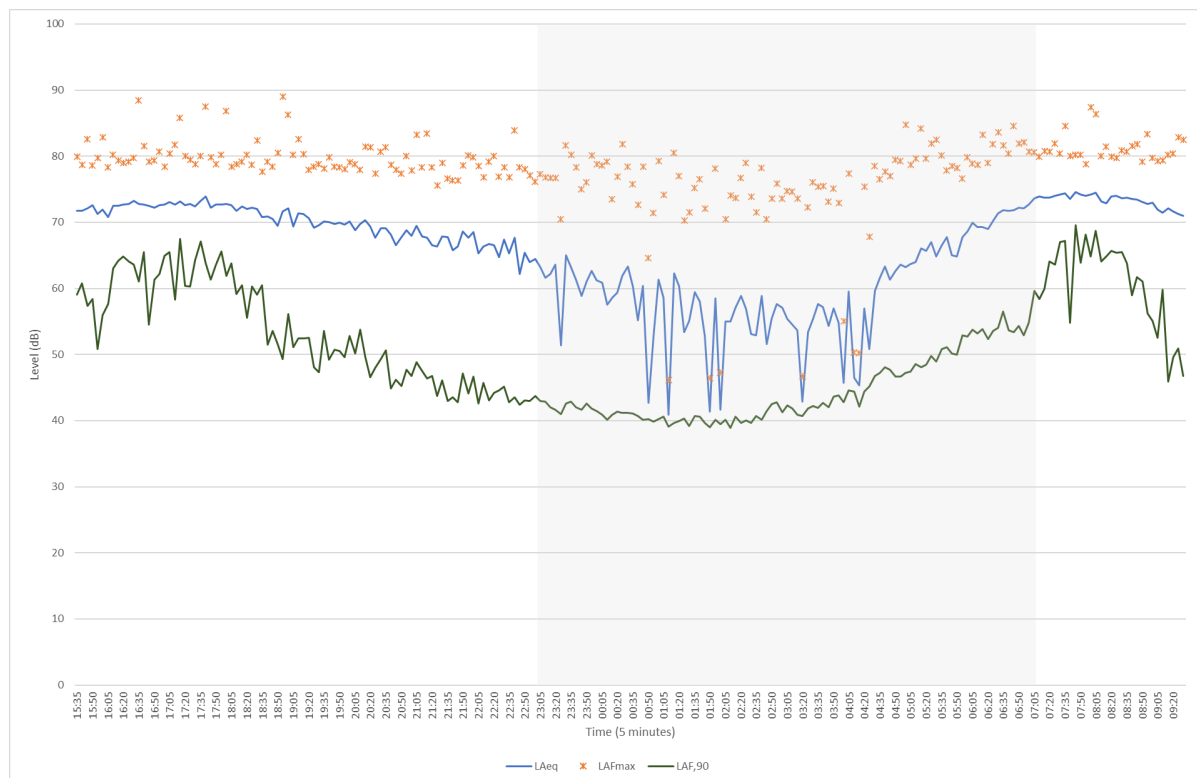


TABLE 6: :- Summary of baseline survey noise levels for unattended measurements (day and night) rounded to the nearest decibel

Location	Period	Measured Noise Levels, dB	
		Log. Av. L_{Aeq}	Modal L_{A90}
Location A	Day (07:00-23:00)	51	44
	Night (23:00-07:00)	51	43
Location B ^[1]	Day (07:00-23:00)	61	47
	Night (23:00-07:00)	54	41

^[1]Survey Results L_{AeqT} corrected to consider distance attenuation to residential properties.

- 3.3 Location A was located away from localised activity and noise levels were similar during day and night time period. Noise levels were dictated by distant road traffic. At location B noise levels were influenced by localised road traffic.

4.0 Noise Assessment

- 4.1 The noise impact from use of the Backlot studios will depend on the filming taking place. However, noise from filming activity is typically very low and taking into account the distance to the nearest noise sensitive receptors not considered to cause any impact to local residents.
- 4.2 The main noise impact from the Backlot studio is therefore likely to be noise from the construction of sets and the setting up of lighting rigs etc. This type of work may include the use of mobile plant such as cranes, and telehandlers and although the majority of set construction will take place during the daytime there will be occasions when the plant may be used for night filming. In addition to the above, other sources of noise may include the use of special effects and pyrotechnics, however this is likely to be occasional use only.
- 4.3 Whilst it is not possible to carry out detailed calculations, SR has carried out indicative calculations based on typical activity, including set building. Using noise source levels determined from BS 5228-1 2009 + A1 2014 Code of Practice for noise and vibration control on construction and open sites Part 1 and SR's own library data the predicted noise level from construction of sets has been determined. The following plant has been assumed.

TABLE 7: Assumed operational noise – Set construction

Plant/equipment	Sound Power level L_{WA}
Mobile Cranes (2)	103
Loader/Fork lift truck (x2)	105
Handheld tools	105
Scaffolding	100

- 4.4 Using the above noise source data the predicted noise level at the receptor locations identified in Figure 2 has been calculated. The calculations are shown the tables below:

TABLE 8: Calculated sound level – Cutbush Lane East (R1) and Grange Cottage (R2)

Sources and Calculations	Plant/equipment			
	Mobile Cranes	Loader/FLT	Handheld tools	Scaffolding
Source level L_{WA}	103	104	105	100
Correction no plant	+3dB	+3dB	n/a	n/a
Distance attenuation*	-61 dB	-61 dB	-61 dB	-61 dB
Ground absorption	-6dB	-6dB	-6dB	-6dB
On time (assumed 50%)	-3dB	-3dB	-3dB	-3dB
Sound level at receptor L_{Aeq}	36 dB	37 dB	35 dB	30 dB
Overall	41 dB L_{Aeq}			
Feature correction	+3dB for impulsivity			
Rating level	44 dB			

*assumed 450 metres

TABLE 9: Calculated sound level – Whitehorn (R3)

Sources and Calculations	Plant/equipment			
	Mobile Cranes	Loader/FLT	Handheld tools	Scaffolding
Source level L_{WA}	103	104	105	100
Correction no plant	+3dB	+3dB	n/a	n/a
Distance attenuation*	-62 dB	-62 dB	-62dB	-62dB
Ground absorption	-7dB	-7dB	-7dB	-7dB
On time (assumed 50%)	-3dB	-3dB	-3dB	-3dB
Sound level at receptor L_{Aeq}	34 dB	35 dB	33 dB	28 dB
Overall	39 dB L_{Aeq}			
Feature correction	+3 dB for impulsivity			
Rating Level	42 dB			

*Assumed 500 metres

Assessment

- 4.5 As advised above the majority of set building/site activity will take place during the daytime period only. The predicted rating sound level from site activity will be no greater than the existing daytime background noise levels measured and therefore the impact during this period is considered to be low.
- 4.6 At night the level of activity will be less, however even using the above predicted noise levels noise level from site activity will still be less than 5dB above existing night time background levels measured. Therefore, in accordance with the guidance in Annex 2 of the MDPP will be below the lowest observed adverse effect level (LOAEL).

Other noise sources

- 4.7 As advised general filming is a relatively quiet activity, however there may be occasions when special effects, including the use of pyrotechnics, may be used. Due to the bespoke nature of filming, it is not possible to carry out a detailed assessment of such activities, however such activity will be limited and will be controlled through good practice to prevent any unreasonable disturbance to local residents.
- 4.8 As discussed in section 2.0 of this report the main policy aim of the NPPF is the avoidance of significant adverse impacts. Based on the guidance in Table 1 this is described as *“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.”*

- 4.9 The impact of noise and the impact on quality of life depend not just on the level of noise but many factors including how often the noise occurs, duration and also time of day. Therefore, whilst there is the potential for noise from certain filming activities to cause disturbance it is considered that the provisions of the NMP would effectively reduce any potential risk of noise and prevent any significant adverse impact in accordance with the policy aims of the NPPF.

5.0 Summary and Conclusions

- 5.1 Sharps Redmore (SR) has undertaken a noise assessment which has considered the impact of noise from activity at the proposed studio Backlot 3 at Shinfield Studios.
- 5.2 The Site has been used for filming purposes under a Prior Approval notice.
- 5.3 A noise survey has been carried out at a location representative of the residential properties to site to determine existing daytime and night time noise levels. Existing noise levels are dictated by road traffic noise, including noise from the M4 which is to the north of the site.
- 5.3 A detailed assessment of typical set activity, including set building, has been carried out and concluded that noise will not cause adverse impact to local residents in line with the national and local policy aims.
- 5.4 Other noise sources associated with filming activity, including the use of pyrotechnics have been considered. Operational mitigation measures will be used based on good industry practice to reduce any potential impact and considering the infrequent nature of such events it is concluded that noise will not cause significant adverse impact in accordance with the policy aims of the NPPF.

Acoustic Terminology

- A1 Noise, defined as unwanted sound, is measured in units of decibels, dB. The range of audible sounds is from 0 dB to 140 dB. Two equal sources of sound, if added together will result in an increase in level of 3 dB, i.e. 50 dB + 50 dB = 53 dB. Increases in continuous sound are perceived in the following manner:

1 dB increase - barely perceptible.

3 dB increase - just noticeable.

10 dB increase - perceived as twice as loud.

- A2 Frequency (or pitch) of sound is measured in units of Hertz. 1 Hertz (Hz) = 1 cycle/second. The range of frequencies audible to the human ear is around 20Hz to 18000Hz (or 18kHz). The capability of a person to hear higher frequencies will reduce with age. The ear is more sensitive to medium frequency than high or low frequencies.
- A3 To take account of the varying sensitivity of people to different frequencies a weighting scale has been universally adopted called "A-weighting". The measuring equipment has the ability automatically to weight (or filter) a sound to this A scale so that the sound level it measures best correlates to the subjective response of a person. The unit of measurement thus becomes dBA (decibel, A-weighted).
- A4 The second important characteristic of sound is amplitude or level. Two units are used to express level, a) sound power level - L_w and b) sound pressure level - L_p . Sound power level is an inherent property of a source whilst sound pressure level is dependent on surroundings/distance/directivity, etc. The sound level that is measured on a meter is the sound pressure level, L_p .
- A5 External sound levels are rarely steady but rise or fall in response to the activity in the area - cars, voices, planes, birdsong, etc. A person's subjective response to different noises has been found to vary dependent on the type and temporal distribution of a particular type of noise. A set of statistical indices have been developed for the subjective response to these different noise sources.
- A6 The main noise indices in use in the UK are:
- LA90: The sound level (in dBA) exceeded for 90% of the time. This level gives an indication of the sound level during the quieter periods of time in any given sample. It is used to describe the "background sound level" of an area.
- LAeq: The equivalent continuous sound level in dBA. This unit may be described as "the notional steady noise level that would provide, over a period, the same energy as the intermittent noise". In other words, the energy average level. This unit is now used to measure a wide variety of different types of noise of an industrial or commercial nature, as well as aircraft and trains.

L_{A10}: The sound level (in dBA) exceeded for 10% of the time. This level gives an indication of the sound level during the noisier periods of time in any given sample. It has been used over many years to measure and assess road traffic noise.

L_{AMAX} The maximum level of sound measured in any given period. This unit is used to measure and assess transient noises, i.e. gun shots, individual vehicles, etc.

- A7** The sound energy of a transient event may be described by a term SEL - Sound Exposure Level. This is the L_{Aeq} level normalised to one second. That is the constant level in dBA which lasting for one second has the same amount of acoustic energy as a given A weighted noise event lasting for a period of time. The use of this unit allows the prediction of the L_{Aeq} level over any period and for any number of events using the equation;

$$L_{AeqT} = SEL + 10 \log n - 10 \log T \text{ dB.}$$

Where

n = Number of events in time period T.

T = Total sample period in seconds.

- A8** In the open, known as free field, sound attenuates at a rate of 6 dB per each doubling of distance. This is known as geometric spreading or sometimes referred to as the Inverse Square Law. As noise is measured on a Logarithmic scale, this attenuation in distance = 20 Log (ratio of distances), e.g. for a noise level of 60 dB at ten metres, the corresponding level at 160 metres is:

$$60 - 20 \log \frac{160}{10} = 60 - 24 = 36 \text{ dB}$$