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## Treetops

Grove Road  
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# Noise Management Report

Data Centre Controlled  
Environmental  
Noise Monitoring  
Air Quality  
Meteorological  
Calculation  
SPLtrack  
SPLcloud  
Management  
Consultancy

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## 1. Introduction

- 1.1. Treetops consists of a clubhouse with ancillary areas of garden and car park and a cycling facility. This report addresses noise related to the use of the clubhouse.
- 1.2. The proposed application concerns the use of the clubhouse .
- 1.3. The Applicant is aware that if noise is created then the premises licence can be reviewed and conditions imposed.
- 1.4. The licensable activities covered in this application are the sale of alcohol and provision of late night refreshment
- 1.5. In addition to the building patrons may use a clubroom terrace, a roof terrace and a smoking area to the rear of the building.
- 1.6. This report considers the potential effects of noise impact from:
  - 1.6.1. Use of the premises in respect of the licensable activities applied for
  - 1.6.2. Background music in the clubroom
  - 1.6.3. Noise resulting from the use of outdoor areas
  - 1.6.4. Traffic noise
- 1.7. Each potential noise impact has been assessed against appropriate standards and, where necessary, mitigation measures have been outlined.
- 1.8. An annotated plan showing the location of the nearest sensitive receptors (NSR) is provided in appendix 1.
- 1.9. This report is necessarily technical in nature, therefore a glossary of acoustic terms is provided in the appendix.

## 2. Operational hours

- 2.1. Monday to Thursday until 23:00 hours closing to public at 23.30
- 2.2. Friday, Saturday, Bank Holiday Sundays e until 00:30 hours the following day and New Years Eve until 02.00

## 3. Building Construction

- 3.1. The clubhouse is a timber building of unusual construction on three levels utilising several tree trunks as vertical structural members. A renovation project is planned that will provide a cafeteria and cycle shop on the ground floor and an improved clubhouse area on the first floor. There are no opening windows.

- 3.1.1. The lower level is presently unglazed and in dilapidated condition. Substantial works will be carried out at this level including the installation of glazed panels.
- 3.1.2. The upper Level (the clubroom and kitchen areas) is fully double glazed with four double exit doors to a balcony area. Floors and ceiling are of heavy timber boarding.
- 3.1.3. The roof terrace is accessed by an open stairway to the rear of the building and is surrounded by a parapet wall approximately 1.6m high. The roof area is uncovered.
- 3.1.4. Rear garden (the smoking area) is contained within foliage to the rear of the building and is uncovered.

#### 4. Scope of the assessment

- 4.1. The scope of the assessment has been determined in the following way:
- 4.2. A visit to the proposed site and surrounding area.
- 4.3. Identification of the closest Noise Sensitive Receptors (NSR)
- 4.4. A baseline noise survey has not been conducted due to time constraints, however data is available for similar areas close to Penshurst. The author considers that data to be representative of the likely background levels in this location.
- 4.5. Identification of noise sources associated with the activities.
- 4.6. Prediction of absolute noise levels impacting on the closest identified NSR from the various noise sources and consideration of the likely magnitude and significance of impact.

#### 5. Methodology

##### 5.1. Guidance

- 5.1.1. The following guidance documents have been referenced where appropriate:
- 5.1.2. Calculation of Road Traffic Noise (CRTN)
- 5.1.3. British Standard (BS) 8233: Guidance on sound insulation and noise reduction for buildings
- 5.1.4. World Health Organisation (WHO) Guidelines for community noise

5.1.5. British Standard (BS) 4142: Methods for rating and assessing industrial and commercial sound

5.1.6. ISO9613-2 Acoustics: Attenuation of sound during propagation outdoors – General method of calculation.

## 6. Scoping

6.1. There has been no scoping consultation between the author and the licensing authority, however there has been communication between the applicant's representatives and the Council in which specific concerns have been expressed. In addition a number of representations have been received from local residents. From this information it is understood by the applicant that:

6.1.1. Noise from vehicle movements including patrons and service vehicles should be assessed and managed appropriately

6.1.2. Noise from activities should be assessed and, where there might be a potential for impact upon NSR's, contained to reasonable hours and mitigated accordingly

6.1.3. The proposed use should be risk assessed for any other potential noise sources such as that from plant and machinery.

## 7. Assessment Methods (Magnitude, Sensitivity and Significance Criteria)

### 7.1. Sensitivity, Magnitude and Significance

7.1.1. The significance of effects reflects the sensitivity of the identified potential receptors and the nature and magnitude of the predicted changes. For example, a negative impact on a low sensitivity location will be of lesser significance than the same impact on a high sensitivity location. The nature of the predicted effects will also be relevant, for example, whether they are temporary or long term, positive or negative, reversible or irreversible.

### 7.2. Sensitivity of Receptors

7.2.1. For the purposes of this assessment, all identified NSR are considered to be sensitive.

### 7.3. Magnitude of impact

7.3.1. The relationship between the change in noise levels from background level due to the noise sources associated with the activities (experienced at an identified NSR) is expressed in the table below.

**Magnitude of impact based on predicted changes in environmental noise levels**

| <b>Change in noise level (dB)</b> | <b>Subjective response</b>                  | <b>Magnitude of impact</b> |
|-----------------------------------|---|----------------------------|
| 0.1 – 0.9                         | Imperceptible                               | Negligible                 |
| 1.0 – 2.9                         | Just perceptible                            | Minor impact               |
| 3.0 – 4.9                         | Noticeable                                  | Moderate impact            |
| 5.0 – 9.9                         | Up to a doubling or halving in loudness     | Major impact               |
| 10.0 or more                      | More than a doubling or halving in loudness |                            |

8. Potential Impacts and Mitigation

8.1. Activities in the clubroom

8.1.1. In its present condition provided only low level background music is provided then the premises will not cause a nuisance so far as the sale of alcohol and provision of late night refreshment are concerned provided:

8.1.2. The Upper Level Terrace is supervised after 19.00 hours,

8.1.3. The Upper Level Terrace is closed at 22.00 hours

8.1.4. Beverages are only sold or supplied to persons seated at table on the Roof Terrace

8.1.5. The rear of the premises is used for consumption of alcohol off the premises and as the smoking area.

8.1.6. Suitable signage is provided to direct users of the clubhouse in the outdoor areas and to inform that noisy activities are not permitted.

8.1.7. It is noted that the Applicant will not provide music in any open areas.

8.2. Plant and machinery

8.2.1. Plant and machinery, including chillers, ventilation and air conditioning equipment, will be contained with a soundproofed equipment room on the ground floor. External ducts will be fitted with silencing cowls. The environmental noise impact from plant and equipment will be negligible.

8.3. Deliveries and waste collection

8.3.1. Deliveries will take place after 09:00 hours and before 18:00 hours.

8.3.2. Delivery and waste activities, particularly bottling, will be assessed on site to minimise noise.

8.3.3. Waste collection will take place after 09:00 and before 18:00 hours.

8.3.4. The environmental noise impact from deliveries and waste collection will be negligible.

#### 8.4. Vehicle movements

8.4.1. Paragraph 30 of Section 2 of Calculation of Road Traffic Noise (CRTN chart 12) illustrates the noise assessment procedure to be followed where road systems have low flows. The definition of low flow on a road segment is between 50 and 200 vehicles per hour. Where flows are of less than 50 vehicles per hour or 1000 vehicles in the 18-hour period between 0600 and 0000h then predictions using the CRTN methodology are considered to be unreliable.

8.4.2. Staff traffic flow is expected to be in the order of ten vehicles per day.

8.4.3. Deliveries and removal of waste will occur between the hours of 09:00 and 18:00 and will be occasional.

8.4.4. Patrons attending the facility will arrive by car and will park in the areas adjacent to the building. For occasions where up to 300 persons may gather it is expected that approximately 100 cars may enter and leave the site. Movements will be of limited duration and will be supervised. Signage will be used to advise patrons to leave quietly.

8.4.5. It is understood that the access road that is currently very rough will be improved by the applicant. This will have the effect of reducing noise from vehicles.

8.4.6. Based upon anticipated traffic flow the significance of effect is likely be negligible to minor.

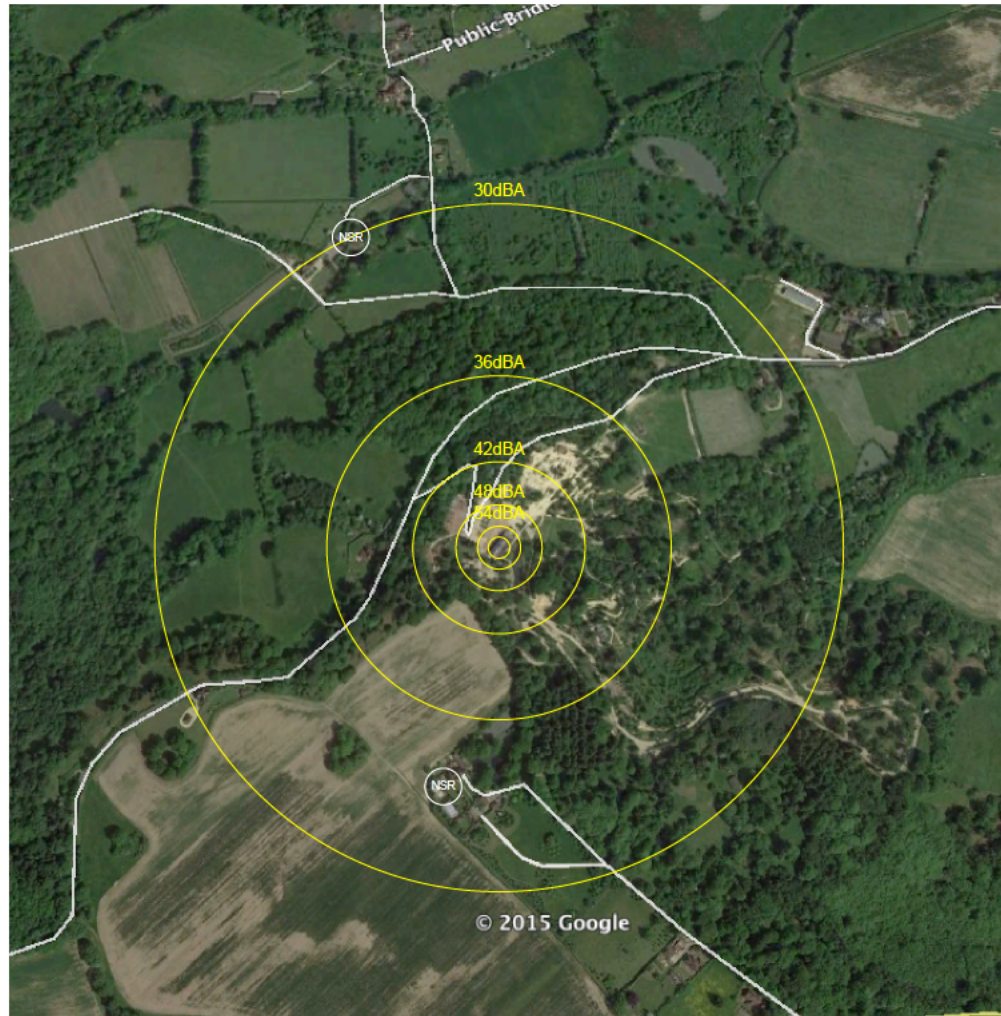
#### 9. Noise Propagation

9.1. Background noise levels in the area have not been measured, but are likely to be in the order of 36dBLAeq(15) before 24:00 hours to 27dBLAeq(15) after 24:00 hours. Other noise sources in the area consist of road traffic and a public house/restaurant with garden terrace.

9.2. The anticipated noise profile at source will consist of conversation level human voice from those using the outdoor areas. The estimated noise level 1m from the facade of the building during times of operation is 58dBA.

9.3. Background music, where it is used, will not be audible outside the building structure.

9.4. The figure below shows the location of the NSRs and a propagation diagram indicating noise propagation. This has been shown as a simple inverse square reduction and does not account for air or ground absorption or attenuation due to trees and foliage. It is clear that noise due to activities covered by this application is likely to fall below background level at the NSRs.



## 10. Active noise management

10.1. Should noise associated with site activities become an issue, an active noise reporting system will be installed at the appropriate NSR's.

10.2. Access to the active Internet cloud noise monitoring system and reports would be granted to the Licensing Authority.

## 11. Executive summary

11.1. The structure of the building is unusual but, following planned renovation works, will be appropriate for the licensable activities applied for.

11.2. It is unlikely that the licensable activities will be audible at NSR's.

11.3. Food deliveries and waste removal will be managed, limited to short duration and will be assessed to minimise environmental noise impact.

11.4. Traffic flows will be very low. Noise impact from traffic associated with the proposed development will be negligible to minor.

11.5. Based upon these assessments, mitigation works and management in use, noise impact from the proposed development will be negligible to minor.

11.6. In the case that background music is used in enclosed areas within the clubhouse it will be ancillary to the provision of refreshments and therefore not a licensed activity. A separate report will be prepared that provides advice and actions for noise mitigation should the Applicant wish to provide anything other than background music.



## Appendix - Glossary of terms

|   |  |
|---|--|
| Ambient Noise                             | The total encompassing sound in a given situation at a given time, usually composed of sound from many sources far and near  |
| A-weighted sound pressure, $p_A$          | Value of overall sound pressure, measured in pascals (Pa), after the electrical signal derived from a microphone has been passed through an A-   |
| A-weighted sound pressure level, $L_{pA}$ | Quantity of A-weighted sound pressure, given by the following formula in   |
| Background Noise Level, $L_{A90,T}$       | The A weighted sound pressure level of the residual noise at the assessment position that is exceeded for 90% of a given time interval, T, measured using time weighting, F, and quoted to the nearest whole number of decibels  |
| Daytime Decibel (dB)                      | The period 09:00-23:00 hours   |
| Decibel (dB)                              | A unit of level derived from the logarithm of the ratio between the value of a quantity and a reference value. It is used to describe the level of many different quantities. For sound pressure levels the reference quantity is 20 uPa. The threshold of normal hearing is in the region of 0 dB and 140 dB is the threshold of pain. A change of 1 dB is only perceptible under controlled conditions   |
| dB(A), $L_{Ax}$                           | Decibels measured on a sound level meter incorporating a frequency weighting (A weighting) which differentiates between sounds of different frequency (pitch) in a similar way to the human ear. Measurements in dB(A) broadly agree with people's assessment of loudness. A change of 3 dB(A) is the minimum perceptible under normal conditions, and a change of 10 dB(A) corresponds roughly to halving or doubling the loudness of a sound. The background noise in a living room may be about 30 dB(A); normal conversation about 60 dB(A) at 1 metre; heavy road traffic about 80 dB(A) at 10 metres; the level near a pneumatic drill about 100 dB(A) |
| Free-field level                          | Sound pressure level measured outside, far away from reflecting surfaces. Measurements are made 1.5 m above the ground and at least 3.5 m away from other reflecting surfaces are usually regarded as being free-field measurements. To minimize the effect of reflections the measuring position should be at least 3.5 m to the side of the reflecting surface (i.e. not 3.5 m from the reflecting surface in the direction of the source). Estimates of noise from aircraft overhead usually include a correction of 2 dB to allow for reflections from the ground.   |
| Façade level                              | Sound pressure level measured 1 m in front of the façade of a property.  |

|                                    |  |
|------------------------------------|--|
| $L_{A10,T}$                        | The A weighted noise level exceeded for 10% of the measurement period, T.  |
| $L_{A90,T}$                        | The A weighted noise level exceeded for 90% of the measurement period, T. This is defined in BS 4142 as the background noise level.  |
| $L_{AE}$                           | The sound exposure level – the level of a sound with a period of 1 second that has the same sound energy as the event considered.  |
| $L_{Aeq,T}$                        | The equivalent continuous A-weighted sound pressure level is the value of the A-weighted sound pressure level in decibels (dB) of a continuous, steady sound, that within a specified time interval, T, has the same mean squared sound pressure as the sound under consideration that varies with time. |
| LAmax                              | The highest A weighted noise level recorded during a noise event. The time weighting (slow or fast) should be stated.  |
| Night time                         | The period 23:00-09:00 hours.  |
| Octave band                        | Band of frequencies in which the upper limit of the band is twice the frequency of the lower limit.  |
| Third octave band                  | Band of frequencies in which the upper limit of the band is 2 times the frequency of the lower limit.  |
| Residual noise                     | The ambient noise remaining at a given position in a given situation when the specific noise source is suppressed to a degree such that it does not contribute to the ambient noise.   |
| Sound Power Level, $L_w$           | An absolute parameter widely used for rating and comparing sound sources. Sound power is a physical property of the source alone, independent of any external or environmental factors.  |
| Sound Pressure, p                  | Root-mean-square value of the variation in air pressure measured in pascals (Pa), above and below atmospheric pressure, caused by the sound.   |
| Sound Pressure Level, $L_p$        | Quantity of sound pressure, in decibels (dB).  |
| Specific Noise Level, $L_{Aeq,Tr}$ | The equivalent continuous A-weighted sound pressure level at the assessment position produced by the specific noise source over a given reference time interval.   |
| Specific Noise Source              | The noise source under investigation.  |