

**TCP/11/16(367)**

**Planning Application 13/01174/FLL – Change of use of agricultural shed for the processing and storage of biomass materials (in retrospect), land at Lambhill, Blairingone**

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**TCP/11/16(367)**

**Planning Application 13/01174/FLL – Change of use of agricultural shed for the processing and storage of biomass materials (in retrospect), land at Lambhill, Blairingone**

**PAPERS SUBMITTED  
BY THE  
APPLICANT**



## NOTICE OF REVIEW

UNDER SECTION 43A(8) OF THE TOWN AND COUNTRY PLANNING (SCOTLAND) ACT 1997 (AS AMENDED) IN  
RESPECT OF DECISIONS ON LOCAL DEVELOPMENTS

THE TOWN AND COUNTRY PLANNING (SCHEMES OF DELEGATION AND LOCAL REVIEW PROCEDURE)  
(SCOTLAND) REGULATIONS 2008

THE TOWN AND COUNTRY PLANNING (APPEALS) (SCOTLAND) REGULATIONS 2008

**IMPORTANT: Failure to supply all the relevant information could invalidate your notice of review.**

Use **BLOCK CAPITALS** if completing in manuscript

### Applicant(s)

Name BARNHILL ESTATES

Address WEST GOGAR,  
BLAIRLOGIE. STIRLING

Postcode FK9 5QB

Contact Telephone 1  
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Fax No

E-mail\*

### Agent (if any)

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Address WESTBURN, ST BOSWELLS, MELROSE,  
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Postcode TD6 0HG

Contact Telephone 1 01835 823928  
Contact Telephone 2 07931 776217  
Fax No

E-mail\* JCAMPBELLQC@ADVOCATES.ORG.UK

Mark this box to confirm all contact should be through  
this representative: YES

\* Do you agree to correspondence regarding your review being sent by e-mail? YES

Planning authority PERTH AND KINROSS COUNCIL

Planning authority's application reference number

13/01174/FUL

Site address LAMBHILL FARM, BLAIRINGONE,

PERTH & KINROSS

Description of proposed  
development Change of use of  
agricultural shed for processing and  
storage of agricultural biomass  
materials (in retrospect)

Date of application 20 June 2013

Date of decision 25 March 2015  
Page 1 of 4

**Note.** This notice must be served on the planning authority within three months of the date of the decision notice or from the date of expiry of the period allowed for determining the application.

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### Nature of application

1. Application for planning permission (including householder application) ☒ X
2. Application for planning permission in principle
3. Further application (including development that has not yet commenced and where a time limit has been imposed; renewal of planning permission; and/or modification, variation or removal of a planning condition)
4. Application for approval of matters specified in conditions

### Reasons for seeking review

1. Refusal of application by appointed officer ☒ X
2. Failure by appointed officer to determine the application within the period allowed for determination of the application
3. Conditions imposed on consent by appointed officer

### Review procedure

The Local Review Body will decide on the procedure to be used to determine your review and may at any time during the review process require that further information or representations be made to enable them to determine the review. Further information may be required by one or a combination of procedures, such as: written submissions; the holding of one or more hearing sessions and/or inspecting the land which is the subject of the review case.

Please indicate what procedure (or combination of procedures) you think is most appropriate for the handling of your review. You may tick more than one box if you wish the review to be conducted by a combination of procedures.

1. Further written submissions ☒ X
2. One or more hearing sessions ☒ X
3. Site inspection ☒ X
4. Assessment of review documents only, with no further procedure

If you have marked box 1 or 2, please explain here which of the matters (as set out in your statement below) you believe ought to be subject of that procedure, and why you consider further submissions or a hearing are necessary:  
**THE APPLICATION AND RESPONSE COULD BE IN WRITING. ORAL EVIDENCE IS REQUIRED TO FULLY EXPLAIN THE PROCEDURES REQUIRED TO PRODUCE BIOMASS MATERIAL FROM VIRGIN TIMBER.**

### Site inspection

In the event that the Local Review Body decides to inspect the review site, in your opinion:

1. Can the site be viewed entirely from public land? ☐ NO
2. Is it possible for the site to be accessed safely, and without barriers to entry? ☐ NO

If there are reasons why you think the Local Review Body would be unable to undertake an unaccompanied site inspection, please explain here:

THE NEIGHBOURING SITE HAS PP AND A WML FOR THE STORAGE OF WASTE WOOD AND SHARES THE SAME ACCESS ROAD AS THE APPEAL SITE. WHEN NOT OPERATIONAL THE GATES ARE LOCKED, AND WHEN OPERATIONAL THERE ARE LORRY MOVEMENTS IN AND OUT, USING THE WEIGHBRIDGE. THE APPEAL SITE LAND IS IN USE BY LORRIES AND TRACTORS. VEHICLE TRAFFIC CAN BE EXTENSIVE. IT IS IMPORTANT THAT PEDESTRIANS ON THE SITE ARE SAFE AND PROPERLY PROTECTED.

#### Statement

You must state, in full, why you are seeking a review on your application. Your statement must set out all matters you consider require to be taken into account in determining your review. Note: you may not have a further opportunity to add to your statement of review at a later date. It is therefore essential that you submit with your notice of review, all necessary information and evidence that you rely on and wish the Local Review Body to consider as part of your review.

If the Local Review Body issues a notice requesting further information from any other person or body, you will have a period of 14 days in which to comment on any additional matter which has been raised by that person or body.

State here the reasons for your notice of review and all matters you wish to raise. If necessary, this can be continued or provided in full in a separate document. You may also submit additional documentation with this form.

THE CURRENT APPLICATION IS FOR A CHANGE OF USE OF A SHED (ORIGINALLY PERMITTED UNDER 97/1660/FUL) AND THE SURROUNDING HARDSTANDING AREA FOR THE STORAGE AND PROCESSING OF BIOMASS MATERIAL FOR USE AS FUEL.

THE SITE AREA AS SUBMITTED (EXCLUDING THE EXISTING ACCESS ROAD) EXTENDS TO AROUND 4000 SQ. METRES (0.4 HA).

THIS IS AN APPEAL AGAINST THE REFUSAL BY THE PLANNING AUTHORITY OF AN APPLICATION FOR PLANNING PERMISSION IN CASE No. 13/00174/FLL. THE APPEAL IS TAKEN ON THE GROUND THAT THE APPLICATION ACCORDS WITH THE LDP, AND THAT NO MATERIAL CONSIDERATION INDICATES WHY IT SHOULD NOT BE GRANTED.

THE APPLICATION IS FOR FORESTRY AND ACCORDS WITH THE PERMITTED USE AND THE LOCAL DEVELOPMENT PLAN IE TAYPLAN 3 AND PKC DP 2014 POLICIES Nos PMLA, ED3, ER1, EP3, EPS, AND EP8.

PLANNING CONDITIONS CONTROL ANY PERCEIVED ADVERSE IMPACTS. NO ANALYSIS HAS BEEN CARRIED OUT AS TO WHETHER COMPLAINTS ARE JUSTIFIED. THE PLANNING OFFICER'S CONCLUSION THAT ANY EXCESSIVE NOISE CANNOT BE SATISFACTORILY CONTROLLED IS INCORRECT.

RFR2 DOES NOT REFLECT ANY NOISE ANALYSIS BY THE LOCAL PLANNING AUTHORITY NOR ANY ASSESSMENT OF AMENITY. THE COMPLAINTS ARE ALLEGED TO HAVE COME FROM LOCAL HOUSES. THE LOCAL PLANNING AUTHORITY HAS DECLINED TO IDENTIFY THE COMPLAINANTS, SO THAT THEIR ALLEGATIONS OF EXCESSIVE NOISE CAN BE TESTED.

P&KC ENVIRONMENTAL HEALTH ONLY CHOSE FOUR NOISE RECEPTORS AT WHICH BACKGROUND NOISE LEVELS WERE TO BE CALCULATED – AND AT WHICH IMPACT FROM THE SITE WAS TO BE ASSESSED. THE NOISE ASSESSMENT WAS ACCEPTED BY P&KEH AS SHOWING THAT IF CERTAIN NOISE ATTENUATION MEASURES WERE CARRIED OUT THEN THE IMPACT ON THESE FOUR RECEPTORS WOULD BE WITHIN ACCEPTABLE LIMITS. THE PLANNING OFFICER HAS IGNORED THE ADVICE FROM HIS OWN NOISE ASSESSMENT EXPERTS.

Have you raised any matters which were not before the appointed officer at the time the determination on your application was made? NO

Have you raised any matters which were not before the appointed officer at the time the determination on your application was made? NO

If yes, you should explain in the box below, why you are raising new material, why it was not raised with the appointed officer before your application was determined and why you consider it should now be considered in your review.

### List of documents and evidence

Please provide a list of all supporting documents, materials and evidence which you wish to submit with your notice of review and intend to rely on in support of your review.

1. Report of Handling
2. Notice of refusal
3. PKC Local Development Plan
4. Noise Report
5. BS 4142:2014
6. Site map

\*\*

THE APPELLANT SUBMITS THAT THIS APPEAL SHOULD BE DETERMINED FOLLOWING CONSIDERATION OF THE RELEVANT DOCUMENTS, AND AN APPEARANCE AT A SHORT HEARING AT WHICH THE APPLICATION AND THIS APPEAL CAN BE FULLY EXPLAINED, AND A SITE INSPECTION BY MEMBERS OF THE LRB.

A HEARING IS NECESSARY BECAUSE THE APPEAL RAISES BOTH LEGAL AND FACTUAL ISSUES.

THE LEGAL ISSUE IS WHETHER OR NOT THE EXISTING PLANNING PERMISSION COVERS THE ACTIVITY COMPLAINED OF. THE APPELLANT SUBMITS THAT IT DOES.

Note. The planning authority will make a copy of the notice of review, the review documents and any notice of the procedure of the review available for inspection at an office of the planning authority until such time as the review is determined. It may also be available on the planning authority website.

### Checklist

Please mark the appropriate boxes to confirm you have provided all supporting documents and evidence relevant to your review:

Full completion of all parts of this form X

Statement of your reasons for requiring a review

X

All documents, materials and evidence which you intend to rely on (e.g. plans and drawings or other documents) which are now the subject of this review. X

Note. Where the review relates to a further application e.g. renewal of planning permission or modification, variation or removal of a planning condition or where it relates to an application for approval of matters specified in conditions, it is advisable to provide the application reference number, approved plans and decision notice from that earlier consent.

### Declaration

I the agent [delete as appropriate] hereby serve notice on the planning authority to review the application as set out on this form and in the supporting documents.

Signed

Date

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***The Completed form should be returned to the Head of Corporate Administration, Scottish Borders Council, Council Headquarters, Newtown St. Boswells TD6 0SA.***



## REPORT OF HANDLING

### DELEGATED REPORT

Ref No	12/01354/FLL
Ward No	N8- Kinross-shire

**PROPOSAL:** Storage of waste wood material on concrete hardstanding in retrospect.

**LOCATION:** Land at Lambhill Blairingone

**APPLICANT:** Barnhill Estates

**RECOMMENDATION:** APPROVE THE APPLICATION

**SITE INSPECTION:** 17 September 2012

#### OFFICERS REPORT:

##### Brief Description

The application site forms part of an area of land at Lambhill Farm which is situated 0.5km to the south east of the village of Blairingone and which was formerly part of a wider open cast mining site operated by British Coal. When the open cast mining finished the land was restored to agricultural use at Lambhill Farm. Established woodland planting surrounds and screens the site and there is a man made settlement pond to the south west. The farm extends to 240 hectares. In April 1998 planning consent was granted on the former open cast mining hardstanding area for the erection of 2 agricultural buildings and the use of an area of hardstanding for agricultural and forestry purposes under application PK 97/1655. Under this consent previous operations included agricultural composting and a wood storage facility. The site has a heavy goods vehicle operators licence.

An application which was submitted on another part of the wider site for a change of use of the agricultural shed consented under PK97/1655 for the processing and storage of biomass materials was withdrawn on the 8 May 2013 (12/00912/FLL).

The application site has consent for forestry uses on it as indicated above however this consent does not cover forestry or wood which is classified as waste wood.

This application is in retrospect and is for the storage of waste wood material on a lower hardstanding area of approximately 0.96 hectares. The lower hardstanding is accessed from the public road along an existing concrete roadway. The material being stored at Lambhill is waste wood material which

includes shredded wood, sawdust and fine wood that will all be used in a chipboard manufacturing process at Norbord Limited, Cowie Mill, by Stirling. The applicant has provided in the Supporting Statement a Norbord Limited Material Specification for Wood Chips. The material stored at Lambhill has to conform to this specification. The shredded wood material is classified in the European Waste Catalogue with the Code 19-12-07 and the fine wood with the Code 17-02-01. Sawdust is not a waste wood under this classification. There are 3 separate storage stockpiles - one each for shredded wood, fine wood and for sawdust.

The main issues to be addressed here are the impact of the waste wood storage on the site and whether this will have any impact on the environment and immediate surrounding area and whether there are any visual impact concerns as a consequence.

SEPA have been consulted on the proposal and following initial concerns over drainage they have withdrawn their objection. The applicant's agent has confirmed that surface water from the yard will be collected in an underground storage tank at the south west corner of the hardstanding which has a capacity of 50 000 litres. The surface water discharge should not pollute the water environment and the storage tank may well provide sufficient treatment, however SEPA will require to monitor the site through the Waste Management Licencing process. For storage of waste wood the applicant will have to apply to SEPA for an exemption under paragraph 17 of The Waste Management Licensing (Scotland) Regulations 2011 which limits the maximum capacity of waste wood on site to 1000 tonnes for up to 12 months. The Waste Management Licence can only be applied for once planning permission is in place.

Environmental Health have no objections to the proposal on noise grounds as the proposal is for wood storage only however recommend that a dust management plan should be prepared and submitted for the approval of the Council by condition.

There are no objections to the proposal on road traffic safety grounds.

The application site is screened by woodland and the proposed storage of waste wood will not have any adverse visual impact on the immediate surrounding area including the village of Blairingone or the wider countryside.

The proposal represents rural diversification and is considered to be in accordance with Policy 51 of the adopted local plan, where encouragement will be given to farmers and landowners to diversify their business particularly where this will generate additional employment and there are no adverse impacts on the environment and the amenity of nearby housing.

Given the previous consent for the use of the hardstanding area for forestry purposes it is considered that the storage of waste wood will not have any detrimental impact on the environment or any adverse visual impact subject to conditions and its storage at this location is therefore acceptable.

## **DEVELOPMENT PLAN**

Kinross Area Local Plan 2004

The application site is within the landward area.

Main policies:

Policy 2: Development Criteria

Policy 5: Landscape

Policy 14: Surface Water Drainage

Policy 51: Rural Diversification

Perth and Kinross Proposed Local Development Plan (PLDP) 2012

ED3: Rural Business & Diversification

## **SITE HISTORY**

00/00259/FUL Approval of land restoration plan in accordance with a condition on planning permission PK/97/1665 (erect 2 agricultural buildings) and extension of time for completion of restoration works (PK/98/0374) at 16 October 2000 Application Refused

97/01345/FUL Erection of a general agricultural store on 3 October 1997 Application Withdrawn

97/01660/FUL Erection of 2 agricultural buildings at Lambhill/Broomhill Farms, Blairingone 3 April 1998 Application Permitted

99/00102/FUL Approval of land restoration plan in accordance with a condition on planning permission PK/97/1665 (erect 2 agricultural buildings) and extension of time to complete restoration of opencast coal extraction site (PK/88/0374MW) on 27 July 1999 Application Refused

12/00912/FLL Modification of existing consent (PK/97/1665) to allow change of use of agricultural shed for the processing and storage of biomass materials withdrawn on 8 May 2013

## **CONSULTATIONS/COMMENTS**

Scottish Environment  
Protection Agency

No objections

Environmental Health                      No objections

Fossoway Community                      Objection on the grounds of noise, landscape  
Council    impact, drainage, traffic and application type.

**TARGET DATE:** 23 September 2012

**REPRESENTATIONS RECEIVED:**

Number Received: 2

**Summary of issues raised by objectors:**

2 letters of representation were received including one from Fossoway & District Community Council. Main issues raised:-

- concerns over the noise impact of the proposal
- concerns over the traffic implications
- the landscape impact of the proposal
- impact on site drainage
- this application along with application 12/00912/FLL should be dealt with as a major application

**Response to issues raised by objectors:**

See report

**Additional Statements Received:**

Environment Statement

Not required

Screening Opinion

Not required

Environmental Impact Assessment

Not required

Appropriate Assessment

Not required

Design Statement or Design and Access Statement

Not required

Report on Impact or Potential Impact eg Flood Risk Assessment

Not required

**Legal Agreement Required:**

Not required

**Direction by Scottish Ministers**

None

**Conditions:-**

- 1 The proposed development must be carried out in accordance with the approved drawings and documents, unless otherwise provided for by conditions imposed on the planning consent.
- 2 Within 1 month of the date of this consent the applicant shall submit in writing for the approval of the Planning Authority a Dust Management Plan detailing measures to control dust and prevent it's migration from the site.
- 3 Surface water drainage arrangements shall be carried out in accordance with the arrangements agreed between the applicant and SEPA to the satisfaction of the Planning Authority.
- 4 No processing of waste wood shall be carried out on the application site to the satisfaction of the Planning Authority.

**Reasons:-**

- 1 To ensure that the development is carried out in accordance with the plans approved.
- 2 In the interests of amenity and environmental quality.
- 3 In the interests of sustainable drainage and flood risk.
- 4 In accordance with the terms of the application.

**Justification**

- 5 The proposal is in accordance with the Development Plan and there are no material reasons which justify departing from the Development Plan

**Notes**

- 1 The applicant will require to apply for a Waste Management Licence for the storage of waste wood on the site from SEPA under The Waste Management Licensing (Scotland) Regulations 2011.

## PERTH AND KINROSS COUNCIL

Barnhill Estates  
c/o Ballantynes Surveyors  
FAO Ben Ballantyne  
28 York Place  
Perth  
PH2 8EH

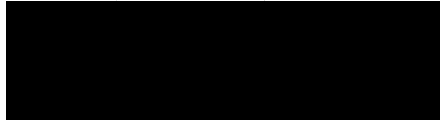
Pullar House  
35 Kinnoull Street  
PERTH  
PH1 5GD

Date 25th March 2015

### TOWN AND COUNTRY PLANNING (SCOTLAND) ACT

Application Number: 13/01174/FLL

I am directed by the Planning Authority under the Town and Country Planning (Scotland) Acts currently in force, to refuse your application registered on 2nd July 2013 for permission for **Change of use of agricultural shed for the processing and storage of biomass materials (in retrospect) Land At Lambhill Blairingone** for the reasons undernoted.



Development Quality Manager

#### Reasons for Refusal

1. The proposal is contrary to Policy EP8: Noise Pollution, of the Perth and Kinross Local Development Plan 2014 as without mitigation, the development will have a significant adverse impact on the amenity of nearby residential properties. The mitigation measures which are recommended in the submitted noise impact are considered to be neither practical or nor satisfactorily enforceable. The adverse noise impact cannot therefore be adequately controlled.
2. The proposal would generate an unacceptable level of noise and activity which would adversely affect the character and amenity of the surrounding area, which is characterised by agriculture, forestry and scattered residential properties. The proposal is therefore contrary to Policy PM1A of the Local Development Plan 2014 which seeks to ensure that new developments respect the amenity of the area concerned.

## **Justification**

The proposal is not in accordance with the Development Plan and there are no material reasons which justify departing from the Development Plan

The plans relating to this decision are listed below and are displayed on Perth and Kinross Council's website at [www.pkc.gov.uk](http://www.pkc.gov.uk) "Online Planning Applications" page

### **Plan Reference**

13/01174/1

13/01174/2

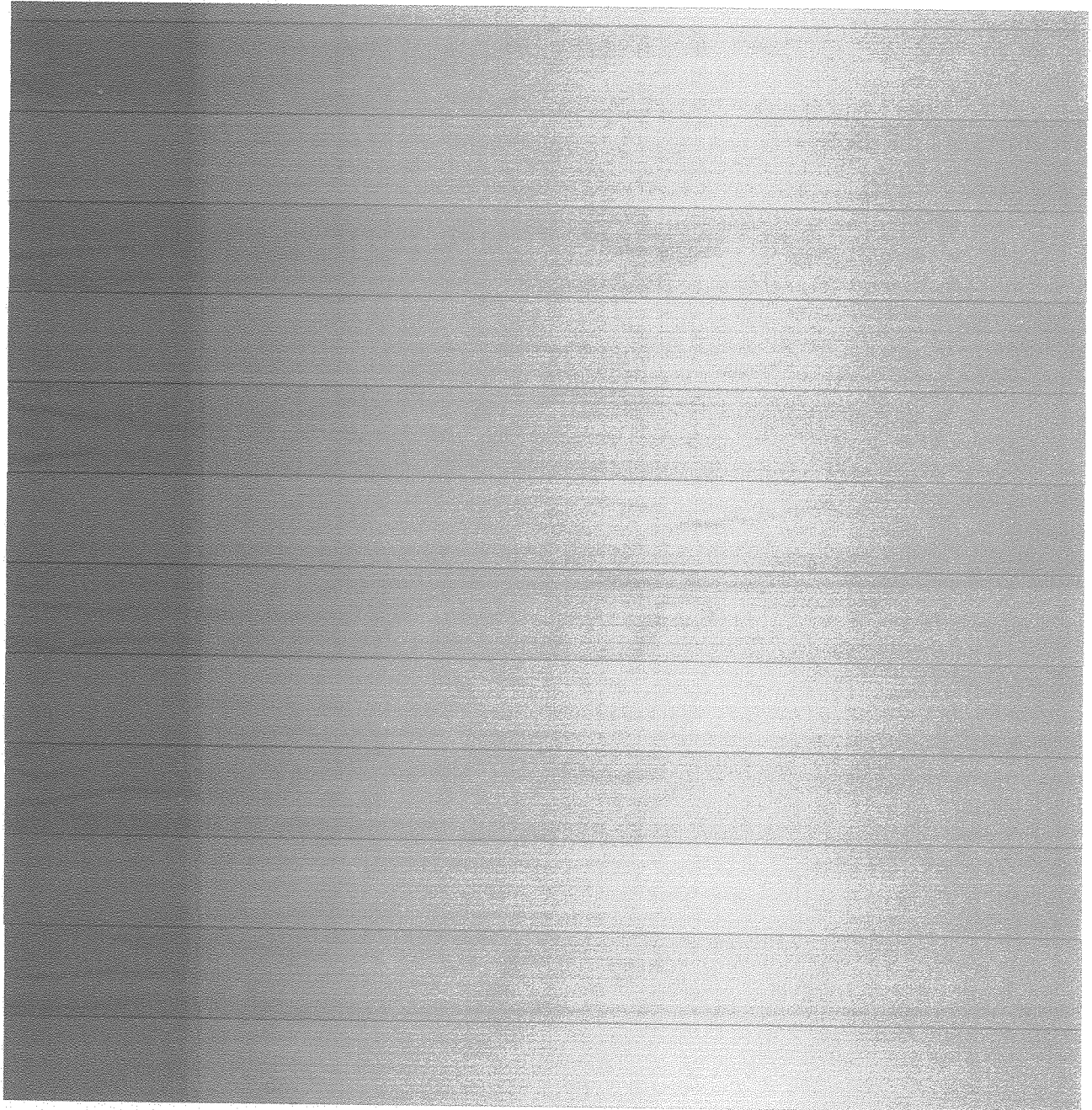
13/01174/3

13/01174/4

13/01174/5

13/01174/6

# **Lambhill BS4142 Noise Impact Assessment-**



Prepared by:

Scott Gemmell  
Acoustic Consultant

Checked by:

Dr David Palmer  
Technical Director

Approved by:

Dr Bernadette McKell  
Director

#### Noise Impact Assessment

Rev No	Comments	Checked by	Approved by	Date
1	Initial Issue	David Palmer	Bernadette McKell	16/01/2015
2	Updated Following Client Comments	David Palmer	Bernadette McKell	29/01/2015

Telephone: 0141 222 6400 Fax: 0141 222 6499 Website: <http://www.aecom.com>

Job No: 60336724

Reference: M001.001

Date Created: 29<sup>th</sup> January 2015

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## **Appendices**

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<b>2</b>	<b>Instrumentation Used and Calibration Certificates</b>
<b>3</b>	<b>Site Layout Plan and Baseline Noise Measurement Locations</b>

# **Lambhill BS4142 Noise Impact Assessment**

# 1 Introduction

- 1.1 AECOM was instructed by Mr. Malcolm Snowie of Barnhill Estates to undertake a noise impact assessment in relation to a wood chip and shaving production site at Lambhill, Blairingone.
- 1.2 A brief description of the Lambhill site and surrounding area relevant to this assessment is provided in Section 2. The criterion for assessment is reproduced in Section 3. Section 4 contains a description of the baseline noise monitoring, whilst Section 5 provides details of the assessment of potential noise impacts. Finally, a summary and conclusions can be found in Section 6.
- 1.3 Environmental noise measurements of the operational site were undertaken on Tuesday 4<sup>th</sup> November 2014 during the daytime period. Whilst baseline noise level measurements were undertaken on Tuesday 2<sup>nd</sup> of December during the daytime and night-time periods and Wednesday 3<sup>rd</sup> of December during the night-time period.
- 1.4 A glossary of acoustical terminology is included as Appendix 1.
- 1.5 A list of the instrumentation used during the measurement periods is included as Appendix 2.
- 1.6 A site layout plan showing the site in relation to the surrounding noise sensitive receptors and noise monitoring locations is shown in Appendix 3.

## 2 A Brief Description of the Site

- 2.1 The Lambhill wood chip and shaving production site is located to the south of Blairingone, Perth and Kinross. The site is surrounded by other storage areas, a mixture of agricultural land and woodland. The nearest noise sensitive receptors (NSR) are located approximately 300 m to the south, 380 m to the west and 450m to the north as shown in Appendix 3.
- 2.2 The site produces and distributes wood chips and shaving for use in biomass energy boilers throughout Scotland. The site is comprised of 2 large yard areas which are used to store timber logs and other raw materials for use as biomass fuel, these raw materials are processed into wood chips and the loading and unloading of raw materials and wood. There is also a large storage building located at the northern pad of the site which is also used for storing processed materials and equipment. It is understood that the operation of plant associated with the site will occur at the upper pad. A site plan is included as Appendix 3, which shows the upper pad area highlighted in blue and the total extent of Barnhill Estates land.
- 2.3 The following noise sources were identified as having potential impacts :
- HGVs associated with supplying raw materials;
  - HGVs associated with the dispatch of processed materials;
  - A Doppstadt DH 810 Mobile Chipper;
  - A Doppstadt DH 910 Mobile Chipper; and
  - A 456 JCB 20tn Loader.

### 3 Criteria for Assessment

- 3.1 Dawn Stewart, EHO at Perth & Kinross Council, has requested that an assessment of the potential noise impacts be undertaken in accordance with BS 4142:2014 *"Methods for Rating and Assessing Industrial and Commercial Sound"*:
- 3.2 The scope of BS 4142 describes methods for rating and assessing sound of an industrial and/or commercial nature, which includes:
- Sound from industrial and manufacturing processes;
  - Sound from fixed installations which comprise mechanical and electrical plant and equipment;
  - Sound from the loading and unloading of goods and materials at industrial and/or commercial premises; and
  - Sound from mobile plant and vehicles that is an intrinsic part of the overall sound emanating from premises or processes, such as that from forklift trucks, or that from train or ship movements on or around an industrial and/or commercial site.
- 3.3 BS 4142 involves comparing the rating noise level of the operational noise sources against the measured background noise level at noise sensitive receptors. Definitions of the rating noise level and background noise level are provided in Appendix 1.
- 3.4 The assessment method is described in Section 11 of BS4142, as follows:

*"Obtain an initial estimate of the impact of the specific sound by subtracting the measured background sound level from the rating level and consider the following*

*Note 1 More than one assessment might be appropriate.*

- a) *Typically, the greater this difference, the greater the magnitude of impact.*
- b) *A difference of around +10dB or more is likely to be an indication of a significant adverse impact, depending on the context.*
- c) *A difference of around +5dB is likely to be an indication of an adverse impact depending on the context.*
- d) *The lower the rating level is relative to the measured background sound level, the less likely that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on context.*

*Note 2 Adverse impacts include, but are not limited to, annoyance and sleep disturbance. Not all adverse impacts will lead to complaints and not every complaint is proof of an adverse impact.*

*Where the initial estimate of the impact needs to be modified due to the context, take all pertinent factors into consideration, including the following.*

- 1) *The absolute level of sound. For a given difference between the rating level and the background sound level, the magnitude of the overall impact might be greater for an acoustic environment where the residual sound level is high than for an acoustic environment where the residual sound level is low.*

*Where background sound levels and rating levels are low, absolute levels might be as, or more, relevant than the margin by which the rating level exceeds the background. This is especially true at night.*

*Where residual sound levels are very high, the residual sound might itself result in adverse impacts or significant adverse impacts and the margin by which the rating level exceeds the background might simply be an indication of the extent to which the specific sound source is likely to make those impacts worse.*

- 2) *The character and level of the residual sound compared to the character and level of the specific sound. Consider whether it would be beneficial to compare the frequency spectrum and temporal variation of the specific sound with that of the ambient or residual sound, to assess the degree to which the specific sound source is likely to be distinguishable and will represent an incongruous sound by comparison to the acoustic environment that would occur in the absence of the specific sound. Any sound parameters, sampling periods and averaging time periods used to undertake character comparisons should reflect the way in which sound of an industrial and/or commercial nature is likely to be perceived and how people react to it.*

*Note 3 Consideration ought to be given to evidence on human response to sound and, in particular, industrial and/or commercial sound where it is available. A number of studies are listed in the "Effects on humans of industrial and commercial sound" portion of the "Further reading" list in the Bibliography".*

## 4 Baseline Noise Survey

- 4.1 Following discussions with the EHO it was agreed that baseline noise level measurements would not be undertaken within the garden areas of the nearest NSR but rather noise level measurements would be undertaken at the nearest accessible point which was deemed to be representative of the noise levels at the NSR.
- 4.2 Daytime baseline noise level measurements were undertaken at 3 locations on Tuesday 2<sup>nd</sup> December between 12:10pm until 17:25pm on a rotating 15 minute measurement period, whilst night-time baseline noise level measurements were undertaken at the same 3 locations between 23:10 hours on Tuesday 2<sup>nd</sup> December until 01:40 hours on Wednesday 3<sup>rd</sup> December.
- 4.3 Appendix 3 shows the baseline measurement locations in relation to the proposed site and NSR.
- 4.4 Table 1 provides easting and northing location for each measurement location and a description of the dominant noise sources at that location.

**Table 1: Measurement Locations and Dominant Noise Source During the Daytime Period**

ID	Easting	Northing	Dominant Noise Source
1	298564	696680	Road traffic noise from the A977, occasional vehicle on unnamed road passing west of the Lambhill site, occasional bird song, and aircraft overhead
2	298624	696376	Road traffic noise from the A977, occasional vehicle on unnamed road passing west of the Lambhill site*, occasional bird song, and aircraft overhead
3	298937	696098	Distant road traffic noise from the A977 to the north, birdsong and aircraft overhead

\*At this location the separation distance between the sound level meter and the unnamed road was approximately 4.5m, therefore, for the occasions when car passbys occurred the associated measurement periods have been excluded from the overall measurements. This is because to have included them would have resulted in reported noise levels that would not be representative of the noise levels experienced at the NSR to the west of the measurement location which are located further from the unnamed road.

- 4.5 The weather conditions during the daytime and night-time measurement period varied. However, throughout each measurement period, the weather conditions were conducive to undertaking noise level measurements as prescribed in BS 7445 *Description and Measurement of Environmental Noise – Part 1: Guide to quantities and procedures*.

- 4.6 The noise monitoring equipment was calibrated both before and after each measurement period using an acoustic calibrator, which itself has been calibrated against a reference set traceable to National and International Standards. There was no shift in the observed calibration levels.
- 4.7 Table 2 details the symbol or letter used to identify the wind speed and direction in Tables 3 and 4, which detail the measured noise levels at each measurement location for the daytime and night-time periods, respectively.

**Table 2: Key to Letters and Symbols used in the Wind Conditions Column of Tables 3 and 4**

Symbol/Letter	Meaning
^	Maximum wind speed
≈	Average wind speed
ms <sup>-1</sup>	Metres per second
N	Wind direction is from the north
NW	Wind direction is from the northwest
W	Wind direction is from the west
SW	Wind direction is from the southwest
S	Wind direction is from the south
SE	Wind direction is from the southeast
E	Wind direction is from the east
NE	Wind direction is from the northeast

**Table 3: Measured Daytime Background Noise Levels**

Measurement Location	Date	Start Time (hh:mm)	Duration (mm:ss)	Noise Level (dB)				Weather	
				L <sub>Aeq</sub>	L <sub>A10</sub>	L <sub>A90</sub>	L <sub>AFmax</sub>	Wind	Conditions
1	02/12/14	12:12	15:00	54.5	58.0	45.0	70.2	Very light SW breeze	100% Clear skies and ground damp in places Temperature 8.9°C
1	02/12/14	13:40	15:00	52.9	56.7	42.9	65.0		100% Clear skies and ground damp in places Temperature 7.2°C
1	02/12/14	15:20	15:00	54.7	57.8	48.7	63.1	Calm	95% clear skies and ground damp in places Temperature 3.0°C
1	02/12/14	16:48	15:00	54.8	58.1	48.1	63.5	^2.0 ≈ 0.8 SW	100% Clear skies and ground damp in places Temperature 3.0°C
Location 1: 60 Minute Noise Level				54.3	57.7	45.9	70.2		
2	02/12/14	12:34	15:00	44.2	47.3	37.5	58.4	Very light SW breeze	100% Clear skies and ground damp in places Temperature 10.0°C
2	02/12/14	14:05	15:00	40.4	43.3	35.7	52.2	Calm	100% Clear skies and ground damp in places Temperature 6.2°C
2	02/12/14	15:45	15:00	48.0	51.0	42.7	57.4	Very light SW breeze	98% clear skies and ground damp in places Temperature 2.0°C
2	02/12/14	17:08	15:00	48.4	51.8	41.3	59.0	Very light SW breeze	100% Clear skies and ground damp in places Temperature 3.0°C
Location 2: 60 Minute Noise Level				46.3	50.0	37.5	59.0		

Measurement Location	Date	Start Time (hh:mm)	Duration (mm:ss)	Noise Level (dB)				Weather	
				L <sub>Aeq</sub>	L <sub>A10</sub>	L <sub>A90</sub>	L <sub>AFmax</sub>	Wind	Conditions
3	02/12/14	13:05	15:00	37.1	39.3	33.8	47.7	Very light SW breeze	100% Clear skies and ground damp in places Temperature 8.4°C
3	02/12/24	14:32	15:00	44.5	46.9	40.7	53.6	Calm	95% clear skies and ground damp in places Temperature 5.0°C
3	02/12/14	14:47	15:00	43.7	46.0	39.7	54.8		
3	02/12/14	16:12	15:00	45.7	48.2	42.0	56.3	Calm	100% clear skies and ground damp in places Temperature 1.6°C
Location 3: 60 Minute Noise Level				43.7	46.8	35.8	56.3		

Table 4: Measured Night-time Background Noise Levels

Measurement Location	Date	Start Time (hh:mm)	Duration (mm:ss)	Noise Level (dB)				Weather	
				L <sub>Aeq</sub>	L <sub>A10</sub>	L <sub>A90</sub>	L <sub>AFmax</sub>	Wind	Conditions
1	02/12/14	23:14	15:00	49.9	54.0	35.2	65.4	Calm	100% clear, light frost Temperature -2.8°C
1	03/12/14	00:55	15:00	37.1	38.8	22.7	54.4		100% clear, light frost Temperature -3.4°C
Location 1: 30 Minute Noise Level				47.1	51.9	23.1	65.4		
2	02/12/14	23:38	15:00	40.6	45.0	27.7	52.0	Calm	100% clear, light frost Temperature -3.7°C
2	03/12/14	01:22	15:00	33.8	37.7	23.3	48.8		100% clear, light frost Temperature -4.5°C
Location 2: 30 Minute Noise Level				38.4	43.2	23.6	52.0		
3	03/12/14	00:05	15:00	36.5	40.1	27.0	51.7	Calm	100% clear, light frost Temperature -3.4°C
3	03/12/14	00:25	15:00	35.6	39.0	25.4	52.7		
Location 3: 30 Minute Noise Level				36.1	39.6	25.8	52.7		

4.8 As can be seen from Tables 3 and 4 at Measurement Location 1 the measured background noise level is **L<sub>A90,60mins</sub> 45.9dB** during the daytime and **L<sub>A90,30mins</sub> 23.1dB** during the night-time period. At Measurement Location 2 the measured background noise level is **L<sub>A90,60mins</sub> 37.5dB** during the daytime period and **L<sub>A90,30mins</sub> 23.6dB** during the night-time period. Finally at Measurement Location 3 the measured background noise level is **L<sub>A90,60mins</sub> 35.8dB** during the daytime period and **L<sub>A90,30mins</sub> 25.8dB** during the night-time period. These measured background noise levels have been used when assessing potential noise impacts at the closest NSR:

- Measurement Location 1 = NSR 1
- Measurement Location 2 = NSR 2 & 3
- Measurement Location 3 = NSR 4 & 5.

## 5 BS 4142 Noise Impact Assessment

- 5.1 An assessment of the potential noise impacts from the site have been undertaken for both the daytime (07:00 – 23:00) and night-time (23:00 – 07:00) periods following the guidance of BS 4142:2014. The guidance of BS 4142 advises that the specific sound of operational noise from industrial/commercial sources should be evaluated over an appropriate reference time interval,  $T_r$ . The reference time interval is 60 minutes for the daytime period and 15 minutes for the night-time period.
- 5.2 As stated in Section 2, the following items of plant/vehicles were identified as having a potential noise impact to nearby NSR:
- HGV movements associated with the transportation of raw and processed materials;
  - A Doppstadt DH 810 Mobile Chipper;
  - A Doppstadt DH 910 Mobile Chipper; and
  - A 456 JCB 20tn Loader.
- 5.3 When assessing noise impacts from the site several assumptions have been made based on the typical operation at the site. Table 5 provides a summary of the assumed activity at the Site for both the daytime and night-time periods, based on the operational description provided in Section 2.

**Table 5: Industrial/Commercial Activity on Site**

Activity	Description Number of Events	
	Daytime (60 minutes)	Night-time (15 minutes)
HGV movements	2 (1 entering and 1 exiting the site)	1 (either entering or exiting the site)
Doppstadt DH810 and 910 mobile chippers	A single wood chipper operating continuously during a 60 minute period	Not in Operation
456 JCB 20tn Loader	Potential to operate continuously during a 60 minute period whilst wood chipper is in operation	Operating continuously during a 15 minute reference period

- 5.4 Specific noise level measurements of the operational DH810 mobile chipper and 456 JCB 20tn Loader was undertaken on Tuesday 4<sup>th</sup> November 2014. The weather conditions during the measurement period were conducive to undertaking noise level measurements in accordance with BS 7445.
- 5.5 The monitoring equipment was calibrated both before and after each measurement period using an acoustic calibrator, which itself has been calibrated against a reference set traceable to National and International Standards. There was no shift in the observed calibration levels.
- Doppstadt DH810 Mobile Chipper**
- 5.6 Noise level measurements of the Doppstadt DH 810 mobile chipper were undertaken within the northern pad of the site adjacent to the storage building. The microphone was positioned 1.5m above the ground in free-field conditions approximately 14.7 m from the mobile chipper, as shown in Figure 1.

**Figure 1: Photograph of DH810 Mobile Chipper**



- 5.7 The noise source height of the mobile chipper is approximately 1.5m, which is the level at which logs are fed into the chipping drum and also the height of the engine. Table 6 provides the results of the measured noise levels of the mobile chipper whilst Figure 2 provides a graph of the 1/3 octave band frequency spectrum.

**Table 6: Measurements of DH 810 Mobile Chipper**

Measurement Number	Date	Start Time (hh:mm)	Duration (mm:ss)	Noise Level (dB)			
				L <sub>Aeq</sub>	L <sub>A10</sub>	L <sub>A90</sub>	L <sub>AFmax</sub>
1	04/11/14	15:34	02:00	86.8	88.6	84.8	93.7
2	04/11/14	15:37	02:00	86.5	87.8	84.6	90.6
<b>Overall Period Noise Level</b>			<b>04:00</b>	<b>86.6</b>	<b>88.2</b>	<b>84.8</b>	<b>93.7</b>

**Figure 2: 1/3 Octave Band Frequency Spectrum of DH810 Noise Level Measurements**

- 5.8 As can be seen from Figure 2 the measured frequency spectrum of the DH 810 mobile chipper does not have any distinct tones nor is the sound impulsive in nature as the noise from the engine and chipping drum remain at a relatively constant noise level.

#### 456 JCB 20tn Loader

- 5.9 Noise level measurements of the 456 JCB 20tn loader were undertaken within the lower pad of the site. However, it is understood that this is not a normal part of the operation of the site and under normal operations the loader would only be operational in the upper pad of the site. The microphone was positioned 1.5m above the ground in free-field conditions approximately 23.9m from the point at which the loader deposits wood chips into the stationary HGV, as shown in Figure 3.
- 5.10 The JCB manoeuvres between the pile of wood chippings and stationary HGV in a comparatively small turning area and thus can be considered as a point source with respect to the nearest NSR due to the large separation distances in excess of 300m.

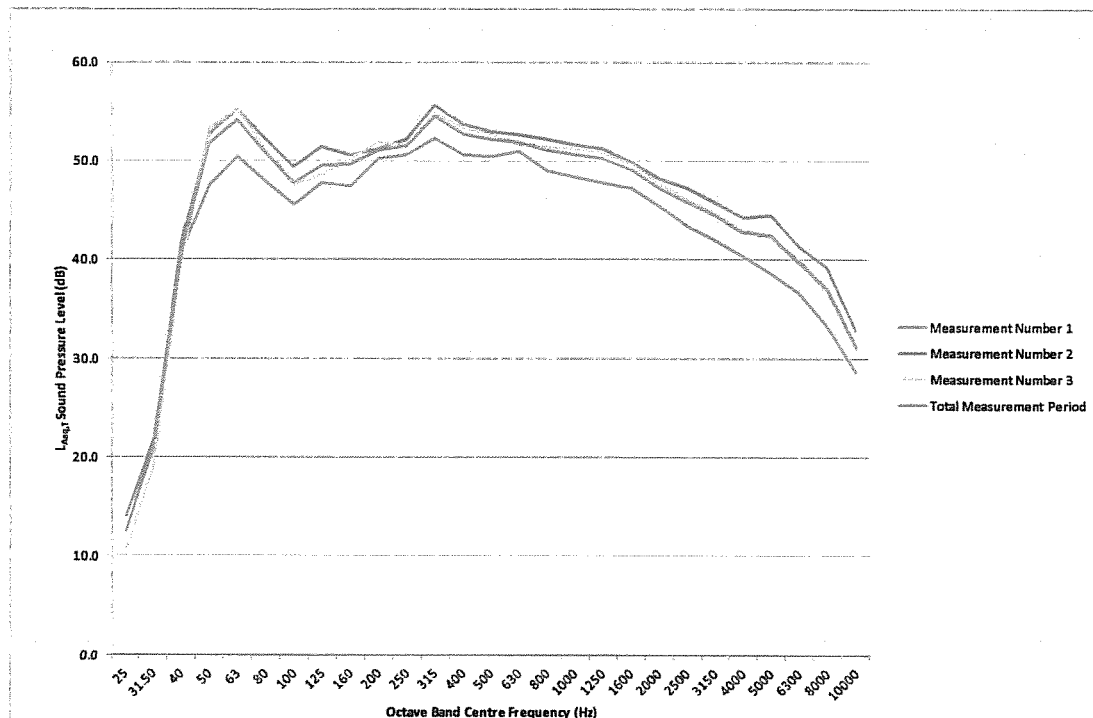
**Figure 3: Photograph of 456 JCB 20tn Loader**



- 5.11 The noise source height for the JCB is approximately 1.5 m, which is the height of the engine. Table 7 provides the results of the measured noise levels of the JCB Loader whilst Figure 4 provides a graph of the 1/3 octave band frequency spectrum.

**Table 7: Measurements of 456 JCB 20tn Loader**

Measurement Number	Date	Start Time (hh:mm)	Duration (mm:ss)	Noise Level (dB)			
				L <sub>Aeq</sub>	L <sub>A10</sub>	L <sub>A90</sub>	L <sub>AFmax</sub>
1	04/11/14	15:49	02:00	61.6	64.5	55.1	76.5
2	04/11/14	15:51	02:00	64.6	67.4	57.8	75.8
3	04/11/14	15:54	02:00	64.0	66.4	58.1	76.9
Overall Period Noise Level			06:00	63.6	66.5	55.4	76.9

**Figure 4: 1/3 Octave Band Frequency Spectrum of DH810 Noise Level Measurements**

- 5.12 As can be seen from Figure 3 the measured frequency spectrum of the 456 JCB 20tn Loader does not have any distinct tones nor is the sound impulsive in nature as the noise from the engine and chipping drum remain at a relatively constant noise level

#### HGV Movements

- 5.13 On site noise level measurements of HGV movements were not undertaken. However noise source data used to predict the potential noise impacts has been sourced from AECOM's extensive database of HGV movements (sound power levels) and is shown in Table 8.

**Table 8: Operational Noise Source Data Of HGV Movements**

Noise Source	Source Height	L <sub>w</sub> (dB)	Octave Band Centre Frequency L <sub>w</sub> Noise Levels (Hz)								
			31.5	63	125	250	500	1000	2000	4000	8000
HGV drive by	1.5	117.0	103.6	116.2	106.6	98.4	93.7	94.4	91.7	87.4	80.3

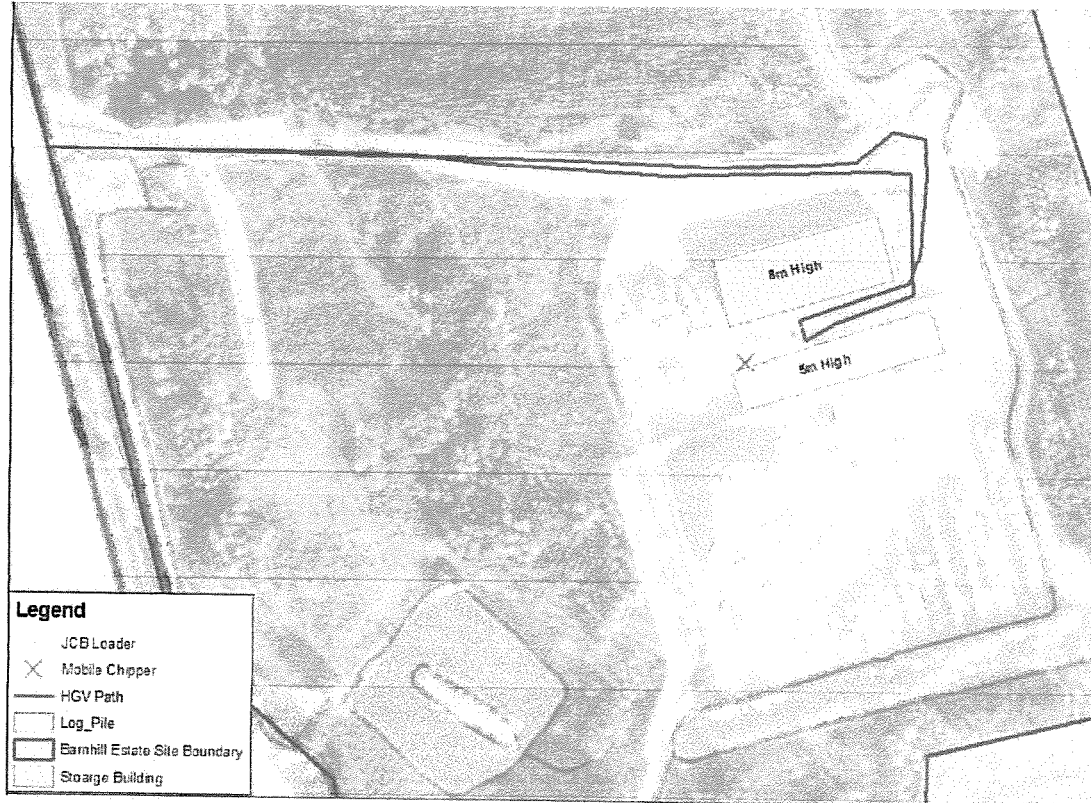
#### CadnaA Noise Model

- 5.14 In order to assess the potential noise impacts a 3D CadnaA® noise model has been produced, which incorporates the following assumptions:

- Ground height information based on a 5 m digital terrain model;
- Hard ground attenuation factor for the Lambhill site;
- Soft ground attenuation factor for the ground between the site and NSR; and
- The assumed atmospheric conditions are: 10°C and 70% relative humidity.

- 5.15 When undertaking noise model predictions a single scenario has been assessed. Assuming that all operational plant and HGVs will be operating at the upper pad of the site. Furthermore, whilst on site it was noted that several piles of logs and wood chipping were stored on site with heights ranging between approximately 2m – 5m in height. However, given the dynamic nature of the woodpiles only the woodpile along the southern boundary of the upper pad has been included in order to model a worst case assessment. Figure 5 shows the locations of the the noise sources, the 8m high storage building and the 5m high wood pile.

**Figure 5: Location of Noise Sources**



- 5.16 BS 4142:2014 states that for specific noise sources that are not tonal or impulsive a penalty of + 3dB can be applied. However, this is if either the specific noise is readily distinctive against the residual acoustic environment or if they have an identifiable on/off conditions which is readily distinctive against the residual acoustic environment. Whilst on site it was concluded that the DH 810 mobile chipper and 456 JCB 20tn loader warranted a +3dB character correction, whereas the HGV movements, did not meet either of the conditions and, therefore, a +3dB character correction has not been applied. This is because noise from HGV movements is a commonly heard noise associated with road traffic use on surrounding roads.
- 5.17 Noise level predictions have been undertaken based on the operational activities stated in Table 5 and the noise levels described in paragraphs 5.4 - 5.14.
- 5.18 Table 9 presents the predicted Rating Level  $L_{A,T}$ , during the daytime and night-time periods at each identified NSR.

**Table 9: Predicted Rating Level at NSR**

NSR	Predicted Daytime Rating Level (L <sub>Ar,60mins</sub> dB)	Measured Daytime Background Noise Level (L <sub>A90,60mins</sub> )	Rating Level Minus-Background Noise Level (dB)	Predicted Night-time Rating Level (L <sub>Ar,15mins</sub> dB)	Measured Night-time Background Noise Level (L <sub>A90,30mins</sub> )	Rating Level Minus-Background Noise Level (dB)
1	53.2	45.9	+7.3	30.1	23.1	+7.0
2	52.4	37.5	+14.9	34.7	23.6	+11.1
3	52.6	37.5	+15.1	38.8	23.6	+15.2
4	43.1	35.8	+7.3	31.6	25.8	+5.8
5	44.5	35.8	+8.7	31.5	25.8	+5.7

**Assessment of Daytime Noise Impacts**

- 5.19 As can be seen in Table 9 at NSR 1 during the daytime period, the difference between the Rating Level and background noise level is 7.3dB. In accordance with BS 4142 this is an indication of an adverse impact depending, on context. However at NSR 1 during the daytime period the residual noise level is dominated by road traffic noise on the A977 this therefore reduces the likelihood of adverse impact from the Lambhill site at this NSR. Indeed the measured residual noise level during the daytime period at this NSR was L<sub>Aeq, 60mins</sub> 54.3 dB which is 1.1 dB greater than the predicted daytime rating level. This, therefore, is an indication of the operational noise from Lambhill having an adverse impact.
- 5.20 At NSRs 2 and 3, during the daytime period, the difference between the Rating Level and background noise level is 14.9 dB and 15.1 dB respectively. In accordance with BS 4142 this is an indication of a significant adverse impact depending, on context. At both these NSR the measured daytime residual noise level was L<sub>Aeq,60mins</sub> 46.3 dB, which was primarily composed of road traffic noise, and the predicted rating level is L<sub>Ar,60mins</sub> 52.4 dB at NSR 2 and L<sub>Ar,60mins</sub> 52.6 dB at NSR 3. It is therefore considered that at these NSR there is likely to be a significant adverse impact.
- 5.21 Finally at NSR 4 and 5 during the daytime period, the difference between the Rating Level and background noise level is 7.3dB and 8.7dB respectively. In accordance with BS 4142 this is an indication of an adverse to significant adverse impact depending, on context. At these NSR the measured daytime residual noise level was L<sub>Aeq,60mins</sub> 43.7dB and was primarily from distant road traffic noise on the A977. Therefore, the significance of impact is still considered to be adverse to significant adverse.

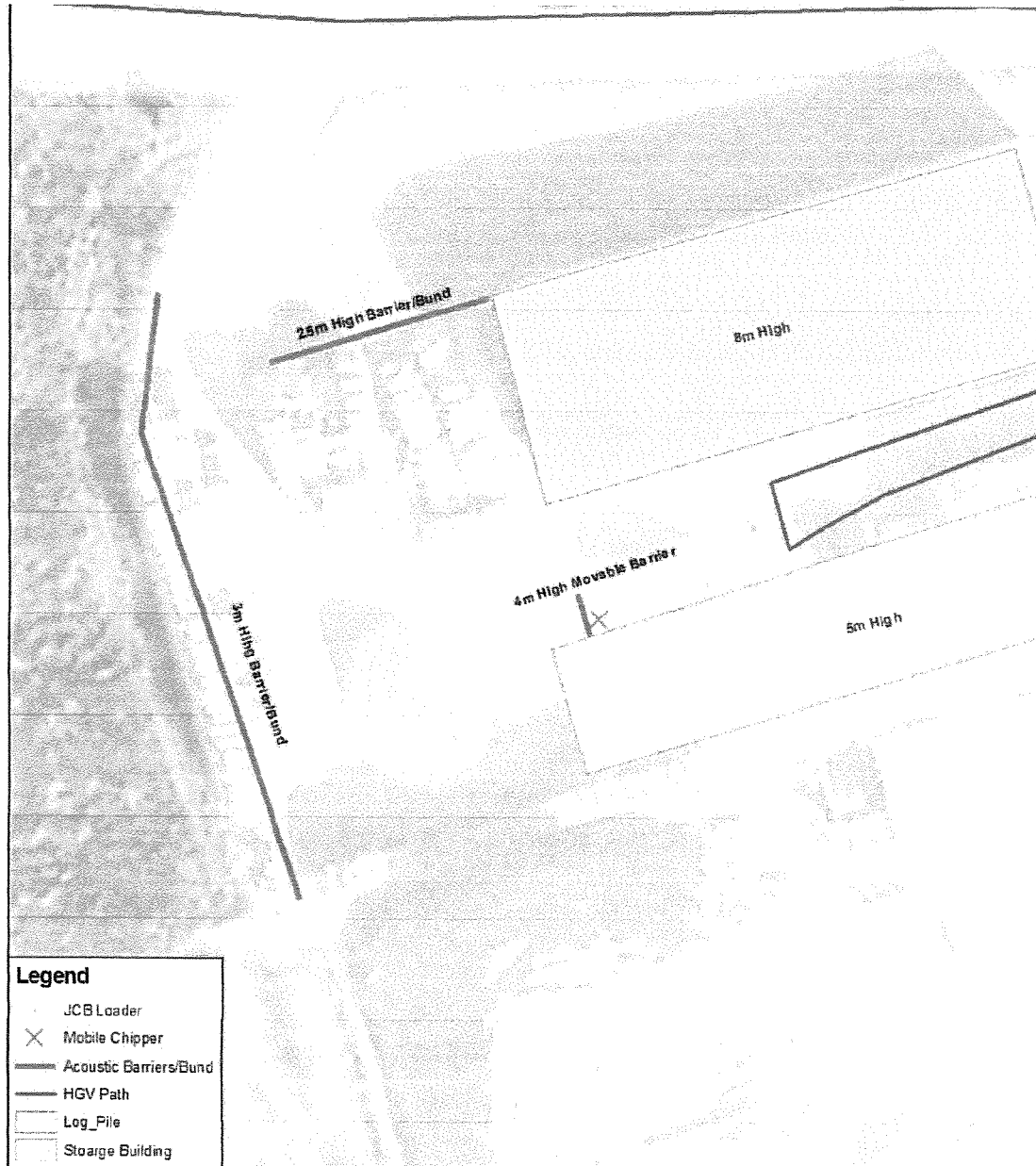
**Assessment of Night-time Noise Impacts**

- 5.22 As can be seen in Table 9 at NSR 1 during the night-time period, the difference between the Rating Level and background noise level is 7.0dB. In accordance with BS 4142 this is an indication of an adverse impact depending, on context.
- 5.23 At NSRs 2 and 3, during the night-time period, the difference between the Rating Level and background noise level is 11.1 dB and 15.2 dB respectively. In accordance with BS 4142 this is an indication significant adverse impact depending, on context.

- 5.24 Finally at NSR 4 and 5 during the night-time period, the difference between the Rating Level and background noise level is 5.8 dB and 5.7 dB. In accordance with BS 4142 this is an indication of an impact depending, on context.
- 5.25 However, whilst the BS4142 noise assessment for the night-time period indicates an adverse to significant adverse impact at all NSR it should be appreciated that during the night-time period it is internal noise levels which are of the greatest concern. Therefore, given the highest predicted noise level at any NSR during the night time period is no greater than  $L_{Ar,15mins}$  38.8 dB, which includes a +3 dB character correction. Then internal noise levels would be  $L_{Ar,15mins}$  28.8 dB, assuming a reduction of 10 dB for a partially open window. This noise level is at lower than the night time guideline value for bedrooms ( $L_{Aeq,8hr}$  30dB) contained within BS 8233:2014: "Guidance on sound insulation and noise reduction for buildings". Moreover, using a 15 minute time period is more onerous than the 8 hour time base used in the BS 8233:2014 guideline.

#### **Mitigation Strategy and Assessment**

- 5.26 In order to reduce the noise levels at NSR 1, 2 and 3 it is proposed that three acoustic barriers be installed at the site, these are:
- A 3m high barrier along the western boundary of the upper pad;
  - A 2.5m high barrier positioned parallel to the northern façade of the storage building; and
  - A noise barrier of 4.0m in height perpendicular to the existing log pile identified in Figure 1 and located 1.5m from the mobile chipper.
- 5.27 Figure 6 shows the location and extent of these barriers

**Figure 6: Location and Extent of Additional Acoustic Mitigation during the Daytime**

- 5.28 The 3m high acoustic barrier located at the western boundary and the 2.5m high barrier perpendicular to the storage building are more suitable to being permanent noise barriers which can be formed by an individual acoustic barrier or a barrier/bund combination.
- 5.29 However, the barrier perpendicular to the existing log pile, 1.5m from the mobile chipper, could either be formed by placing another pile of timber logs perpendicular to the existing pile, using an enclosed HGV trailer, or by utilising a mobile acoustic barrier. This is because the location of the mobile chipper is not stationary and the acoustic barrier will need to remain within 1.5m of the mobile chipper.
- 5.30 It should also be noted that the existing 5m log pile should be maintained to ensure that the length of the barrier extends far enough to shield the operation of the mobile chipper and loader and that this log pile is kept at 5m in height. Providing the mobile chipper is located within 1.5m of then the depth of the log pile should be at least one length deep. Figure 7 shows a photograph of a log pile on site which was 2 lengths deep.

**Figure 7: Photograph showing log pile depth**



- 5.31 In addition to the acoustic barriers it will also be necessary to treat the southern façade of the storage building with an acoustically absorptive material. This is because in the unmitigated state noise from the mobile chipper noise is reflected from the façade of the building and adversely impacting the NSR to the south of the site (NSR 4 and 5).
- 5.32 The extent of the absorptive material required should cover the middle 50% of the area, i.e. with a building 8m in height only the section of the building between 2 – 6 m would require absorptive material.
- 5.33 There are several manufacturers of absorptive panels, such as the C/S and C/A wall panels supplied by IAC Acoustics<sup>1</sup>. However, the final choice of absorptive material used should be discussed fully with the manufacturers in order to ensure it will achieve an overall absorption coefficient of 0.8. Furthermore, any panel or material used must be cleanable so that the absorptive quality of the material is not reduced by the accumulation of particulate matter.
- 5.34 As stated in Paragraph 5.25 whilst the BS 4142 assessment indicates that during the night-time there will be an adverse to significant adverse impact, typically, it is internal noise levels that are of greatest concern during the night time period and, as already stated if a 10dB noise level reduction is assumed for a partially open window then internal noise levels are predicted to meet with BS 8233 internal noise level guideline values for bedrooms.
- 5.35 With the aforementioned mitigation measures in place the predicted noise level at each of the NSR are as presented in Table 10.

<sup>1</sup> [http://www.iac-acoustics.com/cms/documents/community-acoustic\\_barriers.pdf](http://www.iac-acoustics.com/cms/documents/community-acoustic_barriers.pdf)

**Table 10: Predicted Rating Level at NSR with Mitigation**

NSR	Predicted Daytime Rating Level (L <sub>Ar,60mins</sub> dB)	Measured Daytime Background Noise Level (L <sub>A90,60mins</sub> )	Rating Level Minus-Background Noise Level (dB)	Predicted Night-time Rating Level (L <sub>Ar,15mins</sub> dB)	Measured Night-time Background Noise Level (L <sub>A90,30mins</sub> )	Rating Level Minus-Background Noise Level (dB)
1	49.6	45.9	+3.7	29.7	23.1	+6.6
2	39.3	37.5	+1.8	30.7	23.6	+7.1
3	40.2	37.5	+2.7	34.9	23.6	+11.3
4	38.7	35.8	+2.9	30.2	25.8	+4.4
5	40.5	35.8	+4.7	29.9	25.8	+4.1

**Assessment of Daytime Noise Impacts with Mitigation**

- 5.36 As can be seen in Table 10, with the aforementioned mitigation at all NSR in the vicinity of the Lambhill site the difference between the rating level and the background noise level during the daytime period are all below 5.0 dB.
- 5.37 At NSR 1 the difference between the rating level and background noise level is 3.7 dB. In accordance with BS 4142 this is an indication of an adverse impact depending, on context. However, as previously stated, at NSR 1 during the daytime period the residual noise level is dominated by road traffic noise associated with the A977 this, therefore, reduces the likelihood of adverse impact at this NSR. Indeed the measured residual noise level during the daytime period at this NSR was L<sub>Aeq, 60mins</sub> 54.3 dB which is 4.7 dB greater than the predicted daytime rating level. This is, therefore, a positive indication of the noise from Lambhill having a low impact.
- 5.38 At NSR 2 and 3 the difference between the Rating Level and background noise level is +1.8 and +2.7 dB respectively. In accordance with BS 4142 this is an indication of a less than adverse impact depending, on context. At both these NSR the measured daytime residual noise level was L<sub>Aeq,60mins</sub> 46.3 dB and primarily composed of road traffic noise associated with the A977. Given that the predicted Rating Level is at least 6 dB below the residual noise level it considered that at these NSR noise from the Lambhill site will have a low impact with the aforementioned mitigation in place.
- 5.39 At NSR 4 and 5 the difference between the Rating Level and background noise level is 2.0 dB and 4.7 dB, respectively. In accordance with BS 4142 this is an indication of an adverse impact depending, on context. At both these NSR the measured daytime residual noise level was L<sub>Aeq,60mins</sub> 43.7 dB and primarily composed of distant road traffic noise associated with the A977. Given that the predicted Rating Level is at least 3 dB below the residual noise level it considered that at these NSR noise from the Lambhill site will have a low impact with the aforementioned mitigation in place.

**Assessment of Night-time Noise Impacts with Mitigation**

- 5.40 As previously stated during the night-time period it is internal noise levels which are of the greatest concern. Therefore, given the highest predicted noise level at any NSR during the night time period is no greater than L<sub>Ar,15mins</sub> 34.9dB. Then internal noise levels would be L<sub>Ar,15mins</sub> 24.9 dB, assuming a reduction of 10 dB for a partially open window. This noise level is at least 5 dB lower than the night time guideline

value for bedrooms ( $L_{Aeq,8hr}$  30dB) contained within BS 8233:2014: "*Guidance on sound insulation and noise reduction for buildings*". Moreover, using a 15 minute time period is more onerous than the 8 hour time base used in the BS 8233:2014 guideline.

## 6 Summary and Conclusions

- 6.1 AECOM were instructed by Malcolm Snowie of Barnhill Estates to undertake a noise impact assessment in relation to a wood chip and shaving production site at Lambhill, Blairingone.
- 6.2 Baseline noise measurements were undertaken on Tuesday 2<sup>nd</sup> of December 2014 during the daytime and night-time periods and Wednesday 3<sup>rd</sup> of December 2014 during the night-time period.
- 6.3 Noise level measurements of the operational plant were undertaken on Tuesday 4<sup>th</sup> November 2014 during the daytime period.
- 6.4 Operational noise impacts have been predicted using CadnaA® noise modelling software in accordance with BS 4142:2014 "Method for rating and assessing industrial and commercial sound".
- 6.5 The results of the foregoing noise impact assessment indicates that when unmitigated the predicted magnitude of impacts during the daytime period at 4 of the 5 NSR are predicted to be adverse to significant adverse in nature.
- 6.6 Accordingly, a scheme for mitigation has been recommended which includes:
- Treating the southern façade of the storage building with an acoustically absorbent material (covering the middle 50% of the façade height)
  - A 3m high acoustic barrier or barrier/bund combination along the western boundary of the site;
  - A 2.5m high acoustic barrier or barrier/bund combination perpendicular to the northern façade of the storage building; and
  - A 4m high acoustic barrier around the area where the mobile chipper will be operation. The acoustic barrier can be created by either creating another wood pile 1.5 m from the mobile chipper, an enclosed HGV trailer or a movable acoustic barrier, which will offer more flexibility in the positioning of the mobile chipper.
- 6.7 With this level of mitigation in place it is considered that operational noise from the Lambhill site will have a low impact at all NSR during the daytime period, due to the context of the existing daytime residual noise levels.
- 6.8 During the night-time period with the aforementioned level of mitigation in place, whilst the foregoing BS 4142 noise impact assessment indicates an adverse to significant adverse impact at all NSR during the night-time period it is internal noise levels which are of the greatest concern. Therefore, given the highest predicted noise level at any NSR during the night time period is no greater than  $L_{Ar,15mins}$  34.9 dB. Then internal noise levels would be  $L_{Ar,15mins}$  24.9 dB, assuming a reduction of 10dB for a partially open window. This noise level is at least 5dB lower than the night time guideline value for bedrooms ( $L_{Aeq,8hr}$  30 dB) contained within BS 8233:2014: "Guidance on sound insulation and noise reduction for buildings". Moreover, using a 15 minute time period is more onerous than the 8 hour time base used in the

BS 8233:2014 guideline. Accordingly, the internal noise levels are such that residents are unlikely to be annoyed by noise. Furthermore, these night-time noise levels are with only a single HGV entering or exiting the site and the Loader operating continuously during any 15 minute period,

## Appendix 1 – Glossary of Acoustical Terminology

Term	Definition
<b>Decibel (dB)</b>	The range of audible sound pressures is approximately $2 \times 10^{-5}$ Pa to 200 Pa. Using decibel notation presents this range in a more manageable form, 0dB to 140dB. Mathematically Sound Pressure level = $20 \log \{p(t)/p_0\}$ Where $P_0 = 2 \times 10^{-5}$ Pa.
<b>A" Weighting (dB(A))</b>	The human ear does not respond uniformly to different frequencies. "A" weighting is commonly used to simulate the frequency response of the ear. It is used in the assessment of risk of damage of hearing due to noise.
<b>Frequency (Hz)</b>	The number of cycles per second, for sound this is subjectively perceived as pitch.
<b>Frequency Spectrum</b>	Analysis of the relative contributions of different frequencies that make up a noise.
<b>Ambient Sound</b>	Totally encompassing sound in a given situation at a given time usually composed of sound from many sources near and far ( <i>The ambient sound comprises the residual sound and the specific sound when present</i> ).
<b>Ambient Sound Level</b> $L_a = L_{Aeq,T}$	Equivalent continuous A-weighted sound pressure level of the totally encompassing sound in a given situation at a given time, usually from many sources near and far, at the assessment location over a given time interval, T.
<b>Background Sound Level</b> $L_{A90,T}$	A-weighted sound pressure level that is exceeded by the residual sound at the assessment location for 90% of a given time interval, T, measured using time weighting F and quoted to the nearest whole number of decibels.
<b>Equivalent Continuous A-weighted Sound Pressure Level</b> $L_{Aeq,T}$	Value of the A-weighted sound pressure level in decibels of continuous steady sound that, within a specified time interval, $T = t_2 - t_1$ , has the same mean-squared sound pressure as a sound that varies with time, and is given by the following equation: $L_{Aeq,T} = 10 \lg_{10} \left\{ \left( \frac{1}{T} \right) \int_{t_1}^{t_2} \left[ p_A \frac{(t)^2}{p_0^2} \right] dt \right\}$ Where $p_0$ is the reference sound pressure (20μPA); and $P_A(t)$ is the instantaneous A-weighted sound pressure level at time t
<b>Measurement Time Interval</b> $T_m$	Total time over which measurements are taken ( <i>This may consist of the sum of a number of non-contiguous, short-term measurement time intervals</i> )
<b>Rating level</b> $L_{Ar,Tr}$	Specific sound level plus any adjustment for the characteristic features of the sound
<b>Reference Time Interval, <math>T_r</math></b>	Specified interval over which the specific sound level is determined ( <i>This is 1 h during the day from 07:00 h to 23:00 h and a shorter period of 15 min at night from 23:00 h to 07:00 h</i> )
<b>Residual Sound</b>	Ambient sound remaining at the assessment location when the specific sound source is suppressed to such a degree that it does not contribute to the ambient sound
<b>Residual sound level</b> $L_r = L_{Aeq,T}$	Equivalent continuous A-weighted sound pressure level of the residual sound in a given situation at the assessment location over a given time interval, T.
<b>Specific sound level</b> $L_s = L_{Aeq,Tr}$	Equivalent continuous A-weighted sound pressure level produced by the specific sound source at the assessment location over a given time interval, T.
<b>Specific Sound</b>	Sound source being Assessed

Source	
$L_{A10,T}$	The A-weighted sound pressure level of the residual noise in decibels exceeded for 10% for a given time interval. This is the parameter defined by the government to describe road traffic noise
$L_{AFmax}$	The maximum RMS A-weighted sound pressure level occurring within a specified time period. Fast time weighting indicates sound pressure level measurements undertaken using a 125-millisecond moving average time weighting period

## Appendix 2 – Instrumentation Used and Calibration Certificates

Brüel & Kjær Hand Held Analyser Type 2250  
Serial Number 2507254

Brüel & Kjær Microphone Type 4189  
Serial Number 2542984

Brüel & Kjær Sound Level Calibrator Type 4231  
Serial Number 2545421

Brüel & Kjær Sound Analysis Software BZ 5503

Brüel & Kjær Evaluator Software 7820

DataKustk CadnaA® 3D Noise Modelling Software Version 4.4.145

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## Certificate of Calibration

CALIBRATION

UKAS Laboratory 0789

**Certificate number:** U13403

**Test object:** Sound Level Meter, Type 1 (Precision)  
**Manufacturer:** Brüel and Kjær  
**Type:** 2250  
**Serial no:** 2507254

**Customer:** AECOM  
**Address:** 225 Bath Street  
 Glasgow  
 G2 4GZ.  
**Contact Person:** Mr. Scott Gemmell.

### Method

Calibration has been performed as set out in CA Technical Procedures TP01 & 02 as appropriate. The following items have been calibrated as set out in BS 7580 Part 1 1997

	Producer	Type	Serial No	Certificate number
Microphone	Brüel & Kjær	4189	2542584	13402
Calibrator*	Brüel and Kjær	4231	2545421	U13401
Preamplifier	Brüel & Kjær	ZC0032	10885	Included

### Additional items that also have been submitted for verification

Wind shield	Brüel & Kjær	UA1236
Attenuator	None	
Extension cable	None	

These items have been taken into account wherever appropriate

Environmental conditions:	Pressure:	Temperature:	Relative humidity
Reference conditions:	101 325 kPa	23 0 °C	50 %RH
Measurement conditions:	101 035 kPa	22 5 °C	51.1 %RH

Date received : 25/04/2013  
 Date of calibration 29/04/2013  
 Date of issue 29/04/2013

Engineer

Nick Long BA(Hons) AMIOA

Supervisor

Darren Batten Tech IOA

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to recognized national standards, and to the units of measurement realized at the National Physical Laboratory or other recognized national standards laboratories. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

\* The calibrator was complete with any required coupler for the microphone specified

Page 1 of 2

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CALIBRATION



UKAS Laboratory 0789



Certificate number: U16207

## Certificate of Calibration and Conformance

**Test object:** Sound Calibrator  
**Manufacturer:** Brüel and Kjær  
**Type:** 4231  
**Serial no:** 2545421

**Customer:** AECOM Ltd  
**Address:** 225 Bath Street,  
 Glasgow, G2 4GZ  
**Contact Person:** Scott Gemmell

Measurement Results	Level	Level Stability	Frequency	Frequency Stability	Distortion
1	94.07 dB	0.01 dB	999.97 Hz	0.00 %	0.35 %
2	94.07 dB	0.01 dB	999.96 Hz	0.00 %	0.38 %
3	94.07 dB	0.01 dB	999.96 Hz	0.00 %	0.36 %
<b>Result (Average):</b>	<b>94.07 dB</b>	<b>0.01 dB</b>	<b>999.96 Hz</b>	<b>0.00 %</b>	<b>0.36 %</b>
Expanded Uncertainty	0.10 dB	0.02 dB	1.00 Hz	0.01 %	0.10 %
Degree of Freedom	>100	>100	>100	>100	>100
Coverage Factor	2.00	2.00	2.00	2.00	2.00

The stated level is relative to 20µPa. The level is traceable to National Standards.

The stated level is valid at reference conditions. The following correction factors have been applied during the measurement: Pressure: 0.00008 dB/kPa, Temperature: 0.0015 dB/°C, Relative humidity: 0.001 dB/%RH, Load volume: 0.0003 dB/mm³.

The reported expanded uncertainty of measurements is based on a standard uncertainty multiplied by the coverage factor of k=2, providing a level of confidence of approximately 95%. Where the degrees of freedom are insufficient to maintain this confidence level, the coverage factor is increased to maintain this confidence level. The uncertainty has been determined in accordance with UKAS requirements.

Records: K:\IC\Calibration\Nor-1504\Nor-1018\_CalCal2014\BNK4231v1\_2545421\_M1.nm

Environmental conditions	Pressure	Temperature	Relative humidity
Reference conditions:	101.325 kPa	23.0 °C	50 %RH
Measurement conditions:	102.340 ± 0.042 kPa	21.6 ± 0.1 °C	48.3 ± 1.6 %RH

Date received for calibration: 09/05/2014  
 Date of calibration: 14/05/2014  
 Date of issue: 14/05/2014  
 Engineer:

Supervisor

Michael Tickner

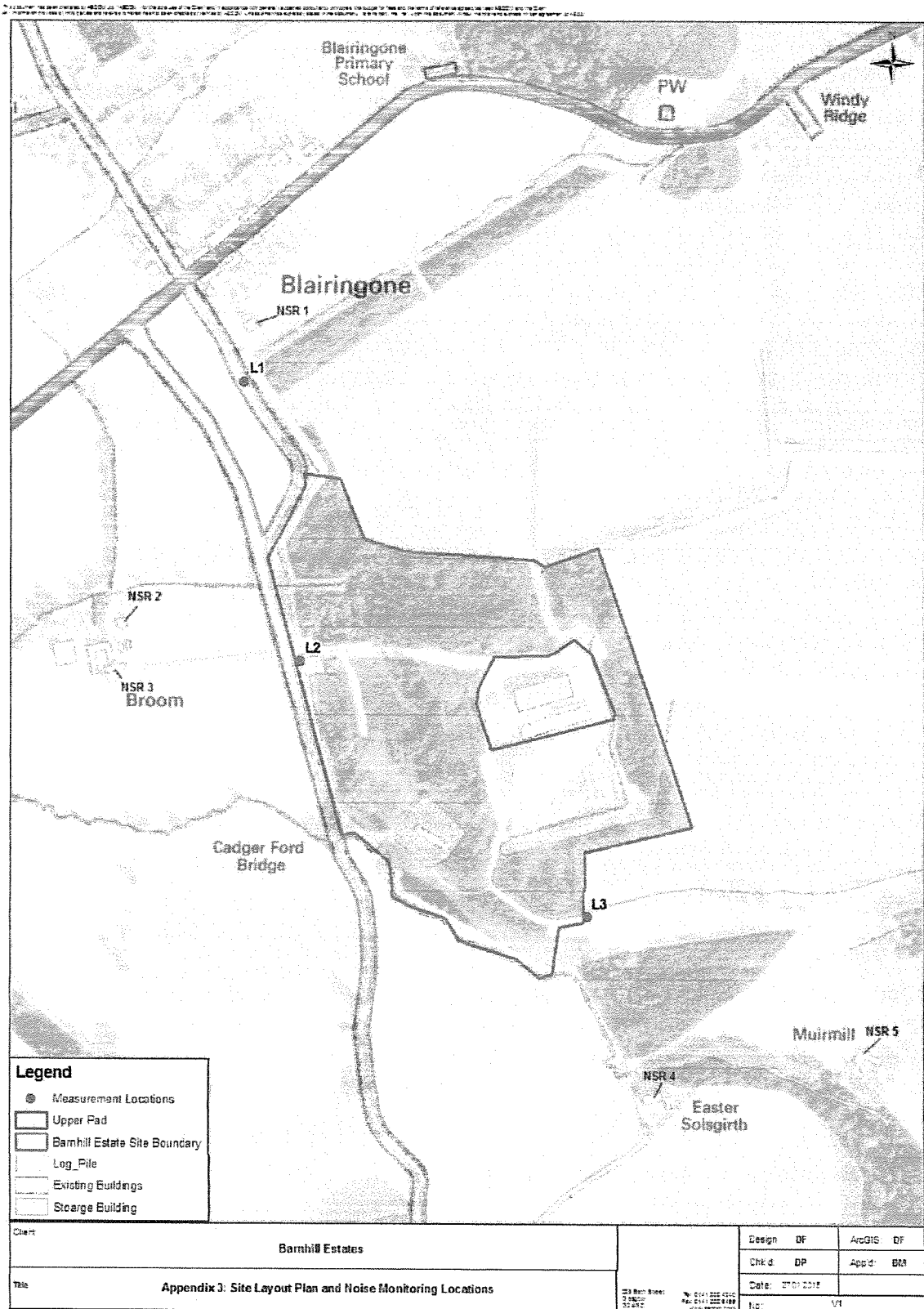
Darren Batten TechnOA

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Revision 00-000

## Appendix 3 – Site Layout Plan and Noise Measurement Locations



BS 4142:2014



BSI Standards Publication

## Methods for rating and assessing industrial and commercial sound

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Published by BSI Standards Limited 2014

ISBN 978 0 580 80051 1

ICS 17.140.20; 91.120.20

The following BSI references relate to the work on this document:

Committee reference EH/1/3

Draft for comment 14/30268407 DC

### Publication history

First published March 1967

Second edition November 1990

Third edition September 1997

Fourth edition October 2014

### Amendments issued since publication

Date	Text affected
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**Summary of pages**

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 72, an inside back cover and a back cover.

## Foreword

### Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 31 October 2014. It was prepared by Sub-committee EH/1/3, *Residential and industrial noise*, under the authority of Technical Committee EH/1, *Acoustics*. A list of organizations represented on these committees can be obtained on request to their secretary.

### Supersession

This British Standard supersedes BS 4142:1997, which is withdrawn.

### Information about this document

BS 4142 was first published in 1967, and was revised in 1990 to align it with elements of ISO 1996. The 1997 edition clarified aspects of the standard in the light of comments from users.

This edition has been prepared under the direction of the Health and Environment Sector Board. The general basis for the standard is derived from the application of previous editions, together with accumulated experience. Some aspects, including guidance on character corrections, are based upon research which has been reported since publication of the previous edition of this standard.

This edition clarifies the application of the standard. New to this edition is the introduction of uncertainty, including good practice for reducing uncertainty. The examples in Annex A have been considerably expanded.

Response to sound can be subjective and is affected by many factors, both acoustic and non-acoustic. The significance of its impact, for example, can depend on such factors as the margin by which a sound exceeds the background sound level, its absolute level, time of day and change in the acoustic environment, as well as local attitudes to the source of the sound and the character of the neighbourhood. This edition of the standard recognizes the importance of the context in which a sound occurs. Great care has, therefore, been taken in the use of the words "sound" and "noise". Sound can be measured by a sound level meter or other measuring system. Noise is related to a human response and is routinely described as unwanted sound, or sound that is considered undesirable or disruptive.

The documents available as downloads from the sites referenced in the Bibliography were last accessed on 30 October 2014.

### Use of this document

It has been assumed in the preparation of this British Standard that the execution of its provisions will be entrusted to appropriately qualified and experienced people, for whose use it has been produced.

### Presentational conventions

The guidance in this standard is presented in roman (i.e. upright) type. Any recommendations are expressed in sentences in which the principal auxiliary verb is "should".

*Commentary, explanation and general informative material are presented in smaller italic type.*

**Contractual and legal considerations**

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

**Compliance with a British Standard cannot confer immunity from legal obligations.**

## 1 Scope

**1.1** This British Standard describes methods for rating and assessing sound of an industrial and/or commercial nature, which includes:

- a) sound from industrial and manufacturing processes;
- b) sound from fixed installations which comprise mechanical and electrical plant and equipment;
- c) sound from the loading and unloading of goods and materials at industrial and/or commercial premises; and
- d) sound from mobile plant and vehicles that is an intrinsic part of the overall sound emanating from premises or processes, such as that from forklift trucks, or that from train or ship movements on or around an industrial and/or commercial site.

The methods described in this British Standard use outdoor sound levels to assess the likely effects of sound on people who might be inside or outside a dwelling or premises used for residential purposes upon which sound is incident.

*NOTE Examples of how ratings might be obtained using this standard are given in Annex A.*

**1.2** This standard is applicable to the determination of the following levels at outdoor locations:

- a) rating levels for sources of sound of an industrial and/or commercial nature; and
  - b) ambient, background and residual sound levels,
- for the purposes of:
- 1) investigating complaints;
  - 2) assessing sound from proposed, new, modified or additional source(s) of sound of an industrial and/or commercial nature; and
  - 3) *assessing sound at proposed new dwellings or premises used for residential purposes.*

**1.3** The determination of noise amounting to a nuisance is beyond the scope of this British Standard.

Sound of an industrial and/or commercial nature does not include sound from the passage of vehicles on public roads and railway systems.

The standard is not intended to be applied to the rating and assessment of sound from:

- a) recreational activities, including all forms of motorsport;
- b) music and other entertainment;
- c) shooting grounds;
- d) construction and demolition;
- e) domestic animals;
- f) people;
- g) public address systems for speech; and
- h) other sources falling within the scopes of other standards or guidance.

The standard is not intended to be applied to the derivation of indoor sound levels arising from sound levels outside, or the assessment of indoor sound levels.

The standard is not applicable to the assessment of low frequency noise.

*NOTE Information on the assessment of low frequency noise is given in NANR45 [1, 2].*

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS EN 60942, *Electroacoustics – Sound calibrators*

BS EN 61260, *Electroacoustics – Octave-band and fractional-octave-band filters*

BS EN 61672-1, *Electroacoustics – Sound level meters – Part 1: Specifications*

## 3 Terms and definitions

For the purposes of this British Standard, the following terms and definitions apply.

*NOTE All the measurements and values used throughout this standard are "A"-weighted. Where "A" weighting is not explicit in the descriptor, it is to be assumed in all cases, except where it is clearly stated that it is not applicable, as in the case of tones.*

### 3.1 acoustic environment

sound from all sound sources as modified by the environment

[BS ISO 12913-1:2013]

### 3.2 ambient sound

totally encompassing sound in a given situation at a given time, usually composed of sound from many sources near and far

*NOTE The ambient sound comprises the residual sound and the specific sound when present.*

### 3.3 ambient sound level, $L_a = L_{Aeq,T}$

equivalent continuous A-weighted sound pressure level of the totally encompassing sound in a given situation at a given time, usually from many sources near and far, at the assessment location over a given time interval,  $T$

*NOTE The ambient sound level is a measure of the residual sound and the specific sound when present.*

### 3.4 background sound level, $L_{A90,T}$

A-weighted sound pressure level that is exceeded by the residual sound at the assessment location for 90% of a given time interval,  $T$ , measured using time weighting F and quoted to the nearest whole number of decibels

### 3.5 equivalent continuous A-weighted sound pressure level, $L_{Aeq,T}$

value of the A-weighted sound pressure level in decibels of continuous steady sound that, within a specified time interval,  $T = t_2 - t_1$ , has the same mean-squared sound pressure as a sound that varies with time, and is given by the following equation:

$$L_{Aeq,T} = 10 \lg_{10} \left\{ (1/T) \int_{t_1}^{t_2} [p_A(t)^2 / p_0^2] dt \right\} \quad (1)$$

where:

$p_0$  is the reference sound pressure (20  $\mu$ Pa); and

$p_A(t)$  is the instantaneous A-weighted sound pressure (Pa) at time  $t$

*NOTE The equivalent continuous A-weighted sound pressure level is quoted to the nearest whole number of decibels.*

### 3.6 measurement time interval, $T_m$

total time over which measurements are taken

*NOTE This may consist of the sum of a number of non-contiguous, short-term measurement time intervals.*

### 3.7 rating level, $L_{A,r,T_r}$

specific sound level plus any adjustment for the characteristic features of the sound

### 3.8 reference time interval, $T_r$

specified interval over which the specific sound level is determined

*NOTE This is 1 h during the day from 07:00 h to 23:00 h and a shorter period of 15 min at night from 23:00 h to 07:00 h.*

### 3.9 residual sound

ambient sound remaining at the assessment location when the specific sound source is suppressed to such a degree that it does not contribute to the ambient sound

### 3.10 residual sound level, $L_r = L_{Aeq,T}$

equivalent continuous A-weighted sound pressure level of the residual sound at the assessment location over a given time interval,  $T$

### 3.11 specific sound level, $L_s = L_{Aeq,T_r}$

equivalent continuous A-weighted sound pressure level produced by the specific sound source at the assessment location over a given reference time interval,  $T_r$

### 3.12 specific sound source

sound source being assessed

## 4 Preparation

The assessor should gain a sufficient understanding of the situation (context) to be rated and assessed by conducting an appraisal, as appropriate, in order to:

- identify and understand all the sounds that can be heard, and identify their sources;
- identify which measurement methods, instruments and metrics (see Clause 5) would be most appropriate for the assessment;
- identify potential measurement locations;
- identify the necessary measurement frequencies, durations and timings; and
- where a new development is to be assessed, understand what kind of sound a new industrial source would introduce, or what potential impact would be imposed from an existing source on a new sensitive receptor.

## 5 Instrumentation

### 5.1 General

Select systems for measuring sound pressure levels, including microphone(s), cable(s), windscreen(s), recording devices and other accessories which conform to BS EN 61672-1, Class 1, for free-field application, as appropriate. Filters, where used, should conform to BS EN 61260, Class 1, and sound calibrators to BS EN 60942, Class 1.

*NOTE* It is also acceptable to use measuring systems conforming to BS EN 60804, Type 1, and BS EN 60651, Type 1.

### 5.2 Verification

Demonstrate conformity of the measuring system, filters where appropriate and sound calibrators with the provisions of 5.1 by means of valid certificates showing conformity to each relevant standard following testing according to the appropriate part of that standard.

*NOTE 1* It is recommended that sound calibrators are calibrated at intervals not exceeding 1 year, conformity of the measuring systems to BS EN 61672-1 is verified at intervals not exceeding 2 years, and the conformity of filters to BS EN 61260 is verified at intervals not exceeding 2 years.

*NOTE 2* It is also acceptable to verify measuring systems conforming to BS EN 60804, Type 1, and BS EN 60651, Type 1, in accordance with BS 7580-1.

## 6 Measurement procedure

### 6.1 Field calibration check

At the beginning of every measurement session check the calibration of the measuring system at one or more frequencies in accordance with the manufacturer's instructions, by means of a sound calibrator, and check the calibration value at the end of the measurement. Where the difference between the initial calibration value, any subsequent calibration check, and a final calibration check on completion of measurements exceeds 0.5 dB, treat with caution the results of measurements obtained for any period to which this relates.

*NOTE* The level of acceptable calibration drift needs to be considered in the context of the entire measurement period. A calibration drift exceeding 0.5 dB might be considered acceptable for an unattended measurement system that has been deployed for several days between calibration checks. In this case, the drift ought to be reported. Where the drift is 1 dB or more, the measurement chain ought to be thoroughly investigated to determine the source of the drift. If a fault in the sound measuring system has been identified, then the veracity of the data ought to be treated with extreme caution.

### 6.2 Measurement locations

Choose outdoor measurement locations that will give results that are representative of the ambient sound and residual sound at the assessment location(s). Make the measurement of the ambient sound level, the residual sound level and the background sound level at a height of 1.2 m to 1.5 m above the ground, unless there is a specific reason to use an alternative height (which should be justified), and under similar conditions, e.g. similar influence of reflections and measurement height above the ground. Where practical, minimize the influence of reflections by making the measurements at least 3.5 m from any reflecting surface other than the ground.

Where it is necessary to undertake measurements above ground floor level, choose a location which is approximately 1 m from the facade on the relevant floor of the building if it is not practical to make the measurements at least 3.5 m from the facade at this elevation.

*NOTE* When measurements for distant sources are made at 1 m from a facade, the measured level can be adjusted to an equivalent free-field level by subtracting a 3 dB correction factor. For sources that are relatively close or not perpendicular to the facade the correction may be 1 dB or 2 dB, in which case the reasons for not using a correction of 3 dB ought to be explained.

Record the measurement location, height and the distance from any reflecting structure other than the ground.

### 6.3 Precautions against interference

Take precautions to minimize the influence on the measurements from sources of interference such as:

- a) wind passing over the diaphragm of the microphone of a sound measuring system, which can generate interference (see 6.4);
- b) rain falling on the microphone windshield or nearby surfaces, which can cause interference (see 6.4, Clause 10 and Annex B);
- c) electrical and electromagnetic interference, which can be caused in the sound measuring system by, for example, nearby power cables or radio transmitters; and
- d) temperature (see 6.4).

An effective windshield should be used to minimize turbulence at the microphone.

*NOTE* Windshields are generally effective up to windspeeds of  $5 \text{ m/s}^{-1}$ .

### 6.4 Weather conditions

Record the weather conditions that could affect measurements. Monitor wind speed at the measurement location, using an anemometer, and record the wind speed together with the wind direction. Exercise caution when making measurements in poor weather conditions such as wind speeds greater than  $5 \text{ m/s}^{-1}$ .

Visually estimate cloud cover by eye as either a percentage of sky covered by cloud or in oktas. Record all forms of precipitation together with the period over which the precipitation occurred, having regard to how this might affect uncertainty (see Clause 10 and Annex B).

Record the temperature at the measurement location, in  $^{\circ}\text{C}$ , at the beginning and the end of the measurement period, and at any other appropriate time if there is a change in the weather conditions.

Where appropriate, use instruments for measuring meteorological parameters during long-term unattended measurements by means of a logging meteorological station at the measurement location.

*NOTE 1* Weather conditions can affect sound levels by influencing sound propagation or generating sound which can be pertinent to the assessment.

*NOTE 2* Whilst regional weather forecasts are useful in planning when to measure, local conditions can often vary significantly from the regional forecast. Forecasts ought not to be used instead of site measurements of the actual weather during the survey.

*NOTE 3* It might be appropriate to make more than one assessment to account for varying weather conditions.

## 7 Specific sound level

### 7.1 General

Determine the specific sound level at the assessment location(s) as a discrete entity, distinct and free of other influences contributing to the ambient sound, in accordance with 7.3. Report in detail the methods used.

Ensure that all sample measurements are representative of the period of interest.

### 7.2 Reference time interval

Evaluate the specific sound over an appropriate reference time interval,  $T_r$ :

- a) 1 h during the day; and
- b) 15 min during the night.

*NOTE 1 For the purposes of this standard, daytime is typically between 07:00 h and 23:00 h, and accordingly night-time is between 23:00 h and 07:00 h.*

*NOTE 2 The shorter reference time interval at night means that short duration sounds with an on time of less than 1 h can lead to a greater specific sound level when determined over the reference time interval during the night than when determined during the day.*

### 7.3 Determination of the specific sound level

*NOTE Any rounding is to be done on the basis that a value of 0.5 is rounded up.*

**7.3.1** Measure the ambient sound level, distinguishing the specific sound from the residual sound. Minimize the influence of sound from other sources by measuring at times and during intervals when the residual sound has subsided to typically low levels.

Where the residual sound level fluctuates by an amount that materially affects the calculated specific sound level, report this.

*NOTE The effects could potentially be minimized by measuring at a number of locations and/or periods, or by measuring close to the source and calculating the level at the assessment location(s).*

**7.3.2** Measure the residual sound level in the absence of the specific sound.

**7.3.3** Correct for the effect of the residual sound by using the following formula:

$$L_s = 10 \lg(10^{L_r/10} - 10^{L_a/10}) \quad (2)$$

where:

$L_s$  is the specific sound level;

$L_a$  is the ambient sound level; and

$L_r$  is the residual sound level.

*NOTE 1 When measuring the residual sound level, all other conditions ought to be similar to the conditions that exist when the ambient sound level measurements are taken with the specific sound present.*

*NOTE 2 Where the variability in the residual sound level might be of significance the effect of such uncertainty ought to be considered as part of the assessment.*

If the difference between the ambient sound level and the residual sound level is  $\leq 3$  dB, then see 7.3.5.

*NOTE 3 This can be applicable where there is a greater difference if the residual or specific sound levels have a high degree of variability (see 7.3.13 and 7.3.15).*

**7.3.4** Where possible, determine the specific sound level by measurement of the ambient sound level and the residual sound level at the assessment location(s).

*NOTE It might be appropriate to take measurements if there are periods of low residual sound (such as at night or at weekends) when the specific sound would not normally occur but might be turned on for measurement purposes. The specific sound ought as far as is practicable to be representative of typical operating conditions.*

**7.3.5** Where it is not possible to determine the specific sound level by measurement of the ambient sound level and the residual sound level at the assessment location(s), for example, because the difference between the ambient sound level and the residual sound level is  $\leq 3$  dB, determine the specific sound level by a combination of measurement and calculation. Report the method of calculation in detail and give the reason for using it.

*NOTE In some cases, measurements can be supplemented by calculations. Calculations are often more reliable than a single short-term measurement when long-term averages are to be determined and in other cases where it is impossible to carry out measurements because of high residual sound levels. In case of the latter, it is sometimes convenient to carry out the measurements closer to the source and then use a calculation method to estimate the specific sound level at the assessment location(s).*

**7.3.6** Determine the specific sound level by calculation alone if measurement is not practicable, for example if the source is not yet in operation. In such cases, report the method of calculation in detail and give the reason for using it.

*NOTE 1 When calculating rather than measuring sound pressure levels, it is necessary to have appropriate representative data on source sound emission, for example as a source sound power level (including source directivity), and the position of any point source(s) creating the same sound pressure levels in the environment as the real source. Often, such data are given in established calculation models, but in other cases it is necessary that they be determined in each individual case.*

*NOTE 2 Using a suitable method for the sound propagation from source to receiver, the sound pressure level at the assessment point can be calculated. It is necessary to relate the sound propagation to well-defined meteorological and ground conditions. Most calculation models refer to neutral or favourable sound propagation conditions, as other propagation conditions are much more difficult to predict. The acoustic impedance of the ground is also important, in particular at large distances and low source and receiver heights.*

**7.3.7** Determine the specific sound level as separate component parts when:

- a) the influence of other sound sources can be avoided only by measuring samples of the specific sound; or
- b) the specific sound is composed of contributions from several sources which have been measured separately and, if necessary, corrected for propagation effects.

**7.3.8** Determine the equivalent continuous A-weighted sound pressure level of the specific sound,  $L_{Aeq,T}$  over time interval,  $T$ , from the equivalent continuous A-weighted sound pressure levels of its components,  $L_{Aeq,T_i}$  according to equation (3).

$$L_{Aeq,T} = 10 \lg \left[ (1/T) \sum T_i 10^{0.1 L_{Aeq,T_i}} \right] \quad (3)$$

where:

$T = \sum T_i$  if components are sequential; and

$T = \text{maximum value of } T_i \text{ if components are concurrent.}$

**NOTE 1** The time interval,  $T$ , may contain intervals,  $T_i$ , during which the specific sound is off and the specific sound level is therefore nil.

Ensure that the measurement time intervals are long enough to obtain representative values of the equivalent continuous A-weighted sound pressure level.

**NOTE 2** The separate components may be sequential, such as when measuring during troughs in the residual sound, or concurrent, such as when measurements are made close to separate sub-sources which normally operate concurrently and combine to produce a composite sound further away.

**7.3.9** Determine the specific sound level over a time interval which reflects all significant temporal and level variations of the specific sound.

**NOTE** If the sound is steady, a short sample measurement is sufficient. If it is cyclic or intermittent or varies randomly, a longer sample is required to characterize it. It might be necessary to investigate the sound over relatively long periods to select an appropriate, representative measurement time interval.

**7.3.10** If the measurement time interval,  $T_m$ , is equal to the reference time interval,  $T_r$  (see 7.2), measure the equivalent continuous A-weighted sound pressure level,  $L_{Aeq,T_m}$ , take this value to be  $L_a$ , correct for the influence of residual sound according to equation (2), and assign the result to the specific sound level.

**7.3.11** If the specific sound is continuous, such that measurements over the time interval  $T_m (< T_r)$  are representative of measurements over the reference time interval,  $T_r$ , measure the equivalent continuous A-weighted sound pressure level,  $L_{Aeq,T_m}$ , take this value to be  $L_a$ , correct for the influence of residual sound according to equation (2), and assign the result to the specific sound level.

**7.3.12** If the specific sound fluctuates at random, select the measurement time interval,  $T_m$ , to give a reliable estimate of the equivalent continuous A-weighted sound pressure level over the reference time interval,  $T_r$ , measure the equivalent continuous A-weighted sound pressure level,  $L_{Aeq,T_m}$ , take this value to be  $L_a$ , correct for the influence of residual sound according to equation (2), and assign the result to the specific sound level.

**7.3.13** If the specific sound is continuous and cyclic with a period less than or equal to the reference time interval,  $T_r$ , select the measurement time interval,  $T_m$ , to cover a whole number of complete cycles, measure the equivalent continuous A-weighted sound pressure level,  $L_{Aeq,T_m}$ , take this value to be  $L_a$ , correct for the influence of residual sound according to equation (2), and assign the result to the specific sound level (see Figure 1).

**NOTE** If continuous measurements over the measurement time interval,  $T_m$ , cannot be made, short-term measurement time intervals ought to be selected, so that each represents a part of a cycle and, together, they represent a complete cycle or number of cycles.

**7.3.14** If the specific sound is intermittent and either steady or cyclic and the reference time interval,  $T_r$ , is over a representative time, and the on time is less than the reference time interval, determine the on time,  $T_o$ , and select the measurement time interval,  $T_m \leq T_o$ , to obtain a representative value for the equivalent continuous A-weighted sound pressure level  $L_{Aeq,T_m}$  for the sound while it is on (see Figure 2). Take this value to be  $L_a$  and calculate the specific sound level as follows:

$$L_s = 10 \lg(10^{L_{Aeq,T_m}/10} - 10^{L_r/10}) + 10 \lg(T_o/T_r) \quad (4)$$

Figure 1 Selecting the measurement time interval

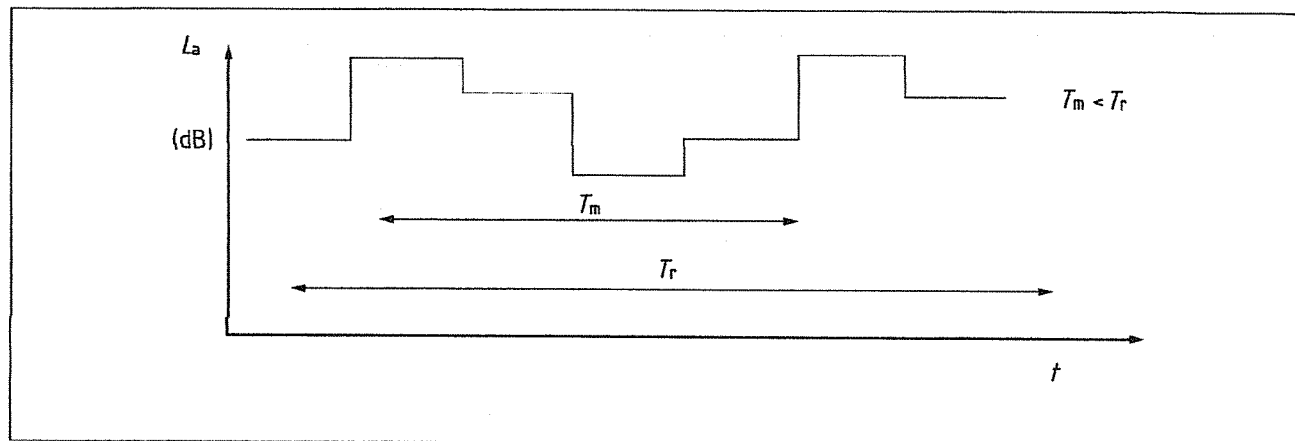
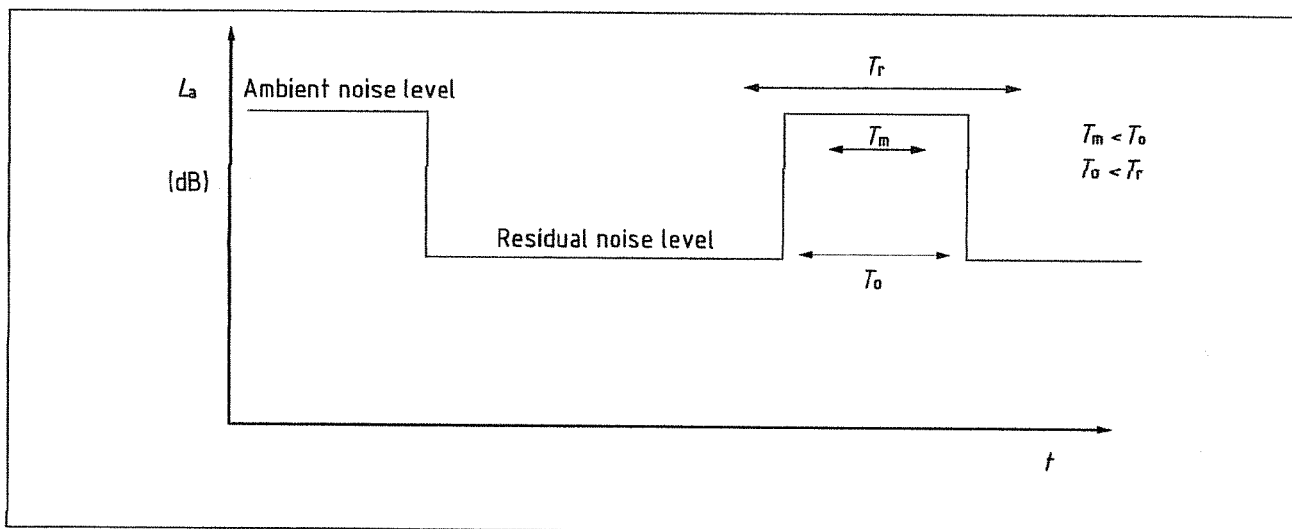
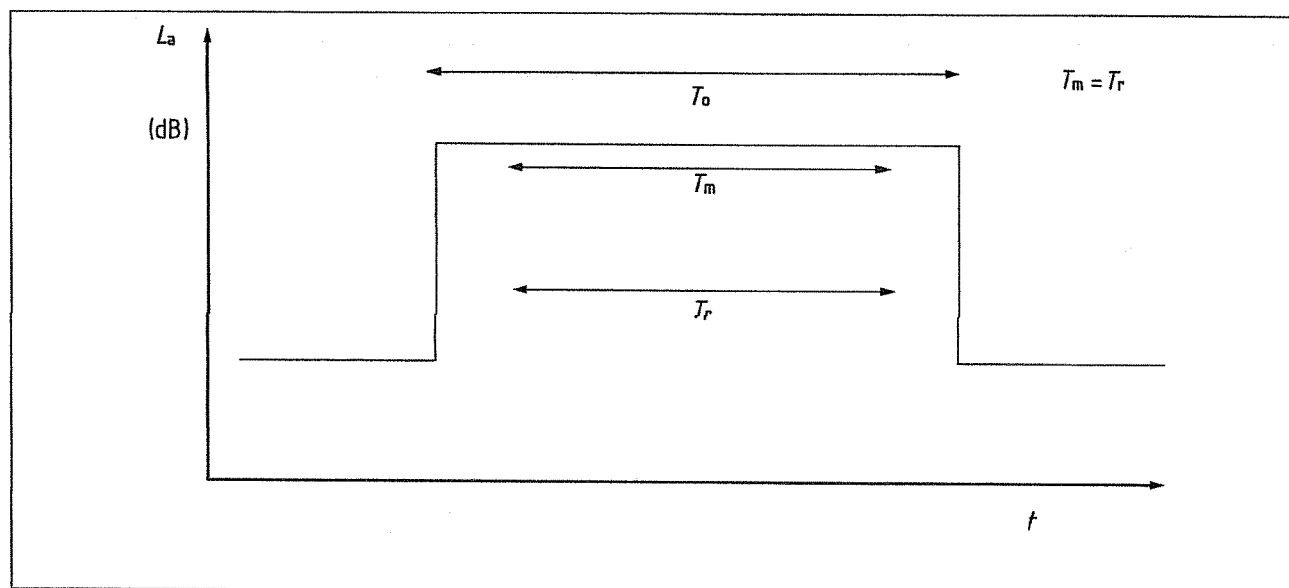


Figure 2 Selecting the measurement time interval



**7.3.15** If the specific sound is intermittent or cyclic, and the reference time interval is over a representative time, and the on time is equal to or greater than the reference time interval, select the measurement time interval,  $T_m$ , to obtain a representative value for the equivalent continuous A-weighted sound pressure level  $L_{Aeq, T_m}$ , and take this value to be  $L_a$ . Correct for the influence of residual sound according to equation (2), and assign the result to the specific sound level (see Figure 3).

Figure 3 Selecting the measurement time interval



## 8 Background sound level

### 8.1 General

#### COMMENTARY ON 8.1

The background sound level is an underlying level of sound over a period,  $T$ , and might in part be an indication of relative quietness at a given location. It does not reflect the occurrence of transient and/or higher sound level events and is generally governed by continuous or semi-continuous sounds.

In using the background sound level in the method for rating and assessing industrial and commercial sound it is important to ensure that values are reliable and suitably represent both the particular circumstances and periods of interest. For this purpose, the objective is not simply to ascertain a lowest measured background sound level, but rather to quantify what is typical during particular time periods.

Among other considerations, diurnal patterns can have a major influence on background sound levels and, for example, the middle of the night can be distinctly different (and potentially of lesser importance) compared to the start or end of the night-time period for sleep purposes. Furthermore, in this general context it can also be necessary to separately assess weekends and weekday periods.

Since the intention is to determine a background sound level in the absence of the specific sound that is under consideration, it is necessary to understand that the background sound level can in some circumstances legitimately include industrial and/or commercial sounds that are present as separate to the specific sound.

Care is necessary in circumstances where background sound levels are low to ensure that self-generated and electrical noise within the measurement system does not unduly influence reported values, which might be the case if the measured background sound levels are less than 10 dB above the noise floor of the measuring system.

**8.1.1** As appropriate, for each of the following situations conduct background sound level measurements under weather conditions that are representative and comparable to the weather conditions when the specific sound occurs or could occur:

- a) a new specific sound source is to be commissioned (see 8.2); or
- b) a change or modification is to be made to an existing sound source (see 8.2); or
- c) there is an existing specific sound source not operating continuously (see 8.3); or
- d) there is an existing specific sound source operating continuously (see 8.4); or
- e) a new noise-sensitive receptor is being introduced to an environment already experiencing, or that will at a future time experience, industrial and/or commercial sound (see 8.5).

**8.1.2** Where possible, measure the background sound level at the assessment location(s). If this is not possible measure at an alternative location where the residual sound is comparable to the assessment location(s). A detailed justification for considering this should be reported.

*NOTE* In determining whether an alternative location is suitable for carrying out measurements of the background sound level it is important to take account of all contributing factors that might influence the measurement and assessment procedure. As far as is practicable, uncertainty in any measurement at an alternative location ought to be minimized and the extent of uncertainty reported.

**8.1.3** Ensure that the measurement time interval is sufficient to obtain a representative value of the background sound level for the period of interest. This should comprise continuous measurements of normally not less than 15 min intervals, which can be contiguous or disaggregated.

**8.1.4** The monitoring duration should reflect the range of background sound levels for the period being assessed. In practice, there is no "single" background sound level as this is a fluctuating parameter. However, the background sound level used for the assessment should be representative of the period being assessed.

*NOTE 1* To obtain a representative background sound level a series of either sequential or disaggregated measurements ought to be carried out for the period(s) of interest, possibly on more than one occasion. A representative level ought to account for the range of background sound levels and ought not automatically to be assumed to be either the minimum or modal value.

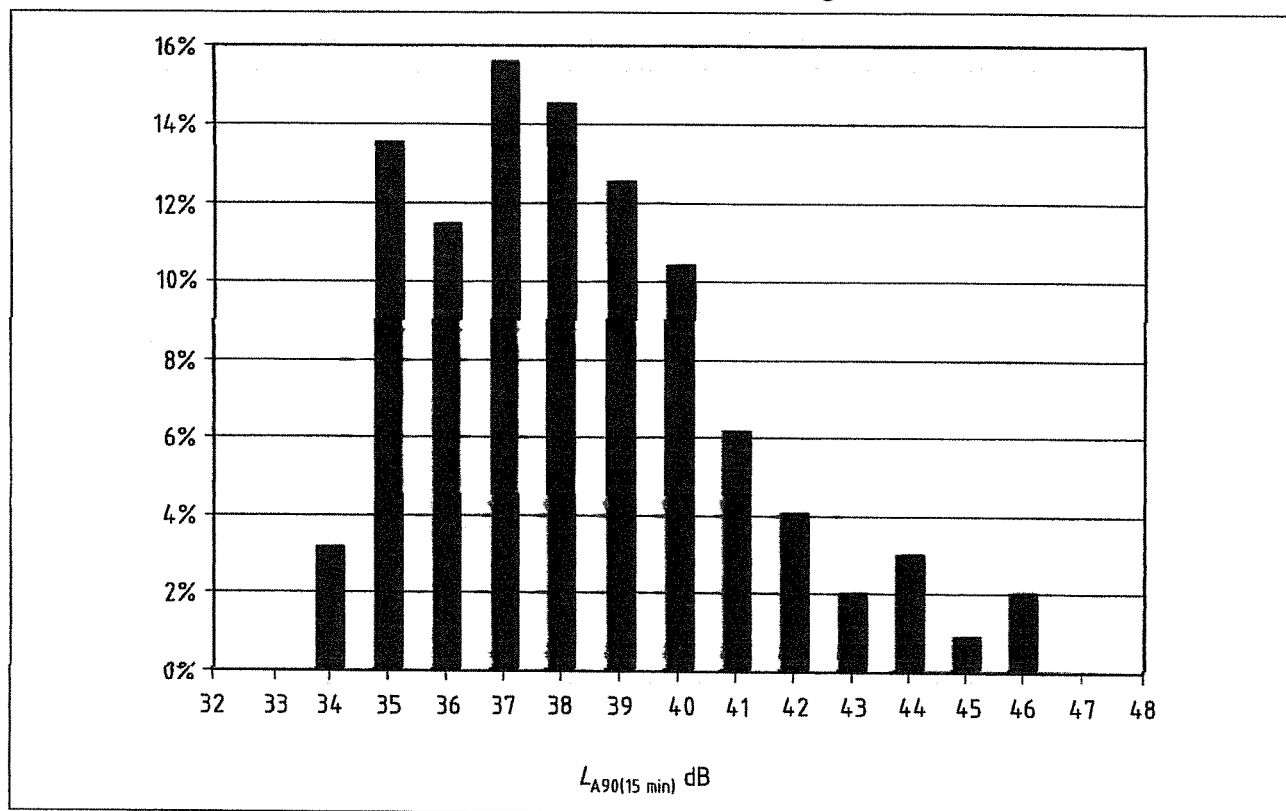
*NOTE 2* The mean average of a series of measured background sound levels is not numerically equal to the overall period background sound level that would otherwise be obtained by a single measurement spanning individual measurement periods.

*NOTE 3* Background sound can be significantly affected by meteorological conditions, particularly where the main sources of residual sound are remote from the assessment location(s).

*NOTE 4* Figure 4 shows an example of a statistical analysis of the results of all the measurement periods in order to determine a background sound level. For this distribution of the data an  $L_{A90(15 \text{ min})}$  of 37 dB was considered to be representative and in this instance was also the most commonly occurring value.

**8.1.5** To fully understand the context in which the sound from an industrial and/or commercial source(s) is being assessed, describe and report the sources of sound which comprise the acoustic environment.

Figure 4 Example of a statistical analysis to determine the background sound level



### 8.2 Proposed, new, modified or additional specific sound source(s)

Measure the background sound level at times when the specific sound source(s) is intended to be operated.

### 8.3 Existing specific sound source(s) not operating continuously

Measure the background sound:

- during a temporary shutdown of the specific sound source(s); or
- during a period immediately before or after the specific sound source(s) operate(s); or
- at times when the specific sound is absent but might otherwise be present over the period of interest.

### 8.4 Existing specific sound source(s) operating continuously

Measure the background sound at a location which is not subject to the specific sound and where the residual sound is considered to be comparable to that of the assessment location. Justification for considering this should be reported.

### 8.5 Introduction of a new noise-sensitive receptor

Measure the background sound at the intended location of any new noise-sensitive receptor(s) in the absence of any specific sound.

*NOTE* Where a new noise-sensitive receptor is introduced and there is extant industrial and/or commercial sound, it ought to be recognized that the industrial and/or commercial sound forms a component of the acoustic environment. In such circumstances other guidance and criteria in addition to or alternative to this standard can also inform the appropriateness of both introducing a new noise-sensitive receptor and the extent of required noise mitigation.

## 8.6 Precision when reporting the sound level measured

There can be variability in the derivation of statistical parameters, so use integers when expressing the background sound level.

*NOTE 1 A background sound level expressed to a precision of one decimal place implies incorrectly that the background sound level is exactly that value.*

*NOTE 2 Rounding is to be done on the basis that a value of 0.5 is rounded up.*

## 9 Rating level

### 9.1 General

Certain acoustic features can increase the significance of impact over that expected from a basic comparison between the specific sound level and the background sound level. Where such features are present at the assessment location, add a character correction to the specific sound level to obtain the rating level. This can be approached in three ways:

- a) subjective method;
- b) objective method for tonality;
- c) reference method.

*NOTE 1 Sound with prominent impulses has been shown to be more annoying than continuous types of sound (without impulses or tones) with the same equivalent sound pressure level.*

*NOTE 2 The rating level is equal to the specific sound level if there are no such features present or expected to be present.*

### 9.2 Subjective method

Where appropriate, establish a rating penalty for sound based on a subjective assessment of its characteristics. This would also be appropriate where a new source cannot be measured because it is only proposed at that time, but the characteristics of similar sources can subjectively be assessed.

Correct the specific sound level if a tone, impulse or other characteristic occurs, or is expected to be present, for new or modified sound sources.

*NOTE 1 The prominence of tonal or impulsive sound from a source can be masked by residual sound. In many cases the amount of masking varies as the residual sound changes in level and possibly character. The source's tonal and/or impulsive characteristics could also vary with time.*

Consider the subjective prominence of the character of the specific sound at the noise-sensitive locations and the extent to which such acoustically distinguishing characteristics will attract attention.

#### COMMENTARY ON 9.2

##### Tonality

*For sound ranging from not tonal to prominently tonal the Joint Nordic Method gives a correction of between 0 dB and +6 dB for tonality. Subjectively, this can be converted to a penalty of 2 dB for a tone which is just perceptible at the noise receptor, 4 dB where it is clearly perceptible, and 6 dB where it is highly perceptible.*

##### Impulsivity

*A correction of up to +9 dB can be applied for sound that is highly impulsive, considering both the rapidity of the change in sound level and the overall change in sound level. Subjectively, this can be converted to a penalty of 3 dB for impulsivity which is just perceptible at the noise receptor, 6 dB where it is clearly perceptible, and 9 dB where it is highly perceptible.*

### **Other sound characteristics**

Where the specific sound features characteristics that are neither tonal nor impulsive, though otherwise are readily distinctive against the residual acoustic environment, a penalty of 3 dB can be applied.

*NOTE 2* Where tonal and impulsive characteristics are present in the specific sound within the same reference period then these two corrections can both be taken into account. If one feature is dominant then it might be appropriate to apply a single correction. Where both features are likely to affect perception and response, the corrections ought normally to be added in a linear fashion.

### **Intermittency**

When the specific sound has identifiable on/off conditions, the specific sound level ought to be representative of the time period of length equal to the reference time interval which contains the greatest total amount of on time. This can necessitate measuring the specific sound over a number of shorter sampling periods that are in combination less than the reference time interval in total, and then calculating the specific sound level for the reference time interval allowing for time when the specific sound is not present. If the intermittency is readily distinctive against the residual acoustic environment, a penalty of 3 dB can be applied.

## **9.3 Objective methods**

### **9.3.1 General**

If the subjective method is not sufficient for assessing the audibility of tones in sound or the prominence of impulsive sounds, use the one-third octave method in 9.3.2 and/or the reference methods in 9.3.3, as appropriate.

The precision used in the assessment should be appropriate to the method chosen and the uncertainties associated with it. If the reference method approach is adopted it might be appropriate to work to a precision of one decimal place and then round the rating level to the nearest integer value. If an approximation value is used then integer values should be used throughout.

*NOTE 1* The uncertainty in assessing community response to sound from industrial and commercial sources makes the use of a precision of one decimal place inappropriate.

*NOTE 2* Rounding is to be done on the basis that a value of 0.5 is rounded up.

### **9.3.2 One-third octave method**

Identify tones using the method given in Annex C, then add a correction of 6 dB if a tone is present.

### **9.3.3 Reference methods**

When the one-third octave method is not sufficient, use the reference method for assessing the audibility of tones given in Annex D, which produces a penalty on a sliding scale from 0.0 dB to 6.0 dB.

Use the reference method given in Annex E for measuring the prominence of impulsive sounds, which produces penalties in the range 0.0 dB to 9.0 dB.

*NOTE* Where tonal and impulsive characteristics are present in the specific sound within the same reference period then these two corrections can both be taken into account. If one feature is dominant then it might be appropriate to apply a single correction. Where both features are likely to affect perception and response, the corrections ought normally to be added in a linear fashion.

## 10 Uncertainty

### 10.1 General

Consider the level of uncertainty in the data and associated calculations. Where the level of uncertainty could affect the conclusion, take reasonably practicable steps to reduce the level of uncertainty. Report the level and potential effects of uncertainty.

### 10.2 Uncertainty of measured values

Report the reasoning for the selected measurement method, together with steps taken to reduce measurement uncertainty.

*NOTE The level of uncertainty associated with a measurement of sound level depends upon a number of factors, including:*

- a) *the complexity of the sound source and the level of variability in sound emission from the source;*
- b) *the complexity and level of variability of the residual acoustic environment;*
- c) *the level of residual sound in the presence of the specific sound at the measurement location;*
- d) *the location(s) selected for taking the measurements;*
- e) *the distance between sources of sound and the measurement location and intervening ground conditions;*
- f) *the number of measurements taken;*
- g) *the measurement time intervals;*
- h) *the range of times when the measurements have been taken;*
- i) *the range of suitable weather conditions during which measurements have been taken;*
- j) *the measurement method and variability between different practitioners in the way the method is applied;*
- k) *the level of rounding of each measurement recorded; and*
- l) *the instrumentation used.*

*An appreciation of the uncertainties in the measurement is likely to lead to a better understanding of the measurement, its potential variability and any implications in the reported findings of the assessment. In such instances, where the level of uncertainty is too great, it might be necessary to repeat measurements or to take other steps to obtain the desired confidence in the results.*

*Although the level of uncertainty due to the instrumentation system can be quantified, this is unlikely to be practicable for some of the other measurement uncertainties. The level of uncertainty can be reduced by several methods, including taking more measurements, for longer measurement time intervals, on different occasions over longer periods of time, under differing suitable weather conditions. What is appropriate will depend upon the particular circumstances of each assessment, including the scale of the proposed development and the risk of it causing significant adverse impact. Consideration ought to be given to any published information that is relevant to the assessment.*

## 10.3 Uncertainty in calculations

### COMMENTARY ON 10.3

*Uncertainty in calculating sound levels can arise from:*

- a) *uncertainty in any measured sound levels used in the calculations;*
- b) *uncertainty in the operation or sound emission characteristics of the specific sound source and any assumed sound power levels;*
- c) *uncertainty in the calculation method;*
- d) *simplifying the real situation to "fit" the model (user influence on modelling); and*
- e) *error in the calculation process.*

*Where the sound power level is used for calculating sound pressure levels, it ought to be representative of the source and the conditions under which the source is expected to operate.*

Where possible, use recognized standards to establish the sound power level and the uncertainty (e.g. BS EN ISO 3740 and BS EN ISO 3747). Where it is not possible to use appropriate standards, describe the method of establishing the sound power level, report the uncertainty and state the reasons for using this method.

Use a validated method of calculating sound levels, e.g. ISO 9613-2 or similar. If an alternative calculation method is used, fully describe the method and state the reasons for using this method.

Check the implementation of the calculation method for errors.

For simple cases, e.g. where the level of variability in sound propagation resulting from changes in meteorological conditions is likely to be small, simple calculation methods might be sufficient.

## 11 Assessment of the impacts

### COMMENTARY ON CLAUSE 11

*The significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the background sound level and the context in which the sound occurs. An effective assessment cannot be conducted without an understanding of the reason(s) for the assessment and the context in which the sound occurs/will occur. When making assessments and arriving at decisions, therefore, it is essential to place the sound in context.*

Obtain an initial estimate of the impact of the specific sound by subtracting the measured background sound level (see Clause 8) from the rating level (see Clause 9), and consider the following.

**NOTE 1** *More than one assessment might be appropriate.*

- a) Typically, the greater this difference, the greater the magnitude of the impact.
- b) A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.
- c) A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.
- d) The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not

exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

*NOTE 2 Adverse impacts include, but are not limited to, annoyance and sleep disturbance. Not all adverse impacts will lead to complaints and not every complaint is proof of an adverse impact.*

Where the initial estimate of the impact needs to be modified due to the context, take all pertinent factors into consideration, including the following.

- 1) The absolute level of sound. For a given difference between the rating level and the background sound level, the magnitude of the overall impact might be greater for an acoustic environment where the residual sound level is high than for an acoustic environment where the residual sound level is low.

Where background sound levels and rating levels are low, absolute levels might be as, or more, relevant than the margin by which the rating level exceeds the background. This is especially true at night.

Where residual sound levels are very high, the residual sound might itself result in adverse impacts or significant adverse impacts, and the margin by which the rating level exceeds the background might simply be an indication of the extent to which the specific sound source is likely to make those impacts worse.

- 2) The character and level of the residual sound compared to the character and level of the specific sound. Consider whether it would be beneficial to compare the frequency spectrum and temporal variation of the specific sound with that of the ambient or residual sound, to assess the degree to which the specific sound source is likely to be distinguishable and will represent an incongruous sound by comparison to the acoustic environment that would occur in the absence of the specific sound. Any sound parameters, sampling periods and averaging time periods used to undertake character comparisons should reflect the way in which sound of an industrial and/or commercial nature is likely to be perceived and how people react to it.

*NOTE 3 Consideration ought to be given to evidence on human response to sound and, in particular, industrial and/or commercial sound where it is available. A number of studies are listed in the "Effects on humans of industrial and commercial sound" portion of the "Further reading" list in the Bibliography.*

- 3) The sensitivity of the receptor and whether dwellings or other premises used for residential purposes will already incorporate design measures that secure good internal and/or outdoor acoustic conditions, such as:
  - i) facade insulation treatment;
  - ii) ventilation and/or cooling that will reduce the need to have windows open so as to provide rapid or purge ventilation; and
  - iii) acoustic screening.

## 12 Information to be reported

Report the following, as appropriate.

- a) Statement of qualifications, competency, professional memberships and experience directly relevant to the application of this British Standard of all personnel contributing to the assessment.
- b) Source being assessed as follows:
  - 1) description of the main sound sources and of the specific sound;
  - 2) hours of operation;
  - 3) mode of operation (e.g. continuous, twice a day, only in hot weather);
  - 4) statement of operational rates of the main sound sources (e.g. maximum load setting, 50% max rate, low load setting); and
  - 5) description of premises in which the main sound sources are situated (if applicable).
- c) Subjective impressions, including:
  - 1) dominance or audibility of the specific sound; and
  - 2) main sources contributing to the residual sound.
- d) The existing context (see Clause 4 and Clause 11), including an assessment of the sensitivity of the receptor, e.g. school, dwelling, office.
- e) Measurement locations, their distance from the specific sound source, the topography of the intervening ground and any reflecting surface other than the ground, including a photograph, or a dimensioned sketch with a north marker. A justification for the choice of measurement locations should also be included.
- f) Sound measuring systems, including calibrator or pistonphone used:
  - 1) type and/or model;
  - 2) manufacturer;
  - 3) serial number; and
  - 4) details of the latest verification test including dates.
- g) Operational test:
  - 1) reference level(s) of calibrator, multi-function calibrator or pistonphone; and
  - 2) meter reading(s) before and after measurements with calibrator, multi-function calibrator or pistonphone applied.
- h) *Weather conditions, including:*
  - 1) wind speed(s) and direction(s);
  - 2) presence of conditions likely to lead to temperature inversion (e.g. calm nights with little cloud cover);
  - 3) precipitation;
  - 4) fog;
  - 5) wet ground;
  - 6) frozen ground or snow coverage;
  - 7) temperature; and
  - 8) cloud cover.

- i) Date(s) and time(s) of measurements.
- j) Measurement time intervals.
- k) Reference time interval(s).
- l) Specific sound level:
  - 1) measured sound level(s);
  - 2) residual sound level(s) and method of determination;
  - 3) ambient sound level(s) and method of determination;
  - 4) specific sound level(s) and method of determination;
  - 5) justification of methods; and
  - 6) details of any corrections applied.
- m) Background sound level(s) and measurement time interval(s) and, in the case of measurements taken at an equivalent location, the reasons for presuming it to be equivalent.
- n) Rating level(s):
  - 1) specific sound level(s);
  - 2) any acoustic features of the specific sound; and
  - 3) rating level(s).
- o) Excess of the rating level(s) over the measured background sound level(s) and the initial estimate of the impacts.
- p) Conclusions of the assessment after taking context into account.
- q) The potential impact of uncertainty (see Clause 10).

Annex A  
(informative)**Examples of how to use the standard to obtain ratings**

**NOTE** These examples illustrate how the standard could be applied and are not to be taken as a definitive interpretation of how it is intended to be used. It is assumed in all these examples that full information as set out in Clause 12 would be included in the report and is not therefore given here.

**A.1 Example 1: Hums: General acoustic feature correction**

A factory that has recently become operational works only during the day and produces a continuous, low-level general hum that is steady, not attributable to one specific source of sound, and can be heard at the measurement location.

Figure A.1 shows the sound level time history to include 40 min immediately before the factory machinery is turned on, in addition to a sample of the sound caused by the factory. The sound levels both before and after the factory machinery is turned on are relatively steady and continuous.

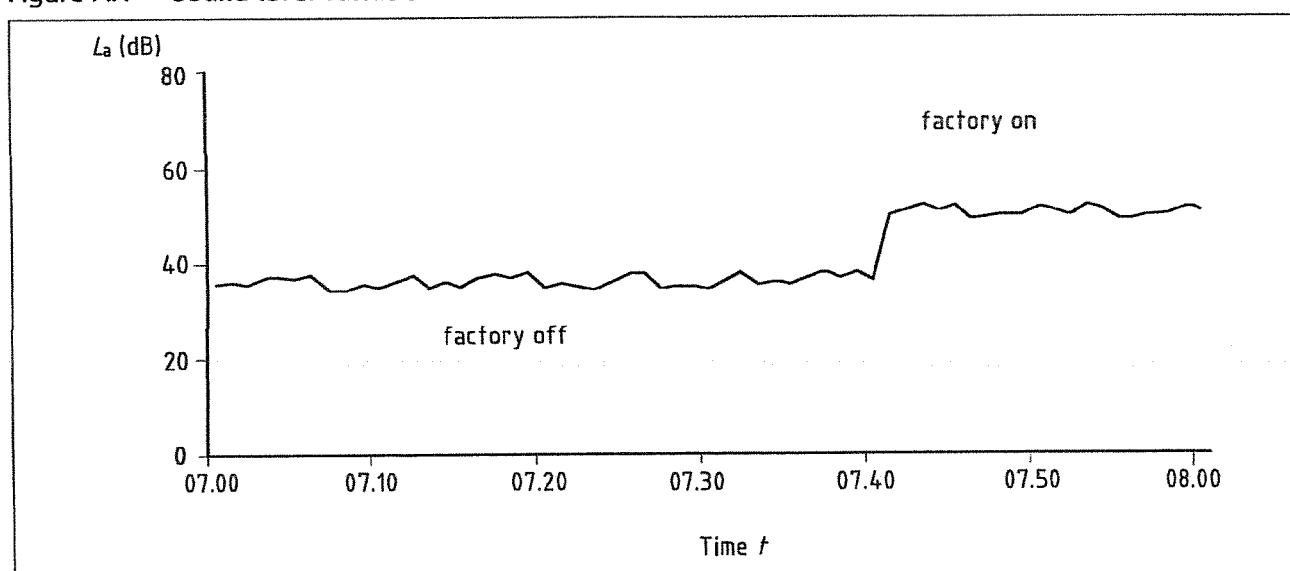
It is reasonable to assume that sample measurements are representative, provided that there is no reason to believe that either the background sound level or the factory sound would significantly change over a longer period of time. It is also reasonable to assume that the background sound level does not change after the machinery is turned on.

The specific sound level in this case was determined by measuring the ambient sound level,  $L_a$ , as an  $L_{Aeq(15 \text{ min})}$ , as this sample measurement was deemed to be a representative sample of the factory sound.

**NOTE** A longer measurement period up to 1 h could have been used.

The residual sound level and background sound level were measured when the specific sound was off and when conditions contributing to the fluctuations in the residual sound were similar to those when the ambient sound level was measured. The residual sound level was  $L_{Aeq(40 \text{ min})}$  39 dB with a background sound level of  $L_{A90(40 \text{ min})}$  35 dB.

Figure A.1 Sound level variation with time



The assessment and its results are detailed in Table A.1.

Table A.1 Example 1: Assessment

Results		Relevant clause	Commentary
Measured ambient sound level	$L_{Aeq(15 \text{ min})} = 51 \text{ dB}$	7.1 7.3.1	Specific sound source active and the level unaffected by any other sound sources
Residual sound level	$L_{Aeq(40 \text{ min})} = 39 \text{ dB}$	7.3.3	Specific sound not active to determine the correction to be made to the measured ambient sound level
Background sound level	$L_{A90(40 \text{ min})} = 35 \text{ dB}$	8.1.3 8.3	Measured just before the factory started up; was deemed to be representative of the background sound when the factory was in operation
Assessment made during the daytime, so reference time interval is 1 h		7.2	
Specific sound level	$L_{Aeq(60 \text{ min})} = 51 \text{ dB}$	7.3.4 7.3.5	
Acoustic feature correction	+3 dB	9.2	The specific sound is not distinctly tonal, though is otherwise distinctive against the residual acoustic environment
Rating level	$(51 + 3) \text{ dB} = 54 \text{ dB}$	9.2	The factory produces a continuous steady hum
Background sound level	$L_{A90(40 \text{ min})} = 35 \text{ dB}$	8	Residual sound level was relatively steady
Excess of rating over background sound level	$(54 - 35) \text{ dB} = 19 \text{ dB}$	11	
Assessment indicates likelihood of significant adverse impact		11	
Uncertainty of the assessment	Not significant	10	The excess of the rating level over the background sound level is very large and in this instance the uncertainty of the measurement does not have any significance to the outcome of the assessment

## A.2 Example 2: Sound to be rated does not significantly exceed the background sound

This example illustrates the procedure and calculations to be undertaken when the sound to be assessed is not significantly in excess of the residual sound, which in turn does not have any identifiable low level periods in which the specific sound level could otherwise be measured.

This is a similar situation to example 1 (A.1), but the assessment location is further away from the factory. The background sound level was measured over a 30 min period when the specific sound source was not operating. The measurement of the factory sound was affected by the residual sound. Consequently, a correction has to be made.

At this location the factory sound had no discernible acoustic features.

Figure A.2 shows a short extract of the typical time variation of the level before and after the specific sound source was turned on. Since the measured ambient sound level is not much in excess of the residual sound level the choice is to apply a correction to the ambient sound level or to measure the ambient sound level on another occasion when the residual sound is lower. An alternative would be to measure the specific sound level closer to the factory at a location where it is much greater than the residual sound level and then calculate the sound level at the receiver location. In this case, because the sound levels are fairly steady and do not vary much over time, the method of correcting the ambient sound level to calculate the specific sound level by removing the contribution of the residual sound was chosen.

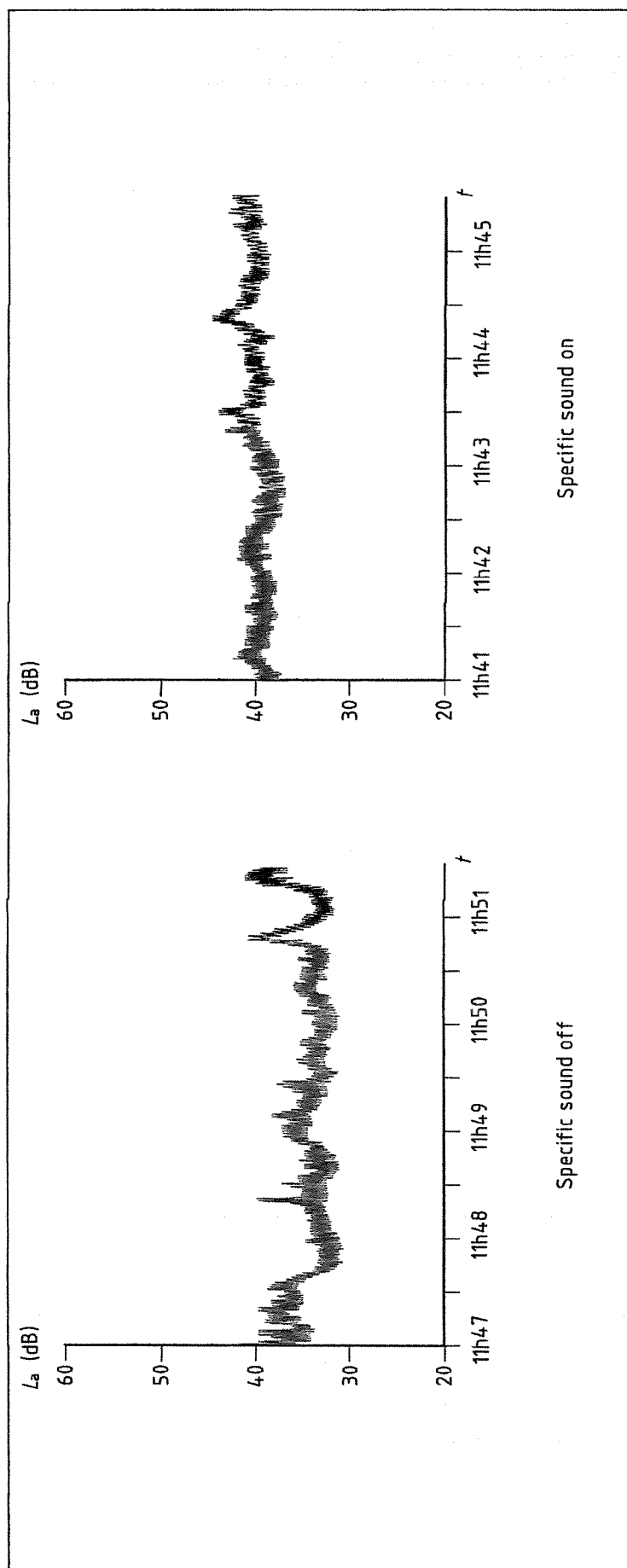
The specific sound was measured over a 20 min period. This was assumed to be representative of any longer term fluctuations in the specific sound. The residual sound level was determined over a similar representative time period of 20 min when the specific sound source was switched off.

The assessment and its results are detailed in Table A.2.

Table A.2 Example 2: Assessment

Results		Relevant clause	Commentary
Measured ambient sound level	$L_{Aeq(20 \text{ min})} = 40 \text{ dB}$	7.3.1	Specific sound on
Residual sound level	$L_{Aeq(20 \text{ min})} = 35 \text{ dB}$	7.3.3	Specific sound off to determine the correction to be made to the measured ambient sound level
Background sound level (day)	$L_{A90(30 \text{ min})} = 34 \text{ dB}$	8.3	The background sound was measured in a temporary shutdown of the factory, but otherwise representative of normal conditions
Assessment made during the daytime, so the reference time interval is 1 h		7.2	
Specific sound level calculated by correcting the ambient sound level to remove the contribution of the residual sound level	$L_{Aeq(60 \text{ min})} = 38 \text{ dB}$	7.3.4	
Acoustic feature correction	0 dB	9.2	No acoustic features were present
Rating level	$(38 + 0) \text{ dB} = 38 \text{ dB}$	9.2	
Background sound level	$L_{A90(30 \text{ min})} = 34 \text{ dB}$	8	
Excess of rating over background sound level	$(38 - 34) \text{ dB} = 4 \text{ dB}$	11	
The assessment indicates likelihood of adverse impact		11	Although the excess of rating over background sound level was less than +5 dB, this conclusion is reached by professional judgement, taking context into consideration
Uncertainty of the assessment		10	The measurements were taken under repeatable conditions and the uncertainty in the result will be low

Figure A.2 Measurement of the factory sound affected by the residual noise



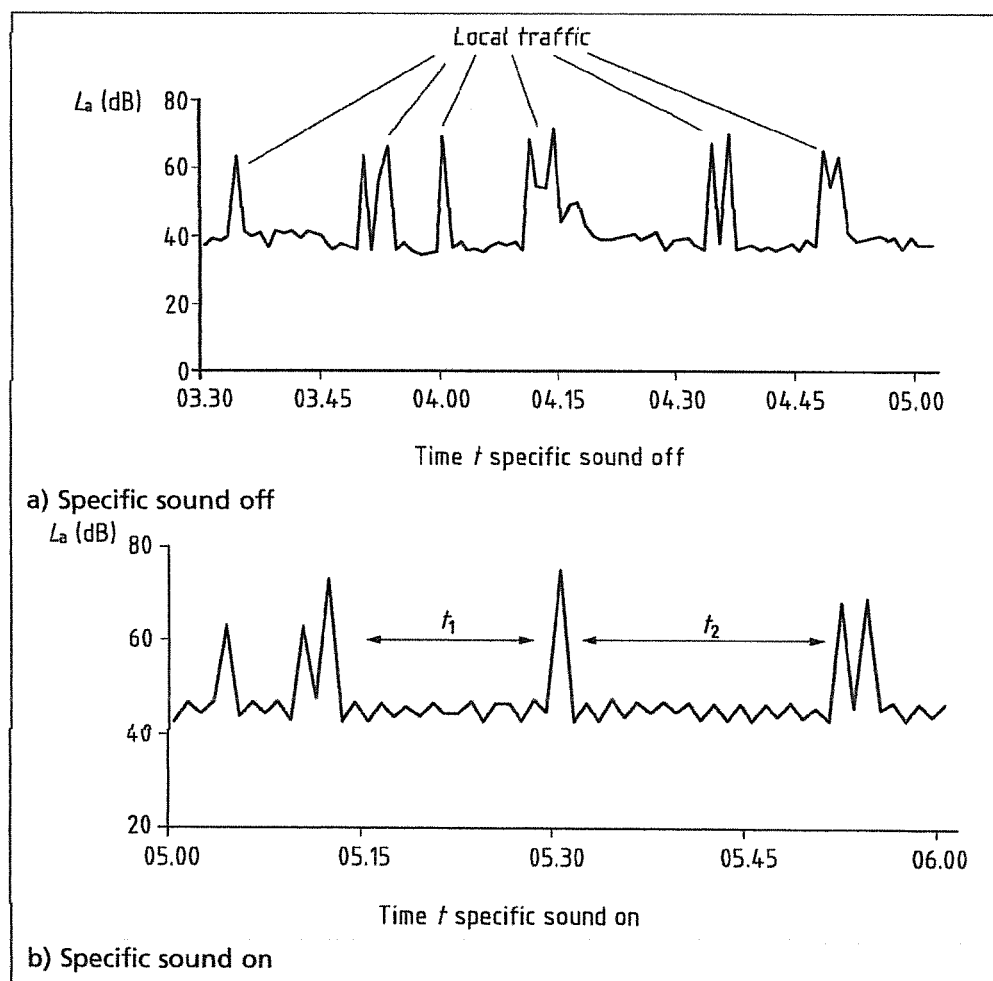
### A.3 Example 3: Effect of residual sound

An existing factory installed a machine which has operated during the day without complaint. The operators wish to assess the significance of impact if the machine were to operate at night. The machine operates continuously, emitting discernible but not prominent bangs.

The maximum sound levels were produced by passing traffic and were above the steady sound of the specific sound source. The specific sound source was measured during those periods between passing traffic.

Figure A.3 shows an extract of a 90 min measurement of the residual sound and ambient sound at night. An hour was used thereafter to assess the variability of the specific sound source. The specific sound level was measured during the indicated periods  $t_1$  and  $t_2$  in Figure A.3.

Figure A.3 Sound level variations with time



The assessment and its results are detailed in Table A.3.

Table A.3 Example 3: Assessment

Results		Relevant clause	Commentary
Measured ambient sound level	$L_{Aeq(15 \text{ min})} = 44 \text{ dB}$	7.3.2	The specific sound could clearly be heard during lulls in the passing night-time traffic
Residual sound level	$L_{Aeq(5 \text{ min})} = 40 \text{ dB}$	7.3.3	A representative residual sound level is obtained from measurements between traffic pass-bys
Background sound level (night-time)	$L_{A90(60 \text{ min})} = 38 \text{ dB}$	8.1.1 8.1.3 8.3	A relatively long measurement period was used owing to varying ambient sound levels caused by traffic. The background sound level can be measured over a longer time than the reference time period or over several periods
Assessment made during the night-time, so the reference time interval is 15 min		7.2	
Specific sound level calculated by correcting the ambient sound level to remove the contribution of the residual sound level	$L_{Aeq(15 \text{ min})} = 42 \text{ dB}$	7.3.4	
Acoustic feature correction	+3 dB	9.2	This is an estimated correction of +3 dB to account for the character of discernible bangs
Rating level	$(42 + 3) \text{ dB} = 45 \text{ dB}$	9.2	
Background sound level	$L_{A90(60 \text{ min})} = 38 \text{ dB}$	8.3	
Excess of rating over background sound level	$(45 - 38) \text{ dB} = 7 \text{ dB}$	11	Assessment indicates that reduction or mitigation measures are desirable if the machine is to run at night
Assessment indicates a likely adverse impact		11	The context is night-time when there is a greater likelihood of adverse impact
Uncertainty of the assessment		10	The excess of the rating level over the background sound level is not very large and in this instance the uncertainty of the measurement might have some influence on the outcome of the assessment

#### A.4 Example 4: Source is intermittent and cyclic

A factory on the edge of an industrial estate operates 24 hours a day and is to install a new process that will operate over 20 h from 06:00 h to 02:00 h. Figure A.4 shows a typical cycle of operation over a 1 h period whereby the source is on for two distinct periods of 7 min 45 s and 4 min, respectively.

Switching the plant on and off at a comparable factory that already operates the new process does not indicate any acoustic features that warrant correction for tonality, impulsivity or other sound characteristics at the assessment location.

The background sound level, determined at the nearest residence to the factory that plans to install the process, in terms of  $L_{A90(60 \text{ min})}$ , was 31 dB at night and 39 dB during the day.

When the sound of the proposed operation was measured at a comparable distance to the factory where it already operates, and under comparable acoustic conditions, the  $L_{Aeq(12 \text{ min})}$  was 41 dB. After the ambient sound level was measured, the specific source was turned off and the measured residual sound level was 36 dB.

The assessment and its results are detailed in Table A.4.

Figure A.4 Specific sound cycling on and off

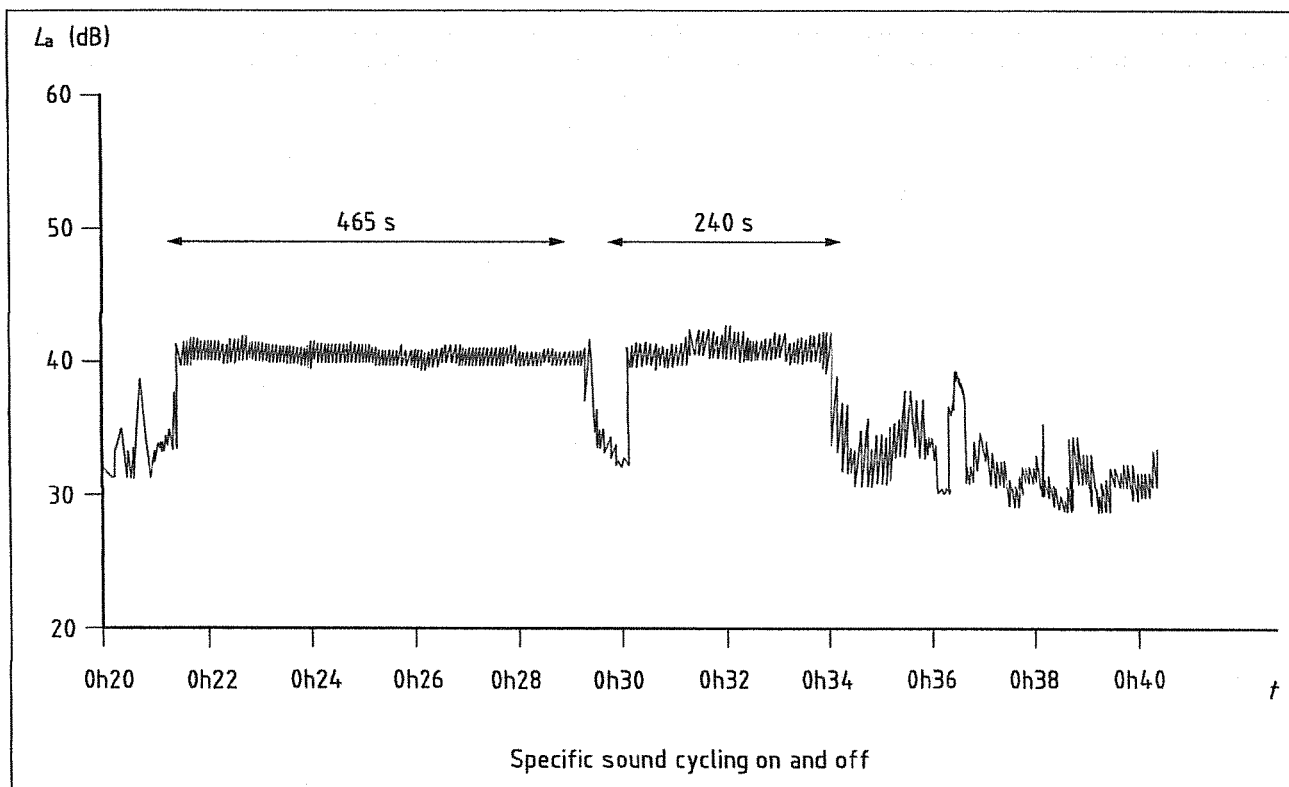


Table A.4 Example 4: Assessment

Results		Relevant clause	Commentary
Measured ambient sound level	$L_{Aeq(12 \text{ min})} = 41 \text{ dB}$	7.1 7.3.1 7.3.10	This includes all cycles of the specific sound
Residual sound level	$L_{Aeq(12 \text{ min})} = 36 \text{ dB}$	7.3.3	Measured for the factory where the process already operates when the specific sound was not active
Background sound level (daytime)	$L_{A90(50 \text{ min})} = 39 \text{ dB}$	8.1 8.1.3 8.1.4 8.3	The background sound level was measured at the assessment location during the daytime under comparable weather conditions to those that prevailed when the ambient and residual sound were measured at the other factory
Background sound level (night-time)	$L_{A90(15 \text{ min})} = 31 \text{ dB}$	8.1 8.1.3 8.1.4 8.3	The background sound level was measured at the assessment location during the night-time after 02:00 h and a statistical analysis was done to determine the typical background sound level
<b>Daytime</b>			
Assessment made during the daytime. The reference time interval is 1 h		7.2	
The total on time during a reference interval is: $465 \text{ s} + 240 \text{ s} = 705 \text{ s}$			The source is on for two periods as part of its cycle during the reference time interval of 60 min
On time correction [to nearest 0.1 dB as intermediate step in equation (4) calculation]	$10\lg(705/3600) = -7.1 \text{ dB}$	7.3.15	The specific source is cyclical, the cycle times in total being less than the daytime reference time period. Therefore, an on time correction is applied as in equation (4)
Specific sound level	$L_{Aeq(60 \text{ min})} = [10\lg(10^{4.1} - 10^{3.6}) - 7.1] \text{ dB} = 32 \text{ dB}$	7.3.15	Equation (4)
Rating level	32 dB	9.3.4	No corrections are applied for tonality, impulsivity or other sound characteristics
Background sound level	$L_{A90(60 \text{ min})} = 39 \text{ dB}$	8.1 8.1.3 8.1.4 8.3	
Excess of rating over background sound level	$(32 - 39) \text{ dB} = -7 \text{ dB}$	11	
Assessment indicates little likelihood of adverse impact		11	The excess of the rating level over the background sound level is -7 dB and in this instance the uncertainty of the measurement does not have any significance to the outcome of the assessment

Table A.4 Example 4: Assessment

Results		Relevant clause	Commentary
<b>Night-time</b>			
Assessment made during the night-time. The reference time period is 15 min		7.2	
The total on time during a reference period is: $465\text{ s} + 240\text{ s} = 705\text{ s}$			The source is on for two periods as part of its cycle during the reference time of 15 min
On time correction [to nearest 0.1 dB as intermediate step in equation (4) calculation]	$10\lg(705/900) = -1.1\text{ dB}$		The specific source is cyclical, the cycle time in total being less than the night-time reference time period. Therefore, an on time correction is applied as in equation (4)
Specific sound level	$L_{\text{Aeq}(15\text{ min})} = [10\lg(10^{4.1} - 10^{3.6}) - 1.1]\text{ dB} = 38\text{ dB}$	7.3.15	Equation (4)
Rating level	38 dB	9.3.4	No corrections are applied for tonality, impulsivity or other sound characteristics
Background sound level	$L_{\text{A90}(15\text{ min})} = 31\text{ dB}$	8.3	
Excess of rating over background sound level	$(38 - 31)\text{ dB} = 7\text{ dB}$	11	
Assessment indicates a likelihood of adverse impact, which could be significant		11	The excess of the rating level over the background sound level is +7 dB and in this instance the uncertainty of the measurement does not have any significance to the outcome of the assessment

#### A.5 Example 5: Sound being investigated louder than residual and background sound level, which cannot be measured at the assessment location

This example deals with a situation where the sound that is to be rated emanates from an industrial installation during the night-time and is higher than the residual and background sound levels which cannot be measured at the assessment location.

An industrial installation has operated for many years, but following upgrading of plant has become the subject of complaints from local residents. The plant giving rise to complaints operates continuously throughout the night-time and produces steady, mild to prominent tonal components.

Representative residual and background sound levels were obtained from a series of measurements at an alternative location due to the sound under investigation being continually present at the assessment location. The justification for the alternative location is as follows:

- the alternative location is the same distance from residual sound sources and sound from the plant is acoustically screened by a significant building structure;
- the sound from the plant is not distinguishable at the alternative location;

- c) measurements of background sound levels and residual sound levels were undertaken during the night-time under the same meteorological conditions as when measurements of the ambient sound level were conducted;
- d) a series of contiguous  $L_{A90(15 \text{ min})}$  measurements were conducted between 11:00 h and 00:15 h with variation in results not exceeding 1 dB;
- e) ambient sound at the alternative location comprised the same sources as at the assessment location, other than the specific sound source being rated;
- f) both measurement locations have the same ground cover and, other than respective building facades, are free from significant sound reflecting structures;
- g) measurement heights above ground level and distances from facades are the same at the two locations;
- h) background sound level and residual sound level measurements were conducted over the same period as when the specific sound level was determined; and
- i) there were no transient or other influencing noise events.

The specific sound level was measured in terms of  $L_{Aeq(15 \text{ min})}$  from 23:00 h onwards.

The assessment and its results are detailed in Table A.5.

Table A.5 Example 5: Assessment

Results		Relevant clause(s)	Commentary
Measured ambient sound level	$L_{Aeq(15 \text{ min})} = 54 \text{ dB}$	7.3.1	Specific sound source on and the level unaffected by any other sound sources
Residual sound level	$L_{Aeq(15 \text{ min})} = 40 \text{ dB}$	7.3.3	Determined at an alternative location together with the background sound level
Background sound level	$L_{A90(15 \text{ min})} = 37 \text{ dB}$	8	Determined at an alternative location together with the residual sound level
Assessment made during the night-time, so the reference time interval is 15 min		7.2	
Specific sound level	$L_{Aeq(15 \text{ min})} = 54 \text{ dB}$	7.3	No correction required to the measured sound level
Acoustic feature correction	+4 dB	9.2	The industrial installation produces a continuous, steady whine. Subjective method used to account for a mild to prominent tone
Rating level	$(54 + 4) \text{ dB} = 58 \text{ dB}$	9.2	The industrial installation produces a continuous, steady whine
Background sound level	$L_{A90(15 \text{ min})} = 37 \text{ dB}$	8	
Excess of rating level over background sound level	$(58 - 37) \text{ dB} = 21 \text{ dB}$	11	
Assessment indicates likelihood of significant adverse impact		11	
Uncertainty of the assessment		10	The excess of the rating level over the background sound level is large and in this instance the uncertainty of the measurement does not have any significance to the outcome of the assessment

## A.6 Examples 6, 7 and 8: Intermittent sources close to dwellings

### COMMENTARY ON A.6

Examples 6, 7 and 8 (A.6.1, A.6.2 and A.6.3) use similar sound measurement time profiles but of a different level, with the data for Example 7 being 3 dB higher than Example 6, and that for Example 8 being 5 dB higher than Example 6. Examples 6 and 8 consider the potential impact on residents who might be going to sleep in indoor bedrooms, whereas Example 7 considers the potential impact on residents who might be outside during the late evening. Although the difference between the specific and residual sound levels remains constant for all three examples, the difference between specific and background levels differs depending upon the reference time interval. The difference between the rating and background levels also differs due to the variation in rating penalty that is applicable for the three different scenarios.

These three examples show how similar sound levels can produce different results, depending primarily upon the context in which the sound occurs.

**A.6.1 Example 6: Intermittent sound source operating at night potentially affecting residents indoors, producing a relatively low sound level with no significant acoustically distinguishing characteristics**

An item of mechanical equipment has been installed at a commercial premises where other plant is also operating elsewhere on site. This plant operates intermittently 24 hours a day, producing sound that is identifiable outside the nearest dwelling, particularly when the residual sound falls to lower levels when residents might be going to sleep. At these more sensitive times the sound contains a tone that is just perceptible outside the dwelling and appears to be *slightly impulsive when starting operation*. However, the *slight tonality* that is noticeable outdoors is not noticeable indoors, and the corresponding change in sound level as the source commences or ceases operation is relatively slight indoors due to masking by other sources of sound within the dwelling and does not attract a listener's attention. This means that no rating penalty is applicable for this assessment.

Figure A.5 shows the sound level time history (measured every 100 ms) 4 m from the nearest dwelling for 31 min at night, during which time the sound source was identifiable on five occasions and the residual acoustic environment included typical variations due to sources such as passing and distant vehicles, an aircraft and some animal activity. The specific sound source is located close to the dwelling, so it was not practicable to take measurements closer to it. The identifiable periods when the source was operating and its constant character reduce the uncertainty in calculating the specific sound level from these measurements.

It is reasonable to assume that the operation of the plant throughout the measurement period is representative of normal operation and that the residual acoustic environment was representative of normal conditions at this time.

The  $L_{Aeq}$  for the entire measurement period was 40 dB, falling to a residual sound level of around 28 dB at times when no vehicles were passing and the specific source was not operating. The background sound level  $L_{A90}$  was measured as 27 dB for the entire measurement period (the specific source being on for such short periods as to be judged not to affect this measurement) and the ambient  $L_{Aeq}$  was measured as 36 dB whilst the specific sound source was operating.

The assessment and its results are detailed in Table A.6.

In addition to the rating/background sound level comparison shown in Table A.6, the primary concern is the potential for disturbance of residents who could be sleeping with open bedroom windows.

Other guidance, such as BS 8233, might also be applicable in this instance. As Figure A.5 shows, the residual acoustic environment varies considerably with time, which also tends to mask sound from the source, reducing its relative significance in comparison with a location where the residual sound level remains relatively steady around 27 dB.

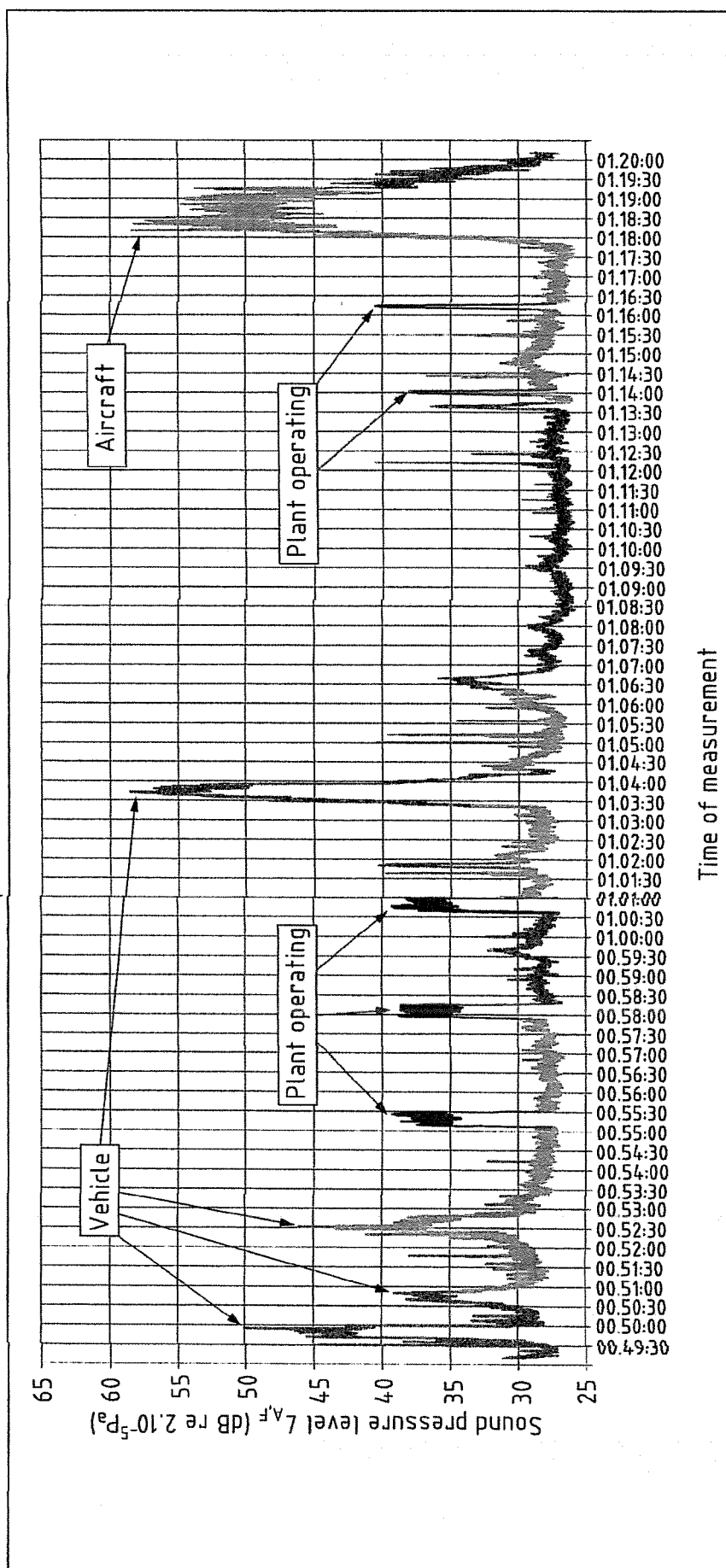
Table A.6 Example 6: Assessment

Results		Relevant clause	Commentary
Measured ambient sound level	$L_{Aeq} = 36 \text{ dB}$	7.3.2	Specific sound source on
Residual sound level	$L_{Aeq} = 28 \text{ dB}$	7.3.3	Estimated representative level around the times when source was operating and no vehicles passing, to determine the correction to be made to the measured ambient sound level
Background sound level	$L_{A90(31 \text{ min})} = 27 \text{ dB}$	8.1.2	Measured throughout the measurement period and deemed to be representative of the background sound when the source was in operation. Though it should normally be excluded from background measurements, the specific source was judged to be on for a sufficiently short period as not to affect this measurement
Reference time interval of 15 min used for assessment on the basis that the source continues to operate as during the measurement period		7.2	
On time correction [to nearest 0.1 dB as intermediate step in equation (4) calculation]	$10\lg(75.1/900) = -10.8 \text{ dB}$	7.3.15	Total on time of 75.1 s during 15 min period
Specific sound level	$L_{Aeq(15 \text{ min})} = [10\lg(10^{3.6} - 10^{2.8}) - 10.8] \text{ dB} = 24 \text{ dB}$	7.3.15	Equation (4)
Acoustic feature correction	0 dB	9.2	No significant distinctive features at noise receptor location (within bedroom)
Rating level	$(24 + 0) \text{ dB} = 24 \text{ dB}$	9.2	
Background sound level	$L_{A90(31 \text{ min})} = 27 \text{ dB}$	8.6	
Excess of rating over background sound level	$(24 - 27) \text{ dB} = -3 \text{ dB}$	11	
Assessment indicates low impact due to plant noise at the receptor		11	The context is a new item of plant at a commercial premises with other plant elsewhere in a residual acoustic environment that, whilst relatively steady, includes regular events of a significantly higher level than that from the plant. At these times the noise-sensitive location is indoors with open windows where residual sound within the dwelling will further mask sound from the plant

Table A.6 Example 6: Assessment

Results		Relevant clause	Commentary
Uncertainty of the assessment		10	There is uncertainty in the residual level subtracted from the measured source level, which might account for approximately 1 dB variation in the actual source level. The measurement graph provides confidence that the specific sound level measurements were taken at times when the residual sound level was relatively low and stable. Given the similarity of specific and background sound levels this is not a significant level of uncertainty. The background sound level might be slightly lower on some occasions but is likely to be higher for much of the time depending upon weather conditions

Figure A.5 Sound level outside bedroom window with intermittent plant operation:  $L_{Aeq}$  for entire period 40 dB, residual  $L_{Aeq}$  when no vehicles passing 28 dB, background  $L_{A90}$  27 dB, ambient  $L_{Aeq}$  with plant on 36 dB



**A.6.2 Example 7: Intermittent sound source operating during the day, evening and night, potentially affecting residents in their garden during the late evening, producing a relatively low sound level with slight acoustically distinguishing characteristics**

An item of mechanical equipment has been installed at a commercial premises where other plant is also operating elsewhere on site. This plant operates intermittently 24 hours a day, producing sound that is identifiable outside the nearest dwelling, particularly when the residual sound falls to lower levels during the late evening. At these more sensitive times the sound contains a tone that is just perceptible outside the dwelling and appears to be slightly impulsive when starting operation. This means that a rating penalty of 2 dB for slight tonality, plus 3 dB for slight impulsivity, is applicable for this assessment.

Figure A.6 shows the sound level time history (measured every 100 ms) on the patio of the neighbouring garden 4 m from the rear of the dwelling for 31 min during the evening, during which time the specific sound source was identifiable on five occasions and the residual acoustic environment included typical variations due to sources such as passing and distant vehicles and an aircraft. The specific sound source is located close to the dwelling, so it was not practicable to take measurements closer to it. The identifiable periods when the source was operating and its constant character reduce the uncertainty in calculating the specific sound level from these measurements.

It is reasonable to assume that the operation of the plant throughout the measurement period is representative of normal operation and that the residual acoustic environment was representative of normal conditions at this time.

The  $L_{Aeq}$  for the entire measurement period was 43 dB, falling to a residual sound level of around 31 dB at times when no vehicles were passing and the specific source was not operating. The background sound level  $L_{A90}$  was measured as 30 dB for the entire measurement period (the specific source being on for such short periods as to be judged not to affect this measurement) and the ambient  $L_{Aeq}$  was measured as 39 dB whilst the specific sound source was operating.

As Figure A.6 shows, although the residual acoustic environment varies considerably with time, it was relatively steady for the vast majority of the time, particularly when the source was operating, potentially making the associated change in sound level and character due to this industrial/commercial sound source more likely to attract a listener's attention.

The assessment and its results are detailed in Table A.7.

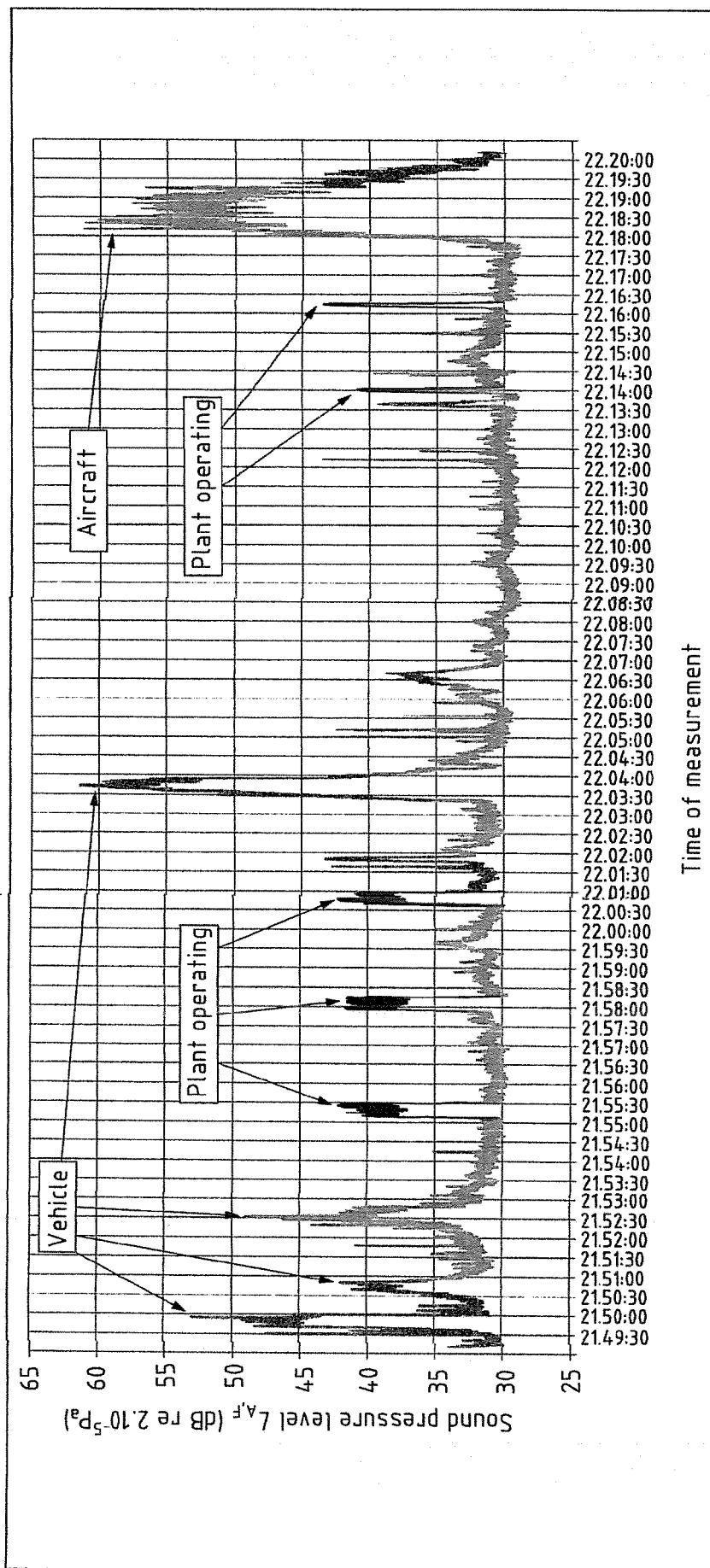
Table A.7 Example 7: Assessment

Results		Relevant clause	Commentary
Measured ambient sound level	$L_{Aeq} = 39$ dB	7.3.6	Specific sound source on
Residual sound level	$L_{Aeq} = 31$ dB	7.3.3	Estimated representative level around the times when source was operating and no vehicles passing, to determine the correction to be made to the measured ambient sound level
Background sound level	$L_{A90(31 \text{ min})} = 30$ dB	8.1.2	Measured throughout the measurement period and deemed to be representative of the background sound when the source was in operation. Though it should normally be excluded from background measurements, the specific source was judged to be on for a sufficiently short period as not to affect this measurement
Reference period of 1 h used for assessment on the basis that the source continues to operate as during the measurement period		7.2	
On time correction [to nearest 0.1 dB as intermediate step in equation (4) calculation]	$10\lg(93.9/1\ 860) = -13.0$ dB	7.3.15	Total on time of 93.9 s during 31 min measurement period which is representative of operation throughout an hour
Specific sound level	$L_{Aeq(60 \text{ min})} = [10\lg(10^{3.9} - 10^{3.1}) - 13.0]$ dB = 25 dB	7.3.15	Equation (4)
Acoustic feature correction	+5 dB	9.2	+2 dB correction for just perceptible tonality and +3 dB for slight impulsivity in garden
Rating level	$(25 + 5)$ dB = 30 dB	9.2	
Background sound level	$L_{A90(31 \text{ min})} = 30$ dB	8.6	
Excess of rating over background sound level	$(30 - 30)$ dB = 0 dB	11	
Assessment indicates low impact due to plant noise at the receptor		11	The context is a new item of plant at a commercial premises in a residual acoustic environment that, whilst relatively steady, includes regular events of a significantly higher level than that from the plant. Although the plant noise is somewhat different in character to the residual acoustic environment the rating level of 30 dB is low and will have little impact on residents using their patio during the evening

Table A.7 Example 7: Assessment

Results		Relevant clause	Commentary
Uncertainty of the assessment		10	There is uncertainty in the residual level subtracted from the measured source level, which could account for approximately 1 dB variation in the actual source level. The measurement graph provides confidence that the specific sound level measurements were taken at times when the residual sound level was relatively low and stable. Given the similarity of specific and background sound levels this is not a significant level of uncertainty. The background sound level might be slightly lower on some occasions but is likely to be higher for much of the time depending upon weather conditions

Figure A.6 Sound level on patio in rear garden with intermittent plant operation:  $L_{Aeq}$  for entire period 43 dB, residual  $L_{Aeq}$  when no vehicles passing 31 dB, background  $L_{A90}$  30 dB, ambient  $L_{Aeq}$  with plant on 39 dB



### A.6.3 Example 8: Intermittent sound source operating at night potentially affecting residents indoors with slight acoustically distinguishing characteristics

An item of mechanical equipment has been installed at a commercial premises where other plant is also operating elsewhere on site. This plant operates intermittently 24 hours a day, producing sound that is identifiable outside the nearest dwelling, particularly when the residual sound falls to lower levels when residents might be going to sleep. At these more sensitive times the sound contains a tone that is just perceptible inside the dwelling and appears to be slightly impulsive when operation starts. This means that a rating penalty of 2 dB for slight tonality, plus 3 dB for slight impulsivity, is applicable for this assessment.

Figure A.7 shows the sound level time history (measured every 100 ms) 4 m from the nearest dwelling for 31 min at night, during which time the source was identifiable on five occasions and the residual acoustic environment included typical variations due to sources such as passing and distant vehicles, an aircraft and some animal activity. The specific sound source is located close to the dwelling, so it was not practicable to take measurements closer to it. The identifiable periods when the source was operating and its constant character reduce the uncertainty in calculating the specific sound level from these measurements.

It is reasonable to assume that the operation of the plant throughout the measurement period is representative of normal operation and that the residual acoustic environment was representative of normal conditions at this time.

The  $L_{Aeq}$  for the entire measurement period was 45 dB, falling to a residual sound level of around 33 dB at times when no vehicles were passing and the specific source was not operating. The background sound level  $L_{A90}$  was measured as 32 dB for the entire measurement period (the specific source being on for such short periods as to be judged not to affect this measurement) and the ambient  $L_{Aeq}$  was measured as 41 dB whilst the specific sound source was operating.

The assessment and its results are detailed in Table A.8.

In addition to the rating/background sound level comparison shown in Table A.8, the primary concern is the potential for disturbance of residents who could be sleeping with open bedroom windows. The change in sound level when the source starts and stops during the night is noticeable indoors and, together with the slight tonality, can attract a listener's attention in the bedroom. It is appropriate to apply a rating penalty of 5 dB.

Other guidance, such as BS 8233, might also be applicable in this instance. Though Figure A.7 shows that the residual acoustic environment varies considerably with time, the overall sound level outside the dwelling when the source is operating is slightly greater than 40 dB. In addition to the slight difference between rating and background sound levels, the potential impact due to the absolute sound level also needs to be considered.

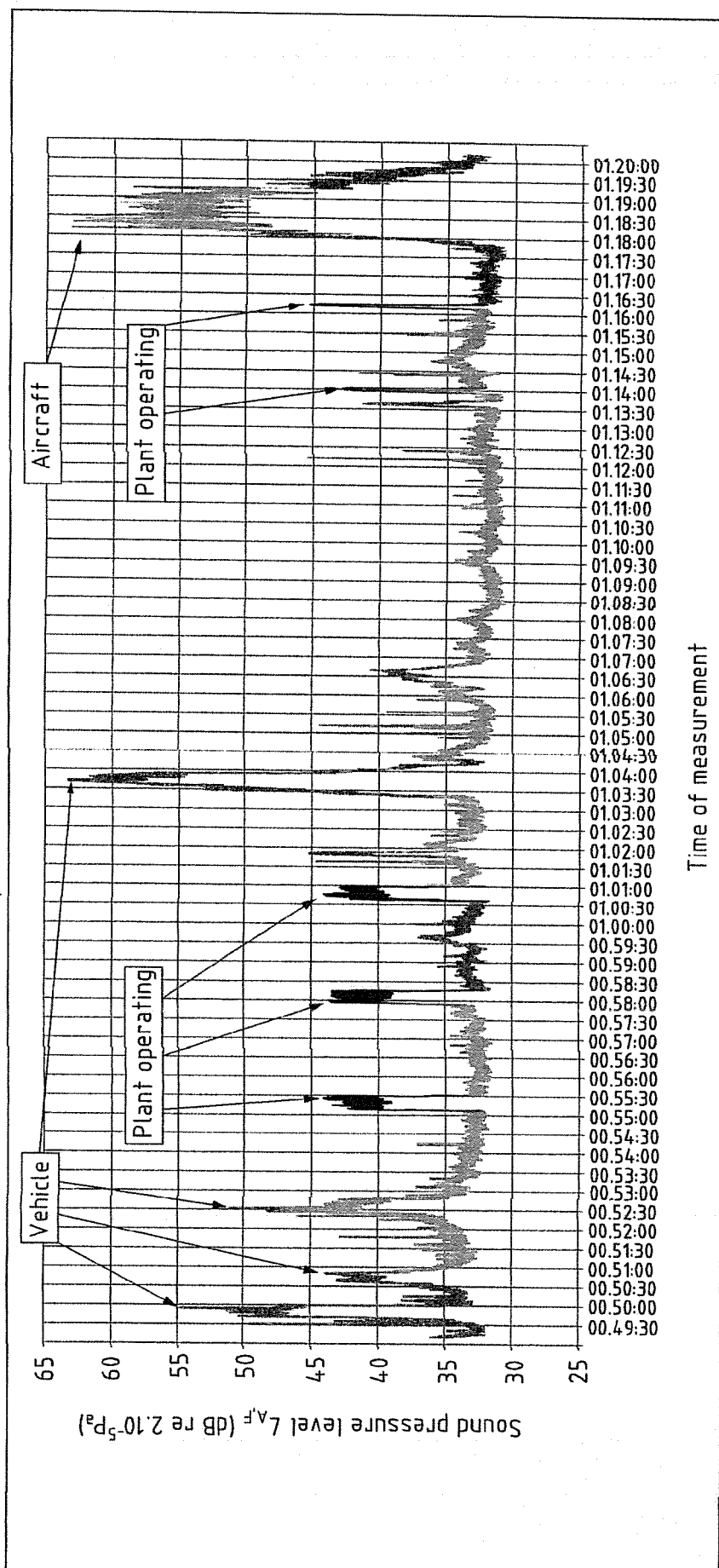
Table A.8 Example 8: Assessment

Results		Relevant clause	Commentary
Measured ambient sound level	$L_{Aeq} = 41$ dB	7.3.2	Specific sound source on
Residual sound level	$L_{Aeq} = 33$ dB	7.3.3	Estimated representative level around the times when source was operating and no vehicles passing, to determine the correction to be made to the measured ambient sound level
Background sound level	$L_{A90(31 \text{ min})} = 32$ dB	8.1.2	Measured throughout the measurement period and deemed to be representative of the background sound when the source was in operation. Though it should normally be excluded from background measurements, the specific source was judged to be on for a sufficiently short period as not to affect this measurement
Reference period of 15 min used for assessment on the basis that the source continues to operate as during the measurement period		7.2	
On time correction [to nearest 0.1 dB as intermediate step in equation (4) calculation]	$10\lg(75.1/900) = -10.8$ dB	7.3.15	Total on time of 75.1 s during 15 min period
Specific sound level	$L_{Aeq(15 \text{ min})} = [10\lg(10^{4.1} - 10^{3.3}) - 10.8]$ dB = 29 dB	7.3.15	Equation (4)
Acoustic feature correction	+5 dB	9.2	+2 dB correction for just perceptible tonality and +3 dB for slight impulsivity in bedroom.
Rating level	$(29 + 5)$ dB = 34 dB	9.2	
Background sound level	$L_{A90(31 \text{ min})} = 32$ dB	8.6	
Excess of rating over background sound level	$(34 - 32)$ dB = 2 dB	11	
The excess of 2 dB is lower than 5 dB which, depending upon the context, is likely to be an indication of an adverse impact. However, the absolute level of slightly over 40 dB outside the dwelling when the source is operating could adversely affect residents when going to sleep		11	The context is a new item of plant at a commercial premises with other plant elsewhere, in a residual acoustic environment that, whilst relatively steady, includes regular events of a significantly higher level than that from the plant. At these times the noise-sensitive location is indoors with open windows. However, consideration needs to be given to the cumulative sound level within the bedroom and the slight character of the specific sound

Table A.8 Example 8: Assessment

Results		Relevant clause	Commentary
Uncertainty of the assessment		10	There is uncertainty in the residual level subtracted from the measured source level, which might account for approximately 1 dB variation in the actual source level. The measurement graph provides confidence that the specific sound level measurements <i>were taken at times when the residual sound level was relatively low and stable</i> . Although relatively small, the uncertainty means that an adverse impact might be slightly more likely than indicated by the numerical assessment alone. The background sound level might be slightly lower on some occasions but is likely to be higher for much of the time depending upon weather conditions

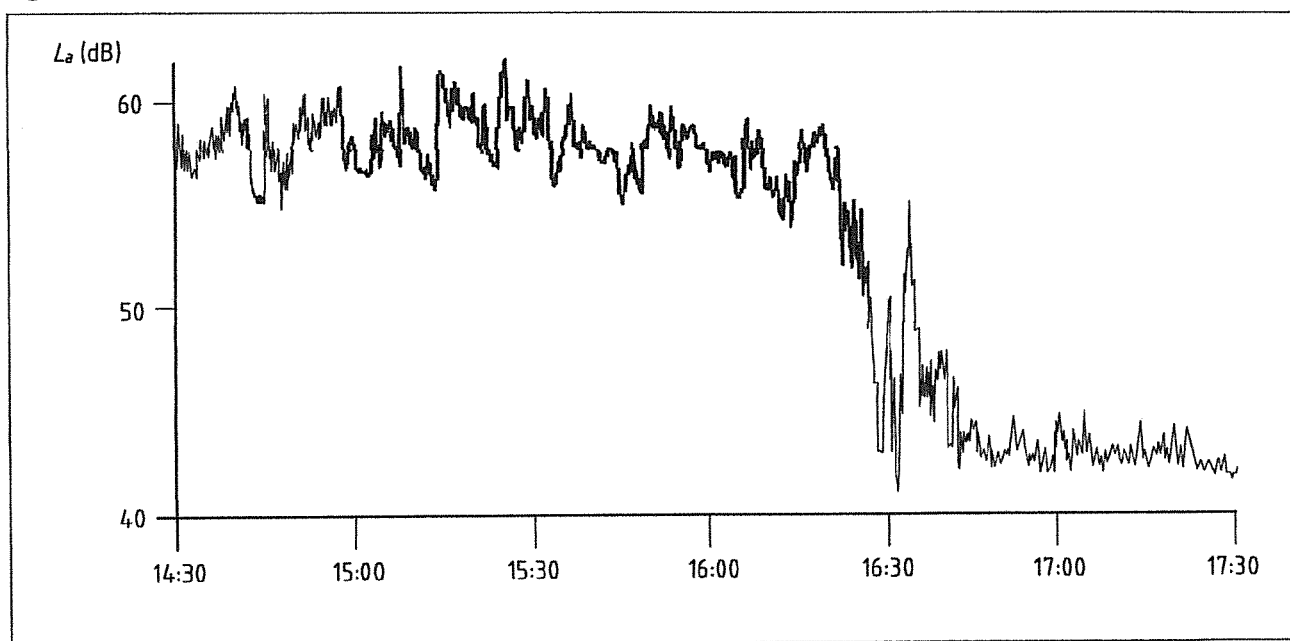
Figure A.7 Sound level outside bedroom window with intermittent plant operation:  $L_{Aeq}$  for entire period 45 dB, residual  $L_{Aeq}$  when no vehicles passing 33 dB, background  $L_{A90}$  32 dB, ambient  $L_{Aeq}$  with plant on 41 dB



### A.7 Example 9: Impulsive and intermittent sound acoustic feature corrections

A scrapyard is sited immediately adjacent to a residential area, producing constant bangs and crashes as well as including tonal features. Figure A.8 shows the sound level time history of a three-hour attended measurement, including 2 h of site noise prior to shut-down at 16:30, and 1 h following the shut-down. The measured ambient sound level prior to shut-down averaged 59 dB [ $L_{Aeq(110 \text{ min})}$ ], and the period immediately after shut-down found a residual sound level of 43 dB [ $L_{Aeq(40 \text{ min})}$ ], and a background sound level of 41 dB [ $L_{A90(40 \text{ min})}$ ].

Figure A.8 Sound level variation with time



A subjective assessment of the impulsivity was considered inadequate to establish an appropriate rating penalty, so the reference method was used. The first half-hour period was assessed, which found regular impulses, the most prominent of which had a level change of 26.5 dB and an onset rate of 212 dB/s<sup>-1</sup>. This event had a calculated prominence  $P$  of 8.6, resulting in an adjustment  $K_1$  of 8.7 dB. This was rounded to a rating penalty of 9 dB.

In addition to the impulsivity, there were also numerous tonal features, most notably the use of an angle grinder for 15 min within the 2 h of site activity. This source was prominently tonal, and met the one-third octave criteria for tonality. As this source was not constantly present, a rating penalty of 4 dB was considered appropriate.

The assessment and its results are detailed in Table A.9.

Table A.9 Example 9: Assessment

Results		Relevant clause	Commentary
Measured ambient sound level	$L_{Aeq(110 \text{ min})} = 59 \text{ dB}$	7.3.2	Specific sound on
Residual sound level	$L_{Aeq(40 \text{ min})} = 43 \text{ dB}$	7.3.3	Specific sound off to determine the correction to be made to the measured ambient sound level
Background sound level	$L_{A90(40 \text{ min})} = 41 \text{ dB}$	8.3	The background sound level was measured immediately after shut-down and was considered to be representative
Assessment made during the daytime, so the reference time interval is 1 h		7.2	
Specific sound level corrected	$L_{Aeq(60 \text{ min})} = 59 \text{ dB}$	7.3.4	
Acoustic feature correction	$(9 + 4) \text{ dB} = 13 \text{ dB}$	9.2	Additive penalties for both impulsivity and tonality
Rating level	$(59 + 13) \text{ dB} = 72 \text{ dB}$	9.2	
Background sound level	$L_{A90(40 \text{ min})} = 41 \text{ dB}$	8	
Excess of rating level over background sound level	$(72 - 41) \text{ dB} = 31 \text{ dB}$	11	
Assessment indicates a likelihood of a significant adverse impact		11	
Uncertainty of the assessment		10	The excess of the rating level over the background sound level is very large and in this instance the uncertainty of the measurement does not have any significance to the outcome of the assessment

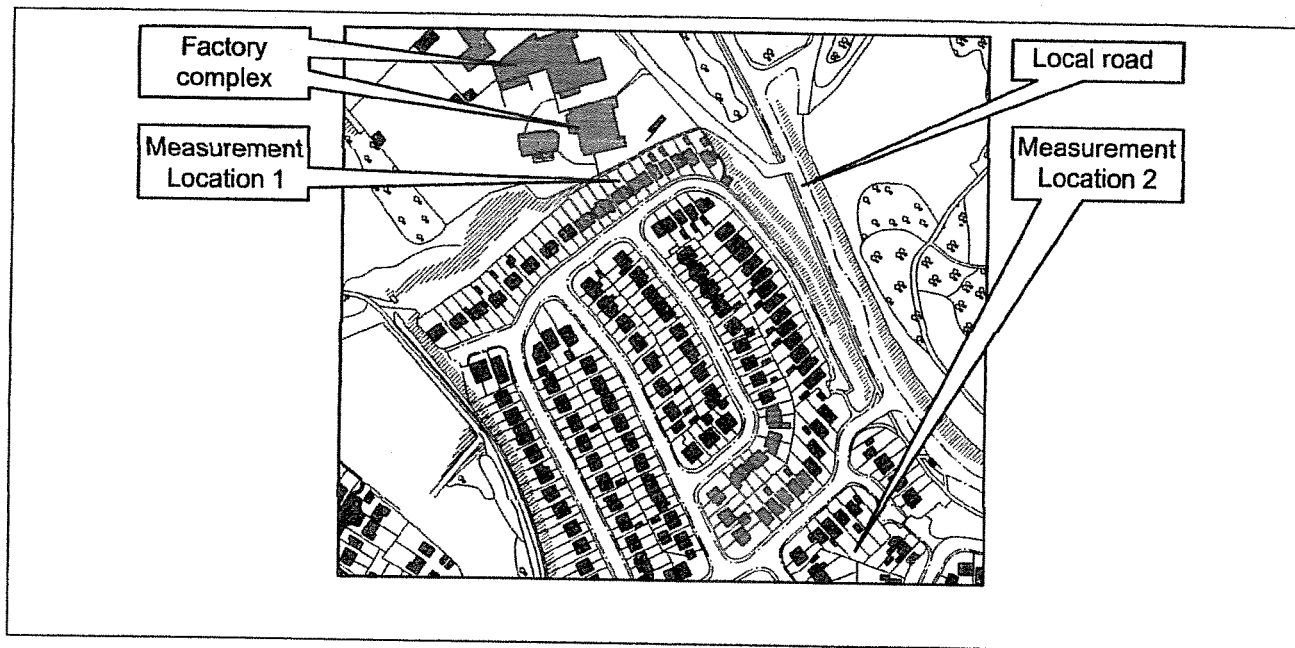
### A.8 Example 10: The use of a surrogate measurement location

The noise from a factory is the cause of complaint from the local population. The factory uses large furnaces that run continuously, and the factory cannot be shut down to enable the measurement of the residual and background sound levels. It was decided to use a surrogate measurement location to obtain these levels. The measurement locations are presented as Figure A.9.

The acoustic environment at Measurement Location 1, which is the assessment location, was heavily dominated by factory noise, with some traffic on a local road also audible. This location was used to assess the ambient sound level. *Measurement Location 2 was not affected by factory noise due to the greater propagation distance and the barrier effect of other housing.* This location was used to measure the residual and background sound levels. Both measurement locations were the same distance from the same road, had a similar amount of screening to the road, and the road gradient and surface roughness did not change. The acoustic environment was considered to be equivalent at both locations, other than for the presence of the factory. Both measurement locations were free-field.

Unattended measurement was performed concurrently at both measurement locations using synchronized sound level meters over a period of one week. This ensured that the weather conditions were identical at both monitoring locations. A logging weather station was deployed at Measurement Location 2 to allow for periods of adverse weather to be discounted.

Figure A.9 Measurement locations



The sound from the factory included a flame roar from the furnaces, but did not contain impulsive sounds or tonal features. A subjective assessment of the acoustic features considered an overall 3 dB rating penalty to be appropriate.

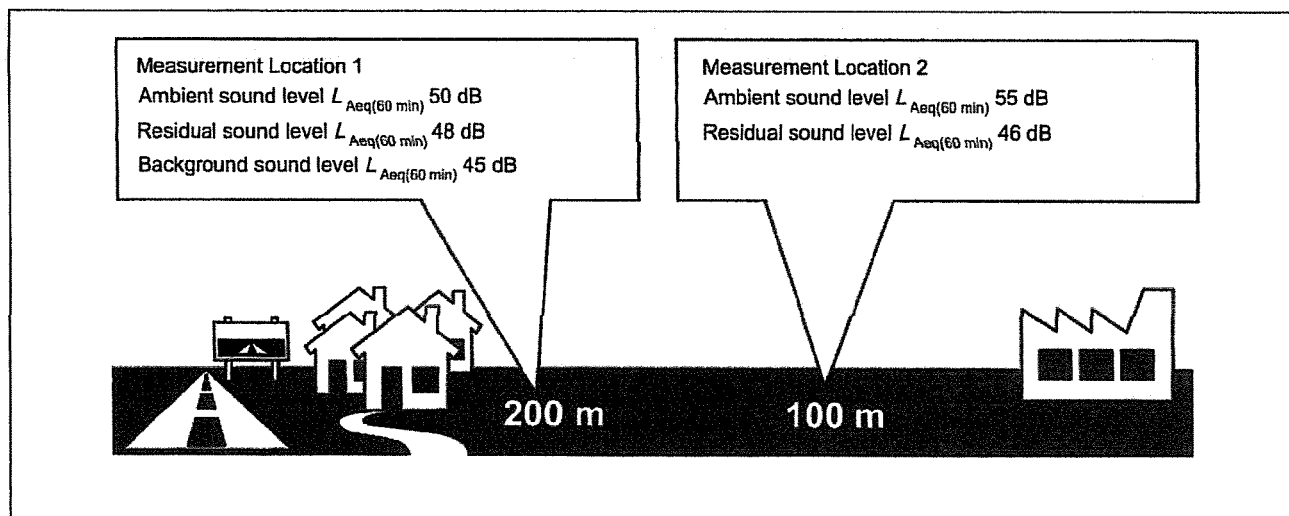
The uncertainty of the assessment was minimized by using concurrent measurement, by avoiding adverse measurement conditions, and by using a longer period of measurement to ensure that the measurement was representative.

#### A.9 Example 11: Propagation corrections

A small factory is 200 m from a residential area across open fields. On the other side of the residential area is a busy road. The acoustic environment at the receptor is equally dominated by sound from the road and sound from the factory. The sound from the factory is generally unlikely to attract attention, but includes a faint mid-frequency tone from an air handling unit.

Initial monitoring at the receptor (Measurement Location 1) found a consistent measured free-field sound level of  $L_{Aeq(60 \text{ min})}$  50 dB when the factory was operating, and a residual sound level of  $L_{Aeq(60 \text{ min})}$  48 dB and a background sound level of  $L_{Aeq(60 \text{ min})}$  45 dB during a voluntary shut-down. As the difference between the ambient and residual sound levels was less than 3 dB, a second period of measurement was undertaken at Measurement Location 2, in free-field conditions in open grassland, and on a direct line between the factory and the receptor. These locations are presented in Figure A.10.

Figure A.10 Measurement locations



At Measurement Location 2, the road noise was only faintly audible and the acoustic environment was dominated by the factory, with a prominent tonal feature produced by the air handling system. At this location the ambient sound level was  $L_{Aeq(60 \text{ min})}$  55 dB, and the residual sound level was found to be  $L_{Aeq(60 \text{ min})}$  46 dB. Subtracting the residual sound level from the ambient sound level resulted in a specific sound level of  $L_{Aeq(60 \text{ min})}$  54.4 dB at this location.

The specific sound level at Measurement Location 2 was then corrected to account for the greater distance to the receptor at Measurement Location 1. Spherical propagation was accounted for using formula A.1.

$$L_2 = L_1 - 20 \lg \left( \frac{R_2}{R_1} \right) \quad (\text{A.1})$$

where:

$$\begin{aligned} R_2 &= 200 \text{ m;} \\ R_1 &= 100 \text{ m; and} \\ L_1 &= 54.4 \text{ dB.} \end{aligned}$$

This resulted in a predicted level of 48.4 dB at Measurement Location 1 ( $L_2$  for the purposes of the formula). This level was further corrected by  $-0.6$  dB for the effects of air absorption over the additional 100 m distance, and  $-1.8$  dB for the effects of ground absorption (at a mean propagation height of 1 m, and using a ground absorption factor of 1). This resulted in an overall predicted specific sound level of 46 dB  $L_{Aeq(60 \text{ min})}$  at the receptor. (See calculation method in ISO 9613-2.)

The assessment and results are detailed in Table A.10.

Table A.10 Example 11: Assessment

Results		Relevant clause	Commentary
Measured ambient sound level	$L_{Aeq(60 \text{ min})} = 55 \text{ dB}$	7.3.6	Specific sound on, measured at Measurement Location 2
Residual sound level	$L_{Aeq(60 \text{ min})} = 46 \text{ dB}$	7.3.6	Specific sound off, measured at Measurement Location 2
Background sound level	$L_{A90(60 \text{ min})} = 45 \text{ dB}$	8.3	The background sound was measured at Measurement Location 1
Assessment made during the daytime, so the reference time interval is 1 h		7.2	
Specific sound level at Measurement Location 2	$L_{Aeq(60 \text{ min})} = 54.4 \text{ dB}$	7.3.4	
Specific sound level calculated at Measurement Location 1	$L_{Aeq(60 \text{ min})} = 46 \text{ dB}$	7.3.6	Accounting for spherical propagation, air absorption and ground absorption
Acoustic feature correction	+2 dB	9.2	A mild tone was subjectively audible at the receptor
Rating level	$(46 + 2) \text{ dB} = 48 \text{ dB}$	9.2	
Background sound level	$L_{A90(60 \text{ min})} = 45 \text{ dB}$	8	
Excess of rating over background sound level	$(48 - 45) \text{ dB} = 3 \text{ dB}$	11	
After taking context into account, assessment indicates there is unlikely to be an adverse impact		11	The dominant road noise at the receptor reduces the likelihood of an adverse impact from the factory

The uncertainty was minimized by measuring in still wind conditions and over a representative monitoring period.

The uncertainty associated with measuring at an intermediate location (Measurement Location 2) is lower than the uncertainty associated with measuring sound power levels at the factory, which might not accurately account for directionality or planar sources.

The remaining uncertainty associated with the propagation calculations means that an adverse impact could still be present when the wind is blowing from the source to the receptor.

## Annex B (informative)

# Consideration of uncertainty and good practice for reducing uncertainty

## B.1 General

Because this standard is not intended to provide a single numerical value against which the significance of a sound source can be determined, consideration needs to be given to the uncertainties involved in sound level measurements and subsequent assessment of data, together with the potential effects of such uncertainties on the outcome of the assessment. It is not appropriate to numerically estimate the uncertainty and simply make an allowance for this value in any assessment. Instead, an appropriate consideration of uncertainty based on professional judgement can enable an informed decision to be made regarding the likely significance of the impact of sound, whilst considering the range of likely levels and context of the assessment.

There is inevitably uncertainty in measured sound levels, leading to uncertainty in calculated numerical results. This is particularly relevant where the ambient sound level with the specific source operating is similar to the residual sound level and also where the residual sound level varies notably during measurement periods. Some components of the measurement uncertainty, such as those due to instrumentation, can reasonably be quantified, although this is not necessarily the case for other components, especially regarding meteorological conditions. Any attempt at the complete quantification of uncertainty becomes more complex for calculated levels which are a logarithmic subtraction of one measured level from another.

Guidance produced by the University of Salford [3] provides information regarding the minimization and quantification of uncertainty in sound levels being measured at the time of measurement. Further uncertainty is recognized by temporal variation in the residual sound level, possibly during the measurement process and particularly under different meteorological conditions. There is also likely to be uncertainty and/or variability in the sound level produced by the source being assessed, or in available data if the source is yet to be installed/operated.

As the residual or specific sound level changes its character can also change. This should also be considered as part of the assessment. For example, the residual sound level might be relatively steady when the wind direction is from a motorway, but could vary to a much greater extent and fall to somewhat lower levels when the wind is in the opposite direction.

Conversely, there might be relatively little variation in a residual sound level that is strongly influenced by nearby plant that is unrelated to the source under investigation. Certain plant and machinery can otherwise produce higher sound levels at times of higher load which might be seasonal dependant or related to other demands. These are relevant factors to consider.

## **B.2 Good practice for reducing uncertainty**

### **COMMENTARY ON B.2**

*This subclause draws on Craven and Kerry 2007 [4].*

### **B.2.1 General**

All measurement results have an associated element of doubt about their true value. In general terms, this is referred to as measurement uncertainty, and is attributed in part to unknown factors influencing the measurement, or an inability to determine the influence of a known quantity with a better accuracy. In the case of environmental sound measurements, it is usually factors influencing the source and propagation path rather than instrumentation shortfalls that cause most concern due to measurement uncertainty. A knowledge of the source and magnitude of these factors assists with interpretation of the results, indicating differences which might not be significant, and identifying areas where greater attention to detail can improve assessments.

### **B.2.2 Good practice guidelines: sources of sound**

#### **B.2.2.1 Spectral content (broadband and tonal sound)**

- Establish whether standing waves/interference patterns are present by considering the nature of the source and the influence of any nearby sound reflecting surfaces. This can be carried out subjectively by listening in several places around the measurement location, or by measuring any change in sound pressure levels with a sound level meter at different locations in the immediate locality when traversing the measurement location.

- If standing waves are present and cannot be avoided, take a spatial average, either by measuring at several fixed locations or by slowly moving the microphone around the measurement location, whilst continually measuring sound level.
- Gauge whether uncertainty could be significant when measuring sound at low and high frequency regions, e.g. below approximately 125 Hz or above 4 kHz respectively.

#### **B.2.2.2 Point, line and area sources/the near and far fields**

- Investigate all sound sources to understand their propagation characteristics and how these *might influence the choice of the measurement location(s)*.
- At large distances from a source in a homogeneous, non-dissipative atmosphere in the absence of a reflective plane, the sound pressure varies inversely with the distance from the source. If the dimension of the source is large relative to the wavelength of sound it radiates, or if the distance from the centre of the source is small relative to the overall source dimensions, there is a region where pressure maxima and minima might occur and consequently sound pressure does not vary inversely with distance.

#### **B.2.2.3 Source configuration and operation**

- Identify and record source operating parameters that could have a significant effect on measurement results.
- If necessary, measure under different operational conditions, the type and number of which will depend upon the nature of the task/reason for measurement. For example, it might be appropriate to measure under the following conditions:
  - sound source under normal load;
  - sound source under full load; and
  - sound source under no load (idling).

#### **B.2.2.4 State of repair and maintenance**

- Determine and record the state of repair of the sound source(s) and features that might afford control of sound.
- Where possible, carry out additional checks to determine the likely variation in level before and after maintenance.

#### **B.2.2.5 Source height**

- Anticipate greater uncertainty when measuring sound from elevated sources. Repeat measurements under different propagation conditions, if necessary.

#### **B.2.2.6 Movement of the sound source**

- Determine and log the movement and number of source(s) during the measurement. If the movement follows a routine, measure representative sound levels for one or more complete cycles.

#### **B.2.2.7 Weather**

- Determine the likely effect of changes in the prevailing weather conditions on the sound source having regard to 6.3 and 6.4.
- Ensure that the sound source is operating under conditions relevant to the purpose of the survey.
- Record and report the prevailing conditions at the time of measurement.

### B.2.3 Good practice guidelines: transmission path

#### B.2.3.1 General

- Use weather forecasts when planning measurement sessions.
- Record meteorological conditions at appropriate times across the duration of the measurement and report.
- Unless circumstances appropriate to the assessment dictate otherwise, it is preferable to measure during meteorological conditions favourable to propagation. These conditions are for downwind propagation, namely when the wind direction is within an angle of  $\pm 45^\circ$  of the direction connecting the centre of the dominant source and the centre of the specified receiver region and with the wind blowing from source to receiver [ISO 9613-2, ANSI/ASA S12.18].
- Avoid measurements when atmospheric conditions give rise to temperature inversions or complex lapse/inversion situations which can give rise to anomalous sound propagation unless circumstances appropriate to the assessment dictate otherwise

#### B.2.3.2 Ground effects

- Avoid sound measurement during precipitation. (When carrying out long-term measurements it might not be possible or even desirable to avoid such periods. In such cases an accurate log of the weather assists with the analysis.) Measurement when the ground is wet or snow covered is highly discouraged, but if it is necessary to obtain data under these situations, carefully describe the conditions.
- In all cases, fully describe the ground surface between the sound source and measurement location, noting features which could influence the acoustic impedance. For grazing angles less than approximately  $20^\circ$ , the following general descriptions may be used as a guide for characterizing the ground type (in the absence of measured acoustic impedance data):
  - *hard ground*: open water, asphalt, concrete pavements or other ground surfaces having low porosity that are highly reflective; and
  - *soft ground*: areas covered with grass, vegetation and other porous types of ground suitable for the growth of vegetation, e.g. farming land – new fallen snow is more absorptive at low frequency than grass-covered ground, but avoid measurements above snow-covered ground unless operation of the source is intimately associated with this condition.

At grazing angles greater than around  $20^\circ$ , which can occur when the sound source is close to the receiver and/or if the sound source is elevated, soft ground can become a good reflector and might need to be considered as hard ground.

- Consider taking a spatial average when measuring tonal sound close to an acoustically hard surface.
- Estimate source and receiver heights/distance and report with measurement results.

#### B.2.3.3 Barriers

- Have due regard for the effect of seasonal changes on foliage.

**B.2.4 Good practice guidelines: receiver****B.2.4.1 General**

- Identify criteria for selection of representative background sound measurement location, as justified by the purpose of the measurement.
- Report exact microphone location in the measurement record. To enable correct interpretation and repetition of the measurement, include in the record:
  - justification of selection of measurement location;
  - diagrams showing distances to significant reflecting surfaces (including height above ground level); and
  - orientation of microphone.
- Record the microphone height and reason for choosing that height.
- Note distance from facade and features of facade.
- Specify any assumed correction applied before stating final result.
- If possible, do not measure near any reflecting object, other than the ground plane.
- Note location, type and characteristics of any unavoidable objects.
- Where possible, orientate the microphone relative to the dominant sound source according to the instrument manufacturer's advice.

**B.2.4.2 Use of equipment**

- Check standard in use for appropriate microphone response and check that the microphone in use conforms to the applicable standard.
- Be aware of the type of microphone in use or the effect of any mechanical or electrical devices that can modify the effective response.
- Ensure that the microphone and sound measuring system responses are compatible.
- Ensure that the whole measurement chain, including the field calibrator (see 5.1), meets the required degree of precision.
- Report the type of sound measuring system used with the measurement results together with details of all other instrumentation used.
- Conduct all measurements using sound level meters and field calibrators whose conformity and calibration have been checked periodically against national standards (guidance can be obtained from UKAS publication, LAB 23 [5], or the relevant measurement standard in use).
- Check calibrators preferably at least once per year and sound measuring systems every two years, or at more frequent intervals depending upon usage and conditions (harsh environments, etc.). Re-calibrate instrumentation if damaged and after repair.
- Store sound level meters, particularly the microphone and field calibrators, under environmental conditions in accordance with manufacturers' instructions.
- Investigate anomalous measurement results to ensure early detection of faults.

- Calibrate sound measuring systems:
  - before and after measurements (and during, if long-term or there are changes in external environment, e.g. change of power supply, changes in atmospheric pressure);
  - on site, i.e. under the same environmental conditions as the measurement taken, in the same configuration as that used for the measurement (e.g. with an extension cable in place);
  - whilst isolated from vibrations, i.e. resting on a resilient (rubber) mat and in a suitable low level sound environment; and
  - to compensate for local variation in environmental conditions and confirm correct operation of the sound level meter.
- Record and report the results of calibration with the measurement results.

#### **B.2.4.3 Long duration surveys**

- When measuring using long-term installations, calibrate the measurement regularly. Logging results provides data from which calibration intervals can be properly assessed.
- Choose the most appropriate microphone for each situation.
- Place the microphone at the correct orientation to the major sound sources.

#### **B.2.4.4 Short duration surveys**

- Avoid the use of long microphone extension cables whenever possible.
- Carry out field calibrations with all cables in place.
- Regularly calibrate the whole measurement system when using long cables.
- Use balanced cables.

#### **B.2.4.5 Sound measuring system settings**

- Take measurements using the time and frequency weighting specified by the relevant standard, guideline or procedure.
- Where no weightings are specified, it is normally preferable to measure using the fast time constant and the A-weighting frequency network, unless significant low- or-high frequency energy is present.
- Report all results in the context of the time and frequency weighting used during measurement.

#### **B.2.4.6 Data retrieval**

- Use digital transfer methods wherever possible, but double check data when transferring manually.

#### **B.2.4.7 General practice**

- Select measurement locations to minimize the influence on the measurement result of all factors other than the subject of the measurement.
- Report and justify the criteria used to select each measurement location.
- To enable repeatable, and therefore comparable, measurements, document the microphone locations (report GPS coordinates if available), and include a description of all relevant factors such as distances to all significant reflecting surfaces and other features.

- View measurement results in the context of the location where they were taken. Do not automatically regard measurements taken at different locations as directly comparable.
- When assessing community noise complaints, it is useful to measure at a number of locations around the noise source to build up an understanding of the acoustic environment.
- Where it is necessary to measure at an alternative location, consider the distance to each major background sound source and the topography between the measurement position and each major background sound source.
- There is no recognized method for the choice of alternative measurement locations as circumstances are often unique to the situation. The best approach is one based upon reasoned decision making.
- If the time and resources are available, make repeated measurements at a number of measurement locations in order to determine the most representative sound level.
- Justify the choice of background measurement location in the survey report.
- Use this check list or a custom version before setting out the measurement plan or commencing measurements.

*NOTE Further information on good practice to reduce uncertainty in environmental sound measurements can be found in the ANC Green Book [6].*

**Annex C  
(normative)**

## **Objective method for assessing the audibility of tones in sound: One-third octave method**

The test for the presence of a prominent, discrete-frequency spectral component (tone) typically compares the  $L_{\text{Zeq,T}}$  sound pressure level averaged over the time when the tone is present in a one-third-octave band with the time-average linear sound pressure levels in the adjacent one-third-octave bands. For a prominent, discrete tone to be identified as present, the time-averaged sound pressure level in the one-third-octave band of interest is required to exceed the time-averaged sound pressure levels of both adjacent one-third-octave bands by some constant level difference.

The level differences between adjacent one-third-octave bands that identify a tone are:

- 15 dB in the low-frequency one-third-octave bands (25 Hz to 125 Hz);
- 8 dB in the middle-frequency one-third-octave bands (160 Hz to 400 Hz); and
- 5 dB in the high-frequency one-third-octave bands (500 Hz to 10 000 Hz).

**Annex D  
(normative)**

## **Objective method for assessing the audibility of tones in sound: Reference method**

### **D.1 General**

If the presence of audible tones is in dispute, the measurement procedure in this annex can be used to verify their presence. Based on the prominence of the tones this procedure also provides recommended level adjustments. The aim of the reference method is to assess the prominence of tones in the same way as listeners do on average. The method is based on the psychoacoustic concept of critical bands, which are defined so that sound outside a critical band does not contribute significantly to the audibility of tones inside that critical band.

The method includes procedures for steady and varying tones, narrow-band sound and low-frequency tones, and the result is a graduated 0 dB to 6 dB adjustment. It is known as the Joint Nordic Method 2 and is to be found in ISO 1996-2.

## D.2 Objective method

### D.2.1 General

The method has three steps:

- narrow-band frequency analysis (preferably Fast Fourier Transform analysis);
- determination of the average sound pressure level of the tone(s) and of the masking sound within the critical band around the tone(s); and
- calculation of the tonal audibility,  $\Delta L_{ta}$ , and the adjustment,  $K_f$ .

### D.2.2 Frequency analysis

A narrow-band A-weighted spectrum is measured by linear averaging for at least 1 min ("long-term average").

The effective analysis bandwidth needs to be less than 5% of the bandwidth of the critical bands with tonal components. The widths of the critical bands are shown in Table D.1 (see D.2.4).

The measuring set-up, including the frequency analyser, should be calibrated in dB re 20  $\mu$ Pa, and the Hanning weighting used as the window function.

*NOTE 1 With the recommended Hanning time window the effective analysis bandwidth (or the effective sound bandwidth) is 1.5 times the frequency resolution. The frequency resolution is the distance between the lines in the spectrum.*

*NOTE 2 With an effective analysis bandwidth of 5% of a critical band, just audible tones normally appear as local maxima of at least 8 dB above the surrounding masking sound in the averaged spectra.*

*NOTE 3 In rare cases of a complex tone with many closely spaced tone components, a finer resolution might be needed to determine the level of the masking sound correctly.*

*NOTE 4 If the frequency of audible tones in the spectrum varies by more than 10% of the frequency range of the critical band within the averaging time, it might be necessary to subdivide the long-term average into a number of shorter-term averages.*

### D.2.3 Determination of sound pressure levels: Sound pressure level of tones, $L_{pt}$

The tones may be determined from the narrow-band frequency spectrum by visual inspection. The sound pressure levels of the tones are determined from the spectrum.

All local maxima with a 3 dB bandwidth smaller than 10% of the bandwidth of the actual critical band are regarded as a tone.

The levels,  $L_{pt,i}$ , of all tones,  $i$ , in the same critical band are added on an energy basis to give the total tone level for that band,  $L_{pt}$ :

$$L_{pt} = 10 \lg \sum 10^{L_{pt,i}/10} \quad (D.1)$$

*NOTE 1 If a "tone" is a narrow band of sound or if the frequency of a tone varies or if the tone frequency does not coincide with the frequency of a spectral line, the tone appears as several lines in the averaged spectrum. In such cases the tone level,  $L_{pt,i}$ , is the energy sum of all lines, with levels within 6 dB of the local maximum level and corrected for the influence of the applied window function (for Hanning weighting this is the energy sum of the lines minus 1.8 dB).*

**NOTE 2** In cases where tones appear at low frequencies, it is advisable to investigate if the total tone level is above the hearing threshold (BS EN ISO 389-7). If the total tone level in a critical band is below the hearing threshold, this critical band is to be disregarded in the assessment of tonal audibility.

#### D.2.4 Bandwidth and centre frequency of critical bands

The widths of the critical bands are shown in Table D.1.

The critical band is positioned with its centre frequency,  $f_c$ , at the tone frequency. When a number of tones are present in the range of a critical band, the critical band is positioned symmetrically around the most significant tones in such a way that the difference between the total tone level,  $L_{pt}$ , and the level of the masking sound,  $L_{pn}$ , is maximized.

Table D.1 Widths of critical bands

Centre frequency, $f_c$	50 Hz to 500 Hz	Above 500 Hz
Bandwidth	100 Hz	20% of $f_c$

**NOTE 1** For the definition of the centre frequency of a critical band, only tones with levels 10 dB or less below the level of the tone with the maximum level ought to be regarded as significant.

**NOTE 2** The centre frequency of the critical bands,  $f_c$ , might vary continuously over the frequency range of interest. The lowest critical band is 0 Hz to 100 Hz.

#### D.2.5 Sound pressure level of the masking sound within a critical band, $L_{pn}$

The average sound level in a critical band,  $L_{pn,avg}$ , may be determined by visually averaging the levels of the "noise lines" in the narrow-band frequency spectrum in a range of approximately  $\pm 0.5$  to  $\pm 1$  critical band from the centre frequency,  $f_c$ . The "noise lines" are found by disregarding all maxima in the spectrum resulting from tones and their possible side bands in that range.

The total sound pressure level of the masking sound,  $L_{pn}$ , is calculated from the average sound level within the critical band,  $L_{pn,avg}$ , as follows:

$$L_{pn} = L_{pn,avg} + 10 \lg \frac{B_{crit}}{B_{eff}} \quad (D.2)$$

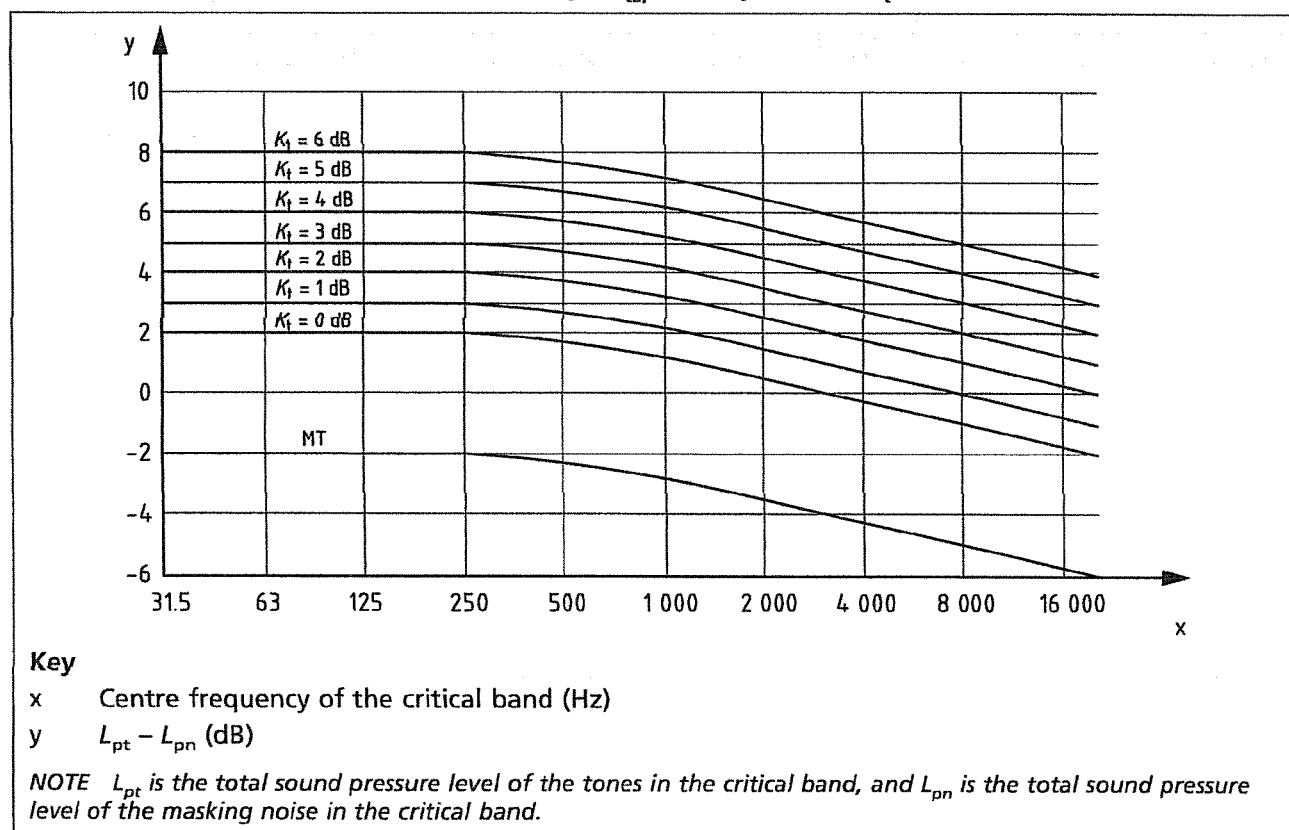
where:

$B_{crit}$  is the critical bandwidth, Hz; and

$B_{eff}$  is the effective analysis bandwidth, Hz.

#### D.2.6 Calculation of the tonal audibility, $\Delta L_{ta}$ , and the adjustment, $K_t$

The tonal audibility,  $\Delta L_{ta}$ , is expressed in dB above the masking threshold, MT. The adjustment,  $K_t$ , is the value to be added to the value of  $L_{Aeq}$  for a time interval to give the tone-corrected rating level for that interval. From the difference between tone level and sound level in a critical band,  $L_{pt} - L_{pn}$ , both  $\Delta L_{ta}$  and  $K_t$  may be determined by means of the graph in Figure D.1. A given centre frequency (Hz),  $f_c$ , of the critical band and a given level difference,  $L_{pt} - L_{pn}$ , determine a point on the graph.  $\Delta L_{ta}$  is determined as the difference between  $L_{pt} - L_{pn}$  and the masking threshold shown in the figure.  $K_t$  is read by interpolating between the lines marked with different values of  $K_t$  in the figure. Alternatively,  $\Delta L_{ta}$  can be calculated by means of the equation (D.3), and  $K_t$  can be calculated by means of equation (D.3).

Figure D.1 Determination of tonal audibility,  $\Delta L_{ta}$ , and adjustment,  $K_t$ 

The adjustment,  $K_t$ , in dB is determined by equation (D.3):

$$\Delta L_{ta} = (L_{pt} - L_{pn}) + 2 + \lg \left[ 1 + \left( \frac{f_c}{502} \right)^{2.5} \right] \quad (D.3)$$

where:

$L_{pt}$  is the total sound pressure level of the tones in the critical band;

$L_{pn}$  is the total sound pressure level of the masking sound in the critical band; and

$f_c$  is the centre frequency in Hz of the critical band.

The adjustment is as follows:

$10 \text{ dB} < \Delta L_{ta}$ :  $K_t = 6 \text{ dB}$

$4 \text{ dB} \leq \Delta L_{ta} \leq 10 \text{ dB}$ :  $K_t = \Delta L_{ta} - 4 \text{ dB}$

$\Delta L_{ta} < 4 \text{ dB}$ :  $K_t = 0 \text{ dB}$

**NOTE**  $K_t$  is not restricted to integer values.

When several tones (or groups of tones) occur simultaneously in different critical bands, separate assessments are made for each of these bands. The critical band containing the most dominant tone(s) (i.e. giving the highest value of  $\Delta L_{ta}$ ) is decisive for the value of  $\Delta L_{ta}$  and the adjustment,  $K_t$ .

### D.2.7 Documentation

Documentation for the analysis should contain the following information.

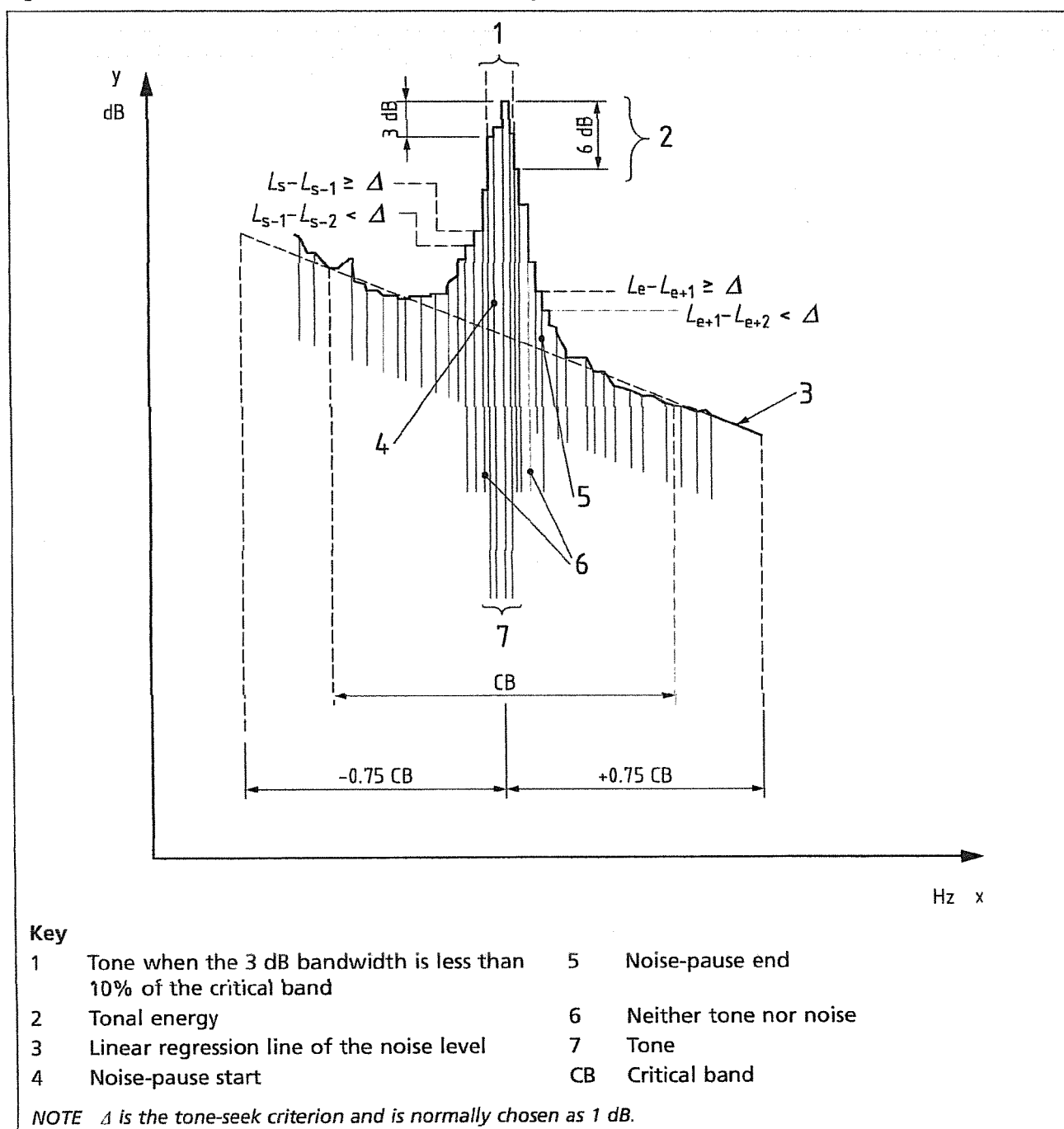
- a) For the analysis:
  - 1) number of averaged spectra, measurement time period and effective analysis bandwidth;
  - 2) time window (e.g. Hanning), time weighting (Lin) and frequency weighting (A); and
  - 3) one typical spectrum (at least) with an indication of the position of the critical band and the average sound level in that band.
- b) For the calculations in the decisive critical band:
  - 1) a statement of whether the results were obtained by visual inspection or by automatic calculation;
  - 2) the frequency limits of the critical band and the range for the visual averaging or linear regression;
  - 3) the frequencies and levels of the tones and the total tone level ( $L_{pti}$  and  $L_{pt}$  in dB re 20  $\mu$ Pa);
  - 4) the masking sound level in the critical band ( $L_{pn}$  in dB re 20  $\mu$ Pa);
  - 5) the audibility of the tones ( $\Delta L_{ta}$  in dB above the masking threshold); and
  - 6) the size of the adjustment ( $K_t$  in dB).

Tones in other critical bands that might cause an adjustment should be mentioned by their frequencies.

### D.2.8 Detailed definitions of tone and masking sound levels

With a view to computer implementations of the method, more comprehensive definitions of tones and sound are given in Figure D.2.

**Figure D.2 Definitions of tones, noise, and noise pause (neither tone nor noise)**



**NOTE:** The technician performing the analysis has the final responsibility for the correctness of the results. It is therefore important that software implementations make it possible to visually inspect the results. At least a spectrum is needed with the lines defined as tones indicated together with the corresponding critical bands and regression lines. Furthermore, separate colouring of spectrum lines characterized as noise, noise pause and tones would be helpful.

### D.2.9 Noise pauses

Noise pauses are local maxima with a probability of a tone. The noise pauses are defined and found according to the following principle.

The start of a noise pause is found on the positive slope of a local maximum as the line,  $s$ , where the following conditions are met:

$$L_s - L_{s-1} \geq \Delta \text{ dB and } L_{s-1} - L_{s-2} < \Delta \text{ dB}$$

where:

$L_s$  is the level of line number  $s$ ;

$L_{s-1}$  is the level of line number  $s - 1$ , etc.; and

$\Delta$  is the tone-seeking criterion (normally chosen as 1 dB).

*NOTE For normal and smooth spectra a tone-seeking criterion of  $\Delta = 1$  dB works without problems. For irregular spectra (e.g. spectra with short averaging time), values of up to 3 dB or 4 dB might give better results. This parameter ought to be user-defined in software implementations of the method.*

The end of a noise pause is defined on the negative slope of a local maximum as the line,  $e$ , where the following conditions are met:

$$L_e - L_{e+1} \geq \Delta \text{ dB and } L_{e+1} - L_{e+2} < \Delta \text{ dB}$$

A preliminary noise pause interval is defined as all the lines  $s$  to  $e$ , including both.

The search for the next noise pause starts at line number  $e + 1$ .

A noise pause can only contain one noise pause start and one noise pause end. A procedure similar to this is performed by investigating the lines in the spectrum from high towards lower frequencies.

Final noise pause intervals: lines defined as preliminary noise pause in both the forward and backward procedure are included in the final noise pause intervals.

#### D.2.10 Tones

The tones are to be found within noise pauses. A tone can exist when the level of any line in the noise pause is 6 dB or more above the levels of line numbers  $s - 1$  and  $e + 1$ .

*Tones include single tones, as well as narrow bands of sound. The bandwidth of the detected peak in the spectrum is defined as the 3 dB bandwidth relative to the maximum line in the noise pause.*

When the 3 dB bandwidth is smaller than 10% of the critical bandwidth, all lines with levels within 6 dB of the maximum level are classified as tones. The tone frequency is defined as the frequency of the line with the maximum level in the noise pause.

*NOTE 1 When this 3 dB bandwidth is larger than 10% of the critical bandwidth, the lines are regarded as neither tones nor narrow-band sound. No adjustment is given for this phenomenon, unless it is caused by a tone with varying frequency, then a shorter averaging time is necessary.*

*NOTE 2 Tones with varying frequency might appear as broad maxima in the long-term average spectrum. The width of these maxima depends on the range of the frequency variation of the tone and the averaging time. When the frequency of a tone varies more than 10% of the width of the critical band during the averaging period, the 10% bandwidth criterion is overruled, and all lines within the broad maximum of the tone are classified as tones or a shorter averaging time is used.*

#### D.2.11 Masking sound

All lines not characterized as noise pauses are defined as masking sound, designated "noise lines".

The masking sound level within a critical band is defined by making a first order linear regression through all lines defined as noise. The range of the regression should usually be chosen as  $\pm 0.75$  critical bandwidth around the centre frequency of the critical band.

*NOTE For irregular spectra or for spectra with broad tonal maxima, the range of the linear regression may be extended to  $\pm 1$  or 2 critical bands. This might bring the regression line in better correlation with the general shape of the noise floor. It is recommended for the range of the regression analysis to be user-defined in software implementation.*

To each spectral line within the actual critical band a sound level,  $L_n$ , is assigned as predicted by the regression line. The total masking sound level,  $L_{pn}$  (in dB), in the critical band is determined as the sum on an energy basis of the assigned levels,  $L_n$ , for all lines in the critical band with correction for the applied window function.

$$L_{pn} = 10 \lg \sum 10^{L_n/10} + 10 \lg \Delta f / B_{\text{eff}} \quad (\text{D.4})$$

where:

$\Delta f$  is the frequency resolution, Hz; and  
 $B_{\text{eff}}$  is the effective analysis bandwidth, Hz.

### D.3 Examples

#### D.3.1 General

The examples in this subclause have been analysed with an automatic procedure as follows:

- number of spectra: 350; and
- measurement time: 2 min.

#### D.3.2 Example 1

Critical band: 3.6 kHz – 4.4 kHz;

Tones: 4 kHz, 46.7 dB

Tonal level:  $L_{pt} = 46.7$  dB

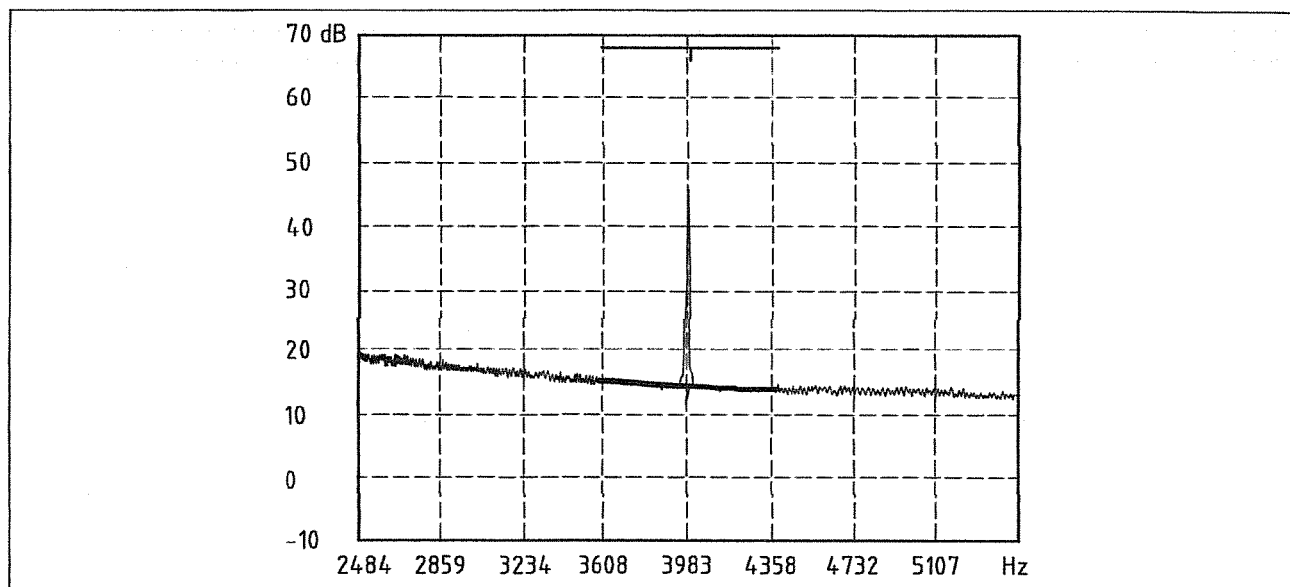
3 dB bandwidth of tone: 0.5% of 800 Hz

$L_{pn}$  in critical band: 37.3 dB

Tonal audibility:  $\Delta L_{ta} = 13.7$  dB re MT

Adjustment:  $K_t = 6$  dB

Figure D.3 Example 1

**D.3.3 Example 2**

Critical band: 380 Hz – 480 Hz

Tones: 395 Hz, 53.1 dB and 468 Hz, 47.0 dB

Tonal level:  $L_{pt} = 54.1$  dB

3 dB bandwidth of tone: 3.1% of 100 Hz

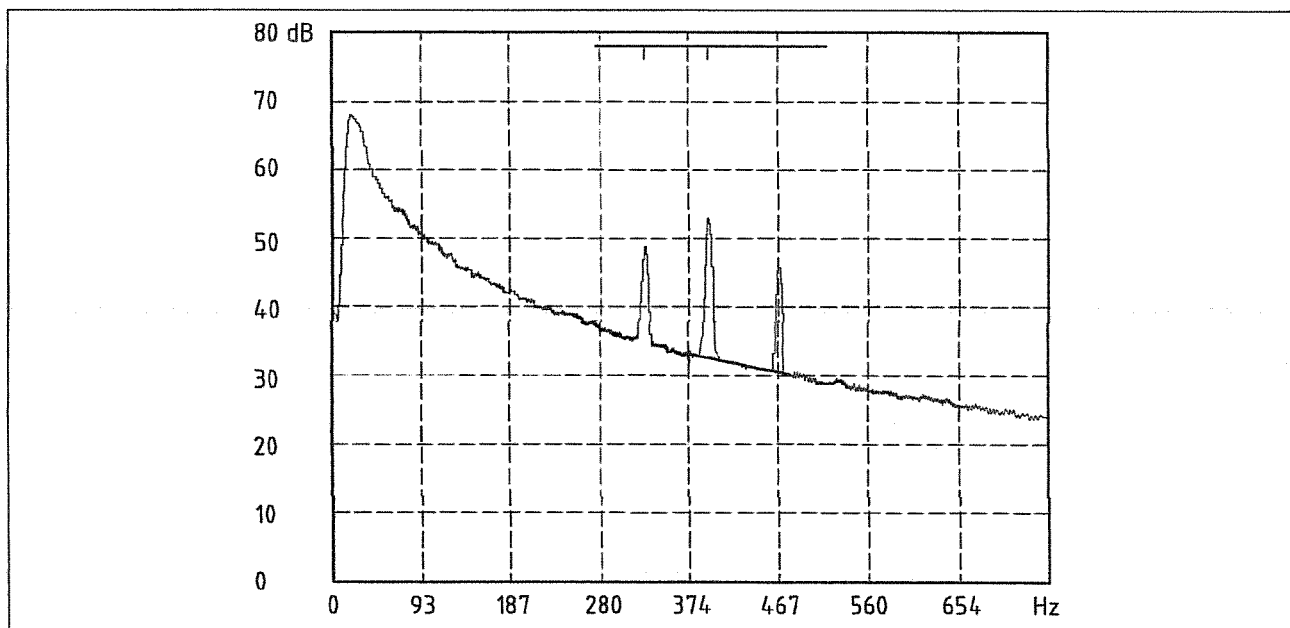
$L_{pn}$  in critical band: 45.2 dB

Tonal audibility:  $\Delta L_{ta} = 11.1$  dB re MT

Adjustment:  $K_t = 6$  dB

*NOTE The two tones with the highest frequencies give the highest  $\Delta L_{ta}$ .*

Figure D.4 Example 2



**D.3.4 Example 3**

Critical band: 258 Hz – 358 Hz

Tones: 278 Hz, 33.3 dB

299 Hz, 38.4 dB

319 Hz, 54.3 dB

334 Hz, 37.1 dB

Tonal level:  $L_{pt} = 54.6$  dB

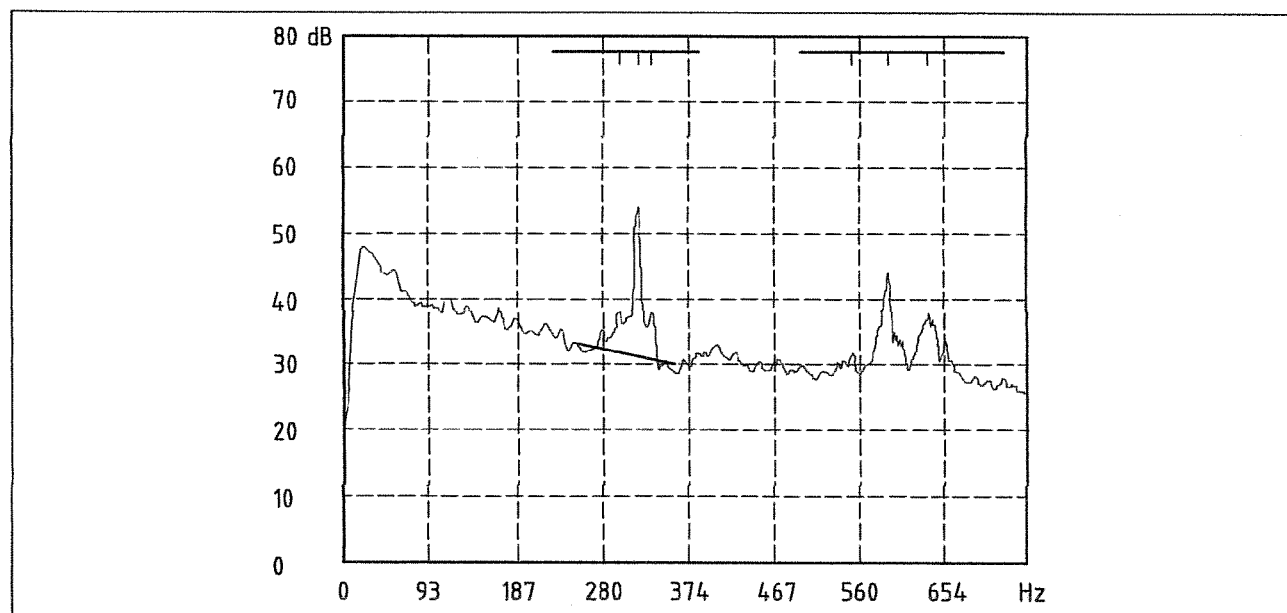
3 dB bandwidth of tone: 3.4% of 100 Hz

$L_{pn}$  in critical band: 45.5 dB

Tonal audibility:  $\Delta L_{ta} = 10.6$  dB re MT

Adjustment:  $K_t = 6$  dB

Figure D.5 Example 3

**D.3.5 Example 4**

Critical band: 680 Hz – 830 Hz

Tone is varying between 680 Hz and 758 Hz

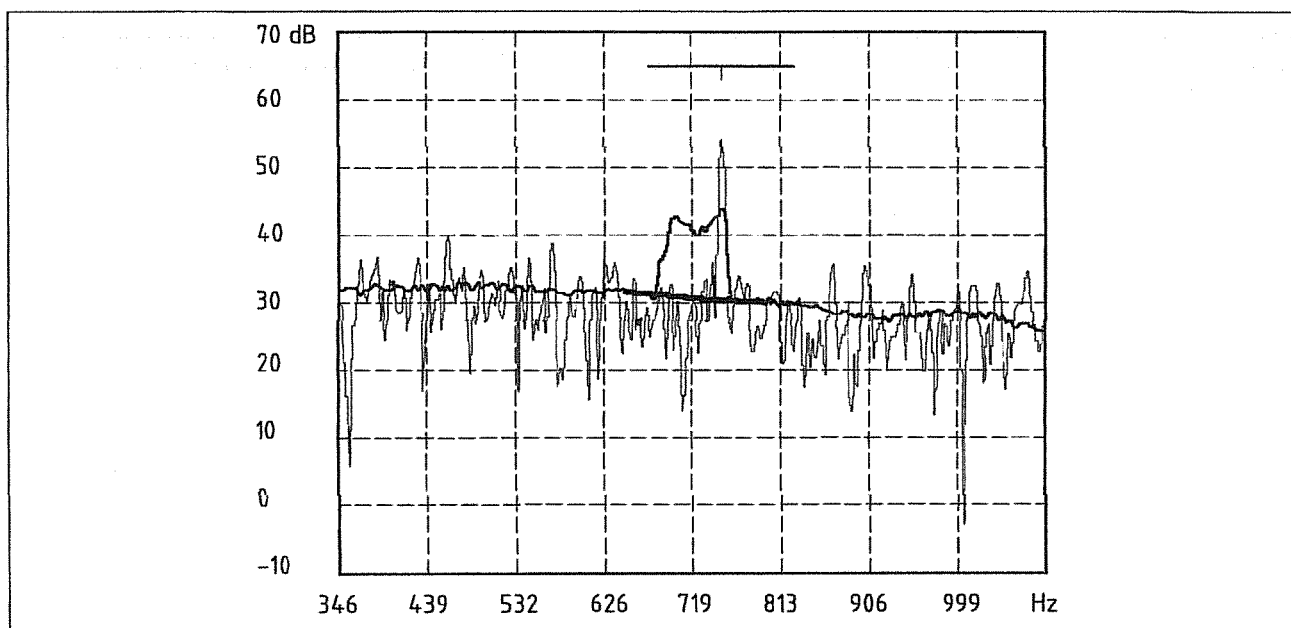
Tonal level:  $L_{pt} = 53.6$  dB

$L_{pn}$  in critical band: 45.5 dB

Tonal audibility:  $\Delta L_{ta} = 10.7$  dB re MT

Adjustment:  $K_t = 6$  dB

Figure D.6 Example 4



**NOTE** The graph shows both an averaged spectrum and an instantaneous spectrum. The tonal level may either be found by energy summation of the lines in the broad maximum in the averaged spectrum or by averaging the tone levels from a number of spectra measured with short averaging time, giving the same total averaging time.

## Annex E (normative)

# Objective method for measuring the prominence of impulsive sounds and for adjustment of $L_{Aeq}$

## E.1 Introduction

Measurements carried out according to this annex yield as the main result a measure for the prominence of impulsive sounds. The method is intended to determine the prominence of impulsive sounds in correspondence with average subjective judgements made by listeners. Based on the prominence,  $P$ , a graduated adjustment,  $K_P$ , to the measured  $L_{Aeq}$  is defined.

The adjustment to  $L_{Aeq}$  for impulses depends on how prominent the impulsive characteristics are perceived through the continuous part of the sound including residual sound.

The method in this annex is derived from Nordtest Method NT ACOU 112 [7] and is not intended for use with gunfire sound and high-energy impulsive sound.

## E.2 Definitions

Sound pressure levels,  $L_{pAF}$ , are A-weighted levels with time weighting F.

## E.3 Impulse

The sudden onset of a sound is defined as an impulse.

**NOTE** The definition includes only the onset of a sound, not the sound as a whole. "Sudden" is based on an auditive judgement, which is expressed in terms of physical measurements in this annex.

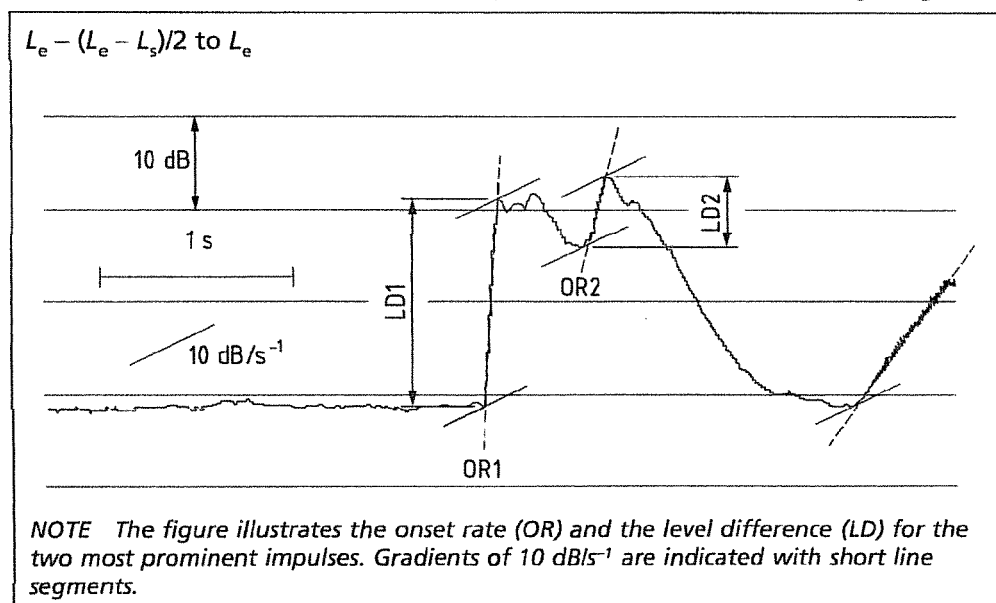
The character and prominence of the impulse depend on the character of the emitted sound, on the distance and propagation path from the specific sound source and on the residual sound. The impulsiveness of a sound is characterized by the onset of the sound independently of the category of the sound source.

#### E.4 Onset

The onset of a sound is defined as the part of the positive slope of the time history of  $L_{pAF}$  where the gradient exceeds  $10 \text{ dB/s}^{-1}$  (see Figure E.1).

The starting point of an onset is the point where the gradient first exceeds  $10 \text{ dB/s}^{-1}$ . The end point of an onset is the first point after the starting point where the gradient decreases to less than  $10 \text{ dB/s}^{-1}$ . Irregularities (on the onset) shorter than 50 ms are disregarded.

Figure E.1 Time history of the A-weighted sound pressure levels with time weighting F



#### E.5 Level difference

The level difference of an impulse is the difference in dB of  $L_{pAF}$  between the level of the end point,  $L_e$ , and the level of the starting point,  $L_s$ , of the onset.

#### E.6 Onset rate

The onset rate is the slope in  $\text{dB/s}^{-1}$  of the straight line that gives the best approximation to the onset.

#### E.7 Measurements

Measurements are made on the basis of  $L_{pAF}$ , the A-weighted sound pressure level with time weighting F. The electric noise floor of the measuring set-up need to be at least 10 dB lower than the acoustic background sound level. Special care is needed to ensure that the system is not overloaded during measurement.

The measurements may be performed by either digital or analogue methods, or a combination of these.

## E.8 Digital recording and signal processing

The A-weighted sound pressure level with time weighting F is sampled with time intervals in the range from 10 ms to 25 ms. Measurements made on the basis of short-term  $L_{Aeq}$ -values (e.g. 10 ms) are approximated (e.g. by computation) to time weighting F before the readings are taken.

**NOTE** Measurements based on a series of short-term  $L_{Aeq}$ -values may be converted to a series of  $L_{pAF}$ -values by the following formula:

$$L_{pAF,n} = 10 \lg \left\{ \frac{[(\tau/\Delta t) - 1](10^{L_{pAF,n-1}/10} + 10^{L_{Aeq,n}/10})}{(\tau/\Delta t)} \right\} \quad (E.1)$$

where:

- $L_{Aeq,n}$  the  $n$ th short-term  $L_{Aeq}$ -value;
- $L_{pAF,n}$  A-weighted sound pressure level with time weighting F at the time of the  $n$ th  $L_{Aeq}$ -value,  $L_{Aeq,n}$ ;
- $\tau$  time constant for the time weighting (for F:  $\tau = 125$  ms); and
- $\Delta t$  time between the  $L_{Aeq}$ -values (and the integration time).

From a successive series of sound pressure levels with time weighting F,  $L_{pAF,n}$ , the starting point,  $n = s$ , and the end point,  $n = e$ , of an onset are defined from the procedure a) to d).

- a) The starting point,  $s$ , is the first point where the slope is larger than  $10 \text{ dB/s}^{-1}$ :  $L_{Aeq,s+1} - L_{Aeq,s} > 10/f$ .
- b) The end point,  $e$ , is the first point after the starting point where the slope is less than  $10 \text{ dB/s}^{-1}$ :  $(L_{Aeq,e+1} - L_{Aeq,e}) < 10/f$ .
- c) A new starting point occurs when condition a) is met again.
- d) If a new starting point,  $s1$ , occurs within a period of 50 ms after the end point  $e$ , then end point  $e$  and start point  $s1$  are neglected if the following conditions are met:

$$\begin{aligned} (L_{Aeq,e1} - L_{Aeq,e})/(t_{e1} - t_e) &> 10 \text{ dB/s}^{-1} \text{ and} \\ (L_{Aeq,s1} - L_{Aeq,s})/(t_{s1} - t_s) &> 10 \text{ dB/s}^{-1} \end{aligned} \quad (E.2)$$

where:

$e1$  is the end point after the new starting point  $s1$ ; if point  $e$  is neglected, point  $e1$  takes over the name  $e$ ;

$L_{Aeq,s}$  is the  $s$ th short-term  $L_{Aeq}$ -value and  $t_s = (s - 1) \Delta t$  is the time of sampling;

$L_{Aeq,e}$  is the  $e$ th short-term  $L_{Aeq}$ -value and  $t_e = (e - 1) \Delta t$  is the time of sampling, and so on; and

$f = 1 / \Delta t$  is the sampling frequency.

For each onset the level difference is  $L_e - L_s$ , and the onset rate is found from the "least squares method" (linear regression) of the points from  $s$  to  $e$  (incl.).

## E.9 Analogue recordings

For analogue recording care needs to be taken that the vertical writing speed (the level) is not limited by the writing system. For recordings in true time a writing speed of at least  $1\,000 \text{ dB/s}^{-1}$  is necessary.

For visual readings of the onset rate from level recordings, the horizontal speed (the time) needs to be sufficient to ensure a satisfactory accuracy of the gradient of the onset. A slope of 45° is recommended.

For the approximation of the onset to a straight line, irregularities shorter than 50 ms on the generally increasing curve (even decreasing levels) do not indicate the start of a new onset.

#### E.10 Predicted prominence, $P$

In periods of half an hour a number of impulses with the apparently highest onset rates and level differences are selected. For sound with shorter duration the impulses are selected during the whole period. For each selected impulse the predicted prominence  $P$  is calculated from:

$$P = 3 \lg (\text{onset rate}/[\text{dBs}]) + 2 \lg (\text{level difference}/[\text{dB}])$$

where the "onset rate" in dBs and the "level difference" in dB are as defined in E.6 and E.5, respectively. The impulse with the highest value of  $P$  gives the final result.

*NOTE* The general form of the expression for  $P$  is:  $P = k_1 \lg (\text{onset rate}) + k_2 \lg (\text{level difference})$ . The constants  $k_1$  and  $k_2$  have been estimated from the results of listening tests. It is also taken into account that the relation between  $P$  for very sudden and loud impulses and  $P$  for slow level changes is large.  $P$  was furthermore designed to give a maximum around 15.

#### E.11 Adjustment to $L_{Aeq}$

For sounds with onset rates larger than 10 dB/s<sup>-1</sup> the following adjustment,  $K_i$ , based on the predicted prominence,  $P$ , may be applied:

$$K_i = 1.8 (P - 5) \text{ for } P > 5; \text{ and}$$

$$K_i = 0 \text{ for } P \leq 5.$$

#### E.12 Examples

The examples given in Table E.1 are taken from Holm Pederson [8].

Table E.1 Examples of the prominence  $P$  and the adjustment  $K_i$  for different sound sources

Sound source	$L_{AFmax}$ dB	Level diff. dB	Onset rate dBs	Prominence $P$	Adj. $K_i$ dB
Background sound $L_{PAF} = 40$ dB					
Tyre change, pneumatic tool, L	48	7	38	6.4	2.6
Tyre change, pneumatic tool, H	67	17	76	8.1	5.5
Compressed air release, L	48	9	65	7.3	4.1
Compressed air release, H	67	27	140	9.3	7.8
Metal hammering, L	54	15	194	9.2	7.6
Metal hammering, H	75	35	222	10.1	9.2
Wood axe, L	52	13	125	8.5	6.4
Wood axe, H	72	17	353	10.1	9.2

*NOTE* Other results occur for different conditions of distance, propagation path and background noise.  $L$  and  $H$  indicate  $L_{Aeq}$  values of 40 dB and 60 dB, respectively, from the sound sources.

**E.13 Accuracy and uncertainty**

It has been found [7, 8] that the mean standard deviations of the results of sixteen different noise examples from four laboratories using four different measuring set-ups was 0.3 on the prominence  $P$  and 0.6 dB on the adjustment  $K_1$ .

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BS EN 60651, *Specification for sound level meters* <sup>1)</sup>

BS EN 60804, *Specification for integrating-averaging sound level meters* <sup>1)</sup>

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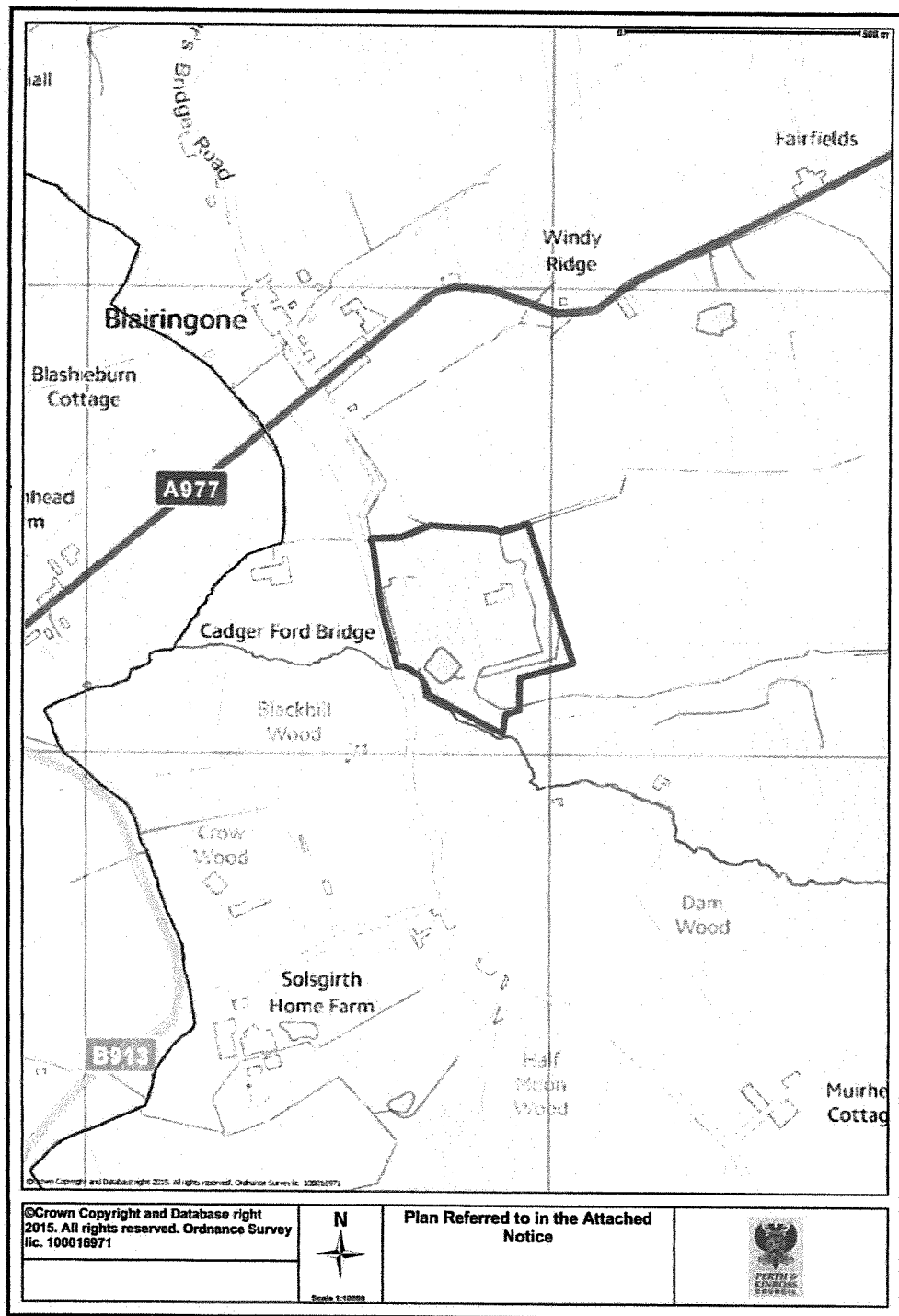
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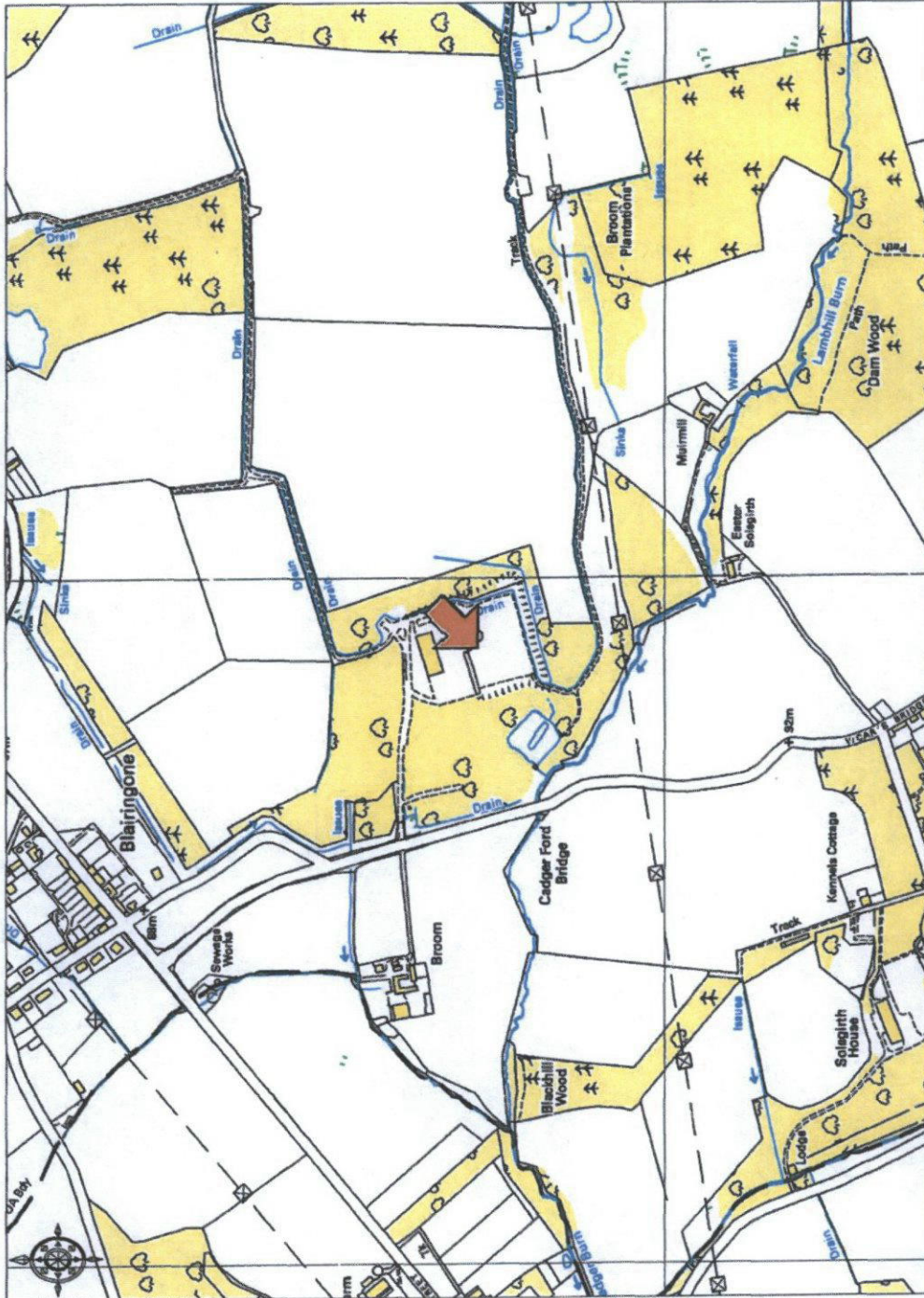
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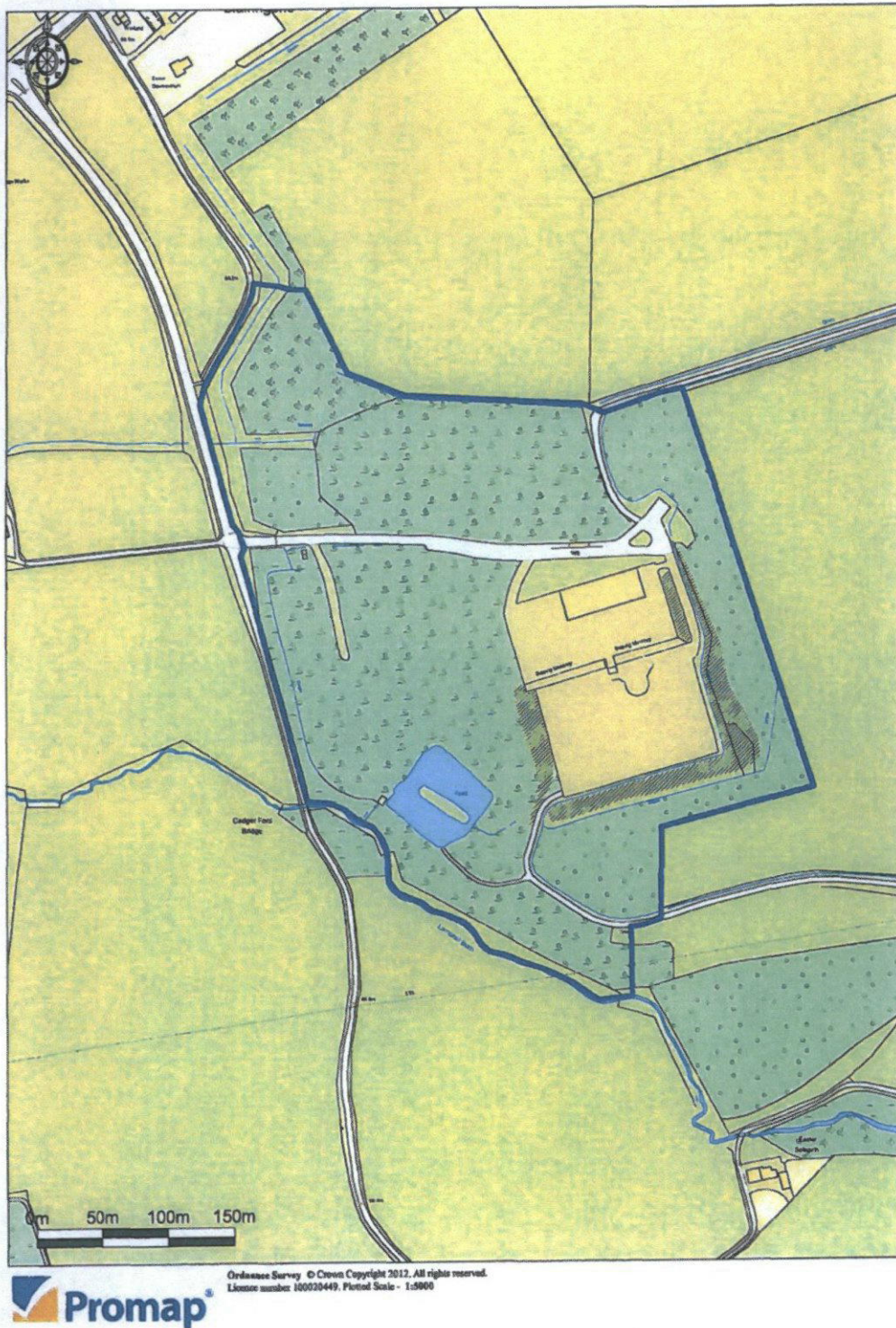
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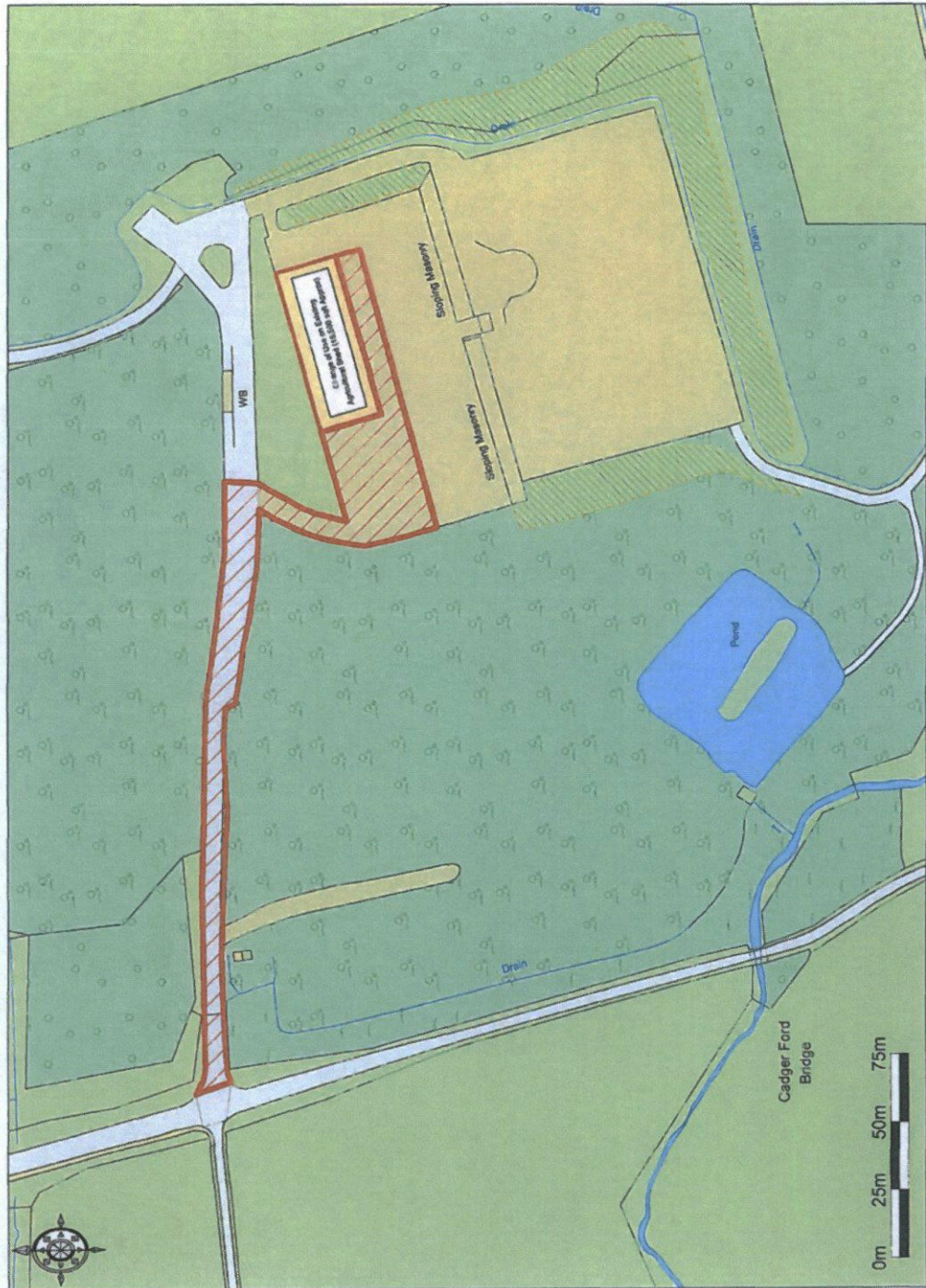
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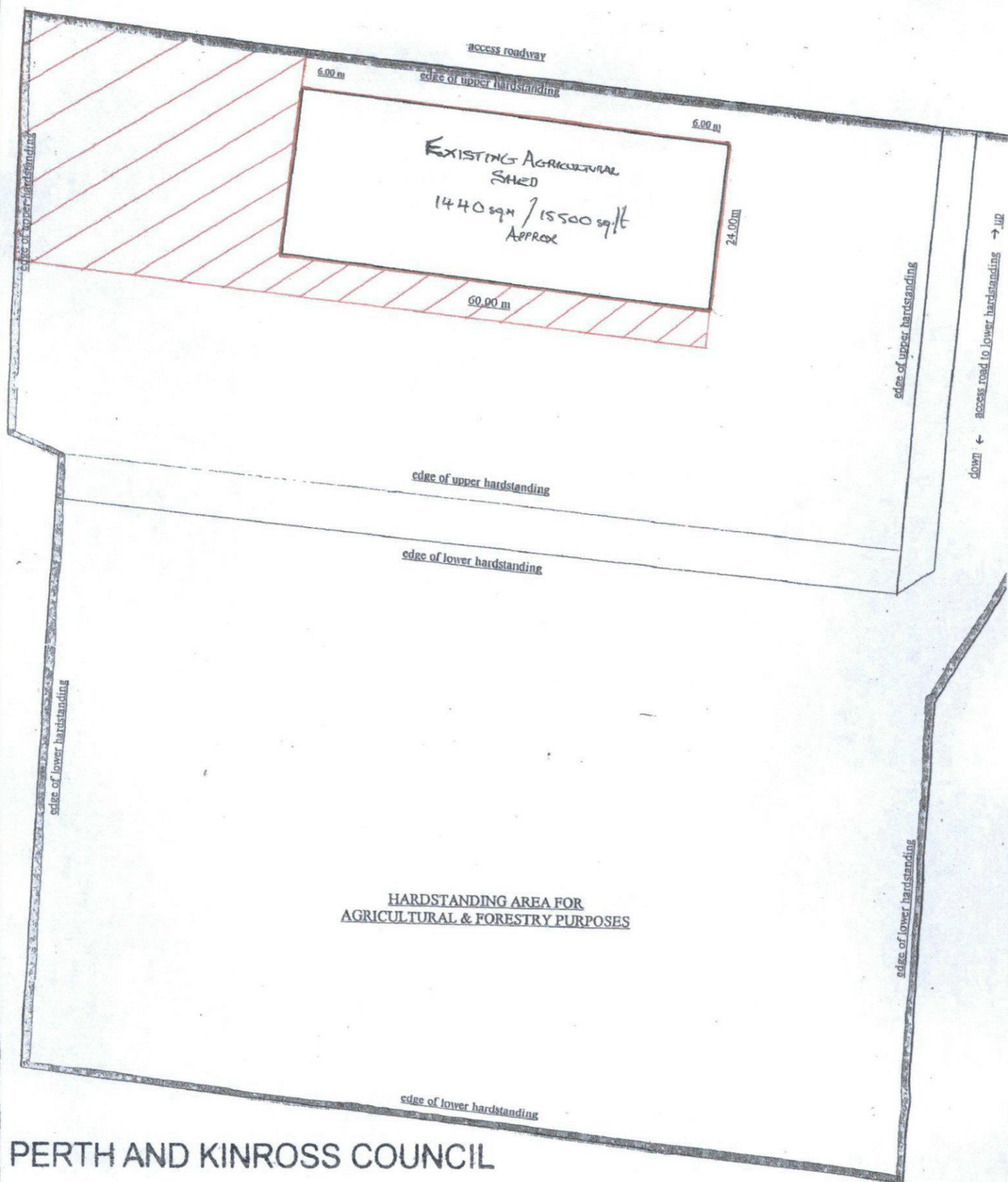


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SITE LAYOUT PLAN  
EXISTING AGRICULTURAL/CATTLE SHED  
MODIFICATION OF USE FOR FORESTRY  
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# Acoustic Consultancy Division

Glasgow, Hadleigh, High Wycombe, Northwich, Old Dalby

Our Ref **HHACY/50834/R01d/IRF**

Date: **4<sup>th</sup> February 2012**

Title: **Environmental Noise Assessment  
Lambhill,  
Blairingone,  
By Dollar,  
FK14 7NX**

Client: **Barnhill Estates  
West Gogar,  
Blairlogie,  
Stirling,  
FK9 5QB**

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**PERTH AND KINROSS COUNCIL**

**DRAWING REF: 13/01/14/5**

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## **1.0 INTRODUCTION & CONSULTANCY BRIEF**

Barnhill Estates are involved with the operation of a timber processing plant in Blairingone. Noise as a result of use of the site is required to be considered at nearby residential properties/areas.

Our scope of works is as follows:

We will:

1. Liaise with the relevant authority (Perth Kinross Council) in order to agree on the specific noise assessment criteria and methodology to be used.
2. Travel to the above site and carry out octave band and overall noise level measurements at the nearest residential properties, at site boundary locations and directly from the plant items (chipper) of concern during full operation. Measurements may also need to be taken when plant is not in operation
3. Analyse site-acquired data to establish the existing noise environment at the site.
4. Using measured noise levels produce a Cadna-A computer generated noise propagation map to determine the noise impact from the plant item/s at the properties of concern.
5. Calculate the noise levels inside habitable rooms of the properties of concern.
6. Compare the calculated internal noise levels with the daytime (0700-2300) NR35 and night-time (2300-0700) NR20 criteria as set by Local Authority.
7. If the internal noise levels do not meet the required criteria, make recommendations for noise control schemes. These may include altering the location of plant, installation of a barrier, enclosing plant. Specification will be given for any necessary noise control schemes.
8. Provide a technical report suitable for submission to third parties, detailing the findings and any recommendations to enable criteria to be met.

## 2.0 SUMMARY

Hodgson & Hodgson Acoustic Consultancy Division were asked to provide a noise level survey report to aid decision making by the Local Authority regarding the Blaringone 'wood chipping fuel for heat' site that currently supplies raw materials to a number of clients including Schools and Hospitals. The site has recently been awarded an opportunity through the Scottish Government Energy Supply Scheme to participate in the Current Framework Contract for Biomass Energy Supply. In order to fulfil these agreements it is understood that the site requires to be open for business 24 hours, seven days a week. It is understood that restrictions on chipper operation, prohibiting use between 11pm and 7a.m. are to be an agreed feature of the facility's operation. The client requested an assessment based upon the World Health Organisation guidance (1999) (Guidelines for Community Noise) consistent with BS 8283:1999 (see attached publicly available example). Further, local authority required that the report would contain comparisons to background levels in accordance with BS 4142: 1997 (Method for rating industrial noise affecting mixed residential and industrial areas).

Noise levels as a result of activities at site have been calculated at nearby residential properties using a CadnaA v4.0.135 noise map based on noise levels measured on site and in the immediate vicinity. The resultant noise level at the residential property façade from the operations on site has then been used to calculate internal ambient noise levels within habitable rooms for comparison to NR curves (as required by local authority). In addition these have been used when considering the requirements of BS4142.

Our findings are:

- Noise levels from operation of the site satisfy all daytime criteria with the exception of BS4142 criterion;
- Noise level criterion during the night-time period is not met without acoustic screening;
- Noise level criteria during the night-time period is met with acoustic screening for loader movements and HGV access with the exception of BS4142 criterion;
- Noise level criterion during the night-time period is not met with acoustic screening for wood chipper operation;
- Measured ambient noise levels at the receptor locations vary by  $\leq 1.7\text{dB}$  when comparing daytime periods with and without site activity.

## 3.0 CRITERIA

Initial discussions with Mr Neil Kydd of Perth & Kinross Council led to the following criteria being given:

All plant or equipment associated with operation of the commercial areas shall be so enclosed, attenuated and/or maintained such that any noise therefrom shall not exceed Noise Rating 35 between 0700 and 2300 hours daily, or Noise Rating 20 between 2300 and 0700 hours daily, within any neighbouring residential premises, with all windows slightly open, when measured and/ or calculated and plotted on a rating curve chart.

In addition Dawn Stewart of Perth & Kinross Council stated that plant noise and vehicle movements should be considered against the requirements of BS4142 at 4 measurement locations with the survey conducted over a weekend period. Remedial design advice is required where the Rating Level at the NSR exceeds the background noise level by +5dB.

#### **4.0 NOISE SURVEY**

Noise data was collected on and around site (measurement locations are shown in Appendix C - Figure 12) in order to represent noise levels radiating from the operational plant. Subjective comments were also noted as to the audibility of site at each location. All measurements were made in 2 minute samples where the dominant noise source on site was known to be in full operation. A datalogging sound level meter was left on site at the source to confirm this.

The dominant noise sources on site are a large wood chipper (Doppstadt DT810), crane to load the raw material onto the chipper and wheeled front loader for transporting the chips to the loading funnel. When in operation the chipper generates significantly more noise than the crane. HGV activity on site was measured during idling at stand still, pulling away and pass-bys.

All noise level measurements were made at 1.2m above ground level with a Type 1 Norsonic 118 Sound Level Meter in accordance with BS7445-1:2003.

Survey details can be found in Appendix A. Survey data can be found in Appendix B.

#### **5.0 ASSESSMENT**

##### **5.1 Internal NR Criteria**

The noise map of site was created using CadnaA v4.0.135 modelling software in accordance with BS EN ISO 9613-2:1996. Consideration of environmental factors such as ground absorption, height and foliage has been made.

The model was created using the reference measurements made on site to ensure accuracy; the noise level at each noise sensitive receptor was then calculated using the 'Building Evaluation' function within CadnaA. CadnaA assesses noise levels incident on all elements of the building façade and reports the highest level at any position. This is shown in Figures 14-19.

For all sources the noise level from site is considered as a 'worst case' scenario at NSRs as identified in Appendix C - Figure 12

##### **5.1.1 Wood Chipper Noise**

The chipper generated noise levels of approximately 98.1dB(A) at 1m (based on a site measurement of 91.6dB(A) at 4.5m).

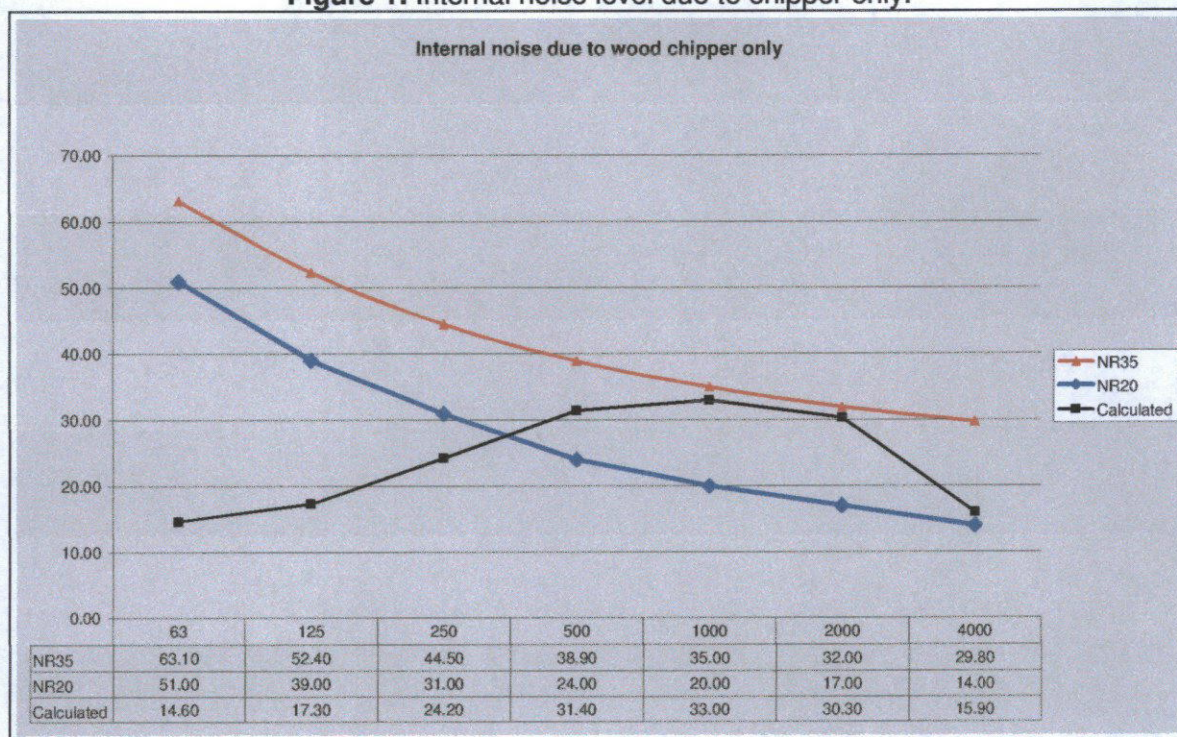
This noise level has been used within the noise model to determine resultant noise levels at the nearest most exposed receptors, see Appendix C - Figure 14.

The resultant noise level at the nearest NSRs (NSR 1, 2 and 3) is 47dB  $L_{Aeq,T}$ .

Local authority criteria is based on an internal noise level not exceeding a given NR curve at a specific time of day, to consider this, an assumption about the reduction across an open

able window must be made. It is accepted that generally a reduction of between 10-15dB is given by a partially open window. Given the spectral makeup of the noise source it is considered prudent to assume a minimum reduction of 10dB.

**Figure 1: Internal noise level due to chipper only.**



It can be seen that noise from the wood chipper meets internal noise criteria for the daytime NR35 (0700-2300hrs) but not for the night-time period NR20 (2300-0700hrs). In order to meet night-time noise level criterion a further reduction of 13.3dB is required (based on highest reduction requirement across all octave bands). In order to achieve this, a full enclosure would be required for the chipper and as such may prove impracticable due to access restrictions and ventilation requirements.

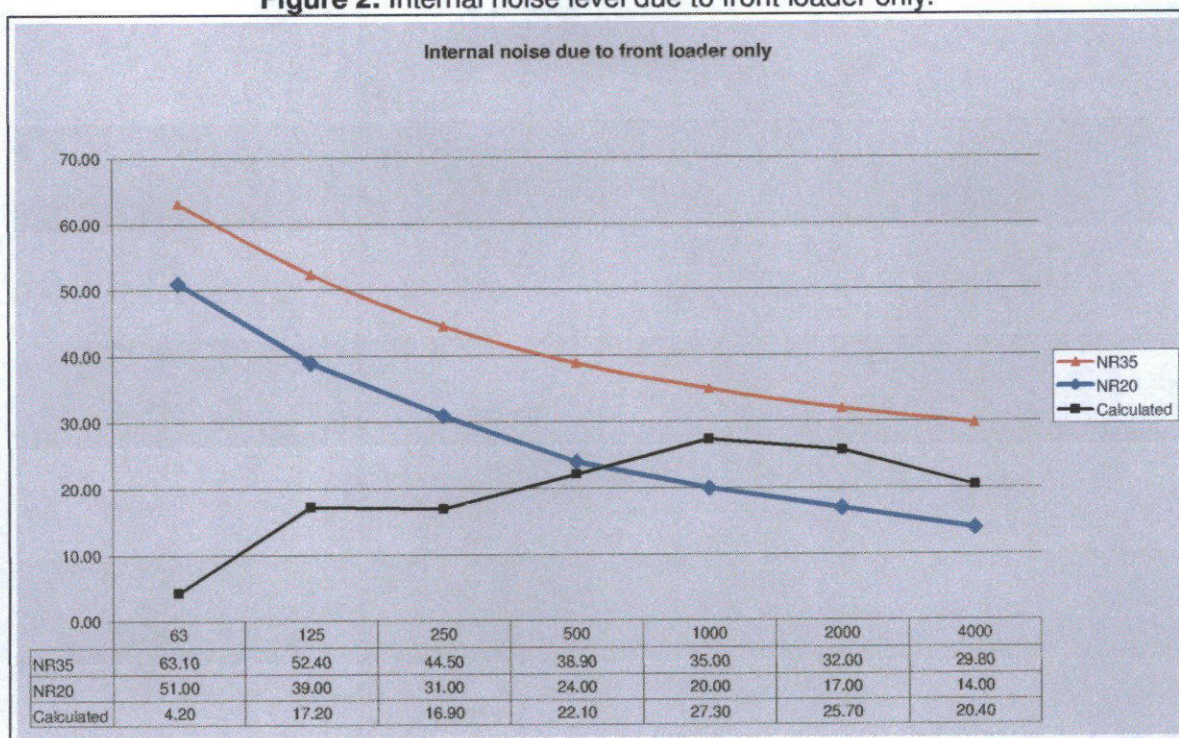
### 5.1.2 Front loader

The front loader generates noise levels of 75.8dB(A) at 10m (based on an on-site measurement of 81dB(A) at 5m during a single vehicle pass-by). This is in agreement with values given in BS5228:Part2 where a wheeled loader is stated as generating a noise level of 76dB  $L_{Aeq,T}$  at 10m. It has been assumed that a maximum of 60 loadings take place in any one hour period.

This noise level has been used within the noise model to determine resultant noise levels at the nearest most exposed receptors (NSR 1 & 2), see Appendix C - Figure 15.

The resultant noise level at the nearest most exposed NSR façade is 41dB  $L_{Aeq,T}$ .

Local authority criteria is based on an internal noise level not exceeding a given NR curve at a specific time of day, to consider this, an assumption about the reduction across an open able window must be made. It is accepted that generally a reduction of between 10-15dB is given by a partially open window. Given the spectral makeup of the noise source it is considered prudent to assume a minimum reduction of 10dB.

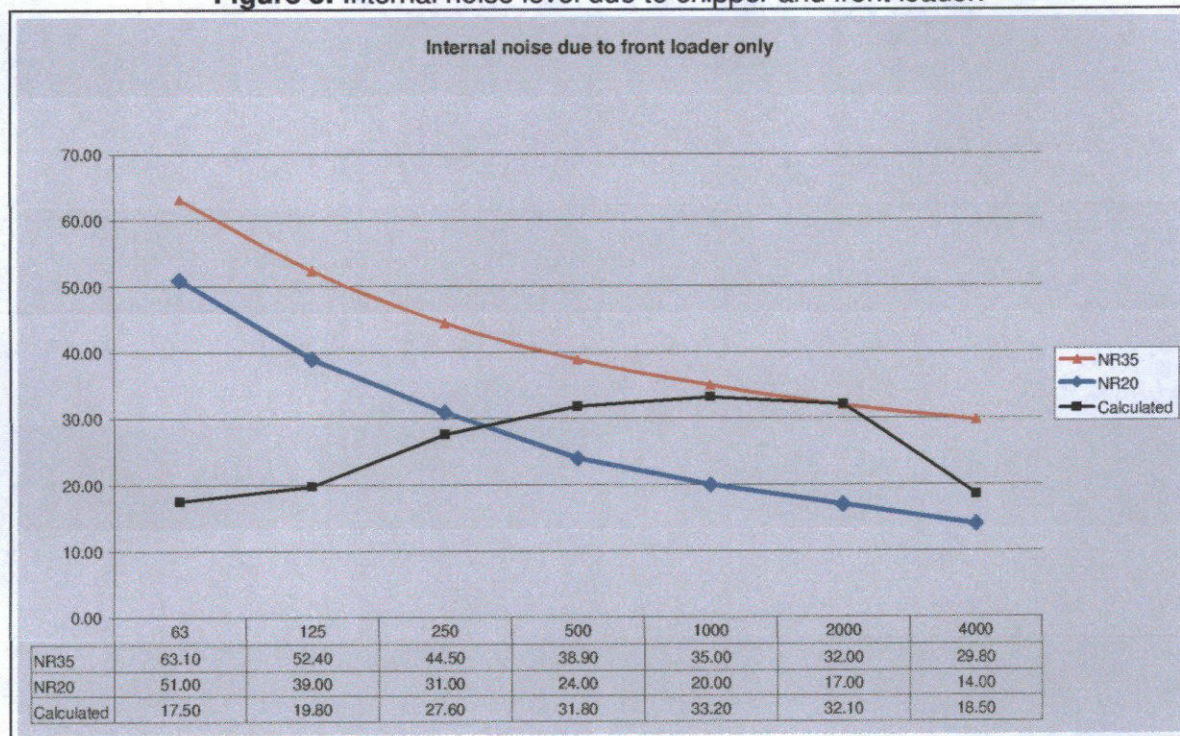
**Figure 2:** Internal noise level due to front loader only.

It can be seen that noise from the front loader meets internal noise criteria for the daytime NR35 (0700-2300hrs) but not for the night-time period NR20 (2300-0700hrs). In order to meet night-time noise level criterion a further reduction of 8.7dB is required (based on highest reduction requirement across all octave bands).

### 5.1.3 Combined sources

The combination of noise sources at the nearest most exposed noise sensitive receptors (NSR 1, 2 and 3) is calculated to be 47.8 dB  $L_{Aeq,T}$ . See Appendix C - Figure 16.

**Figure 3: Internal noise level due to chipper and front loader.**



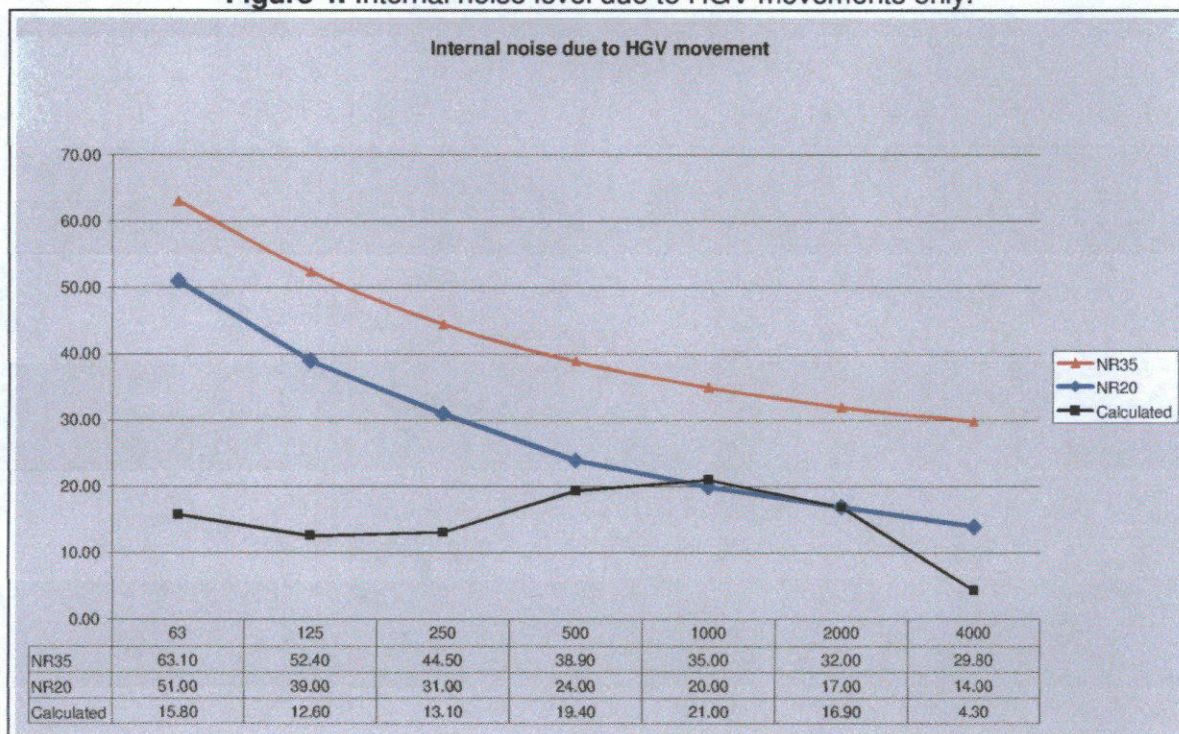
It can be seen that the combined noise level on site is 0.1dB above local authority criterion for the day-time period. This is considered unperceivable where 3dB is regarded as the minimum perceivable difference to an active listener, and as such it is considered that local authority criterion is met.

Internal night-time noise levels as a result of the combined activities is above internal NR criteria.

### 5.1.4 HGV Movements

It is understood that night-time HGV movements are desired at the site; the number of movements during the night-time period is not known however it is assumed that there will be no more than two in any 1-hour period. See Appendix C - Figure 19.

**Figure 4:** Internal noise level due to HGV movements only.



It can be seen that internal noise levels at the nearest most exposed receptor (NSR3) due to HGV movements along the access road during the night-time only marginally exceed night-time criterion by 1dB at 1kHz.

It is considered that the level of contribution at the most exposed receptor (NSR3) is insignificant, particularly given the similar distances between the nearest point on the HGV route and the main thoroughfare (A977) through the village.

## 5.2 BS4142 Noise Impact Assessment

Datalogging sound level meters were setup at 4 locations as shown in Appendix C – Figure 12 for a period of approximately 75 hours between Friday 23<sup>rd</sup> November and Monday 26<sup>th</sup> November.

Given the distance between the dominant source (A977) and the NSR's, the measured dB  $L_{A90}$  at each respective datalogger position is considered representative of the background noise level at each NSR.

The lowest background noise level measured at each location will be used. A 5-minute time period for the night-time is considered, whilst a 1-hour period is used for the daytime.

Time-history survey data is shown in Appendix B. Table 1 gives the background noise level representative of each NSR location used in this assessment as well as the target local authority criterion.

**Table 1:** Summary of background noise levels and target levels to meet LA criteria.

Location	Background noise level dB ( $L_{A90,T}$ )			
	Daytime (0700-2300)		Night-time (2300-0700)	
	Lowest	LA Criterion	Lowest	LA Criterion
NSR 1	29.0	34.0	26.5	31.5
NSR 2	35.0	40.0	33.5	38.5
NSR 3	31.5	36.5	26.5	31.5
NSR 4	32.5	37.5	27.0	32.0

BS4142 requires that the combined noise of introduced items is considered at each NSR. As this varies between daytime and night-time periods they have been assessed separately.

### 5.2.1 Daytime Period

Both plant activity and HGV movements are proposed during the daytime period, using the computer generated noise map it is possible to see the resultant noise level at each NSR due to site activity.

Table 2 gives the calculated combined noise level contribution from site at each NSR location, the resultant Rating Level and the relative level compared to the target levels given in Table 1.

**Table 2:** Daytime noise impact assessment.

Location	Background (dB $L_{A90}$ )	Contribution (dB $L_{Aeq,T}$ )	Rating Level	Relative to criterion
NSR 1	29.0	51.0	56	+22.0
NSR 2	35.0	49.0	54	+14.0
NSR 3	31.5	47.0	52	+15.5
NSR 4	32.5	39.0	44	+6.5

It can be seen that the Rating Level compared to the lowest background noise level measured during the daytime is above target noise levels given in Table 1, therefore LA criteria is not met. The lowest background noise level will typically occur at 22:00hrs so may not directly correspond to typical working hours, however given the level of exceedance at each NSR location this is unlikely to change the BS4142 classification.

### 5.2.2 Night-time Period

It is proposed that front loader and HGV movements will both occur during the night-time period. These have been assessed and are summarised in Table 3 below.

**Table 3:** Night-time noise impact assessment.

Location	Background (dB $L_{A90}$ )	Contribution (dB $L_{Aeq,T}$ )	Rating Level	Relative to criterion
NSR 1	26.5	36.0	41.0	+9.5
NSR 2	33.5	35.0	40.0	+1.5
NSR 3	26.5	37.0	42.0	+10.5
NSR 4	27.0	31.0	36.0	+4.0

It can be seen that the level of noise impact compared to the lowest background noise level measured during the night-time is above target noise levels given in Table 1, and therefore do not meet LA criterion.

### 5.3 World Health Organisation Guidance

The World Health Organisation (WHO) gives guidance for noise levels in external living areas as:

**Table 4: World Health Organisation Guidelines**

Specific Environment	Critical Health Effect(s)	L <sub>Aeq</sub> (dB)	Time base (hrs)	L <sub>Amax,t</sub> (dB)
Outdoor living area	Serious annoyance, daytime and evening	55	16	-
	Moderate annoyance, daytime and evening	50	16	-

In addition, WHO guidance also suggests that the night-time noise level should be 5-10dB lower than that during the day.

**Table 5: Noise contribution in external living areas**

Location	Daytime Level (dB A)	Night-time Level (dB A)
NSR 1	51.0	36.0
NSR 2	49.0	35.0
NSR 3	47.0	37.0
NSR 4	39.0	31.0

It can be seen in Tables 4 and 5 that noise levels within outdoor living areas are within WHO guideline figures for both day and night-time periods.

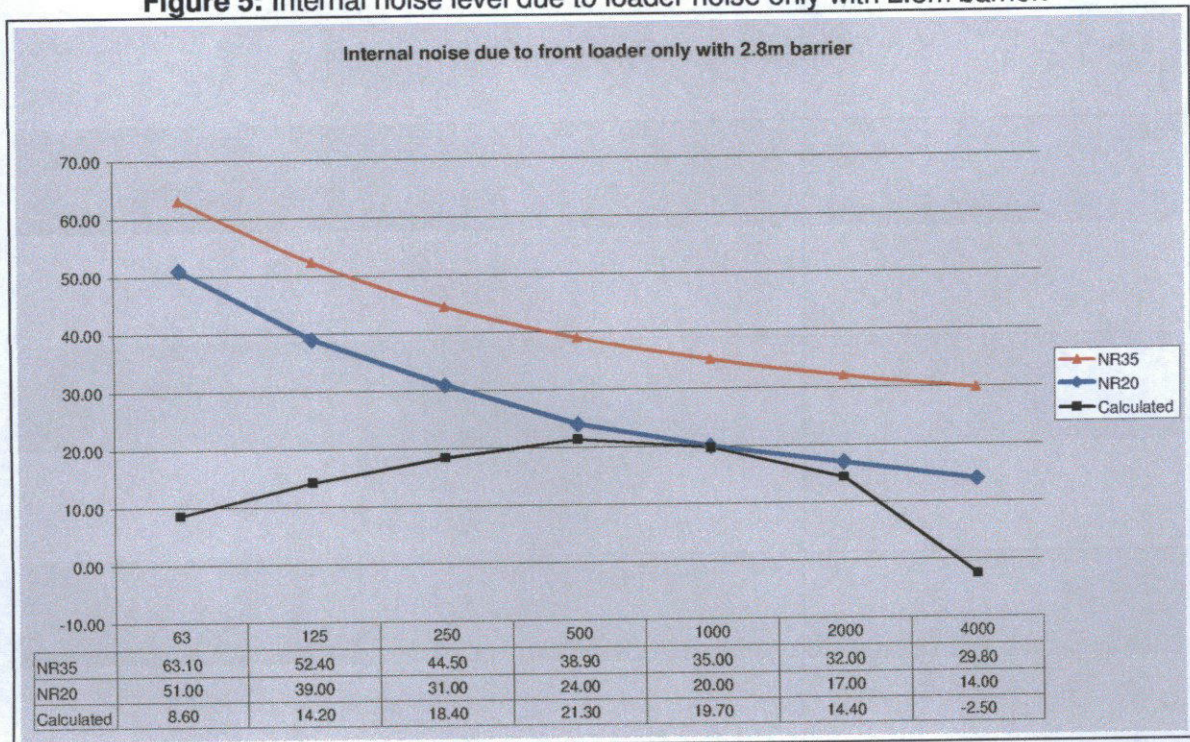
## 6.0 RECOMMENDATIONS

### 6.1 Internal NR Levels

The combined noise level from both the front loader and wood chipper satisfies local authority criteria for the daytime and is 15.1dB above night-time criteria. It is understood that the wood chipper is not desired to be in use during the night-time period and as such remedial advice to achieve LA criterion for this has not been considered.

It is understood that use of the wheeled front loader is desired during the night-time period. Screening provided by a 2.8m barrier has been assessed in order to mitigate the noise level in order to satisfy LA criteria. See Appendix C - Figure 17.

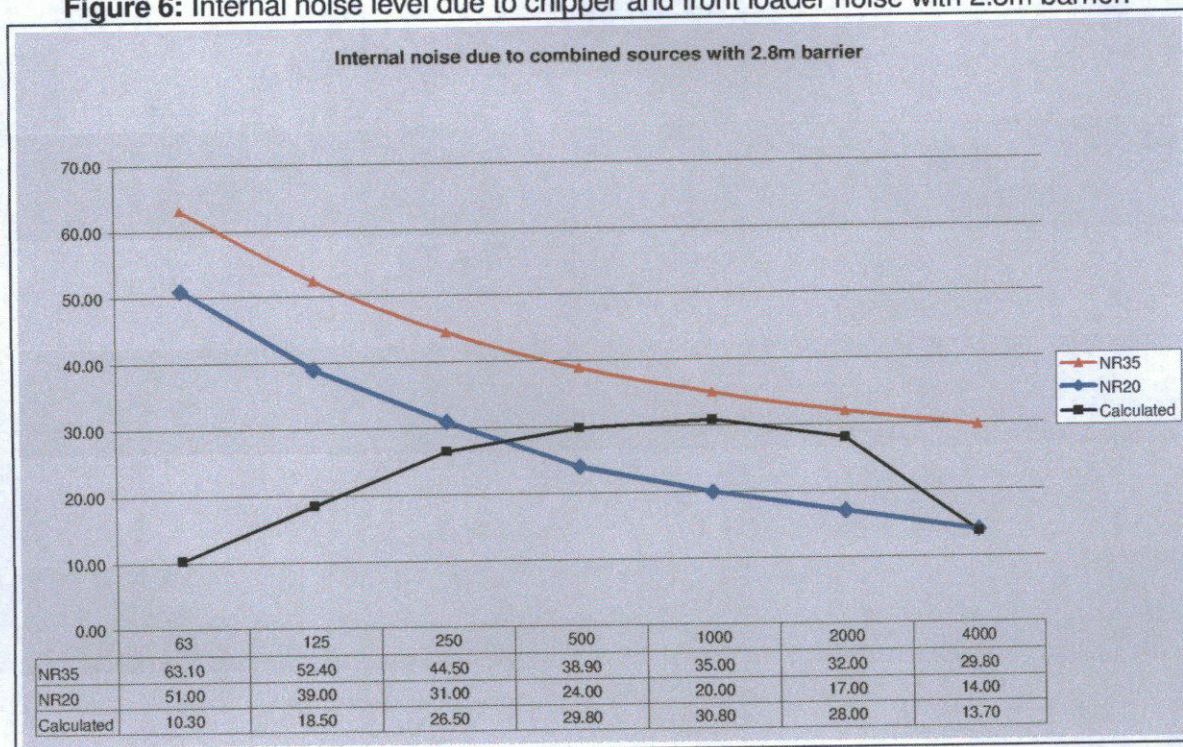
Screening can be achieved in a number of ways, typically this is done through the usage of fencing – however given the wood stock quantity and type kept on-site it is considered that the stock is a suitable alternative provided the minimum height and location of screening are maintained.

**Figure 5:** Internal noise level due to loader noise only with 2.8m barrier.

It can be seen above that a 2.8m screen located along the western and southern boundary of the raised yard area will result in a noise level in line with local authority criteria. For typical specification purposes the screen should have a surface mass  $\geq 20\text{kg/m}^2$ ; however it is understood that stockpile timber is proposed to form the recommended screen. This is considered an improvement over a standard 'fence' approach provided that the stockpile is maintained to the recommended height at all times.

The location of the screen is shown in Figure 13, Appendix C:

An additional benefit of installing this barrier is to improve the daytime level of compliance. See Appendix C - Figures 13 and 17.

**Figure 6:** Internal noise level due to chipper and front loader noise with 2.8m barrier.

## 6.2 BS4142 Noise Impact Assessment

Noise levels at the NSRs will be reduced where screening, as recommended in 6.1, is introduced. The resultant levels are shown in Tables 6 and 7:

**Table 6:** Daytime noise impact assessment within screening

Location	Background (dB L <sub>A90</sub> )	Contribution (dB L <sub>Aeq,T</sub> )	Rating Level	Relative to criterion
NSR 1	29.0	49.0	55.0	+21.0
NSR 2	35.0	43.0	48.0	+8.0
NSR 3	31.5	42.0	47.0	+10.5
NSR 4	32.5	39.0	44.0	+6.5

**Table 7:** Night-time noise impact assessment within screening

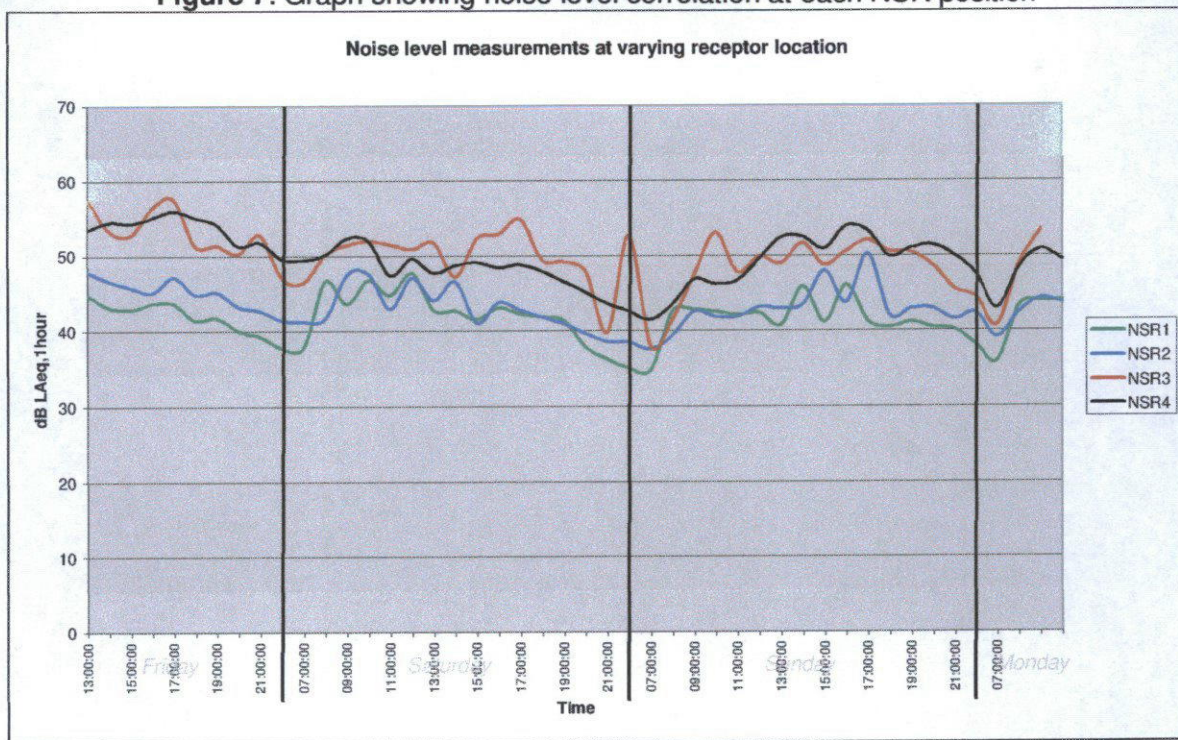
Location	Background (dB L <sub>A90</sub> )	Contribution (dB L <sub>Aeq,T</sub> )	Rating Level	Relative to criterion
NSR 1	26.5	36.0	41.0	+9.5
NSR 2	33.5	34.0	39.0	+0.5
NSR 3	26.5	33.0	38.0	+6.5
NSR 4	27.0	31.0	36.0	+4.0

It can be seen that a marginal improvement at NSRs 1-3 occurs; the noise level remains unchanged at NSR 4 due to the limited area of effect of screening.

Due to very low background noise levels (as qualified in Section 1 of BS4142) on site, the noise impact remains high after screening has been implemented. Due to the nature and limitations of screening it is unlikely that the higher required reductions can be achieved through screening alone.

## 7.0 DISCUSSION

**Figure 7: Graph showing noise level correlation at each NSR position**



It can be seen above that there are direct correlations between measurement positions, indicating that generally each location is subject to similar sources and variations in noise level.

It can also be seen that at NSR 3 intermittent noise sources have a greater effect than at other locations, this is likely due to the close proximity to the site access road.

It is understood that full site activities were carried out on Saturday (as noted by Callum Snowie and Scott Brady – shown in Appendix C - Figure 20), with the site in full shut down on Sunday. This is not immediately apparent when looking at Figure 7 and suggests that site noise is a component of the prevailing noise environment but not dominant when in operation.

Figure 21, Appendix C gives tabular data for comparison of the noted period when the site was active against the same period on Sunday where the site was inactive. It can be seen that generally there is a marginal reduction of between 0.2dB and 1.7dB when the site is not in operation.

## 8.0 CONCLUSIONS

Site activity has been considered against various criteria, where screening is employed as indicated in Section 6, the following applies:

Daytime:

- Noise as a result of full site activity including vehicle movements on and to/from site satisfies criteria for WHO Guidelines for external living areas, LA internal NR level criteria and results in a marginal increase of the general ambient noise level surrounding site;
- Noise as a result of full site activity including vehicle movements on and to/from site does not satisfy BS4142 criteria.

Night-time:

- Noise as a result of limited site activity including vehicle movements on and to/from site and front loader movements alone satisfies criteria for WHO Guidelines for external living areas, LA internal NR level criteria;
- Noise as a result of limited site activity including vehicle movements on and to/from site and front loader movements alone does not satisfy the BS4142 criteria.

## **APPENDIX A: SURVEY DETAILS**

### **SURVEY 1**

#### **A1. Location of Manned Survey**

- Lambhill Blaringone, FK147NX

#### **A2. Date & Time of Manned Survey**

- Start - 13:00hrs, 13/04/2012
- End - 15:15hrs, 13/04/2012

#### **A3. Personnel Present During Survey**

- Ian French BSc(Hons) AMIOA

#### **A4. Weather Conditions during both surveys**

- Start of noise survey: 50% cloud cover, 13°C, dry, still
- End of noise survey: 100% cloud cover, 10°C, beginning to rain, still

#### **A5. Instrumentation**

<b>Make</b>	<b>Model</b>	<b>Serial No.</b>	<b>Exp. Date</b>
Norsonic	Type 118 sound level meter	31381	09/03/2013
Norsonic	Type 1251 calibrator	32120	22/07/2012
Cirrus	CR:811B	C18426FD	31/01/2013

## **SURVEY 2**

### **B1. Location of Unmanned Survey**

- Lambhill Blaringone, FK147NX

### **B2. Date & Time of Unmanned Survey**

- Start - 10:00hrs, 23/11/2012
- End - 16:00hrs, 26/11/2012

### **B3. Personnel Present During Survey**

- Ian French BSc(Hons) AMIOA

### **B4. Weather Conditions during both surveys**

- Start of noise survey: 100% cloud cover, 4 °C, damp, still
- End of noise survey: 100% cloud cover, 2 °C, beginning to rain, still

### **B5. Instrumentation**

<b>Make</b>	<b>Model</b>	<b>Serial No.</b>	<b>Exp. Date</b>
Norsonic	Type 118 sound level meter	31381	09/03/2013
Cirrus	CR:811B	C18426FD	31/01/2013
Cirrus	CR:811B	C17679FD	31/08/2013
Cirrus	CR:821A	B16268FE	30/06/2013
Cirrus	CR:811B	C17900FD	28/02/2013

## APPENDIX B: NOISE SURVEY RESULTS

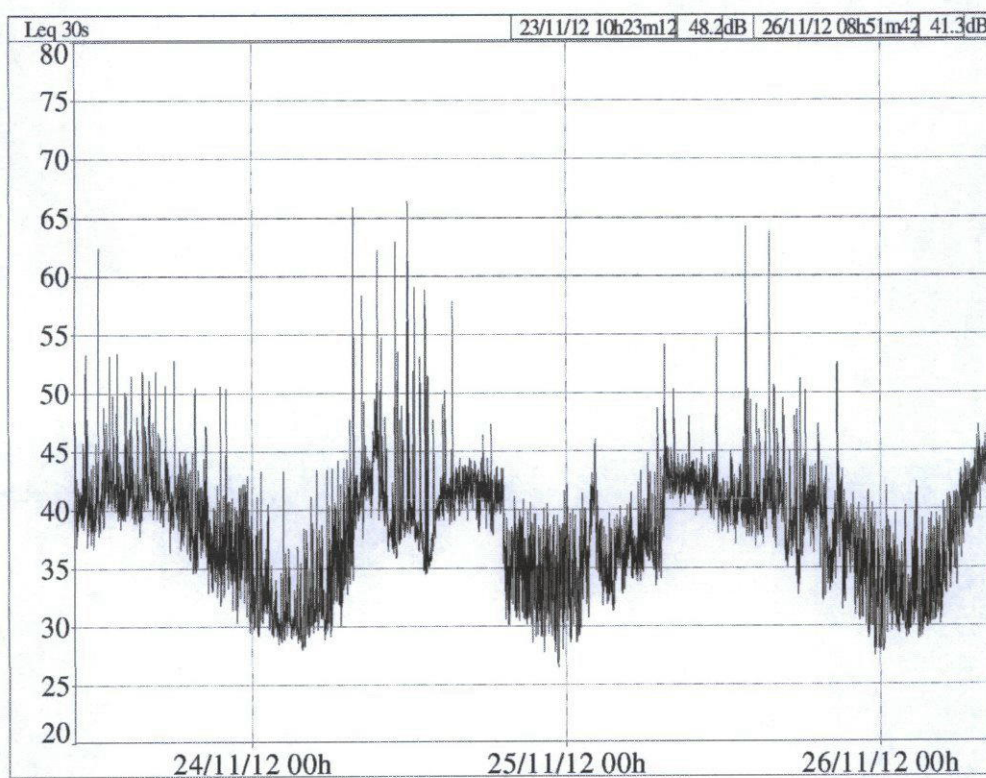
**Table 8:** 1/3<sup>rd</sup> Octave band noise level data

Position	Time	LAeq	Third-octave band noise levels - Leq, 2 minutes																								Notes
			50 Hz	63 Hz	80 Hz	100 Hz	125 Hz	160 Hz	200 Hz	250 Hz	315 Hz	400 Hz	500 Hz	630 Hz	800 Hz	1.0 k	1.25 k	1.6 k	2.0 k	2.5 k	3.15 k	4.0 k	5.0 k	6.3 k	8.0 k	10.0 k	
1	13:01:27	91.6	83.2	84.2	84.4	85.6	83.2	85.3	83.5	83.7	85.6	84.2	82	81.5	80.7	82	61.7	61.4	59	79	77.5	75.9	73.8	72.3	70.7	72.1	4.9m from plant
2	13:17:08	83.9	67.4	63.3	54.4	58.3	49.4	48.5	45.2	38.1	37.9	39.4	38.6	38.1	45.6	43.7	44.5	44.5	44.2	45	38.1	31.2	28	15.4	11.5	11.3	Chipper audible
3	13:21:11	84.6	59.4	53.8	51.5	57	55.9	54.7	54.7	49.7	42.8	43.6	48.1	43.7	45.2	48.6	45.5	44.5	45.9	37.4	33.1	29.5	24.8	22.2	21.4	20.1	Chipper audible
4	13:31:06	48.6	62.4	66.2	59.4	54.7	51.4	51.1	52.4	50.1	44.1	37.1	31.7	30.7	32.9	33.4	30.8	26.7	25.1	18.7	20	25.4	18.3	12.2	11.1	10	Chipper inaudible, shielded by warehouse?
5	13:36:46	53.5	65.4	66.1	59.9	58.7	53.1	53.6	54	49.9	43.6	48.1	45.5	43.1	44.9	42.2	29.5	37.6	35.3	34.9	33.7	30.6	26.2	24.5	17.4	12.6	Chipper inaudible, some road noise
6	13:53:47	53.1	65.7	63.1	63.3	63.7	49	45.2	45.1	44.6	38.9	33.7	37.7	42.4	45.3	47.5	46.2	43	38.1	32.8	30.2	26.3	23.2	18.5	15.5	10.5	Chipper inaudible, road dominant
7	13:59:03	63.4	75	68.2	63.3	59	53.2	54.5	53	52.9	51.2	49.6	50.6	61.8	55.1	58.3	55.9	53.5	59.4	45.7	41.6	38.5	34.8	31.1	28.2	25.9	Chipper inaudible, road dominant
8	14:03:56	63.6	76.3	63.2	61.7	69.5	60.9	58.5	56.2	57.6	53.1	53.6	55.2	55.1	57	56.7	54.4	51.9	49.2	46.2	42.6	40.2	37.5	34.3	28.6	24.6	Chipper inaudible, road dominant

**Table 9:** 5 minute Broadband noise level data to confirm stable noise source

Period end	Leq, 5min	Lmin	Lmax
13/04/2012 13:08	81.6	74.6	84.7
13/04/2012 13:13	81.9	74.9	87
13/04/2012 13:18	81.9	76.4	84.6
13/04/2012 13:23	81.5	75.3	84
13/04/2012 13:28	81.7	76.3	84.8
13/04/2012 13:33	81.6	74.8	87.5
13/04/2012 13:38	81.5	78.3	83.8
13/04/2012 13:43	81.1	78.8	83.7
13/04/2012 13:48	81.3	79.2	83.7
13/04/2012 13:53	81.9	76.3	86.5
13/04/2012 13:58	81.5	79.3	83.6
13/04/2012 14:03	81.3	79.5	83
13/04/2012 14:08	80.8	78.7	83.7
13/04/2012 14:13	81.5	78.4	86.3
13/04/2012 14:18	81.1	79.2	83.5
13/04/2012 14:23	79.9	78.1	81.5
13/04/2012 14:28	81.2	79.4	85.1
13/04/2012 14:33	81.3	75.9	86.6
13/04/2012 14:38	81	75	86.1
13/04/2012 14:43	80.9	80	81.7
13/04/2012 14:48	76.9	61.1	81.4
13/04/2012 14:53	67.7	66.3	68.8
13/04/2012 14:58	67.8	66.8	69.2
13/04/2012 15:03	74.8	67.2	84.9

**Figure 8:** Time history of datalogger at NSR 1 (Pos 2)



**Figure 9 : Time history of datalogger at NSR 2 (Pos3)**

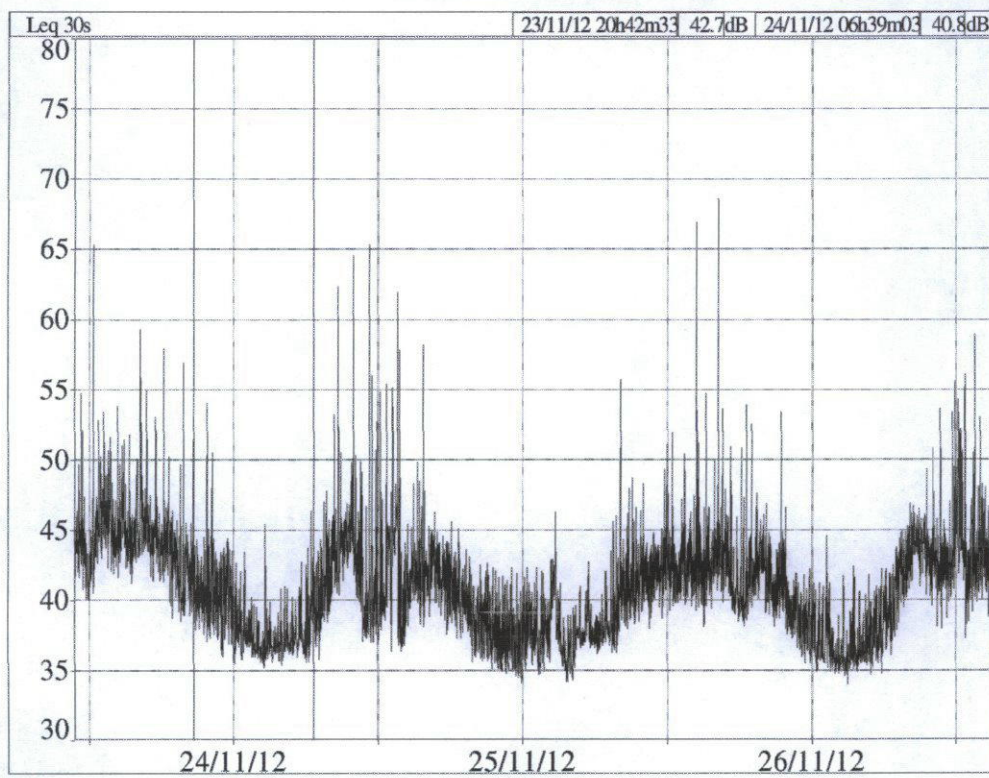


Figure 10 : Time history of datalogger at NSR 3 (Pos 5)

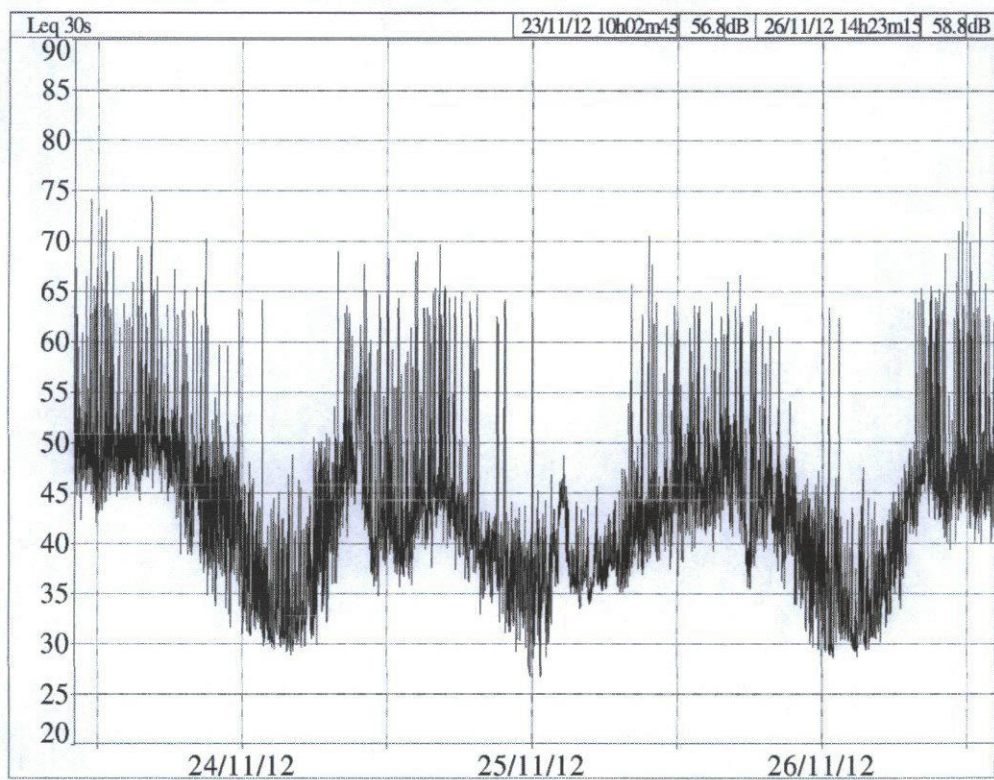
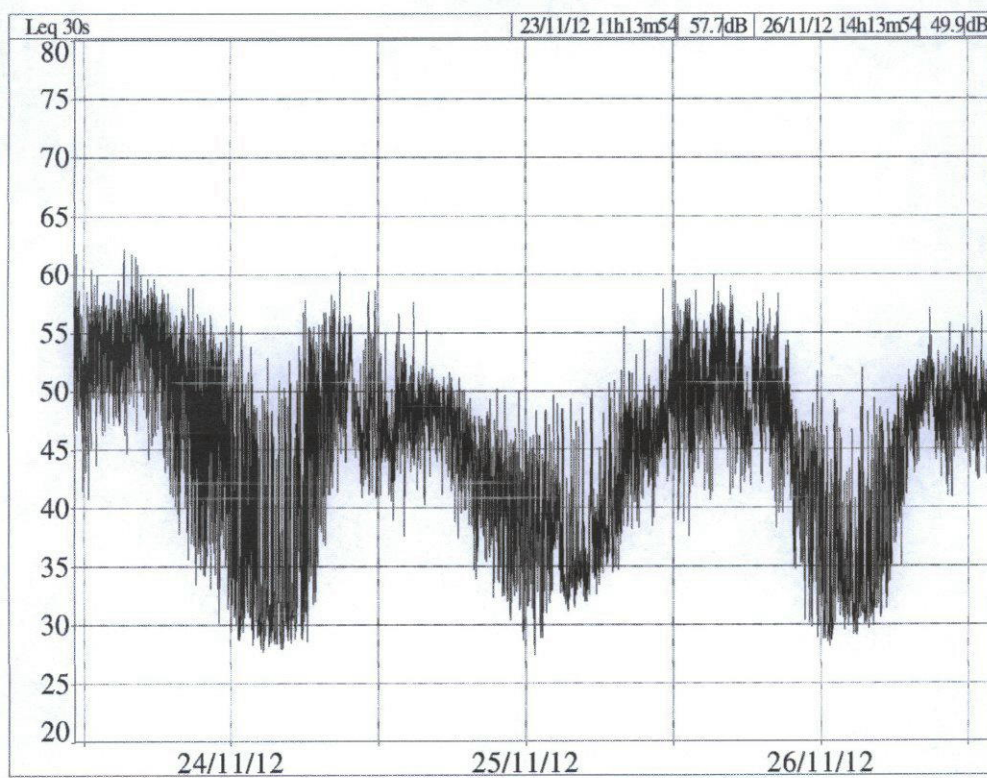


Figure 11: Time history of datalogger at NSR 4



APPENDIX C: FIGURES

Figure 12: Noise Measurement and NSR Locations



Figure 13: Recommended Screening On-site



Figure 14: Noise map showing wood chipper noise only

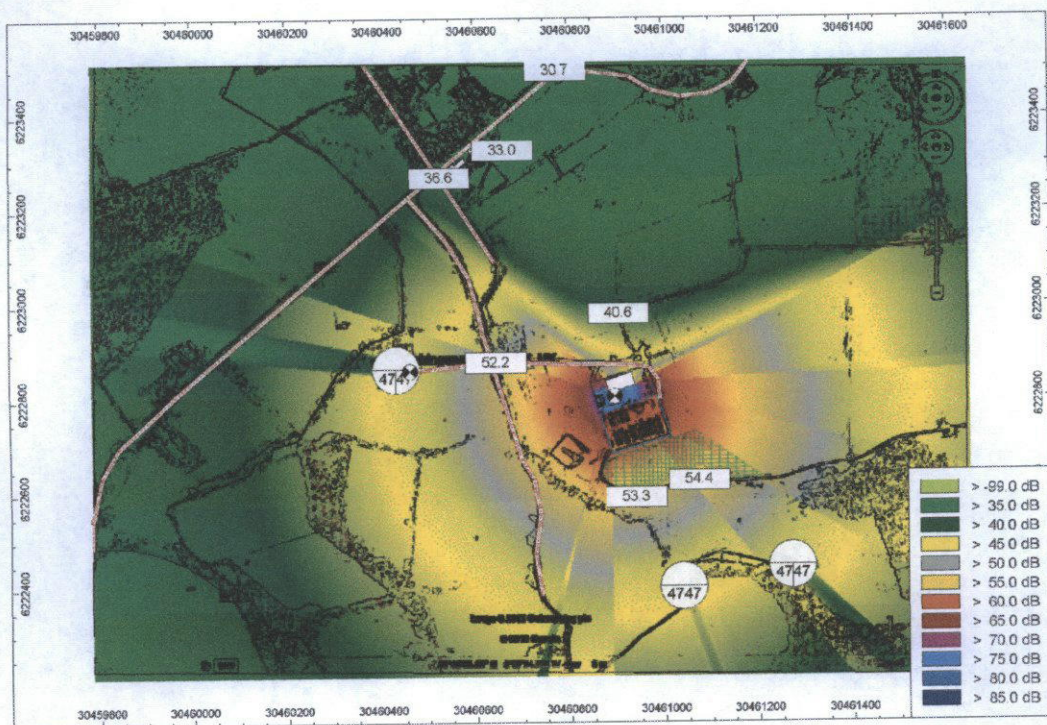
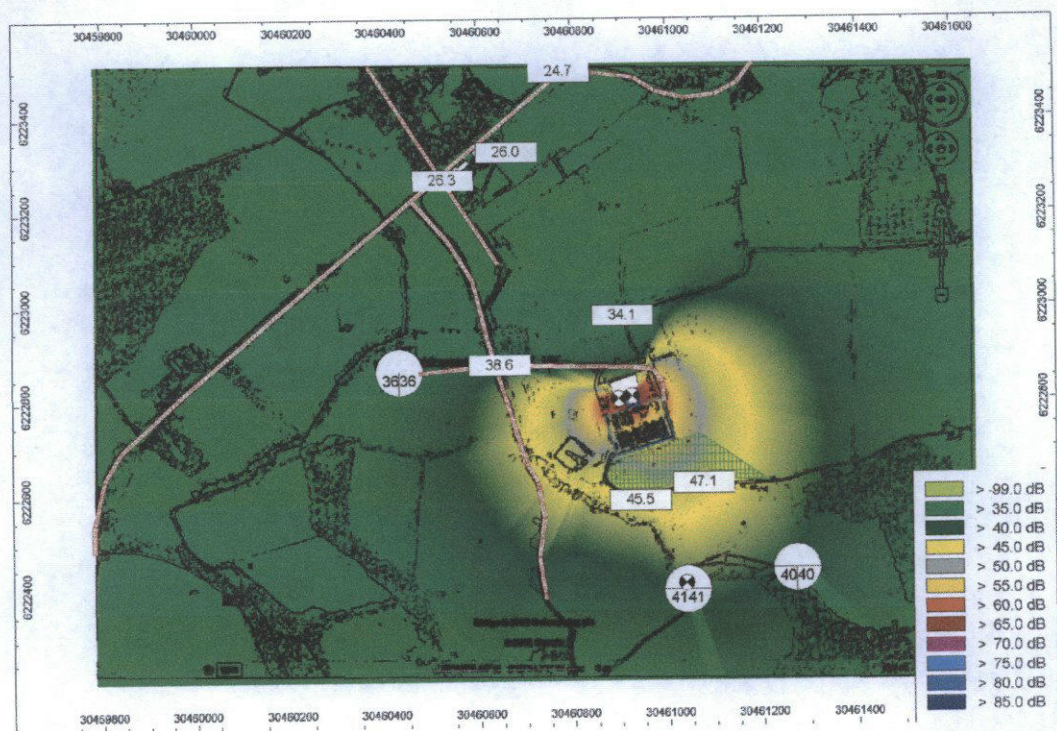


Figure 15: Noise map showing loader noise only



**Figure 16:** Noise map showing wood chipper and loader noise

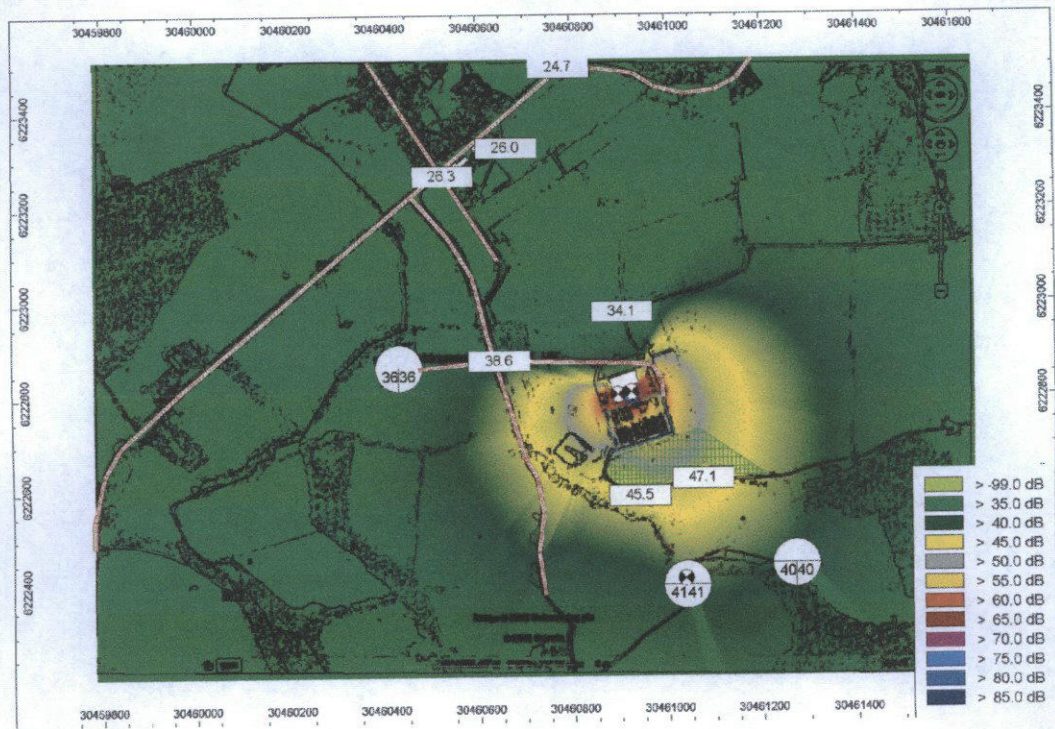
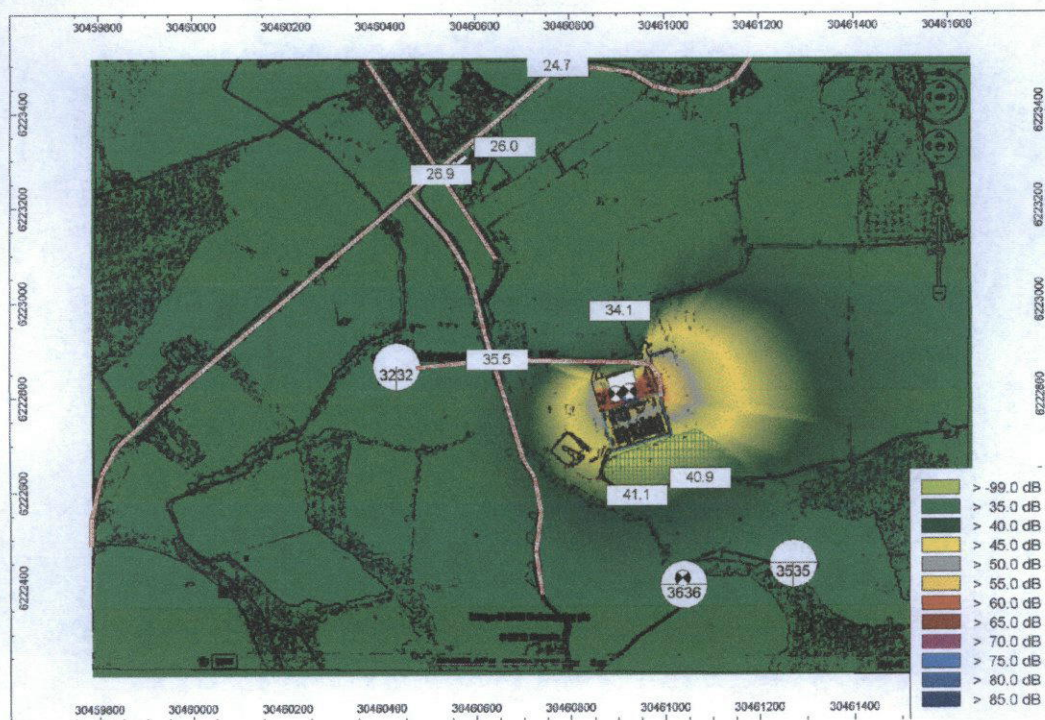


Figure 17: Noise map showing Loader noise only with 2.8m barrier



**Figure 18:** Noise map showing combined wood chipper and loader noise with 2.8m barrier

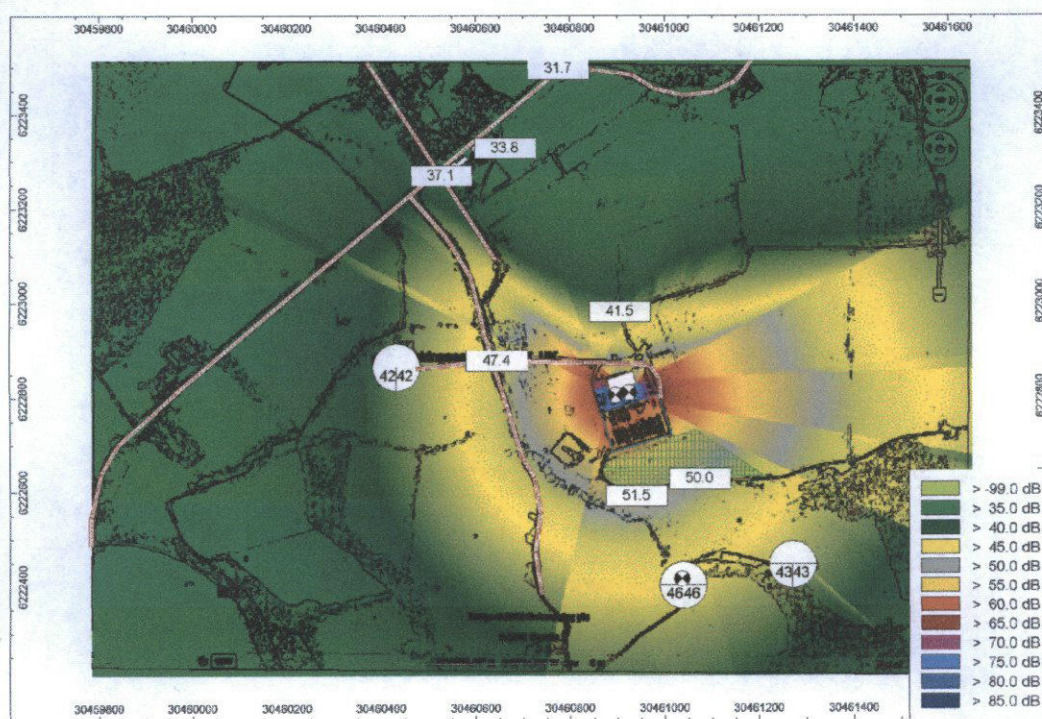
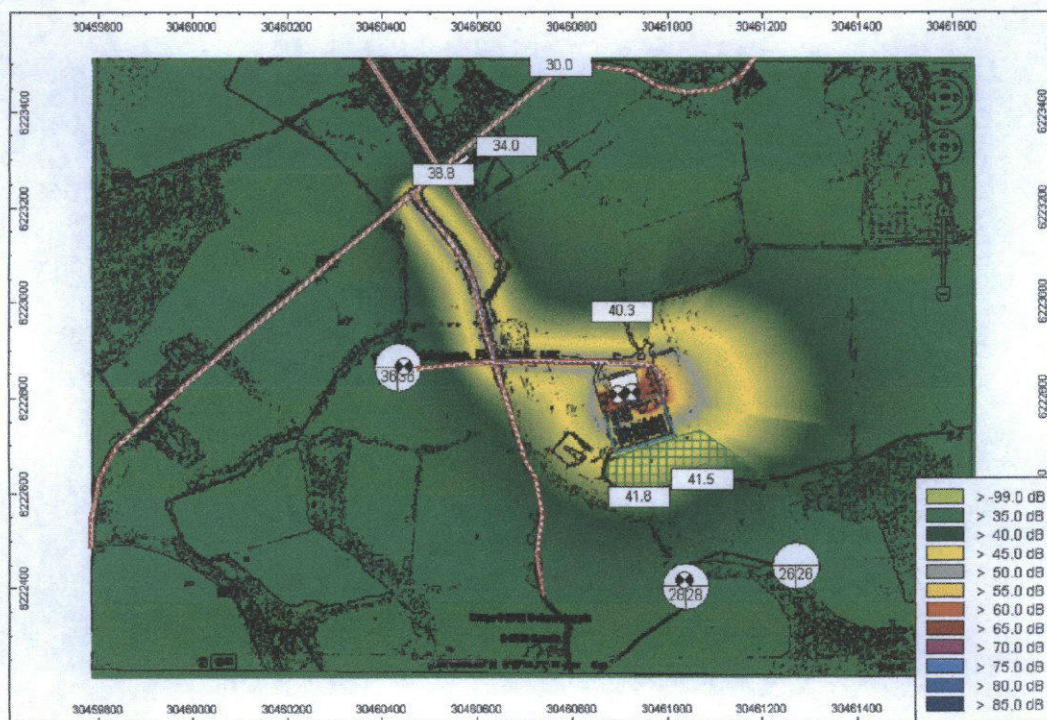


Figure 19: Noise map showing HGV movement noise only (2 per hour)



**Figure 20:** Emailed noted from Callum Snowie and Scott Brady

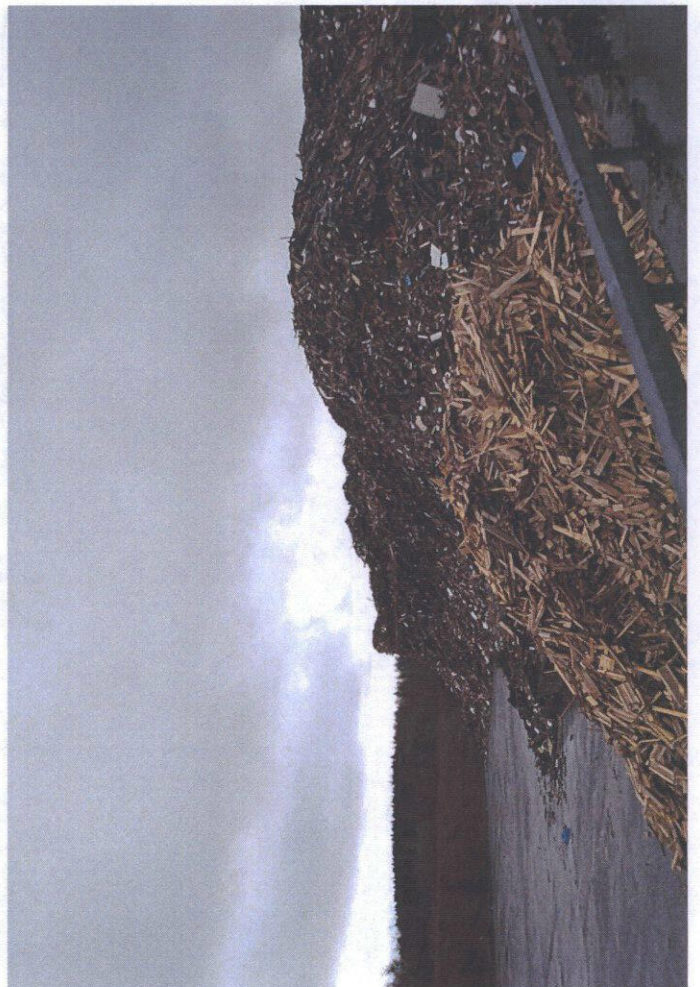
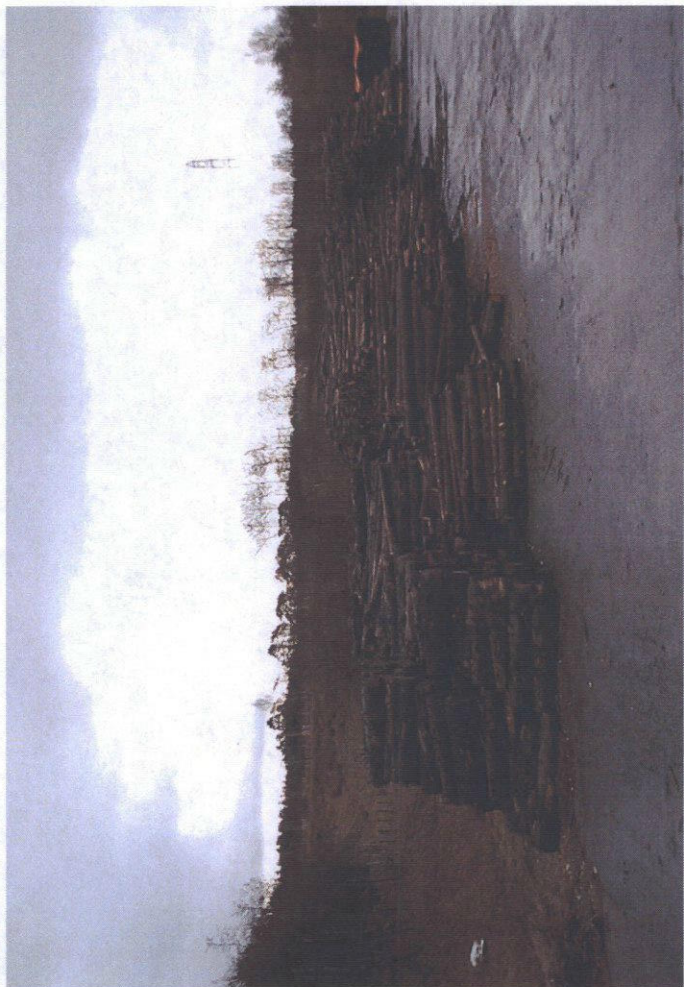
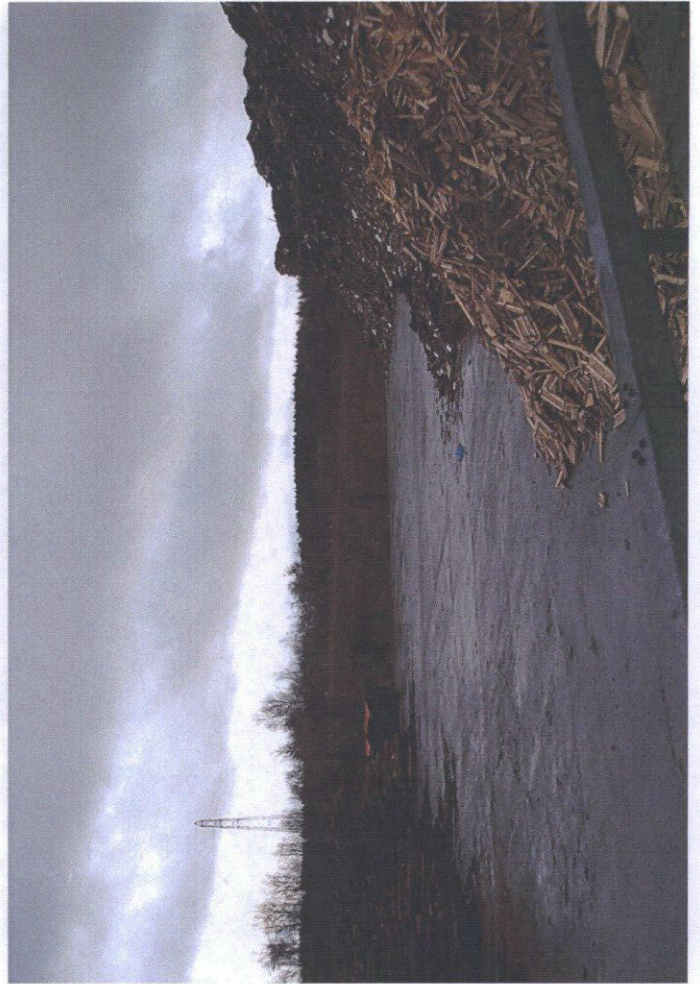
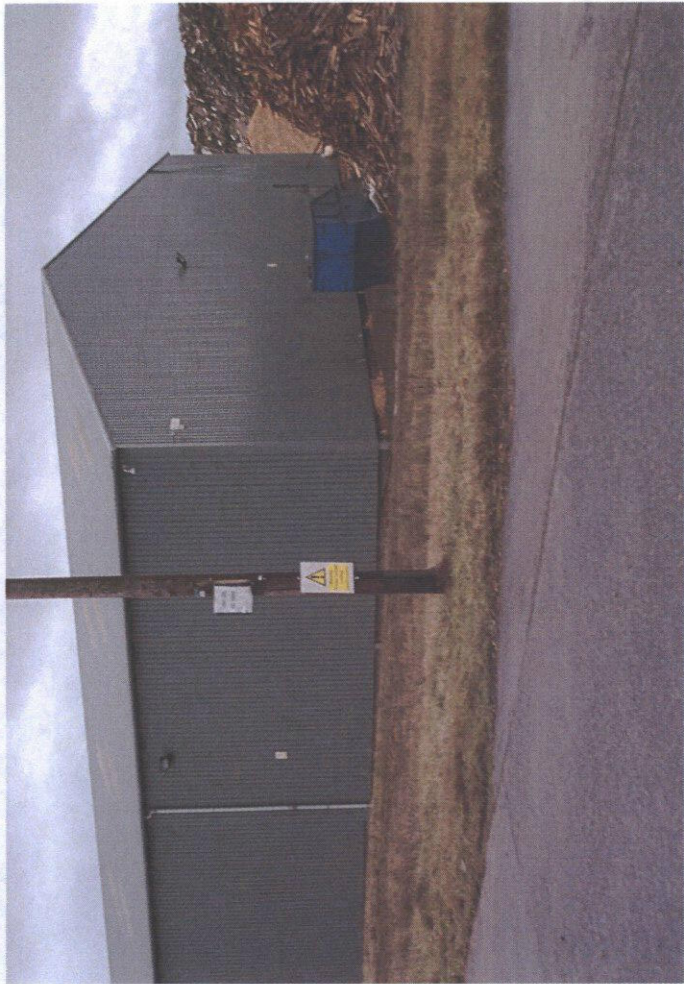
From: Calum Snowie  
Date: 26 November 2012 09:17:00 GMT  
Subject: FW: Noise test

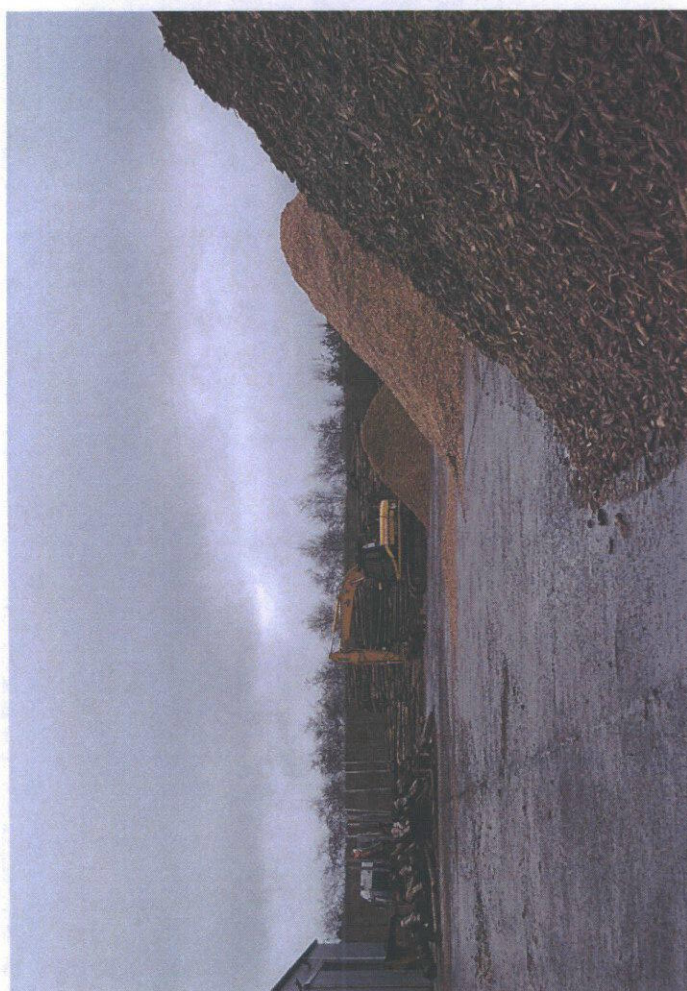
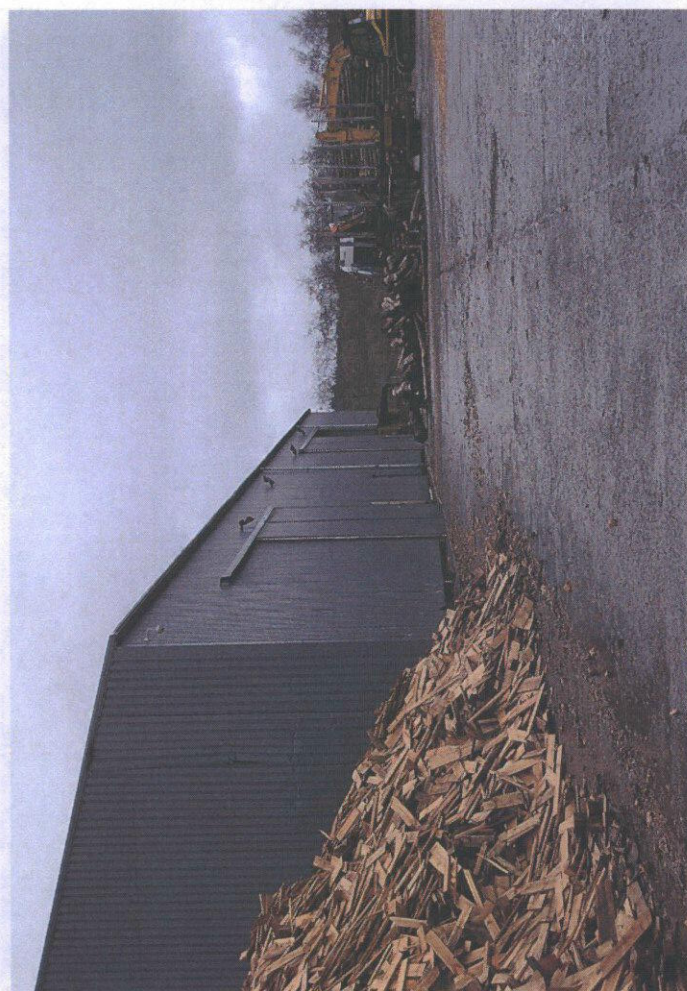
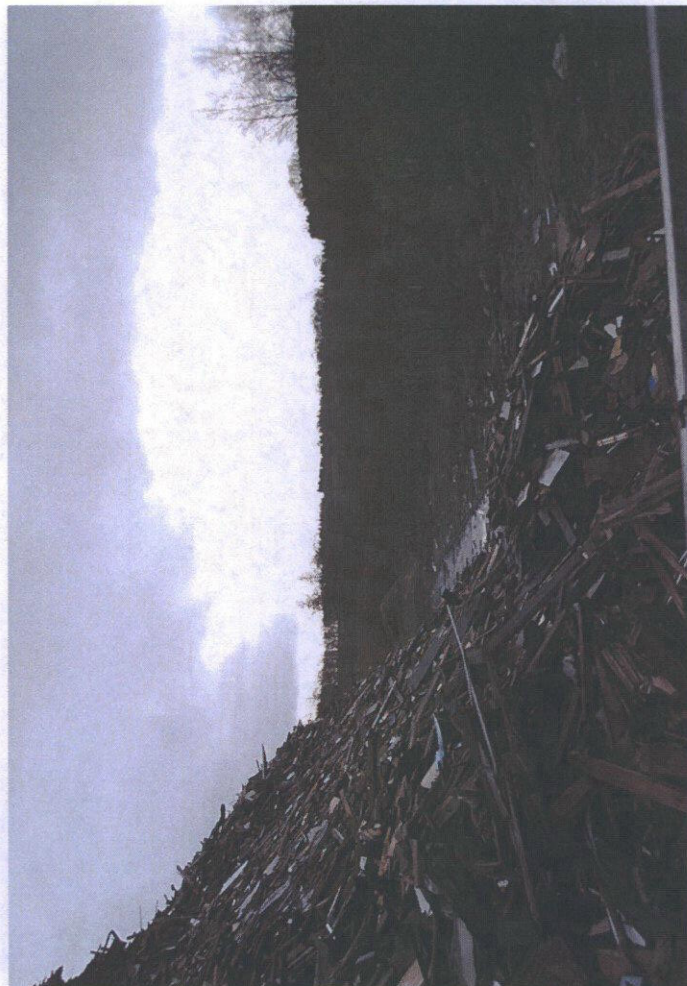
Lambhill Noise Assessment 24/10/12

07:30	Open site and check all of site
07:50	SHC Walking Floor PN08 HKW Entered site and onto Weighbridge, truck then went to the bottom pad to be loaded with Sawdust,
07:55	JCB Loading shovel taken out of shed and put on Bottom Pad
08:10	PN08 HKW Loaded/sheeted and returned to Weighbridge
08:20	PN08 HKW Weighed out of site and left for Norboard
08:25	CS and SB drove pickup round entire site and stopped at first monitor
08:50	JCB Loadall used to take the wood chipper out of the shed
09:10	JS190 taken out of shed to operate wood chipper
09:20	Woodchipper running at full capacity
09:25	MS and SB drove round site in Range Rover
09:45	Wood chipper stopped work
10:00	PN08 HKW Back into site and onto Weighbridge, then on to bottom pad to load with sawdust
10:15	PN08 HKW Loaded/sheeted and returned to Weighbridge
10:18	Shotgun fires heard from neighbouring farm,
10:25	PN08 HKW weighed out of site and left for Norboard
10:30	Toyota pickup left site
10:50	Toyota pickup re entered site
11:30	Forklift used to take chipper to bottom pad
11:40	S190 taken to bottom pad
11:50	Chipper running at full capacity
12:00	chipper stopped working
12:05	PN08 HKW Back into site and onto Weighbridge, then on to bottom pad to be loaded with sawdust
12:15	chipper and js190 taken back up to shed on top pad
12:40	PN08 HKW Weighed out and left site for Norboard
13:25	PN08 HKW entered site and loaded with sawdust
14:40	PN08 HKW Left site for Norboard
16:10	PN08 HKW entered site and loaded with sawdust
16:32	PN08 HKW Left site for Norboard
16:35	Site Closed

Figure 21: Comparison of Daytime noise levels on Saturday 24<sup>th</sup> November and Sunday 25<sup>th</sup> November

	NSR1				NSR2				NSR3				NSR4			
	File	Location	Weighting	Data type	File	Location	Weighting	Data type	File	Location	Weighting	Data type	File	Location	Weighting	Data type
Saturday	Z31112-1.LEQ				Z31112-2.LEQ				Z31112-3.LEQ				Z31112-4.LEQ			
				Leq				Leq				Leq				Leq
				Start				Start				Start				Start
				End				End				End				End
				Period				Period				Period				Period
				30min				30min				30min				30min
				Period start				Period start				Period start				Period start
				Leq				Leq				Leq				Leq
				24/11/2012 07:00				24/11/2012 07:00				24/11/2012 07:00				24/11/2012 07:00
				39.3				40.3				43.9				48
				24/11/2012 07:30				42.8				52.5				51.1
				44				44.2				50.2				52.5
				24/11/2012 08:00				49.4				52.5				52.1
				43.1				49.4				49.8				51.4
				24/11/2012 08:30				44.4				53.5				52.6
				45				49.4				53.4				48.3
				24/11/2012 09:00				43.8				48.5				46.4
				48				42.1				52.2				50.2
				24/11/2012 09:30				49.7				48.2				48.9
				46.8				43.8				52.9				48.2
				24/11/2012 10:00				42.4				50.3				47.2
				60				43.8				44.9				46.6
				24/11/2012 10:30				44.4				46.7				50.1
				40.4				44.7				52.3				49.2
				24/11/2012 11:00				45.2				52.4				48.9
				24/11/2012 11:30				47				52.8				48.2
				24/11/2012 12:00				40.3				52.9				48.7
				24/11/2012 12:30				41.8				55.1				48.9
				24/11/2012 13:00				42.6								
				24/11/2012 13:30				44.8								
				24/11/2012 14:00				42.4								
				24/11/2012 14:30				44.8								
				24/11/2012 15:00				42.6								
				24/11/2012 15:30				44.8								
				24/11/2012 16:00				42.4								
				Overall				45.2				51.7				49.8
Sunday	Z31112-1.LEQ				Z31112-2.LEQ				Z31112-3.LEQ				Z31112-4.LEQ			
				Leq				Leq				Leq				Leq
				Start				Start				Start				Start
				End				End				End				End
				Period				Period				Period				Period
				30min				30min				30min				30min
				Period start				Period start				Period start				Period start
				Leq				Leq				Leq				Leq
				25/11/2012 07:00				38.4				38.6				41.9
				39.5				40.2				42.8				44.8
				25/11/2012 07:30				43.3				49.4				47
				43				41.8				44.3				46.7
				25/11/2012 08:00				41.6				49.3				45.6
				25/11/2012 08:30				42.2				55.1				46.7
				25/11/2012 09:00				41.9				48.5				45.5
				25/11/2012 09:30				42				44.9				46.8
				25/11/2012 10:00				42.4				47				49.1
				25/11/2012 10:30				43.9				51.6				50
				25/11/2012 11:00				44				60.3				52.5
				25/11/2012 11:30				41.7				47.2				52.3
				25/11/2012 12:00				44				51.4				53.2
				25/11/2012 12:30				42.9				52				51.7
				25/11/2012 13:00				50.1				47.3				51.1
				25/11/2012 13:30				49.6				49.8				50.6
				25/11/2012 14:00				44.3				48.6				53.5
				25/11/2012 14:30				43.3				52				54.2
				25/11/2012 15:00				52.7				53.3				52.8
				25/11/2012 15:30				52.7								
				25/11/2012 16:00				45				58				58.5
				Overall				45				58				58.5

























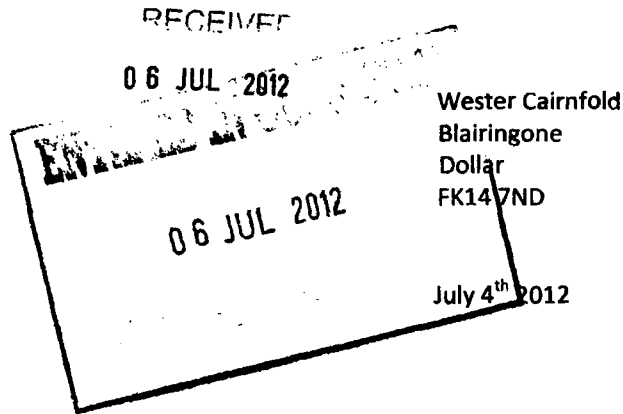
**TCP/11/16(367)**

**Planning Application 13/01174/FLL – Change of use of agricultural shed for the processing and storage of biomass materials (in retrospect), land at Lambhill, Blairingone**

## **REPRESENTATIONS**



Development Quality Manager  
The Environment Service  
Perth and Kinross Council  
Pullar House  
35 Kinnoull Street  
PERTH  
PH 1 5GD



Dear Sir,

**Planning Application 12/00912/FUL**

We wish to object to the above application for the following reasons:

**1. Local Plan**

This application is contrary to the current local plan and the new proposed local plan. The land is zoned for agricultural use, not industrial.

**2. Loss of Amenity**

The noise from the mechanical chipping process is totally unacceptable for a rural area. We can clearly hear it one mile away. Coupled with the proposed 24/7 lorry movements it will be a huge loss of amenity for the entire local community. Why has nothing been done to stop the ongoing operation which has no planning permission?

**3. Public Consultation**

We consider the applicant's resubmission on 28<sup>th</sup> June showing a much reduced area around the enlarged building to be a blatant underhand attempt to circumnavigate the 2 hectare rule (major developments) regarding public consultation, traffic movements, noise etc. The site should be considered in its entirety as per the original plan.

**4. Inaccuracies**

We refer to the letter from the applicant dated 20<sup>th</sup> June 2012, point 5.

We have lived in this immediate area for over 30 years and regularly walk the side roads and forestry tracks surrounding this site. To our certain knowledge the shed subject to this application has never seen agricultural use as we know it, and has definitely never been used as a cattle shed. This insistence on agricultural use by the applicant is very misleading. The shed was built for the maintenance of earthmovers at the open cast and should have been demolished when that ceased as promised by the coal board.

**5. Noise Survey**

We have concerns about the ability to maintain a 2.8m acoustic screen of stockpile logs in a dynamic production process, ie using and replenishing logs. Indeed having just seen the amended plan, dated 28<sup>th</sup> June, it would be totally impossible due to lack of space.

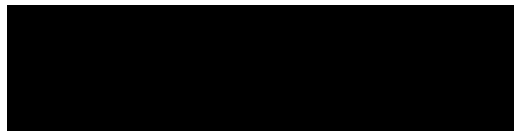
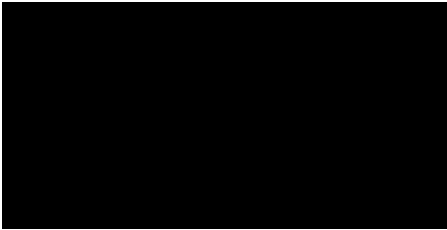
## 6. Site History

We would remind P&K Council of their promissory obligations of the late 1990's that this land would be returned to proper, traditional agricultural use, post open cast mining and the dreadful "*rivers of blood*" slaughter-house waste debacle.

Do the right thing for Blairingone and refuse this application.

Yours faithfully,

John and Sheila Anderson



8<sup>th</sup> July 2013



Perth & Kinross Council  
Pullar House, 35 Kinnoull Street  
Perth  
PH1 5GD

**SCOTTISH WATER**

Customer Connections  
419 Balmore Road  
Glasgow  
G22 6NU

Customer Support Team  
T: 0141 355 5511  
F: 0141 355 5386  
W: [www.scottishwater.co.uk](http://www.scottishwater.co.uk)  
E: [individualconnections@scottishwater.co.uk](mailto:individualconnections@scottishwater.co.uk)

Dear Sir Madam

**PLANNING APPLICATION NUMBER: 13/01174/FLL**  
**DEVELOPMENT: Blairingone Land At Lambhill**  
**OUR REFERENCE: 629258**  
**PROPOSAL: Change of use of agricultural shed for the processing and storage of biomass materials (in retrospect)**

**Please quote our reference in all future correspondence**

In terms of planning consent, Scottish Water does not object to this planning application. However, please note that any planning approval granted by the Local Authority does not guarantee a connection to our infrastructure. Approval for connection can only be given by Scottish Water when the appropriate application and technical details have been received.

Should the developer require information regarding the location of Scottish Water infrastructure they should contact our Property Searches Department, Bullion House, Dundee, DD2 5BB. Tel – 0845 601 8855.

If the developer requires any further assistance or information on our response, please contact me on the above number or alternatively additional information is available on our website:  
[www.scottishwater.co.uk](http://www.scottishwater.co.uk).

Yours faithfully

**Lynsey Horn**  
Customer Connections Administrator



**Mr Alan Kinloch (Objects)****Comment submitted date: Tue 09 Jul 2013**

I object to this planning application on the following grounds.

The use falls under class 5,6 and 11 and not agricultural or forestry as suggested by the council.

The land in question is zoned as suitable for agricultural ONLY and not an industrial processing facility.

The site in question is not identified in the local & structure plans as a site suitable for industrial use.

There is no material benefit to support a change of use in this instance

Significant traffic and noise pollution.

There are considerable environmental, health, Noise, air and wildlife implications associated with an industrial processing operation of this nature that are not being considered..

Loss of visual amenity.

Loss of a right of way secured via prescriptive rights through the site over the last 24 years or more.

Industrialisation of the countryside.

Loss of amenity and open space.

This is a wholly unappropriated use for this location. Taking the impact that Noise and traffic two significant factors will have on this community and that these two factors have have not been properly and adequately addressed by the applicant in their application is appalling.

With the applicant advising that this is to be a 24 hour operation and with 16 articulated vehicles to access the site between 23:00 and 07:00 hours added to the already observed 60-80 articulated vehicles that access the site between 06:00 and 21:00 the scope for significant nuisance to local residents including children on their way to Blairingone School is severe.

In respect of the applicants environmental noise assessment it is clear that there is a degree of fraudulent assumption and indeed factual inaccuracies. The applicants noise engineer advises that noise monitoring equipment has been placed at local residences. However 2 of the residences (one being my own) have not had any equipment installed. Worse where the engineer has shown the location of the supposed noise monitoring equipment is actually in or immediately adjacent to a river who's noise level would render any readings invalid. This alone should have this document and application thrown out for attempting to mislead the council's planning officers.

Regarding the long history of this site it is important to remind P&K planning department that this community reached an agreement with P&K council in the 1980's to allow an open cast mine for a period of 8 years providing:- The land would be reinstated back to agriculture and all hard standing and buildings would be removed to allow a community woodland to be created.

What followed from this agreement was an erosion by P&K council of this understanding that ultimately led to a shocking scenario in the 1990's where hazardous waste including human effluent, medical waste as well as blood and guts from abattoirs was spread on this land with the tacit knowledge of P&K council leading to health issues in the local population.

This led to a well documented fight between this community and P&K council that ended up on the floor of the Scottish parliament changing Scottish legislation in the process.

The outcome of this fight and change in legislation resulted in the following statements and promises by The Scottish Parliament including site visits by Alex Salmond :-

The Scottish Parliament in relation to Blairingone stated on 31st March 2003 that

"In the Case of Blairingone, the village has undoubtedly suffered enough and deserves a clear statement as to the risks or otherwise of the activities adjacent to it.? ?In reaching our conclusion, the committee is conscious that the health of the public should never be jeopardised for lack of definitive evidence. Neither should the situation be made worse by inappropriate and unjustified speculation"

The speaker of the Scottish Parliament said "Blairingone should now be left in peace".

Dorothy-Grace Elder MSP said

"if ever a village has been raided and pillaged repeatedly it is Blairingone. Industry has hauled benefits out of it and put nothing back in return, Scotland owes a debt to Blairingone"

Thus it is fair to say that this community has paid its dues to the wider society and asks P&K council to uphold the fact that P&K agreed that this land be zoned only as suitable for agricultural as indeed shown in the Local and Structure Plan

To expand on the miss classification by P&K planning department.

The proposed industrial chipping use on the site has been wrongly classified by Perth & Kinross Council as falling under agriculture and forestry and thus not needing change of use. This is incorrect.

P&K planning department are basing this view on the legal case of Midlothian v Buccleuch Estates 1962 which found that the storage and transfer of timber and the rendering of wood marketable falls under forestry use.

Where the application of this case is not applicable in this instance is the case premise that found that ?rendering the wood marketable? was the key legal argument that framed the case. Also as important was the ownership of the timber being that it remained in the same ownership until sold implying that the off site storage and rendering were assumed to have taken place in the forest itself.

In the Midlothian v Buccleuch Estates 1962 case the timber was owned by Buccleuch Estates and was being stored and rendered on Buccleuch estates land albeit remote from the forest.

THIS IS NOT THE CASE IN THIS INSTANCE.

In this instance the operator is buying previously rendered felled wood on the open market (thus previously being made marketable) and applying a further industrial processing post rendering of the wood to address the needs of another market.

To expand further, the precedent P&K council uses to justify agricultural use concerns itself with the intermediary relationship between felled timber , the storage of this felled timber and the market place buying the felled timber by the same owner throughout its life until sold. This is not the case on this site as what is now happening is an open market purchase contract transaction which removes a one owner relationship with the timber and creates a multi owner relationship via the market place. The relationship between the owner of the timber is further distanced from agricultural use when an industrial processing technique is used to further render of the wood marketable to address the needs of yet another market (biomass). You argument taken literally would imply that retailer DFS furniture or worse paper/pulp manufacturers could well fall under forestry classification use as they both render timber marketable.

Thus removing applying the planning guidelines literally you would find that the description of Class 5 and indeed class 6 describes the industrial activity now occurring on this site and understanding that this current process goes beyond making the wood marketable, referring to the associated activity on this site, namely the industrial processing including the traffic movements, storage, waste material movement, disposal and usage of the waste wood and building rubble further pushes this proposal out-with forestry description and into major Class 5&6. application,

In terms of classification, this application should be classified as Major and not Local, thus allowing a proper and correct series of noise, traffic, wildlife and environmental impact assessments to be carried out to provide comfort for this community.

P&K planning department have previously stated incorrectly that ?the Hierarchy of Developments Regulations ? are concerned principally with the construction of new buildings rather than the change of use of existing buildings or land? and as such P&K planning department have designated the two applications made my Snowie as local.

The use of the word principally in the definition is material here. Had this said ?are concerned wholly? in relation to this regulation then The statement made by

Nick Brian previously would be correct. However the use of principally thus permits local planning authorities to determine classification of local or major to be based on facts and not merely personal opinion. Thus if an argument can be formed to support a particular designation and as precedent has shown us in other planning cases regarding determination, the planning authority is obliged to act prudently and classify accordingly.

The question now is what argument can be built to show that both these planning applications are in fact the same and thus should be treated as Major.

Firstly to address the question of construction on site and size. The 2006 act (s26) that defines what development construction is states that it is 'the carrying out of building, engineering, mining or other operations in, on, over etc? The use of the phrase 'Other Operations' implies that the absence of built construction should therefore not exclude proper classification and indeed provides expansion as to what 'construction' means. Thus the creation of an industrial chipping operation, in addition to and remote from the existing buildings as well as the ancillary activities of loading, unloading, treating weighing, management services, parking etc , can indeed be defined as 'construction'. Ray Short has stated that a mobile chipper is not development but I have yet to find any evidence to reinforce this and thus a mobile industrial chipper could indeed fall under 'other operations'.

Secondly the original application submitted in March 2012 showed a 2nd industrial building (to be built at right angles to the existing shed) and on a site of 16 hectares. Only when this obviously major application was brought to the attention of P&K planning department and questions asked over its classification did the applicant withdraw and reapply with two separate applications both under the 2 hectare threshold. This thus implies that at a later date additional development construction will be applied for or at least a larger operation under the guise of 'other operations' is planned for this site over and above the agricultural shed.

Planning by stealth could well be argued here.

Thirdly- Scottish regulations state that operations of this scale and nature must have a turning circle to prevent articulated vehicles reversing. The fact the first application site is so tight by design to keep it under 2 hectares that it does not allow for a turning circle and thus vehicles are regularly entering into the second site as well as being forced to reverse indicates a design that does not meet regulations but also reinforces the link between both applications.

Fourthly, the hierarchy of developments act allows for 'any development not wholly falling within any single class of development described in paragraphs 1-8' should be classed as Major. This does not go on to state that construction must take place to allow for this classification and in any case construction can be classed as 'other operations' by which the daily activity of the applicants fall under.

The applicant has also attempting to avoid a 'major' application classification by submitting two separate applications for differing uses and showing the site areas as falling under 2 hectares. Taking the core areas currently used by the applicant for the past 13 months namely access roads, building processing area and storage creates an area above 2 hectares in daily use, despite the 'artistic' interpretation on their application form.

The relationship between both applications is so closely linked namely one being the storage of felled timber the other being the processing of felled timber, that if P&K planning department did consider them as one overall operation use would be a significant breach of planning rules and indeed the spirit of Scottish planning law.

I further wish to object on the following grounds.

1:- the absence of a turning circle in the chipping part of the site and the observation of vehicles from the chipping part of the site entering the storage part of the site to turn thus implying that both are intrinsically linked to one another as to indeed imply more than a mere neighbourly link.

2:- The hierarchy of developments act allows for 'any development not wholly falling within any single class of development described in paragraphs 1-8' should be classed as Major. This does not go on to state that construction must take place to allow for this classification as you have implied and in any case construction can be classed as 'other operations' by which the daily activity of the applicants fall under.

3:- This planning application was submitted in May last year and so far the applicant is carrying out his business without a valid planning application at all hours of the day and night, causing noise, traffic, environmental and wildlife pollution and harm. I am surprised by you comment that it is council policy not to take enforcement action when an application is pending. As this application is rapidly approaching its 12 month anniversary how long does the council hold this 'head in the sand approach' ? Am I to assume then that I can submit a planning application for an inappropriate use, carry out this use, then withdraw the application before determination only to resubmit again and keep this going indefinitely.

4:- Nick Brain has advised Councillor Cuthbert that 'the Hierarchy of Developments Regulations' are concerned principally with the construction of new buildings rather than the change of use of existing buildings or land? and as such you have designated the two applications as local. The use of the word principally in the definition is material here. Had this said 'are concerned wholly?' in relation to this regulation then your statement previously would be correct. However the use of principally thus permits local planning authorities to determine classification of local or major to be based on facts and not merely personal opinion. Thus if an argument can be formed to support a particular designation and as precedent has shown us in other planning cases regarding determination, the planning authority is obliged to act prudently and classify accordingly.

What concerns me the most here is there seems to be a concerted effort by P&K council to build a case for this application as opposed to applying the full rigours of the planning regulations.

This planning application was submitted in May last year and so far the applicant is carrying out his business without a valid planning application where I have suffered noise nuisance at 5.50am, 6.10am and 23.50pm most weeks.

**Mr Andrew Burt (Objects)**

**Comment submitted date: Thu 11 Jul 2013**

As has been stated previously, Blairingone has been ravaged over time by those intent on making money and not retuning anything to our community. Why is this application 'retrospective'???? Simple, it is already being used for the very purpose that this person would now like permission for!!! Brilliant, yet another instance of the rich getting the pleasure and the poor getting the blame!  
PKC, hang your collective heads in shame for allowing these people to even consider that they start in business without proper consent!!!



**Mr David Campbell (Objects)**

**Comment submitted date: Fri 12 Jul 2013**

The land involved is agricultural but the development is industrial and totally inappropriate.

The amenity of the village has suffered dreadfully over the past twenty or so years, due to the open cast mine, the sludge spreading over the reinstated open cast area and now a wood chipping plant.

The original use of the building was for composting and I find it unbelievable that the developer has again flaunted the planning laws by operating a timber chipping plant without planning permission and now submits a retrospective application.

The village already suffers dreadfully from excessive lorry traffic which constantly flaunts the speed limit through the village and indeed, very often harasses any locals who dare to keep their speed within 30MPH.

It is absolutely ridiculous that a small, rural village with absolutely no commercial property, has to endure never ending unsociable, inappropriate commercial operations by organisations who have no involvement whatsoever with the village.



**Mrs Virginia Currie (Objects)**

**Comment submitted date: Fri 12 Jul 2013**

Blairingone already has hundreds of timber lorries thundering through it at all hours. We have a wood chip facility. We have noise from it and pollution from the lorries. The proposal is NOT to use the land for forestry or agriculture....in fact, the complete opposite! This is a village in the countryside and if this application goes ahead, we will merely be a row of houses in an industrialised area with a major trunk road through us!

How can you say that destroying trees by chipping is agricultural use? It is industrial and it is already being done so please reconsider this aggressive attack on our village.



**Mr Fred Saunders (Objects)****Comment submitted date: Fri 12 Jul 2013**

I object to this planning application on the following grounds.

? The use falls under class 5, 6 and 11 and not agricultural or forestry use. The proposed facility is a wood and waste material processing plant and is therefore its use is industrial - see point 1 below.

? The land in question is zoned as suitable for agricultural ONLY and not an industrial processing facility. The site in question is not identified in the local & structure plans as a site suitable for industrial use ? see point 2 below.

? There is no material benefit to the community to support a change of use.

? The proposal would generate significant additional traffic and noise pollution and would give rise to an increased risk of accidents at the A977 junction with the minor road providing access to the site.

? There are environmental, health, noise, and wildlife implications associated with an industrial processing operation of this nature that the applicant has failed to considered.

? The noise survey submitted by the applicant concludes that the full site daytime operation does not meet the requirements of BS4142 and is therefore not appropriate for operation on the Lambhill site which has numerous nearby residents.

? The noise survey does not include the effects of road transport vehicles entering and leaving the site while the site is in operation.

? Loss of rights of way secured via prescriptive rights through the site over the last 24 years or more.

? Industrialisation of the countryside.

? The land ownership certificate section A completed by the applicant is incorrect since the site is currently only approved for agricultural use. It appears therefore that the applicant accepts that his current unauthorised use of the site is in fact industrial.

? In terms of classification, this application should be classified as Major and not Local, thus allowing a proper and correct series of noise, traffic, wildlife and environmental impact assessments to be carried out to provide comfort for this community. P&K Council?s decision to allow the segregation of the timber storage area from the processing facility when the two are clearly and inextricably linked is illogical and wrong. If P&KC allow this application to proceed it should be reclassified as Major. The applicant is already storing waste materials outwith the application area and has dumped scrap equipment in the small pond nearby ? P&KC should investigate these issues.

1. This is not agricultural or forestry use. It is accepted that a site is forestry / agricultural where the intermediary relationship between felled timber, the storage of this felled timber and the sale of the felled timber is by the same owner throughout its life until sold. This is not the case on this site. The timber is procured by an open market purchase which removes a one owner relationship with the timber and creates a multi owner relationship via the market place. The relationship between the owner of the timber is further distanced from agricultural use when an industrial processing technique is used to further render the material marketable to address the needs of yet another market (biomass).

2. Regarding the long history of this site it is important to remind P&K Council that this community reached an agreement with P&K Council to allow an open cast mine for a period of 8 years providing that the land would be reinstated back to agriculture and all hard standing and buildings would be removed to allow a community woodland to be created.

What followed was a shocking scenario where hazardous waste including human effluent, medical waste as well as blood and guts from abattoirs was spread on this land with the tacit knowledge of P&K Council leading to health issues in the local population. This led to a well-documented fight between this community and P&K Council that ended up on the floor of the Scottish parliament and changed Scottish legislation in the process.

Dorothy-Grace Elder MSP said "if ever a village has been raided and pillaged repeatedly it is Blairingone. Industry has hauled benefits out of it and put nothing back in return, Scotland owes a debt to Blairingone". The speaker of the Scottish Parliament said "Blairingone should now be left in peace". This proposal does nothing to leave Blairingone in peace.

This community has paid its dues to the wider society and asks P&K Council to uphold the existing zoning as suitable for agricultural only as shown in the Local and Structure Plan.



**Mrs Rose Saunders (Objects)****Comment submitted date: Fri 12 Jul 2013**

I object to this planning application on the following grounds.

? The use falls under class 5, 6 and 11 and not agricultural or forestry use. The proposed facility is a wood and waste material processing plant and is therefore its use is industrial.

? The land in question is zoned as suitable for agricultural ONLY and not an industrial processing facility. The site in question is not identified in the local & structure plans as a site suitable for industrial use.

? There is no material benefit to the community to support a change of use.

? The proposal would generate significant additional traffic and noise pollution and would give rise to an increased risk of accidents at the A977 junction with the minor road providing access to the site.

? There are environmental, health, noise, and wildlife implications associated with an industrial processing operation of this nature that the applicant has failed to considered.

? The noise survey submitted by the applicant concludes that the full site daytime operation does not meet the requirements of BS4142 and is therefore not appropriate for operation on the Lambhill site which has numerous nearby residents.

? The noise survey does not include the effects of road transport vehicles entering and leaving the site while the site is in operation.

? Loss of rights of way secured via prescriptive rights through the site over the last 24 years or more.

? Industrialisation of the countryside.

? The land ownership certificate section A completed by the applicant is incorrect since the site is currently only approved for agricultural use. It appears therefore that the applicant accepts that his current unauthorised use of the site is in fact industrial.

? In terms of classification, this application should be classified as Major and not Local, thus allowing a proper and correct series of noise, traffic, wildlife and environmental impact assessments to be carried out to provide comfort for this community. P&K Council's decision to allow the segregation of the timber storage area from the processing facility when the two are clearly and inextricably linked is illogical and wrong. If P&K allow this application to proceed it should be reclassified as Major. The applicant is already storing waste building materials outwith the application area and has dumped scrap into the small pond nearby ? P&K should investigate these issues.



**Mr John Anderson (Objects)****Comment submitted date: Sat 13 Jul 2013**

Planning Application 13/01174/FLL

Change of Use of Agricultural Shed for Processing and Storage of Biomass Material

We wish to object to this application for the following reasons.

1. Flawed Assumptions ? This site is zoned for agricultural not industrial use. A chipping operation has been allowed to operate unchecked at this site for far too long, due to the inaction of P&K Enforcement Officers. This lack of action is based on a case history in the Borders of many years ago. Mr Alan Kinloch, a local resident, illustrated in great detail during the handling of the recently withdrawn, 12/00192/FLL, that this is a flawed comparison as in the Lamb Hill situation the biomass material is being imported for processing and then exported for use. Thus making it an industrial way station, or handling plant.

The Duke of Buccleuch situation was for the processing of timber felled on the Duke?s own Estates to make the timber marketable. As the Lamb Hill timber is being bought on the open market, it is clearly already marketable. Thus, this proposal does not qualify for exemption from agricultural use.

2. Acoustic Survey ? Para 1.5 states ?....the noise levels inside habitable rooms of properties of concern?. Para 5 states ?criteria....measured within any neighbouring residential premises with windows slightly open?. My enquiries have revealed none of the nearest properties have ever had sound monitors installed. Have the figures stated for inner noise thus been extrapolated (guesstimated), if so it must raise doubt on the efficacy of the whole report.

3. Acoustic Wall ? The use of a constantly changing log pile as a 2.8M acoustic barrier in a dynamic commercial operation beggars belief. I do not believe it is viable and if allowed will not be adhered to.

4. Site Area ? The area cross hatched on the map is certainly not big enough to accommodate the above log pile and associated traffic movements. NB The position of an acoustic wall is shown well outside of the cross hatched area. Will this proposal use all of the concrete hard standing? If so, the total area should be shown, not the small misleading cross hatched area on the submitted plan.

Blairingone was promised by the Scottish Parliament after the Fields of Filth fiasco (well documented 2001 / 2002) lasting peace from busy commercial industrial operations and I would remind P&K of this commitment, especially as the applicant is the same organisation reprimanded by the Scottish Government Committee at that time.

Finally I would like to express my dismay at the granting of 12/01354/FLL on this same site. If the enforcement officers or planners would care to visit the site, they would find an enormous mountain of building waste including glass, metal, plasterboard and plastic ? not waste wood.

I say again, this site is not zoned for industrial use!!



**Mrs Julie McBrien (Objects)**

**Comment submitted date: Sun 14 Jul 2013**

Please accept our objection to planning application 13/01174/FLL. Our main concern is the noise from this plant, which we can hear several miles away when we have our windows open. If we can hear it here then the residents within Blairingone will definitely suffer from this noise pollution.

In addition to our concerns about noise, we also object on the following grounds:

The use falls under class 5,6 and 11 and not agricultural or forestry as suggested by the council.

The land in question is zoned as suitable for agricultural ONLY and not an industrial processing facility.

A 24hr a day industrial operation is wholly inappropriate.

The application should be classed as Major and not Local.

There is no material benefit to support a change of use in this instance.

There will be significant traffic and noise pollution.

There are considerable environmental, health, Noise, air and wildlife implications associated with an industrial processing operation of this nature that are not being considered due to local classification.

Loss of visual amenity.

Loss of a right of way secured via prescriptive rights through the site over the last 24 years or more.

Industrialisation of the countryside.

Loss of amenity and open space.



**Mrs Jennifer McCrorie (Objects)**

**Comment submitted date: Sun 14 Jul 2013**

This is a re-submission of the application over a year ago that was refused. This agricultural land not industrial and is a Major application. Loss of right of way. I'm afraid this company thinks they can ride roughshod over everyone - would they like this industry in their vicinity at the Gogar??



MON

Development Quality Manager  
The Environment Service  
Perth and Kinross Council  
Pullar House  
35 Kinnoull Street  
PERTH  
PH 1 5GD

2 Tethyknowe Steading  
Blairingone  
Dollar  
FK14 7ND

July 14<sup>th</sup> 2013

Dear Sir,

**Planning Application 13/01174/FLL**

We wish to object to the above application for the following reasons:

- It is contrary to the local plan which has zoned this area for agriculture.
- This application should be treated as a major application. Too many applicants are flouting the new guidelines to avoid the consultation process.
- The noise from this site is already audible from nearly 2 miles away. The impact on the local village is unacceptable.
- The increase in traffic on the A977 is a major safety hazard for the residents of Blairingone.
- Blairingone has had to fight too many battles over this land which should now be restored to woodland as originally promised.

Yours faithfully

Jan and Graham Pye





**Mr Jason Davey (Objects)**

**Comment submitted date: Mon 15 Jul 2013**

Please accept our objection to planning application 13/01174/FLL. Our main concern is the noise from this plant, which we can hear several miles away when we have our windows open. If we can hear it here then the residents within Blairingone will definitely suffer from this noise pollution.

In addition to our concerns about noise, we also object on the following grounds:

The use falls under class 5,6 and 11 and not agricultural or forestry as suggested by the council.

The land in question is zoned as suitable for agricultural ONLY and not an industrial processing facility.

A 24hr a day industrial operation is wholly inappropriate.

The application should be classed as Major and not Local.

There is no material benefit to support a change of use in this instance.

There will be significant traffic and noise pollution.

There are considerable environmental, health, Noise, air and wildlife implications associated with an industrial processing operation of this nature that are not being considered due to local classification.

Loss of visual amenity.

Loss of a right of way secured via prescriptive rights through the site over the last 24 years or more.

Industrialisation of the countryside.

Loss of amenity and open space.



**Miss Kathryn Smith (Objects)**

**Comment submitted date: Mon 15 Jul 2013**

I object on the following

The use falls under class 5,6 and 11 and not agricultural or forestry as suggested by the council.

The land in question is zoned as suitable for agricultural ONLY and not an industrial processing facility.

The site in question is not identified in the local & structure plans as a site suitable for industrial use.

There is no material benefit to support a change of use in this instance

Significant traffic and noise pollution.

There are considerable environmental, health, Noise, air and wildlife implications associated with an industrial processing operation of this nature that are not being considered..

Loss of visual amenity.

Loss of a right of way secured via prescriptive rights through the site over the last 24 years or more.

Industrialisation of the countryside.

Loss of amenity and open space.

I can hear the noise already within my house with windows and doors closed during the day so if this is allowed on a 24hr basis then how are we supposed to sleep or enjoy living in our homes.

There are too many lorries thundering through the village at present, we do not need any more.

We were promised lovely walks by the forestry commission on surrounding land but now i rarely use the area because of the lorries, noise, and the company have blocked part of the access with an enormous pile of scrap wood. There is also an increasing amount of litter from food and plastic sheets.

The site is far too close to homes to be allowed to operate on a 24hr basis and the fact they are allowed to operate at all without the proper planning permission is a disgrace.



**Mrs Helen Vear (Objects)****Comment submitted date: Mon 15 Jul 2013**

Dorothy-Grace Elder MSP said "if ever a village has been raided and pillaged repeatedly it is Blairingone. Industry has hauled benefits out of it and put nothing back in return, Scotland owes a debt to Blairingone". The speaker of the Scottish Parliament said "Blairingone should now be left in peace". This proposal does nothing to leave Blairingone in peace.

Where does this proposal match any of the above comments???

We moved to the countryside to enjoy peace and tranquillity. Already the speed and noise of the lorries using the main trunk road detract from the peaceful surroundings and the noise as they vibrate and rumble over the deteriorating road surface causes increased noise pollution. Adding, and indeed giving permission to, increased traffic use is nonsense.

I strongly object to this proposal and outline the following:

- The use falls under class 5,6 and 11 and not agricultural or forestry as suggested to the council.
- The land in question is zoned as suitable for agricultural ONLY and not an industrial processing facility.
- The application should be classed as Major and not local.
- There is no material benefit to support a change of use in this instance.
- There will be significant traffic and noise pollution.
- There are considerable environmental, health, noise, air and wildlife implications associated with an industrial processing operation of this nature that are not being considered due to local classification.
- Loss of visual amenity
- Loss of right of way secured via prescriptive rights through the site over the last 24 years or more.
- Industrialisation of the countryside
- Loss of amenity and open space.



**Mrs Diane walker (Objects)****Comment submitted date: Tue 16 Jul 2013**

Whilst Snowie have been transporting logs in and out of this site over the past few months they have been transporting them on the Vicars Bridge Rd using HGVs which is both dangerous and surely unlawful. The road has a sign on it saying UNSUITABLE FOR HGVs! HGVs have consistently used this road both day and night I have witnessed them. The school children going to Kinross High School wait at the junction of Vicars Bridge Rd and A977 Main St every morning approx 20-30 children as the bus stop is right outside my house on the junction. They also cross the A977 every morning and afternoon. Any further traffic which will undoubtedly follow with this application is unacceptable as it is dangerous! We have had 2 deaths on the A977 at Blairingone! How many more must we have!?! I object strongly to this application as it will cause HGVs and other vehicles going on A977 both ways through village and there will be increased traffic and noise pollution on this already busy road. Also this application should be classed as major not local. The use falls under class 5, 6 and 11 and not agricultural or forestry as suggested by council. There will be considerable environmental, health, noise, air and wildlife implications associated with a industrial processing plant of this nature that are not being considered due to local classification. Also object due to industrialisation of countryside I bought my house to live in rural area not an industrial site!! Also I walk my dog and child at Lambhill this will mean loss of right of way secured via prescriptive rights through site over past 24 years or more.



**Mr robert walker (Objects)**

**Comment submitted date: Tue 16 Jul 2013**

please see comments on my wife Diane Walker objection to this application.I object for same reasons as her particularly HGV's going along Vicars Bridge Road across Main Rd into site as this is extremely dangerous and noisy.

**Comment submitted date: Tue 16 Jul 2013**

please see comments on my wife Diane Walker objection to this application.I object for same reasons as her particularly HGV's going along Vicars Bridge Road across Main Rd into site as this is extremely dangerous and noisy.





The Coal  
Authority



200 Lichfield Lane  
Berry Hill  
Mansfield  
Nottinghamshire  
NG18 4RG

Tel: 01623 637 119 (Planning Enquiries)

Email: [planningconsultation@coal.gov.uk](mailto:planningconsultation@coal.gov.uk)

Web: [www.coal.gov.uk/services/planning](http://www.coal.gov.uk/services/planning)

For the Attention of Mr M Williamson  
Case Officer  
Perth and Kinross Council

[By Email: [developmentmanagement@pkc.gov.uk](mailto:developmentmanagement@pkc.gov.uk)]

17 July 2013

Dear Mr Williamson

**PLANNING APPLICATION: 13/01174/FLL**

**Change of use of agricultural shed for the processing and storage of biomass materials (in retrospect) ; Land At Lambhill, Blairingone**

Thank you for your consultation letter of 02 July 2013 seeking the views of The Coal Authority on the above planning application.

The Coal Authority is a non-departmental public body sponsored by the Department of Energy and Climate Change. As a statutory consultee, The Coal Authority has a duty to respond to planning applications and development plans in order to protect the public and the environment in mining areas.

**The Coal Authority Response: Material Consideration**

I have reviewed the proposals and confirm that the application site falls within the defined Development High Risk Area.

The Coal Authority records indicate that within the application site and surrounding area there are coal mining features and hazards which should be considered as part of development proposals.

Our information indicates that the application site has been subject to past coal mining activities.

### The Coal Authority Recommendation to the LPA

As you will be aware, The Coal Authority's general approach in cases where development is proposed within the Development High Risk Area is to recommend that the applicant obtains coal mining information for the application site and submits a Coal Mining Risk Assessment to support the planning application.

However, when considering this particular proposal, the planning application is for the change of use of an existing building. There will be no significant operational development resulting from this proposal that intersects the ground. Therefore we do not consider that a Coal Mining Risk Assessment is necessary for this proposal and **do not object** to this planning application.

In the interests of public safety, however, The Coal Authority would recommend that, should planning permission be granted for this proposal, the following wording is included as an Informative Note within the Decision Notice:

***The proposed development lies within an area that has been defined by The Coal Authority as containing potential hazards arising from former coal mining activity. These hazards can include: mine entries (shafts and adits); shallow coal workings; geological features (fissures and break lines); mine gas and previous surface mining sites. Although such hazards are seldom readily visible, they can often be present and problems can occur in the future, particularly as a result of development taking place.***

***It is recommended that information outlining how the former mining activities affect the proposed development, along with any mitigation measures required (for example the need for gas protection measures within the foundations), be submitted alongside any subsequent application for Building Standards approval (if relevant). Your attention is drawn to the Coal Authority policy in relation to new development and mine entries available at [www.coal.decc.gov.uk](http://www.coal.decc.gov.uk)***

***Any intrusive activities which disturb or enter any coal seams, coal mine workings or coal mine entries (shafts and adits) requires the prior written permission of The Coal Authority. Such activities could include site investigation boreholes, digging of foundations, piling activities, other ground works and any subsequent treatment of coal mine workings and coal mine entries for ground stability purposes. Failure to obtain Coal Authority permission for such activities is trespass, with the potential for court action.***

***Property specific summary information on past, current and future coal mining activity can be obtained from The Coal Authority's Property Search Service on 0845 762 6848 or at [www.groundstability.com](http://www.groundstability.com)***

***If any of the coal mining features are unexpectedly encountered during development, this should be reported immediately to The Coal Authority on 0845 762 6848. Further information is available on The Coal Authority website [www.coal.decc.gov.uk](http://www.coal.decc.gov.uk)***

Please do not hesitate to contact me if you would like to discuss this matter further.

Yours sincerely

*D Berry*

**David Berry** *B.Sc.(Hons), MA, MRTPI*  
**Planning Liaison Manager**

Disclaimer

The above consultation response is provided by The Coal Authority as a Statutory Consultee and is based upon the latest available data and records held by The Coal Authority on the date of the response. The comments made are also based upon only the information provided to The Coal Authority by the Local Planning Authority and/or has been published on the Council's website for consultation purposes in relation to this specific planning application. The views and conclusions contained in this response may be subject to review and amendment by The Coal Authority if additional or new data/information (such as a revised Coal Mining Risk Assessment) is provided by the Local Planning Authority or the Applicant for consultation purposes.



**Mrs Elizabeth Robertson (Objects)**

**Comment submitted date: Wed 17 Jul 2013**

- 1) The use falls under class 5, 6 and 11 and not agricultural or forestry as suggested by the council.
- 2) The land in question is zoned as suitable for agricultural ONLY and not an industrial processing facility.
- 3) The application should be classed as Major and not Local.
- 4) There is no material benefit to support a change of use in this instance.
- 5) There will be significant traffic and noise pollution.
- 6) There are considerable environmental, health, noise, air and wildlife implications associated with an industrial processing operation of this nature that are not being considered due to local classification.
- 7) Loss of visual amenity.
- 8) Loss of a right of way secured via prescriptive rights through the site over the last 24 years or more.
- 9) Industrialisation of the countryside.
- 10) Loss of amenity and open space.



**Mrs Sarah Plummer (Objects)****Comment submitted date: Thu 18 Jul 2013**

I object to this planning application on the following grounds.

The use falls under class 5,6 and 11 and not agricultural or forestry as suggested by the council.

The land in question is zoned as suitable for agricultural ONLY and not an industrial processing facility.

The site in question is not identified in the local & structure plans as a site suitable for industrial use.

There is no material benefit to support a change of use in this instance

Significant traffic and noise pollution.

There are considerable environmental, health, Noise, air and wildlife implications associated with an industrial processing operation of this nature that are not being considered..

Loss of visual amenity.

Loss of a right of way secured via prescriptive rights through the site over the last 24 years or more.

Industrialisation of the countryside.

Loss of amenity and open space.

This is a wholly unappropriated use for this location. Taking the impact that Noise and traffic two significant factors will have on this community and that these two factors have have not been properly and adequately addressed by the applicant in their application is appalling.

With the applicant advising that this is to be a 24 hour operation and with 16 articulated vehicles to access the site between 23:00 and 07:00 hours added to the already observed 60-80 articulated vehicles that access the site between 06:00 and 21:00 the scope for significant nuisance to local residents including children on their way to Blairingone School is severe.

In respect of the applicants environmental noise assessment it is clear that there is a degree of fraudulent assumption and indeed factual inaccuracies. The applicants noise engineer advises that noise monitoring equipment has been placed at local residences. I have had any equipment installed. Worse where the engineer has shown the location of the supposed noise monitoring equipment is actually in or immediately adjacent to a river therefore noise level would render any readings invalid. This alone should have this document and application thrown out for attempting to mislead the council's planning officers.

Regarding the long history of this site it is important to remind P&K planning department that this community reached an agreement with P&K council in the 1980's to allow an open cast mine for a period of 8 years providing:- The land would be reinstated back to agriculture and all hard standing and buildings would be removed to allow a community woodland to be created.

What followed from this agreement was an erosion by P&K council of this understanding that ultimately led to a shocking scenario in the 1990's where hazardous waste including human effluent, medical waste as well as blood and guts from abattoirs was spread on this land with the tacit knowledge of P&K council leading to health issues in the local population.

This led to a well documented fight between this community and P&K council that ended up on the floor of the Scottish parliament changing Scottish legislation in the process.

The outcome of this fight and change in legislation resulted in the following statements and promises by The Scottish Parliament including site visits by Alex Salmond :-

The Scottish Parliament in relation to Blairingone stated on 31st March 2003 that

"In the Case of Blairingone, the village has undoubtedly suffered enough and deserves a clear statement as to the risks or otherwise of the activities adjacent to it. In reaching our conclusion, the committee is conscious that the health of the public should never be jeopardised for lack of definitive evidence. Neither should the situation be made worse by inappropriate and unjustified speculation"

The speaker of the Scottish Parliament said "Blairingone should now be left in peace".

Dorothy-Grace Elder MSP said

"if ever a village has been raided and pillaged repeatedly it is Blairingone. Industry has hauled benefits out of it and put nothing back in return, Scotland owes a debt to Blairingone"

Thus it is fair to say that this community has paid its dues to the wider society and asks P&K council to uphold the fact that P&K agreed that this land be zoned only as suitable for agricultural as indeed shown in the Local and Structure Plan

To expand on the miss classification by P&K planning department.

The proposed industrial chipping use on the site has been wrongly classified by Perth & Kinross Council as falling under agriculture and forestry and thus not needing change of use. This is incorrect.

P&K planning department are basing this view on the legal case of Midlothian v Buccleuch Estates 1962 which found that the storage and transfer of timber and the rendering of wood marketable falls under forestry use.

Where the application of this case is not applicable in this instance is the case premise that found that rendering the wood marketable was the key legal argument that framed the case. Also as important was the ownership of the timber being that it remained in the same ownership until sold implying that the off site storage and rendering were assumed to have taken place in the forest itself.

In the Midlothian v Buccleuch Estates 1962 case the timber was owned by Buccleuch Estates and was being stored and rendered on Buccleuch estates land albeit remote from the forest.

THIS IS NOT THE CASE IN THIS INSTANCE.

In this instance the operator is buying previously rendered felled wood on the open market (thus previously being made marketable) and applying a further industrial processing post rendering of the wood to address the needs of another market.

To expand further, the precedent P&K council uses to justify agricultural use concerns itself with the intermediary relationship between felled timber, the storage of this felled timber and the market place buying the felled timber by the same owner throughout its life until sold. This is not the case on this site as what is now happening is an open market purchase contract transaction which removes a one owner relationship with the timber and creates a multi owner relationship via the market place. The relationship between the owner of the timber is further distanced from agricultural use when an industrial processing technique is used to further render of the wood marketable to address the needs of yet another market (biomass).

Thus removing applying the planning guidelines literally you would find that the description of Class 5 and indeed class 6 describes the industrial activity now occurring on this site and understanding that this current process goes beyond making the wood marketable, referring to the associated activity on this site, namely the industrial processing including the traffic movements, storage, waste material movement, disposal and usage of the waste wood and building rubble further pushes this proposal out-with forestry description and into major Class 5&6. application,

In terms of classification, this application should be classified as Major and not Local, thus allowing a proper and correct series of noise, traffic, wildlife and environmental impact assessments to be carried out to provide comfort for this community.

P&K planning department have previously stated incorrectly that the Hierarchy of Developments Regulations are concerned principally with the construction of new buildings rather than the change of use of existing buildings or land and as such P&K planning department have designated the two applications made my Snowie as local.

The use of the word principally in the definition is material here. Had this said are concerned wholly in relation to this regulation then The statement made by Nick Brian previously would be correct. However the use of principally thus permits local planning authorities to determine classification of local or major to be based on facts and not merely personal opinion. Thus if an argument can be formed to support a particular designation and as precedent has shown us in other planning

cases regarding determination, the planning authority is obliged to act prudently and classify accordingly.

The question now is what argument can be built to show that both these planning applications are in fact the same and thus should be treated as Major.

Firstly to address the question of construction on site and size. The 2006 act (s26) that defines what development construction is states that it is the carrying out of building, engineering, mining or other operations in, on, over etc The use of the phrase Other Operations implies that the absence of built construction should therefore not exclude proper classification and indeed provides expansion as to what construction means. Thus the creation of an industrial chipping operation, in addition to and remote from the existing buildings as well as the ancillary activities of loading, unloading, treating weighing, management services, parking etc , can indeed be defined as construction. Ray Short has stated that a mobile chipper is not development but I have yet to find any evidence to reinforce this and thus a mobile industrial chipper could indeed fall under other operations.

Secondly the original application submitted in March 2012 showed a 2nd industrial building (to be built at right angles to the existing shed) and on a site of 16 hectares. Only when this obviously major application was brought to the attention of P&K planning department and questions asked over its classification did the applicant withdraw and reapply with two separate applications both under the 2 hectare threshold. This thus implies that at a later date additional development construction will be applied for or at least a larger operation under the guise of other operations is planned for this site over and above the agricultural shed.

Planning by stealth could well be argued here.

Thirdly- Scottish regulations state that operations of this scale and nature must have a turning circle to prevent articulated vehicles reversing. The fact the first application site is so tight by design to keep it under 2 hectares that it does not allow for a turning circle and thus vehicles are regularly entering into the second site as well as being forced to reverse indicates a design that does not meet regulations but also reinforces the link between both applications.

Fourthly, the hierarchy of developments act allows for any development not wholly falling within any single class of development described in paragraphs 1-8 should be classed as Major. This does not go on to state that construction must take place to allow for this classification and in any case construction can be classed as other operations by which the daily activity of the applicants fall under.

The applicant has also attempting to avoid a 'major' application classification by submitting two separate applications for differing uses and showing the site areas as falling under 2 hectares. Taking the core areas currently used by the applicant for the past 13 months namely access roads, building processing area and storage creates an area above 2 hectares in daily use, despite the 'artistic' interpretation on their application form.

The relationship between both applications is so closely linked namely one being the storage of felled timber the other being the processing of felled timber, that if P&K planning department did consider them as one overall operation use would be a significant breach of planning rules and indeed the spirit of Scottish planning law.

I further wish to object on the following grounds.

1:- the absence of a turning circle in the chipping part of the site and the observation of vehicles from the chipping part of the site entering the storage part of the site to turn thus implying that both are intrinsically linked to one another as to indeed imply more than a mere neighbourly link.

2:- The hierarchy of developments act allows for any development not wholly falling within any single class of development described in paragraphs 1-8 should be classed as Major. This does not go on to state that construction must take place to allow for this classification as you have implied and in any case construction can be classed as other operations by which the daily activity of the applicants fall under.

3:- This planning application was submitted in May last year and so far the applicant is carrying out his business without a valid planning application at all hours of the day and night, causing noise, traffic, environmental and wildlife pollution and harm. I am surprised by your comment that it is council policy not to take enforcement action when an application is pending. As this application is rapidly approaching its 12 month anniversary.

4:- Nick Brain has advised Councillor Cuthbert that the Hierarchy of Developments Regulations are concerned principally with the construction of new buildings rather than the change of use of existing buildings or land and as such you have designated the two applications as local. The use of the word principally in the definition is material here. Had this said are concerned wholly in relation to this regulation then your statement previously would be correct. However the use of principally thus permits local planning authorities to determine classification of local or major to be based on facts and not merely personal opinion. Thus if an argument can be formed to support a particular designation and as precedent has shown us in other planning cases regarding determination, the planning authority is obliged to act prudently and classify accordingly.

What concerns me the most here is there seems to be a concerted effort by P&K council to build a case for this application as opposed to applying the full rigors of the planning regulations.

This planning application was submitted in May last year and so far the applicant is carrying out his business without a valid planning application where I have suffered noise nuisance between 5.50am - 23.50pm most weeks.

**Ms tanya WORSFOLD (Objects)****Comment submitted date: Thu 18 Jul 2013**

I would like to object to this planning application for various reasons.

I have lived in this area for 9 years and the A977 has got busier as each year passes. Heavy goods vehicles seem to dominate the roads and are driven at dangerous speeds. There are a lot of properties situated just off the main road and there is no allowance by other road users when you are trying to get in and out of your own drive. To add more HGVs to this would be a nightmare for the sheer volume of traffic, noise pollution and it would make the A977 even more dangerous than it is already especially for local users. Blairingone has not had much luck when it comes down to unpleasant development, everything seems to be taken out of the area and nothing good put back in. I can hear the plant from my garden, it's a miserable noise, when you live in the country you expect certain sounds and smells but not a metallic sounding hammering.

Also I would like to object on the following grounds;

1. The use falls under class, 5,6 and 11 and not agricultural or forestry as suggested by the council.
2. The land is question is zoned as suitable for agricultural ONLY and not an industrial processing facility.
3. The application should be classed as Major not Local.
4. There is no material benefit to support a change of use in this instance.
5. There will be significant traffic and noise pollution.
6. There are considerable environmental, health, noise, air, and wildlife implications associated with an industrial processing operation of this nature that are not being considered due to local classification.
7. Loss of visual amenity.
8. Loss of right of way secured via prescriptive rights through the site over the last 24 years or more.
9. Industrialisation of the countryside.
10. Loss of amenity and open space.



**Mr Stewart Danks (Objects)**

**Comment submitted date: Fri 19 Jul 2013**

Having moved out of a built-up area to escape noise pollution several years ago, I woke up this morning due to the noise by of the chipping plant at the former Lambhill open cast site Blairingone operating at 6am Friday 19th July.

The open cast site here was as you know worked out some years ago, my understanding was that a condition of the initial planning consent was that the site would return to agricultural use when the coal was worked out. Previous use as a waste transfer and storage station was stretching this point, but current use as a chipping plant is clearly an industrial process and should not be condoned.

I also object on the following grounds,

1. The use falls under class, 5,6 and 11 and not agricultural or forestry as suggested by the council.
2. The land in question is zoned as suitable for agricultural ONLY and not an industrial processing facility.
3. The application should be classed as Major not Local.
4. There is no material benefit to support a change of use in this instance.
5. There will be significant traffic and noise pollution.
6. There are considerable environmental, health, noise, air, and wildlife implications associated with an industrial processing operation of this nature that are not being considered due to local classification.
7. Loss of visual amenity.
8. Loss of right of way secured via prescriptive rights through the site over the last 24 years or more.
9. Industrialisation of the countryside.
10. Loss of amenity and open space.

Yours faithfully,

Mr Stewart Danks



**Mrs Laura Graham (Objects)**

**Comment submitted date: Fri 19 Jul 2013**

As notified neighbours we object to this planning application on the following grounds.

This is a wholly unappropriated use for this location. Taking the impact that Noise and traffic two significant factors will have on this community and that these two factors have not been properly and adequately addressed.

With the applicant advising that this is to be a 24 hour operation and with 16 articulated vehicles to access the site between 23:00 and 07:00 hours added to the already observed 60-80 articulated vehicles that access the site between 06:00 and 21:00 the scope for significant nuisance to nearby family homes is severe.

The use falls under class 5,6 and 11 and not agricultural or forestry as suggested by the council.

The land in question is zoned as suitable for agricultural ONLY and not an industrial processing facility.

The site in question is not identified in the local & structure plans as a site suitable for industrial use.

There is no material benefit to support a change of use in this instance

Significant traffic and noise pollution.

There are considerable environmental, health, Noise, air and wildlife implications associated with an industrial processing operation of this nature that are not being considered..

Loss of visual amenity.

Loss of a right of way secured via prescriptive rights through the site over the last 24 years or more.

Industrialisation of the countryside.

Loss of amenity and open space.

Mr Colin and Mrs Laura Graham



**Mr James Reekie (Objects)**

**Comment submitted date: Fri 19 Jul 2013**

I object strongly to this application and reiterated all the objections already lodged. Snowie's appear to flaunt the rules and continue to run an operation that is illegal, not in keeping with the environment and intrusive to the local community.

I have great concern about the idea that even more large vehicles will be thundering through our village, it is an accident waiting to happen, and this only increases if Perth and Kinross council allow this application to go ahead.

Perth and Kinross you need to come to Blairingone and see what is happening and the impact this organisation would have on an area that is just healing from the ravaging it was subjected to in the past.

Jim Reekie



**Mr Ryan Murphy (Objects)****Comment submitted date: Sat 20 Jul 2013**

I am writing to object to the planning application 13/01174/FLL. I feel that applying for the change of use of an agricultural shed for the processing and storage of biomass materials is inappropriate for this village location. There are many environmental and health implications for this type of development especially in such close proximity to housing and indeed a primary school. This type of operation produces high levels of fine particulates and debris which will inevitably enter the external environment.

As a resident in the village of Blairingone I feel that we should be seeking to conserve and enhance the character of the village and its surrounding landscape. We should be trying to transform brownfield sites into areas of great landscape value for the community. The proposal for an industrial chipping factory in the village of Blairingone has been classified as an agricultural development. It is my understanding that this would require local wood sources to be used in order to make the harvesting of those particular timbers economically viable. The Lambhill proposal is purchasing from open market sources and transporting the timber hundreds of miles for processing. This therefore is an industrial and not agricultural concern and would require a change of use application.

The building is already operating as a wood processing facility, I believe without planning permission, and at times the air around the facility is heavily laden with wood dust. During the daily operation of the current plant the noise is quite clearly heard through the local area and in many homes. Industrial noise is audible from 6am to 11pm at my house and I do not relish the proposed 24 hour operation at this facility.

Not only will a 24 hour a day processing plant be detrimental to the local residents with noise and light pollution, it will also be detrimental to the local flora and fauna populations, including the endangered red squirrel, bats and owls. Upgrading the application to a major development would ensure that proper consideration is given to the environmental impact of this development. Add to that the road noise of nearly one hundred additional articulated lorries accessing the site day and night the environmental impact will be significant. The main road through Blairingone is already a dangerous roadway to negotiate due to the number of speeding motorists, I know of two fatalities within meters of my home in recent times. The police investigating the latest fatality stated that the road was poorly designed and speeding was a considerable problem in the village. The proposal to significantly increase the volume of agricultural vehicles passing through the village per day would cause a rise in the already significant risk to villagers using the road and pavements.

I believe the size of site is well over 2 hectares in size which should in itself satisfy the requirement for classification as a major development. The site size has been highlighted on the application map to include only the bare minimum area required in order to avoid the planning authorities classing this as a major development. I also noticed that the original plan for further buildings has been dropped from this application, which I assume will be applied for in due course again using the smallest area possible to take advantage of planning loopholes. I know from my own industrial workplace that we were required to have a one way system, or if that was not possible a designated turning area, for articulated vehicles on site so as to avoid the risks associated with reversing. This proposal has allowances for neither scenario and as such vehicles would have to enter the areas associated with the applicants other current planning application for the Lambhill site. This in my opinion demonstrates that they are not two separate proposals but one single proposal split in order to avoid being classed as a major development.



Our ref: PCS/127581  
Your ref: 13/01174/FLL

Perth and Kinross Council  
Pullar House  
35 Kinnoull Street  
Perth  
PH1 5GD

If telephoning ask for:  
Alasdair Milne

23 July 2013

By email only to: [DevelopmentManagement@pkc.gov.uk](mailto:DevelopmentManagement@pkc.gov.uk)

Dear Sir

**Town and Country Planning (Scotland) Acts**  
**Planning application: 13/01174/FLL**  
**Change of use of agricultural shed for the processing and storage of biomass materials (in retrospect)**  
**Land at Lambhill, Blairingone**

Thank you for your consultation letter of 4 July 2013.

We **object** to this planning application on the grounds of a lack of information relating to site drainage. We will remove this objection if the issues detailed in Section 1 are adequately addressed.

**Advice for the planning authority**

**1. Site Drainage**

- 1.1 The site has drainage ditches on the east and south edges which, depending on the nature of the process(es) being operated, may need protection from polluting run off. There is insufficient information within the consultation documents to indicate how the process will operate therefore we are unable to provide informed comments relating to the site drainage. We therefore **object** until the applicant confirms their intentions with regard to the drainage provision at the site including the treatment and disposal of surface water, trade and foul effluent.

**Regulatory advice for the applicant**

**2. Regulatory requirements**

- 2.1 The processing and storage of Virgin Timber is not a SEPA regulated waste management activity. However, we would request that the applicant confirms that timber product only is to be processed and stored and not waste wood.
- 2.2 A waste management licence has been discussed for part of the larger site where the shed is situated. The local SEPA operations team are determining a licence for the storage of wood waste on the concrete pad to the south of the shed.

2.3 Details of regulatory requirements and good practice advice for the applicant can be found on our website at [www.sepa.org.uk/planning.aspx](http://www.sepa.org.uk/planning.aspx). If you are unable to find the advice you need for a specific regulatory matter, please contact a member of the operations team in your local SEPA office at:

Bremner House, Castle Business Park, Stirling, FK9 4TF, 01786 452595

If you have any queries relating to this letter, please contact me by telephone on 01355 575665 or e-mail at [planning.se@sepa.org.uk](mailto:planning.se@sepa.org.uk)

Yours faithfully

Alasdair Milne  
Senior Planning Officer  
Planning Service

Copy to: [ben@ballantynes.uk.com](mailto:ben@ballantynes.uk.com)

*Disclaimer*

*This advice is given without prejudice to any decision made on elements of the proposal regulated by us, as such a decision may take into account factors not considered at the planning stage. We prefer all the technical information required for any SEPA consents to be submitted at the same time as the planning application. However, we consider it to be at the applicant's commercial risk if any significant changes required during the regulatory stage necessitate a further planning application and/or neighbour notification or advertising. We have relied on the accuracy and completeness of the information supplied to us in providing the above advice and can take no responsibility for incorrect data or interpretation, or omissions, in such information. If we have not referred to a particular issue in our response, it should not be assumed that there is no impact associated with that issue. If you did not specifically request advice on flood risk, then advice will not have been provided on this issue. Further information on our consultation arrangements generally can be found in [How and when to consult SEPA](#), and on flood risk specifically in the [SEPA-Planning Authority Protocol](#).*



Chairman  
David Sigsworth

Chief Executive  
James Curran

250

**Strathearn House**

Broxden Business Park,  
Lamberkine Drive, Perth, PH1 1RX  
tel 01738 627989 fax 01738 630997  
[www.sepa.org.uk](http://www.sepa.org.uk)

**Mrs Ceri Read (Objects)**

**Comment submitted date: Thu 25 Jul 2013**

We object to this planning application.

If this application were to be approved it would result in significant heavy goods vehicle traffic and noise pollution in a rural location and within the local agricultural and residential community:

- The land in question is zoned as suitable for agricultural ONLY and not an industrial processing facility. The site is not identified in the local & structure plans as a site suitable for industrial use.
- The use falls under class 5,6 and 11 and not agricultural or forestry as suggested by the council.
- There is no material benefit to support a change of use in this instance
- There are considerable environmental, health, noise, air and wildlife implications associated with an industrial processing operation of this nature that are not being considered..
- Loss of visual amenity.
- Loss of a right of way secured via prescriptive rights through the site over the last 24 years or more.
- Industrialisation of the countryside.
- Loss of amenity and open space.

Blairingone is a small rural community that would be severely impacted if this application was successful.



Our ref: PCS/128492  
Your ref: 13/01174/FLL

Perth and Kinross Council  
Pullar House  
35 Kinnoull Street  
Perth  
PH1 5GD

If telephoning ask for:  
Alasdair Milne

27 August 2013

By email only to: [DevelopmentManagement@pkc.gov.uk](mailto:DevelopmentManagement@pkc.gov.uk)

Dear Sir

### **Town and Country Planning (Scotland) Acts**

**Planning application: 13/01174/FLL**

**Change of use of agricultural shed for the processing and storage of biomass materials (in retrospect)**

**Land at Lambhill, Blairingone**

I refer to the application detailed above, to SEPA's letter of objection dated 23 July and to the email received from Ben Ballantyne on 23 August. I am writing to update you on our position.

Our objection due to a lack of information relating to site drainage is now **withdrawn**. Please note the advice provided below.

### **Advice for the planning authority**

#### **1. Site Drainage**

- 1.1 Provided all surface water drainage is directed to the area where there are no drains or ditches and away from any watercourse, the proposed drainage arrangements would be acceptable provided it is only virgin wood that is being stored. We would be concerned if any treated timber was to be processed or stored outside the shed whereby run-off could potentially give rise to pollution issues. Run-off of uncontaminated surface water should not be an issue.

### **Regulatory advice for the applicant**

#### **2. Regulatory requirements**

- 2.1 Details of regulatory requirements and good practice advice for the applicant can be found on our website at [www.sepa.org.uk/planning.aspx](http://www.sepa.org.uk/planning.aspx). If you are unable to find the advice you need for a specific regulatory matter, please contact a member of the operations team in your local SEPA office at:

Bremner House, The Castle Business Park, Stirling, FK9 4TF, tel 01786 452595



Chairman  
David Sigsworth

Chief Executive  
James Curran

Strathearn House  
Broxden Business Park,  
Lamberkine Drive, Perth, PH1 1RX  
tel 01738 627989 fax 01738 630997  
[www.sepa.org.uk](http://www.sepa.org.uk)

If you have any queries relating to this letter, please contact me by telephone on 01698 839340 or e-mail at [planning.se@sepa.org.uk](mailto:planning.se@sepa.org.uk)

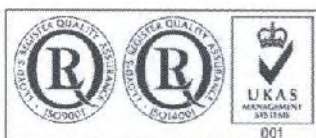
Yours faithfully

Alasdair Milne  
Senior Planning Officer  
Planning Service

eCopy to: [ben@ballantynes.uk.com](mailto:ben@ballantynes.uk.com)

*Disclaimer*

*This advice is given without prejudice to any decision made on elements of the proposal regulated by us, as such a decision may take into account factors not considered at the planning stage. We prefer all the technical information required for any SEPA consents to be submitted at the same time as the planning application. However, we consider it to be at the applicant's commercial risk if any significant changes required during the regulatory stage necessitate a further planning application and/or neighbour notification or advertising. We have relied on the accuracy and completeness of the information supplied to us in providing the above advice and can take no responsibility for incorrect data or interpretation, or omissions, in such information. If we have not referred to a particular issue in our response, it should not be assumed that there is no impact associated with that issue. If you did not specifically request advice on flood risk, then advice will not have been provided on this issue. Further information on our consultation arrangements generally can be found in How and when to consult SEPA, and on flood risk specifically in the SEPA-Planning Authority Protocol.*



Chairman  
David Sigsworth  
Chief Executive  
James Cullen

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# Memorandum

To	Head of Development Control	From	Regulatory Service Manager
Your ref	PK13/01174/FLL	Our ref	EM/MP
Date	3 September 2013	Tel No	(47)6452

The Environment Service

Pullar House, 35 Kinnoull Street, Perth PH1 5GD

## Consultation on an Application for Planning Permission

**PK13/01174/FLL RE: Change of use of agricultural shed for the processing and storage of biomass materials (in retrospect). Land at Lambhill, Blairingone for Barnhill Estates**

**I refer to your letter dated 02 July 2013 in connection with the above application and have the following comments to make.**

### **Contamination** (assessment date – 08/07/2013)

A search of historical maps held by this Service did not show any previous contaminative uses of the site that would raise particular concern for the proposed change of use. In addition, given that the application refers to an existing building with associated hard standing I have no adverse comments to make on the application.

### **Environmental Health**

The applicant has submitted the same noise assessment as previous (12/00912/FLL) which we indicated we could not support due to the impacts at neighbouring residential properties. As no updated information has been received we are still not in a position to support this application.







# MEMORANDUM

To	Mark Williamson Planning Officer	From	Niall Moran Transport Planning Technician Transport Planning
Our ref:	NM	Tel No.	Ext 76512
Your ref:	13/01174/FLL	Date	11 December 2013

Pullar House, 35 Kinnoull Street, Perth, PH1 5GD

## TOWN AND COUNTRY PLANNING (SCOTLAND) ACT 1997 & ROADS (SCOTLAND) ACT 1984

With reference to the application 13/01174/FLL for planning consent for:- **Change of use of agricultural shed for the processing and storage of biomass materials (in retrospect) Land At Lambhill Blairingone for Barnhill Estates**

The applicant has indicated that the proposed level of traffic associated with this development is in the region of only 1-2 HGVs per day. Therefore, insofar as the Roads matters are concerned I have no objections to the proposed change of use at this location.

I trust these comments are of assistance.



**Mark Williamson**

13/01174/FLL.

**From:** Neil Kydd  
**Sent:** 05 February 2014 11:49  
**To:** Mark Williamson  
**Subject:** RE: Lambhill and Crooks Moss

Mark,

We've had no contact from anyone regarding noise issues in this area since last January when we attempted to gain access to Mr Kinlochs house to take noise measurements. He was not available or there was no activity at the site.

I've spoken to Mr Kinloch a few minutes ago to arrange a time to take a noise measurement.

He informs me that there has been no wood chipping activity at the site since mid-December but he thought he heard the chipper being dragged into its normal operational position the other day.

I have given him my direct contact number and asked that he call me back when he feels the wood chipper is up and running and we will take noise measurements and possibly leave the noise meter overnight to catch early morning or late evening activity.

Regards,

Neil.

---

**From:** Mark Williamson  
**Sent:** 05 February 2014 10:09  
**To:** Dawn Stewart; Neil Kydd  
**Subject:** Lambhill and Crooks Moss

Dawn/Neil,

Can you give me an update on both these sites with regards to noise and any recent complaints raised. Following a meeting with the local MP and 2 nearby residents Nick has requested that EH visit the site and take noise readings at Mr Kinloch's House?

Thanks Mark



# Memorandum

To	Development Quality Manager	From	Regulatory Services Manager
Your ref	PK13/01174/FLL	Our ref	DS
Date	11 February 2015	Tel No	01738 476481

The Environment Service

Pullar House, 35 Kinnoull Street, Perth PH1 5GD

## **Consultation on an Application for Planning Permission**

### **PK13/01174/FLL RE: Change of use of agricultural shed for the processing and storage of biomass materials (in retrospect)**

I refer to your letter dated 2 July 2013 in connection with the above application and have the following comments to make.

**Environmental Health** (assessment date – 11/2/15)

#### **Recommendation**

**I have no objections to the application but recommend the undernoted conditions be included in any given consent.**

#### **Comments - Noise**

This memorandum supercedes my colleagues previous memo dated 3 September 2013 in relation to the above application. Previous application (PK12/00912/FLL) which was subsequently withdrawn could not be supported by this Service due to the lack of a sufficient Noise Impact Assessment being submitted.

Due to the nature of the business and the times of operation there is the potential for residential amenity of neighbouring properties to be affected. There has also been a number of objections to the application and as such the applicant was asked to submit a suitable Noise Impact Assessment.

The applicant has now submitted a Noise Impact Assessment carried out in accordance with BS4142:2014: *Methods for rating and assessing industrial and commercial sound*, which would be the appropriate method for assessing this application.

The assessment recognises that without mitigation there is the potential of noise nuisance affecting a number of receptors with the nearest properties identified at approximately 320m-450m from the site boundary.

The noise consultant has recommended a number of mitigation measures to reduce the potential of noise nuisance affecting these noise sensitive receptors. I would recommend that all measures stated in the Noise Impact Assessment dated 29<sup>th</sup> January 2015 along with additional controls be applied.

Therefore I recommend that the undernoted conditions be included on any given consent.

## **Conditions**

- A 3m high acoustic barrier shall be installed along the western boundary of the site.
- A 2.5m high acoustic barrier shall be installed perpendicular to the storage building on the northern boundary of the site.
- The chippers shall be operated within 1.5m of the existing log pile.
- The existing log pile shall be maintained at a height of 5m and at a length of 40m.
- A 4m high mobile acoustic barrier shall be placed perpendicular to the existing log pile and within 1.5m of the chippers when in operation.
- The southern façade of the storage building shall be treated with an acoustically absorbent material to produce an overall absorption coefficient of 0.8.
- All chipping operations shall take place within the upper pad of the site.
- The use of the chippers shall be limited to the hours of 07:00-19:00 Monday to Friday and 08:00 – 17:00 on Saturdays, unless otherwise agreed in writing by the Council as Planning Authority.
- All plant or equipment including any ventilation system associated with operation of the commercial areas shall be so enclosed, attenuated and/or maintained such that any noise therefrom shall not exceed International Standards Organisation (ISO) Noise Rating 35 between 0700 and 2300 hours daily, or Noise Rating 20 between 2300 and 0700 hours daily, within any neighbouring residential premises, with all windows slightly open, when measured and/ or calculated and plotted on an ISO rating curve chart.
- HGV movements to and from the site shall be limited to 4 vehicle movements within any 1 hour period during the hours of 23:00 to 07:00.
- A dust management plan shall be prepared and submitted to the Planning Authority, detailing measures to control dust and prevent its migration from the site.



**Mrs Jennifer Kennedy (Objects)****Comment submitted date: Sun 01 Mar 2015**

I strongly object to this proposal as it would ADVERSELY AFFECT THE DENSITY AND CHARACTER OF THE VILLAGE and would NOT CONTRIBUTE POSITIVELY TO THE QUALITY OF THE SURROUNDING BUILT ENVIRONMENT.

Having just completed a small development within the village of Blairingone and having the initial planning application refused I fail to see how this can even be considered. Although I appreciate ours was a domestic build the justification of refusal from the planning authority should demonstrate equality and transparency throughout. Our application was refused based on the proposed extension being contrary to policy 2, 6 and 81 of the Kinross Local Area Plan 2004. Suggesting (1) the proposed site was not large enough to accommodate the impact of the development (2) the proportion of the extension would not be in keeping with its surroundings and (3) the proposed extension would therefore ADVERSELY AFFECT THE DENSITY AND CHARACTER OF THE VILLAGE. The application was also refused as the proposed extension was contrary to Policy PM1 of the Proposed Local Development Plan 2012 as the development DOES NOT CONTRIBUTE POSITIVELY TO THE QUALITY OF THE SURROUNDING BUILT ENVIRONMENT. Following discussions with the planning authority we agreed to reduce our extension by 3 metres this was deemed by planning to significantly reduce the impact of the development on the village mitigating all aforementioned reasons for refusal. A considerable disproportionate response and decision by the planning authority in comparison to the proposal of planning application 13/01174/FLL.

Although I have only resided in the village for a short time I am already aware of an increase in traffic on the A977 in particular heavy goods vehicles. As the proposal does not intend to alter vehicle access and with the current road design (A977) being more hazardous as ever it would be ludicrous to approve any such proposals contributing to an increase in traffic and contradicting the Perth and Kinross Local Development Plan adopted on 3 February 2014 where it states on page 199

?The A977 is an important strategic route through Kinross-shire and the Council will support further traffic mitigation schemes between Blairingone and Kinross, including examining the need for a by-pass and potential line?

I also object on the following grounds,

1. The use falls under class, 5, 6 and 11 and not agricultural or forestry as suggested by the council.
2. The land in question is zoned as suitable for agricultural ONLY and not an industrial processing facility.
3. The application should be classed as Major not Local.
4. There is no material benefit to support a change of use in this instance.
5. There will be significant traffic and noise pollution.
6. There are considerable environmental, health, noise, air, and wildlife implications associated with an industrial processing operation of this nature that are not being considered due to local classification.
7. Loss of visual amenity.
8. Loss of right of way secured via prescriptive rights through the site over the last 24 years or more.
9. Industrialisation of the countryside.
10. Loss of amenity and open space.

Dorothy-Grace Elder MSP said "if ever a village has been raided and pillaged repeatedly it is Blairingone. Industry has hauled benefits out of it and put nothing back in return, Scotland owes a debt to Blairingone". The speaker of the Scottish Parliament said "Blairingone should now be left in peace". This proposal does nothing to leave Blairingone in peace.



**Mrs Mary Crawford (Objects)**

**Comment submitted date: Tue 03 Mar 2015**

We would like to register our objections regarding the the noise from the chipping process at the above plant and also regarding the traffic arriving and leaving the site.

It has been noted that traffic ( log transporters, and lorries carrying the result of chipping etc ) can start arriving as early as 5.00am and still arriving , leaving as late as 10pm.



**Mr John Fraser (Objects)****Comment submitted date: Wed 04 Mar 2015**

Mr John Fraser (Objects)

Comment submitted date: Wed 04 March 2015.

I would like to re-affirm my objection to this planning application on the following grounds.

The use falls under class 5,6 and 11 and not agricultural or forestry as suggested by the council.

The land in question is zoned as suitable for agricultural ONLY and not an industrial processing facility.

The site in question is not identified in the local &amp; structure plans as a site suitable for industrial use.

There is no material benefit to support a change of use in this instance

Significant traffic and noise pollution.

There are considerable environmental, health, Noise, air and wildlife implications associated with an industrial processing operation of this nature that are not being considered..

Loss of visual amenity.

Loss of a right of way secured via prescriptive rights through the site over the last 24 years or more.

Industrialisation of the countryside.

Loss of amenity and open space.

This is a wholly unappropriated use for this location. Taking the impact that Noise and traffic two significant factors will have on this community and that these two factors have have not been properly and adequately addressed by the applicant in their application is appalling.

With the applicant advising that this is to be a 24 hour operation and with 16 articulated vehicles to access the site between 23:00 and 07:00 hours added to the already observed 60-80 articulated vehicles that access the site between 06:00 and 21:00 the scope for significant nuisance to local residents including children on their way to Blairingone School is severe.

In respect of the applicants environmental noise assessment it is clear that there is a degree of fraudulent assumption and indeed factual inaccuracies. The applicants noise engineer advises that noise monitoring equipment has been placed at local residences. However 2 of the residences (one being my own) have not had any equipment installed. Worse where the engineer has shown the location of the supposed noise monitoring equipment is actually in or immediately adjacent to a river where the noise level would render any readings invalid. This alone should have this document and application thrown out for attempting to mislead the council's planning officers.

Regarding the long history of this site it is important to remind P&amp;K planning department that this community reached an agreement with P&amp;K council in the 1980's to allow an open cast mine for a period of 8 years providing:- The land would be reinstated back to agriculture and all hard standing and buildings would be removed to allow a community woodland to be created.

What followed from this agreement was an erosion by P&amp;K council of this understanding that ultimately led to a shocking scenario in the 1990's where hazardous waste including human effluent, medical waste as well as blood and guts from abattoirs was spread on this land with the tacit knowledge of P&amp;K council leading to health issues in the local population.

This led to a well documented fight between this community and P&amp;K council that ended up on the floor of the Scottish parliament changing Scottish legislation in the process.

The outcome of this fight and change in legislation resulted in the following statements and promises by The Scottish Parliament including site visits by Alex Salmond :-

The Scottish Parliament in relation to Blairingone stated on 31st March 2003 that

"In the Case of Blairingone, the village has undoubtedly suffered enough and deserves a clear statement as to the risks or otherwise of the activities adjacent to it.? ?In reaching our conclusion, the committee is conscious that the health of the public should never be jeopardised for lack of definitive evidence. Neither should the situation be made worse by inappropriate and unjustified speculation"

The speaker of the Scottish Parliament said "Blairingone should now be left in peace".

Dorothy-Grace Elder MSP said

"if ever a village has been raided and pillaged repeatedly it is Blairingone. Industry has hauled benefits out of it and put nothing back in return, Scotland owes a debt to Blairingone"

Thus it is fair to say that this community has paid its dues to the wider society and asks P&amp;K council to uphold the fact that P&amp;K agreed that this land be zoned only as suitable for agricultural as indeed shown in the Local and Structure Plan

To expand on the miss classification by P&amp;K planning department.

The proposed industrial chipping use on the site has been wrongly classified by Perth &amp; Kinross Council as falling under agriculture and forestry and thus not needing change of use. This is incorrect.

P&amp;K planning department are basing this view on the legal case of Midlothian v Buccleuch Estates 1962 which found that the storage and transfer of timber and the rendering of wood marketable falls under forestry use.

Where the application of this case is not applicable in this instance is the case premise that found that ?rendering the wood marketable? was the key legal argument that framed the case. Also as important was the ownership of the timber being that it remained in the same ownership until sold implying that the off site storage and rendering were assumed to have taken place in the forest itself.

In the Midlothian v Buccleuch Estates 1962 case the timber was owned by Buccleuch Estates and was being stored and rendered on Buccleuch estates land albeit remote from the forest.

THIS IS NOT THE CASE IN THIS INSTANCE.

In this instance the operator is buying previously rendered felled wood on the open market (thus previously being made marketable) and applying a further industrial processing post rendering of the wood to address the needs of another market.

To expand further, the precedent P&amp;K council uses to justify agricultural use concerns itself with the intermediary relationship between felled timber , the storage of this felled timber and the market place buying the felled timber by the same owner throughout its life until sold. This is not the case on this site as what is now happening is an open market purchase contract transaction which removes a one owner relationship with the timber and creates a multi owner relationship via the market place. The relationship between the owner of the timber is further distanced from agricultural use when an industrial processing technique is used to further render of the wood marketable to address the needs of yet another market (biomass). Your argument taken literally would imply that retailer DFS furniture or worse paper/pulp manufacturers could well fall under forestry classification use as they both render timber marketable.

Thus removing applying the planning guidelines literally you would find that the description of Class 5 and indeed class 6 describes the industrial activity now occurring on this site and understanding that this current process goes beyond making the wood marketable, referring to the associated activity on this site, namely the industrial processing including the traffic movements, storage, waste material movement, disposal and usage of the waste wood and building rubble further pushes this proposal out-with forestry description and into major Class 5&amp;6. application,

In terms of classification, this application should be classified as Major and not Local, thus allowing a proper and correct series of noise, traffic, wildlife and environmental impact assessments to be carried out to provide comfort for this community.

P&amp;K planning department have previously stated incorrectly that the Hierarchy of Developments Regulations are concerned principally with the construction of new buildings rather than the change of use of existing buildings or land? and as such P&amp;K planning department have designated the two applications made my

Snowie as local.

The use of the word principally in the definition is material here. Had this said are concerned wholly in relation to this regulation then The statement made by Nick Brian previously would be correct. However the use of principally thus permits local planning authorities to determine classification of local or major to be based on facts and not merely personal opinion. Thus if an argument can be formed to support a particular designation and as precedent has shown us in other planning cases regarding determination, the planning authority is obliged to act prudently and classify accordingly.

The question now is what argument can be built to show that both these planning applications are in fact the same and thus should be treated as Major.

Firstly to address the question of construction on site and size, The 2006 act (s26) that defines what development construction is states that it is the carrying out of building, engineering, mining or other operations in, on, over etc The use of the phrase Other Operations? implies that the absence of built construction should therefore not exclude proper classification and indeed provides expansion as to what construction means. Thus the creation of an industrial chipping operation, in addition to and remote from the existing buildings as well as the ancillary activities of loading, unloading, treating weighing, management services, parking etc , can indeed be defined as ?construction?. Ray Short has stated that a mobile chipper is not development but I have yet to find any evidence to reinforce this and thus a mobile industrial chipper could indeed fall under other operations.

Secondly the original application submitted in March 2012 showed a 2nd industrial building (to be built at right angles to the existing shed) and on a site of 16 hectares. Only when this obviously major application was brought to the attention of P&K planning department and questions asked over its classification did the applicant withdraw and reapply with two separate applications both under the 2 hectare threshold. This thus implies that at a later date additional development construction will be applied for or at least a larger operation under the guise of other operations is planned for this site over and above the agricultural shed.

Planning by stealth could well be argued here.

Thirdly- Scottish regulations state that operations of this scale and nature must have a turning circle to prevent articulated vehicles reversing. The fact the first application site is so tight by design to keep it under 2 hectares that it does not allow for a turning circle and thus vehicles are regularly entering into the second site as well as being forced to reverse indicates a design that does not meet regulations but also reinforces the link between both applications.

Fourthly, the hierarchy of developments act allows for any development not wholly falling within any single class of development described in paragraphs 1-8, should be classed as Major. This does not go on to state that construction must take place to allow for this classification and in any case construction can be classed as other operations, by which the daily activity of the applicants fall under.

The applicant has also attempting to avoid a 'major' application classification by submitting two separate applications for differing uses and showing the site areas as falling under 2 hectares. Taking the core areas currently used by the applicant for the past 36 months namely access roads building processing area and storage creates an area above 2 hectares in daily use, despite the 'artistic' interpretation on their application form.

The relationship between both applications is so closely linked namely one being the storage of felled timber the other being the processing of felled timber, that if P&K planning department did consider them as one overall operation use would be a significant breach of planning rules and indeed the spirit of Scottish planning law.

I further wish to object on the following grounds.

1:- the absence of a turning circle in the chipping part of the site and the observation of vehicles from the chipping part of the site entering the storage part of the site to turn thus implying that both are intrinsically linked to one another as to indeed imply more than a mere neighbourly link.

2:- The hierarchy of developments act allows for ?any development not wholly falling within any single class of development described in paragraphs 1-8, should be classed as Major. This does not go on to state that construction must take place to allow for this classification as you have implied and in any case construction can be classed as, other operations, by which the daily activity of the applicants fall under.

3:- This planning application was submitted in May last year and so far the applicant is carrying out his business without a valid planning application at all hours of the day and night, causing noise, traffic, environmental and wildlife pollution and harm. I am surprised by you comment that it is council policy not to take enforcement action when an application is pending. As this application is rapidly approaching its 36month anniversary how long does the council hold this head in the sand approach. Am I to assume then that I can submit a planning application for an inappropriate use, carry out this use, then withdraw the application before determination only to resubmit again and keep this going indefinitely.

4:- Nick Brain has advised Councillor Cuthbert that ?the Hierarchy of Developments Regulations are concerned principally with the construction of new buildings rather than the change of use of existing buildings or land and as such you have designated the two applications as local. The use of the word principally in the definition is material here. Had this said are concerned wholly in relation to this regulation then your statement previously would be correct. However the use of principally thus permits local planning authorities to determine classification of local or major to be based on facts and not merely personal opinion. Thus if an argument can be formed to support a particular designation and as precedent has shown us in other planning cases regarding determination, the planning authority is obliged to act prudently and classify accordingly.

What concerns me the most here is there seems to be a concerted effort by P&K council to build a case for this application as opposed to applying the full rigours of the planning regulations.

This planning application was submitted in May 3 years ago and so far the applicant is carrying out his business without a valid planning application and many, many large articulated vehicles are still accessing the site right through midnight into the early hours of the morning.

### Comment submitted date: Fri 12 Jul 2013

I object to this planning application on the following grounds.

The use falls under class 5,6 and 11 and not agricultural or forestry as suggested by the council.

The land in question is zoned as suitable for agricultural ONLY and not an industrial processing facility.

The site in question is not identified in the local & structure plans as a site suitable for industrial use.

There is no material benefit to support a change of use in this instance

Significant traffic and noise pollution.

There are considerable environmental, health, Noise, air and wildlife implications associated with an industrial processing operation of this nature that are not being considered..

Loss of visual amenity.

Loss of a right of way secured via prescriptive rights through the site over the last 24 years or more.

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This is a wholly inappropriate use for this location. Taking the impact that Noise and traffic two significant factors will have on this community and that these two factors have have not been properly and adequately addressed by the applicant in their application is appalling.

With the applicant advising that this is to be a 24 hour operation and with 16 articulated vehicles to access the site between 23:00 and 07:00 hours added to the already observed 60-80 articulated vehicles that access the site between 06:00 and 21:00 the scope for significant nuisance to local residents including children on their way to Blairingone School is severe.

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Planning by stealth could well be argued here.

Thirdly- Scottish regulations state that operations of this scale and nature must have a turning circle to prevent articulated vehicles reversing. The fact the first application site is so tight by design to keep it under 2 hectares that it does not allow for a turning circle and thus vehicles are regularly entering into the second site as well as being forced to reverse indicates a design that does not meet regulations but also reinforces the link between both applications.

Fourthly, the hierarchy of developments act allows for ?any development not wholly falling within any single class of development described in paragraphs 1-8? should be classed as Major. This does not go on to state that construction must take place to allow for this classification and in any case construction can be classed as ?other operations? by which the daily activity of the applicants fall under.

The applicant has also attempting to avoid a 'major' application classification by submitting two separate applications for differing uses and showing the site areas as falling under 2 hectares. Taking the core areas currently used by the applicant for the past 13 months namely access roads, building processing area and storage creates an area above 2 hectares in daily use, despite the 'artistic' interpretation on their application form.

The relationship between both applications is so closely linked namely one being the storage of felled timber the other being the processing of felled timber, that if P&K planning department did consider them as one overall operation use would be a significant breach of planning rules and indeed the spirit of Scottish planning law.

I further wish to object on the following grounds.

1:- the absence of a turning circle in the chipping part of the site and the observation of vehicles from the chipping part of the site entering the storage part of the site to turn thus implying that both are intrinsically linked to one another as to indeed imply more than a mere neighbourly link.

2:- The hierarchy of developments act allows for ?any development not wholly falling within any single class of development described in paragraphs 1-8? should be classed as Major. This does not go on to state that construction must take place to allow for this classification as you have implied and in any case construction can be classed as ?other operations? by which the daily activity of the applicants fall under.

3:- This planning application was submitted in May last year and so far the applicant is carrying out his business without a valid planning application at all hours of the day and night, causing noise, traffic, environmental and wildlife pollution and harm. I am surprised by you comment that it is council policy not to take enforcement action when an application is pending. As this application is rapidly approaching its 12 month anniversary how long does the council hold this ?head in the sand approach? ? Am I to assume then that I can submit a planning application for an inappropriate use, carry out this use, then withdraw the application before determination only to resubmit again and keep this going indefinitely.

4:- Nick Brain has advised Councillor Cuthbert that ?the Hierarchy of Developments Regulations ? are concerned principally with the construction of new buildings rather than the change of use of existing buildings or land? and as such you have designated the two applications as local. The use of the word principally in the definition is material here. Had this said ?are concerned wholly? in relation to this regulation then your statement previously would be correct. However the use of principally thus permits local planning authorities to determine classification of local or major to be based on facts and not merely personal opinion. Thus if an argument can be formed to support a particular designation and as precedent has shown us in other planning cases regarding determination, the planning authority is obliged to act prudently and classify accordingly.

What concerns me the most here is there seems to be a concerted effort by P&K council to build a case for this application as opposed to applying the full rigours of the planning regulations.

This planning application was submitted in May last year and so far the applicant is carrying out his business without a valid planning application.

**Mrs Catherine Reekie (Objects)**

**Comment submitted date: Thu 05 Mar 2015**

Further to Perth and Kinross council letter dated 27/02/15 regarding a further application from Barnhill Estates to change use of an agricultural building into a shed for processing and storage of biomass materials (in retrospect).

We continue to object to this building and land being used for anything other than agriculture.

We would like to register our objections regarding the noise from the chipping process at the above plant and also regarding the traffic arriving and leaving the site.?

It has been noted that traffic ( log transporters, and lorries carrying the result of chipping etc ) can start arriving as early as 5.00am and still arriving , leaving as late as 10pm.?

The Barnhill estates are already storing and moving reconstituted wood waste without following the appropriate processes or required permits this is with no thought for the village and surrounding area with regards the possible health issues associated with reconstituted wood waste.

Reconstituted wood waste is a proven carcinogen (International Agency on Cancer) inhalation of wood dust is known to increase the risk of nasal and sinus cancer.

I believe there is a clear risk with regards the potential increase of health issues for the people in the area. Can I point out that due to the retrospect application they have already put people health at risk by not ensuring due processes have been followed.

I have no wish to subject my family to an increased chance of respiratory disease and as our home back onto this proposed (in retrospect) processing plant the risk is higher.



**Miss Alison Murray (Objects)**

**Comment submitted date: Sat 07 Mar 2015**

I would like to object to this application on the grounds of this being designated area for agriculture only! Being a dairy farmers daughter, with only 200 dairy farms left in Scotland, we should be very worried indeed where our food is going to come from in the future, if local councils constantly flout previously stated land uses. I am also objecting about the noise pollution, living several miles away the noise from this unwarranted business, early in the morning and at the weekends is horrendous, and to think they will be operating 24hours a day. This is an area of nature and peacefulness and we dont want it ruined by noisy machinery working all day and all night!!



MOW

**Tracy McManamon**

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**From:** John Anderson [REDACTED]  
**Sent:** 08 March 2015 17:51  
**To:** Development Management - Generic Email Account  
**Subject:** Lambhill application. 13/01174/FLL

Development Quality Manager,  
Perth and Kinross Council

Dear Sir,

Lambhill Retrospective Application. 13/01174/FLL We wish to object to the above retrospective application for the following reasons:

1. Contrary to the local plan.

The daily operation at this plant had been proven to be an industrial process ( legal precedent, Midlothian versus Buccleugh Estate 1962 ). The area is zoned for agricultural/forestry so this operation is contrary to the local plan.

2. Site layout Plan

If P & K officers were to visit this operation, they would find that the greater site of several hectares is littered with log and chipping piles associated with the chipping process and lorries can be seen turning/loading on both upper and lower concrete pads. This is contrary to the site area plan submitted with the application which is clearly wrong.

3. Lorry movements.

Local residents find the numerous lorry movements and nocturnal operations upsetting and intrusive, which is affecting their quality of life.

4. Noise Impact Assessment.

The most recent noise impact assessment by AECOM has been found to be inconsistent with BS4142 and contrary to the advice given by P & K's EHO and should be rejected. Further, the idea of using an articulated trailer, or a dynamic log pile as an acoustic baffle would prove to be unworkable given the current level of enforcement.

5. Background.

We would remind you of the well documented long history of abuse at this site and the promises made to Blairingone by the Scottish Parliament. Also the negligence by P & K at not having the site restored to agriculture post open-cast mining.

We urge you to reject this application.'

Yours faithfully,  
John and Sheila Anderson  
Wester Cairnfold, Blairingone. FK14 7ND

Sent from my iPad

ENTERED IN COMPUTER

- 9 MAR 2015



Tracy McManamon

MOW

**From:** Mike and Sheila [REDACTED]  
**Sent:** 09 March 2015 10:14  
**To:** Development Management - Generic Email Account  
**Subject:** Lambhill application 13/01174/FLL

9 March 2015

To: Development Quality Manager,  
Perth and Kinross Council

Dear Sir,

ENTERED IN COMPUTER

- 9 MAR 2015

**Lambhill Retrospective Application. 13/01174/FLL**

I wish to object to the above retrospective application for the following reasons:

**1. Contrary to the local plan.**

The daily operation at this plant had been proven to be an industrial process ( legal precedent, Midlothian versus Buccleugh Estate 1962 ). The area is zoned for agricultural/forestry so this operation is contrary to the local plan.

**2. Site layout Plan**

If P &K officers were to visit this operation, they would find that the greater site of several hectares is littered with log and chipping piles associated with the chipping process and lorries can be seen turning/loading on both upper and lower concrete pads. This is contrary to the site area plan submitted with the application which is clearly wrong.

**3. Quality of Life**

Local residents find the numerous lorry movements and nocturnal operations upsetting and intrusive, which is affecting their quality of life.

**4. Noise Impact Assessment.**

The most recent noise impact assessment by AECOM has been found to be inconsistent with BS4142 and contrary to the advice given by P &K's EHO and should be rejected. Further, the idea of using an articulated trailer, or a dynamic log pile as an acoustic baffle would prove to be unworkable.

**5. Background.**

There is a well documented long history of abuse at this site and the promises made to Blairingone by the Scottish Parliament. Also the negligence by P &K at not having the site restored to agriculture post open-cast mining.

**Please reject this operation and assert your authority on an operator who believes that big brother "bullying" will outweigh anything if they exert enough pressure, even when it is contrary to planning regulations.**

Yours faithfully,

Sheila Travers  
The Millhouse  
Eastfield

Saline  
Fife KY12 9LW

MOW

## Tracy McManamon

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**From:** Alan Kinloch [REDACTED]  
**Sent:** 10 March 2015 10:30  
**To:** Development Management - Generic Email Account  
**Subject:** Re: Lambhill application. 13/01174/FLL  
**Attachments:** PastedGraphic-7.pdf; PastedGraphic-6.pdf; PastedGraphic-2.pdf

Alan Kinloch  
Easter Solsgirth  
Solsgirth  
Dollar  
FK14 7NB

thanks

Alan Kinloch  
Director/Owner

Genoa Black Ltd  
Genoa Black Ventures LLP  
Brand Dash LLP  
[alan@genoablack.com](mailto:alan@genoablack.com)

Mobile - 07795 442 168  
Head Office - 01259 743 829



[www.genoablack.com](http://www.genoablack.com)

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On 10 Mar 2015, at 10:25, Development Management - Generic Email Account  
<[DevelopmentManagement@pkc.gov.uk](mailto:DevelopmentManagement@pkc.gov.uk)> wrote:

Dear Mr Kinloch

To enable us to register your comments we will need your full postal address including postcode.

Regards

Tracy McManamon  
Senior Support Assistant  
Planning and Development  
35 Kinnoull Street  
Perth  
PH1 5GD

Telephone 01738 475334

---

**From:** Alan Kinloch [mailto:[alan@perthandkinross.gov.uk](mailto:alan@perthandkinross.gov.uk)]  
**Sent:** 09 March 2015 12:43  
**To:** Development Management - Generic Email Account  
**Cc:** Laura Graham; Sarah Plummer; Diana Johnson; Sheila Travers; Marion Eggington; Jane Pelly; John Anderson  
**Subject:** Lambhill application. 13/01174/FLL

Development Quality Manager,

Perth and Kinross Council

Dear Sir,

Lambhill Retrospective Application. 13/01174/FLL

I object to the above retrospective application for the following reasons:

1. Contrary to the local & Structure Plans

The proposed use applied for as confirmed in Midlothian versus Duke of Buccleugh Estate 1962 was found to be classified in planning terms as Industrial Class 5 which along with Storage (Class 6) is contrary to the local and structure plans for this site and location. As this area is zoned for agricultural/forestry any use contrary to this goes against the local and structure plans

Further the original approved consent allowing this particular site to be developed British Coal in 1988 offered to the local community that if they did not object to their proposal for an Open cast Mine they would extract the coal quickly (8 years) and completely restore the site back to agriculture upon completion. This was agreed as a Planning Condition (Condition 40 in Planning application PK/88/0374)

When the community challenged Perth & Kinross Council over the planning conditions they were advised that the original planning consent documents had been lost and the council could not enforce planning where they did not have the original documents.

The documents were subsequently found when an MP became involved and demanded that they be found. It was during a meeting in the council offices in February 1999 when the lost plans were tabled that the local Blairingone community discovered that Perth & Kinross had agreed to the removal of 10 pages of conditions all relating to the reinstatement of the land back to agricultural use.

Instead of full restoration what remained is a 2.6 hectare area of concrete hard standing and a 15,000sqft industrial building.

This condition was illegally removed by P&K council without consultation with this community.

George Reid MSP said on 31<sup>st</sup> March 2003

**“The Scottish parliament was set up to cast light into the dark corners of Scottish Life to give voice to the people”**

**“The Blairingone petition group was always about more than addressing health concerns. It was about how Scotland is Governed. About how decisions are taken on our behalf. About opening up our administrative structures and non elected bodies who decide public issues in private – to public scrutiny”**

Dorothy-Grace Elder MSP said

**“ if ever a village has been raided and pillaged repeatedly it is Blairingone. Industry has hauled benefits out of it and put nothing back in return.”**  
**“Scotland owes a debt to Blairingone”**

## 2. Site layout Plan & Size

The applicant has submitted an incorrect site size delineation plan in an attempt to fall under 2 ha.

The applicant has also submitted 2 separate applications on the premise that both are completely separate. This is again incorrect as anyone visiting the site could observe and as

the applicants own acoustic engineers recorded on the recently submitted acoustic report where chipping on the lower part of the site was documented.

The site plan submitted and the separate applications need to be considered in line with planning legislation and considered as one application. To consider this in any other way would be acting out side planning legislation.

### 3. Lorry/vehicles movements.

The absence of any factual & accurate information submitted in both the planning and acoustic reports that reflects true vehicle movements and impacts is an appalling & deliberate omission by the applicant.

P&K council must ensure that any application and noise survey submitted accurately reflects the impact of any/all vehicle movements both accessing and exiting from this site. Local residents find the current 24hr access and the 60+ daily lorry movements upsetting and intrusive, which is affecting their quality of life.

### 4. Noise Impact Assessment.

All noise impact assessment assessments submitted and indeed the most recent by AECOM has been found to fall outside the guidelines BS4142 and contrary to the instructions given by P &K's EHO. The acoustic survey fails in a number of areas :-

Firstly Dawn Stewart has advised that she had instructed AECOM that "should it not be possible to install noise meters in the gardens then installing meters on the applicants property in the direction of the NSR's would be acceptable"

AECOM did not even attempt to make contact with any of the NSR's instead took recordings at pre determined positions. Indeed P3 sitting under a major power line is not permitted due to interference from the power line.

Secondly for the P&K EHO to agreed a location for noise meters that is out-with the act (BS4142) and contrary to PAN1/2011 is another very serious matter. BS4142 is clear that noise meter readings must be located at a location that is representative of the noise levels at the NSR's - not as was agreed in this instance at a position over 700feet away (from the NSR) and significantly elevated, to thus record a higher baseline level due to it being closer to the A977 and elevated to thus pick up higher acoustic readings.

Third for P&K EHO to consider that a temporary pile of logs that is destined to be chipped can be regarded as having acoustic dampening qualities even when the log pile is in the process of being dismantled and chipped and thus no longer physically there is staggering ! Also For P&K EHO to imply that a fixed acoustic barrier would restrict the applicants ability to operate is also a staggering statement.

Further, the idea of using an articulated trailer as an acoustic baffle is outwith the act.

### 5. Classification as Major.

Perth & Kinross Council originally and incorrectly advised the applicant that the classification of this development was that of a 'Local Development' thus removing the need for a 12 week consultation process with this community. A community that has suffered the consequences of poor planning management and lack of enforcement for nearly 4 decades.

This incorrect decision by P&K council has fanned the flames of resentment between this community and Perth & Kinross council and again raising the specter of collusion and secrecy.

The 2009 Hierarchy of Development regulations, is clear under clause 9 'Other Development' that :-

*'Any development not falling wholly within any single class of development described in para. 1-8' and where the area of the site is or exceeds 2 hectares' must be classed as a Major Development.*

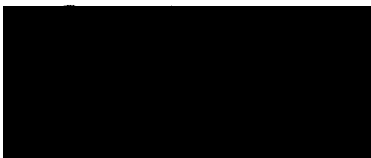
We would remind P&K council of the well documented long history of abuse at this site and the promises made to Blairingone by the Scottish Parliament. Also the negligence by P &K at not having the site restored to agriculture post open-cast mining.

**"We expect in this country for our homes to provide relaxation in a safe environment and many people in the area believe that Blairingone has more than paid its dues to the wider society.**

**Promises to this community, made by the Scottish Parliament in 2003 need to be kept and it is vital that Perth and Kinross Council recognise their responsibility to the community in this very important matter ." Gordon Banks MP**

Alan Kinloch  
Director/Owner

Genoa Black Ltd  
Genoa Black Ventures LLP  
Brand Dash LLP



<image001.png>

<image002.jpg>

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On 8 Mar 2015, at 17:58, John Anderson <[john@cairnfold.com](mailto:john@cairnfold.com)> wrote:

Dear All,

We have written our objection letter....see below. We would urge you to follow suit! Things are hotting up and if we keep the pressure on, we have a chance of getting this down. Please persuade anyone else to do likewise!!

Thanks!

Regards, John A.

Sent from my iPad

Begin forwarded message:

**From:** John Anderson [REDACTED]  
**Date:** 8 March 2015 17:50:47 GMT  
**To:** "[DevelopmentManagement@pkc.gov.uk](mailto:DevelopmentManagement@pkc.gov.uk)"  
<[DevelopmentManagement@pkc.gov.uk](mailto:DevelopmentManagement@pkc.gov.uk)>  
**Subject:** Lambhill application. 13/01174/FLL

Development Quality Manager,  
Perth and Kinross Council

Dear Sir,

Lambhill Retrospective Application. 13/01174/FLL

We wish to object to the above retrospective application for the following reasons:

1. Contrary to the local plan.

The daily operation at this plant had been proven to be an industrial process ( legal precedent, Midlothian versus Buccleugh Estate 1962 ). The area is zoned for agricultural/forestry so this operation is contrary to the local plan.

2. Site layout Plan

If P &K officers were to visit this operation, they would find that the greater site of several hectares is littered with log and

chipping piles associated with the chipping process and lorries can be seen turning/loading on both upper and lower concrete pads. This is contrary to the site area plan submitted with the application which is clearly wrong.

3. Lorry movements.

Local residents find the numerous lorry movements and nocturnal operations upsetting and intrusive, which is affecting their quality of life.

4. Noise Impact Assessment.

The most recent noise impact assessment by AECOM has been found to be inconsistent with BS4142 and contrary to the advice given by P &K's EHO and should be rejected. Further, the idea of using an articulated trailer, or a dynamic log pile as an acoustic baffle would prove to be unworkable given the current level of enforcement.

5. Background.

We would remind you of the well documented long history of abuse at this site and the promises made to Blairingone by the Scottish Parliament. Also the negligence by P &K at not having the site restored to agriculture post open-cast mining.

We urge you to reject this application.'

Yours faithfully,

John and Sheila Anderson

Wester Cairnfold, Blairingone. FK14 7ND

Sent from my iPad

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MON

Tracy McManamon

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**From:** Alastair Lavery [REDACTED]  
**Sent:** 12 March 2015 16:30  
**To:** Development Management - Generic Email Account  
**Subject:** Objection to 13/01174/FLL from Fossoway and District Community Council  
**Attachments:** Planning Lambhill 19Jul13.docx; Planning Lambhill 12March15.docx

I attach a letter objecting to **Planning Application 13/01174/FLL**. Change of use of agricultural shed for the processing and storage of biomass materials (in retrospect), Land At Lambhill Blairingone, from Fossoway and District Community Council. I have also attached a letter of 16th July 2013 on the same application.

Alastair Lavery  
Planning Convenor  
Fossoway and District Community Council




This email has been checked for viruses by Avast antivirus software.  
[www.avast.com](http://www.avast.com)





## FOSSOWAY & DISTRICT COMMUNITY COUNCIL

Burach  
Carnbo  
Kinross  
KY13 ONX



12<sup>th</sup> March 2015

Head of Development Standards  
Perth & Kinross Council  
Pullar House  
35 Kinnoull Street  
Perth  
PH1 5GD

Dear Mr Brian,

**Objection to Planning Application 13/01174/FLL.** Change of use of agricultural shed for the processing and storage of biomass materials (in retrospect), Land At Lambhill Blairingone.

Fossoway and District Community Council discussed this planning application at its meeting on 3<sup>rd</sup> March 2015. The Community Council objected to this application on 16<sup>th</sup> July 2013 and this letter re-affirms the objection. I quote from the introduction to our letter to you at that time, outlining the already complex history of the site

"This application concerns the development of a large site at Lambhill, changing the use of the area from agricultural to biomass processing, an industrial process. Application 13/01174/FLL replaces withdrawn 12/00912/FLL. Modification of existing consent (PK/97/1665) to allow change of use of agricultural shed for the processing and storage of biomass materials. Land At Lambhill Blairingone. We note that there is no substantial difference between the current and withdrawn applications. We also note that 13/01174/FLL is in retrospect, acknowledging that the applicant has been carrying out this work since 12/00912/FLL was lodged in May 2012. A related application 12/01354/FLL. Storage of waste wood material on concrete hardstanding in retrospect. Land At Lambhill Blairingone was approved. The Community Council objected to both of these applications, including on grounds of the lack of clarity caused by considering 2 clearly linked applications concerned with one industrial development as separate."

The current round of consultation is triggered by the distribution by you of a noise report, confirming the statements made in 2013 about unacceptable levels of noise. No details of mitigations measures are given beyond recommendations from the developer's consultant, which fall far short of the information needed by the community to judge the impact of these measures. In particular there is no indication of how these measures will impact on the already contentious matter of the area of the site.

It is therefore extremely disappointing to have to repeat the objections made in 2013 yet again, especially as the site has been operational since 2012 without planning permission.

The Community Council objects to Planning Application **13/01174/FLL**.

1. The application is contrary to the Kinross Area Local Plan and the proposed Local Development Plan. The site is not an industrial site in either plan and the applicant has provided no justification for rezoning.
2. The applicant has shown that noise levels at the site will exceed thresholds. However the application submitted has no detailed plans of where the screening that may mitigate this will be provided.
3. Perth and Kinross Council should use the consideration of this further re-consideration to re-assess the validity of the applicant's claim that the site concerned is less than 2 ha. The operation involves transport movement, handling, noise reduction and other processes which are essential parts of the applicants business on the site and which take place outwith the areas covered by planning permission. The applicant's change of use of the site should be considered as a whole.

Yours sincerely,

Alastair Lavery  
for Fossoway & District Community Council

## FOSSOWAY & DISTRICT COMMUNITY COUNCIL

Burach  
Carnbo  
Kinross  
KY13 ONX  
01577 840645  
lavery@carnbo.freeseve.co.uk

19<sup>th</sup> July 2013.

Head of Development Standards  
Perth & Kinross Council  
Pullar House  
35 Kinnoull Street  
Perth  
PH1 5GD

Dear Mr Brian,

**Planning Application 13/01174/FLL.** Change of use of agricultural shed for the processing and storage of biomass materials (in retrospect), Land At Lambhill Blairingone

Fossoway and District Community Council discussed this planning applications by correspondence.

This application concerns the development of a large site at Lambhill, changing the use of the area from agricultural to biomass processing, an industrial process. Application **13/01174/FLL** replaces withdrawn **12/00912/FLL**. Modification of existing consent (PK/97/1665) to allow change of use of agricultural shed for the processing and storage of biomass materials. Land At Lambhill Blairingone. We note that there is no substantial difference between the current and withdrawn applications. We also note that **13/01174/FLL** is in retrospect, acknowledging that the applicant has been carrying out this work since **12/00912/FLL** was lodged in May 2012. A related application **12/01354/FLL**. Storage of waste wood material on concrete hardstanding in retrospect. Land At Lambhill Blairingone was approved. The Community Council objected to both of these applications, including on grounds of the lack of clarity caused by considering 2 clearly linked applications concerned with one industrial development as separate.

The Community Council objects to Planning Application **13/01174/FLL**.

1. The application is contrary to the Kinross Area Local Plan and the proposed Local Development Plan. The site is not an industrial site in either plan and the applicant has provided no justification for rezoning.
2. The applicant has stated that noise levels at the site will exceed thresholds. However the application submitted has no indication of how or where the screening that may mitigate this will be provided.

We also raise three further issues.

1. The level of information provided is basic and is well below that on the majority of applications seen by this Community Council. We consider that it falls well below the standard needed to allow the Council and the community to make a reasonable assessment of the application.
2. Perth and Kinross Council should use the consideration of this re-application to re-assess the validity of the applicants claim that the site concerned is less than 2 ha. The operation involves transport movement, handling, noise reduction and other processes which are essential parts of the applicants business on the site and which take place outwith the areas covered by planning permission. The applicant's change of use of the site should be considered as a whole.
3. It should be unacceptable to Perth and Kinross Council that a developer is permitted to carry out operations requiring planning permission for an extended period while planning applications are lodged, amended, withdrawn and resubmitted. Has Perth and Kinross Council any plans to take action on this?

I would be grateful for comments on the three issues raised by this application. The Community Council meets next on the 6<sup>th</sup> August.

Yours sincerely,

Alastair Lavery  
for Fossoway & District Community Council

MOW

**Tracy McManamon**

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**From:** Sarah Plummer [REDACTED]  
**Sent:** 12 March 2015 10:41  
**To:** Development Management - Generic Email Account  
**Subject:** Ref 13/01174/FLL

Dear Sir,

Lambhill Retrospective Application. 13/01174/FLL

I wish to object to the above retrospective application for the following reasons:

1. Contrary to the local plan.

The daily operation at this plant had been proven to be an industrial process ( legal precedent, Midlothian versus Buccleugh Estate 1962 ). The area is zoned for agricultural/forestry so this operation is contrary to the local plan.

2. Site layout Plan

If P &K officers were to visit this operation, they would find that the greater site of several hectares is littered with log and chipping piles associated with the chipping process and lorries can be seen turning/loading on both upper and lower concrete pads. This is contrary to the site area plan submitted with the application which is clearly wrong.

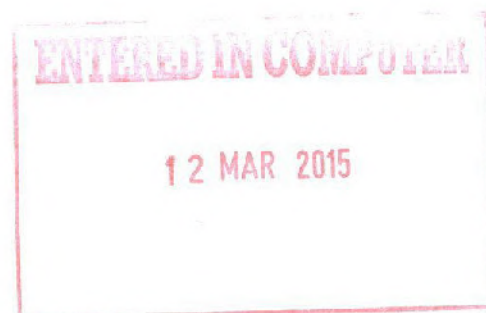
3. Lorry movements. I find the numerous lorry movements and nocturnal operations upsetting and intrusive, which is affecting my quality of life.

4. Noise Impact Assessment.

The most recent noise impact assessment by AECOM has been found to be inconsistent with BS4142 and contrary to the advice given by P &K's EHO and should be rejected. Further, the idea of using an articulated trailer, or a dynamic log pile as an acoustic baffle would prove to be unworkable given the current level of enforcement.

Yours sincerely

Mrs Sarah Plummer  
Easter Downiesdrum  
Blairingone





MOW

**Tracy McManamon**

---

**From:** [REDACTED]  
**Sent:** 13 March 2015 14:08  
**To:** Development Management - Generic Email Account  
**Subject:** 13/01174/FLL - Planning Application on Neighbouring Land - Comment

Development Quality Manager  
Perth and Kinross Council

Dear Sir

Planning Application Reference - 13/01174/FLL  
Land at Lambhill, Blairingone  
Change of use retrospective application

ENTERED IN COMPUTER

16 MAR 2015

We would like to object to the above applications for the following reasons.

1. Noise Impact - The noise generated from the chipping of materials has a negative effect on the quality of life at our property. The plant currently operates seven days a week and all times throughout the day, evening and night. The levels of noise pollution can vary greatly and are sporadic. A recent visitor to our property commented that they thought a helicopter had crashed or a serious accident had taken place such was the loud chipping noises coming from the plant. The most recent noise impact assessment by AECOM has been found to be inconsistent with BS4142 and contrary to the advice given by P&K's EHO and should be rejected.
2. Lorry Movements - We find the constant and numerous lorry movements intrusive and again to have a negative effect on the quality of life at our property. Every vehicle entering and leaving the site has to pass our property and articulated Lorries continue to access the site 24 hours a day 7 days a week.
3. The current operation is contrary to the local plan as the daily operation at the plant is an industrial process in an agricultural /forestry zone.

Kind regards

Mrs Laura Graham  
Broom Farm Cottage  
Blairingone  
FK14 7NX



Development Quality Manager  
The Environment Service  
Perth and Kinross Council  
Pullar House  
35 Kinnoull Street  
PERTH  
PH 1 5GD

2 Tethyknowe Steading  
Blairingone  
Dollar  
FK14 7ND

March 13<sup>th</sup> 2015

Dear Sir,

**Planning Application 13/01174/FLL**

We objected originally to the above application and wish to reiterate our objection for the following reasons:

- This site has a long planning history and past commitments have not been met. This land should have been returned to agriculture many years ago, it is zoned for agriculture and PKC should not have allowed, or allow in future, any industrial activity on this site.
- This application should be treated as a major application. PKC has allowed two applications to be submitted. It is clear from the boundary size of this site and from the activities being undertaken that this is a single operation operating on a site which is well in excess of the 2 hectare limit for local applications. PKC are allowing far too many applications to bend the rules and be dealt with as local when they should be treated as major applications.
- A noise report has finally been submitted detailing a noise analysis which substantially fails to meet the necessary guidelines. Noise does not travel in a uniform manner and to measure noise anywhere other than at the precise locations where the noise may be a potential nuisance ie the nearby houses and over several days covering different conditions is totally inadequate. No attempt was made to do this.
- The increase in traffic on the A977 is a major safety hazard and a nuisance for the residents of Blairingone. No information has been provided on the exact number and times of lorry movements to/from the site.
- Blairingone has had to fight too many battles over the commitments made by PKC and the Scottish Government over this site which should now be restored to woodland as originally promised.

Finally, this application has been ongoing for nearly two years during which time the villagers of Blairingone have been subjected to the impacts of an operation which should have been stopped a long time ago. Whilst it is not unreasonable for some time to be taken to consider a complex and/or controversial application or to be given to an applicant to provide additional information the time taken in this instance goes far beyond what can be considered reasonable. PKC have sought to justify this application on the basis of case law which has been demonstrated to be incorrect. There are already substantial grounds for a formal complaint against PKC for its handling of both this application and aspects relating to the history of this site. A great deal of information, in more detail than that given in this letter, has been provided on the many valid reasons why this application should be rejected. For PKC not to refuse this application for ALL these reasons can only enhance the grounds for such a complaint.

Yours faithfully

Jan and Graham Pye

**Paige Crighton**

**From:** DUNCAN HOPE [REDACTED]  
**Sent:** 16 March 2015 16:03  
**To:** Development Management - Generic Email Account  
**Subject:** 13/01174/FLL

Dear Sirs

**Planning Application 13/01174/FLL**



I wish to object to the above planning application.

I believe this application should and must be refused. For Perth & Kinross Planning Authority and Council to do otherwise would be seen locally as a severe breach of conditions which were placed on the hard standing area at Lambhill Farm to protect the community and residents of Blairingone and district from industrial development on this site.

Many objectors to this application have made reference to the 'Blairingone Petition' and the numerous quotes and recommendations associated with it. I am the person who presented PE327 to the Scottish Parliament Public Petitions Committee on behalf of the Blairingone & Saline Action Group and I can assure you that we did not fight tooth and nail at considerable expense to ourselves to have conditions and safeguards put in place to protect our community only to have them further eroded and again signed away by PKC Planning Authority.

The hard standing area at Lambhill was originally to be removed when coaling was completed in 1996 and the whole site restored to agriculture, woodlands and wetlands but at a meeting of Fossoway Community Council held in the Moubray Hall, Powmill on 24 April 1997, Mr Gordon McFarlane revealed that without consulting the council or the local community he had signed a letter on behalf of PKC Planning Authority on 19 February 1997 giving the then site owners, Scottish Coal Ltd, permission to retain the hard standing area.

The current building, subject of application 13/01174/FLL/ is an agricultural building, being part of application PK97/1665 for the erection of two agricultural buildings and associated slurry store approved by 6 votes to 5 at the development Control Committee meeting on 25 March 1998. The slurry store was refused.

The site description on the Development Control Committee document is as follows:-

4. Lambhill was an extensive open-cast site now being restored to agricultural use as a single farm of 240 hectares. There are no farm buildings on the unit and these currently proposed would be on an extensive area of concrete hard standing on two levels which was constructed in connection with the coal extraction. In February 1997 I agreed to a request by Scottish Coal to retain this hard standing area provided it was **used solely for agricultural purposes**. The site is around 500 metres from Blairingone village and around 350 metres from the nearest house.

Gordon McFarlane is named as Contact Officer and the document is signed by Denis Munro, Director of Planning and Development.

The insertion that the hard standing was to be used solely for agricultural purposes was to protect the community of Blairingone from precisely the type of development now being proposed.

I also refer to petition PE327 and in particular to a recommendation from the Health Inquiry Report carried out on behalf of the Public Petitions Committee of the Scottish Parliament by Dorothy-Grace Elder MSP and Dr John Curnow and published on 31 March 2003.

I quote: "Both the Reporter and the medical advisor felt strongly that Blairingone was a community 'on the edge' due to loss of amenities and environmental stresses, including major industrial and agricultural disruptions over a lengthy period of time. **The Committee therefore recommends that planning authorities and other responsible bodies should take the 'cumulative impact' of such enterprises fully into account when considering new planning applications, and that they should operate on the basis of 'environmental justice'.**"

I would hope the planning authority take note of the wording of that recommendation when deciding the outcome of this application. Environmental justice has been conspicuous by its absence and in extremely short supply in previous planning applications concerning Lambhill.

It is not the business of PKC or its planning authority to remove or alter conditions and recommendations put in place to protect a community from environmental injustice.

Duncan Hope

Broom Farm

Blairingone

Dollar

**Paige Crighton**

BS

**From:** Diana Johnson [REDACTED]  
**Sent:** 16 March 2015 14:01  
**To:** Development Management - Generic Email Account  
**Subject:** Re: Planning application 13/01174/FLL

Thank you. My address is:-

Cults Farm,  
Saline,  
Fife. KY12 9TB



Please confirm that my objection will now be registered in the usual way.

Regards,

Diana Johnson

On 16 March 2015 at 12:07, Development Management - Generic Email Account  
<[DevelopmentManagement@pkc.gov.uk](mailto:DevelopmentManagement@pkc.gov.uk)> wrote:

Dear Ms Johnson

To enable us to register your comments we will need your full postal address including postcode

Thanks

Regards

Paige Crighton-Modern Apprentice

Perth & Kinross Council

Planning & Development

Pullar House

35 Kinnoull Street

Perth

PH1 5GD

(01738) 475327

[PCrighton@pkc.gov.uk](mailto:PCrighton@pkc.gov.uk)

[www.pkc.gov.uk](http://www.pkc.gov.uk)



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**From:** Diana Johnson [REDACTED]  
**Sent:** 15 March 2015 17:35  
**To:** Development Management - Generic Email Account  
**Subject:** Planning application 13/01174/FLL

Dear Sir,

Planning Application 13/01174/FLL

I object to the above planning application for the following reasons:-

1. In 1988 British Coal told the community of Blairingone that the land would be completely restored to agricultural use once open cast coaling ceased. The community agreed to the 8 year open cast on this basis. Conditions (condition 40 in app no PK/88/0374) were drawn up to ensure that this would

happen. The council planning department subsequently told the local community that they had lost these original conditions including restoration maps of the land drawn up by the Ministry of Agriculture and Fisheries. They said new plans were now in place which did not require reinstatement of the land in the manner agreed to between British Coal and the community.

2. The original conditions required the large area of concrete hard standing to be removed but in 1997 the P@K council planner gave permission for this hard standing to remain PROVIDED it was for agricultural use only.

3. In 2003 P@K planning dept granted permission for two agricultural sheds which the applicant said would be used to house cattle. One very large shed has been built but has never housed cattle.

4. The area in this application is zoned for agriculture.

5. The application for a change of use from agriculture to Industrial would be contrary to the Kinross Area Local Plan.

6. The size of the area in the application exceeds that of a local development and should be deemed as "Major".

7. Noise would be a major issue from the proposed Industrial operation both day and night and could severely impact on the quality of life of the local community.

8. Blairingone has endured enough over the past years and should not have any Industrial operations on their doorstep so close to their homes. P@K council should ensure that the original agreements with the community are honoured and refuse this application for an industrial operation. Blairingone deserves Environmental Justice after years of stress since coaling ceased.

Diana Johnson

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**Tracy McManamon**

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**From:** Lorna Ferguson [REDACTED]  
**Sent:** 17 March 2015 15:48  
**To:** Development Management - Generic Email Account  
**Subject:** Subject: Lambhill application. 13/01174/FLL  
**Attachments:** objection.docx

Please find objection letter regarding above subject

Kind regards

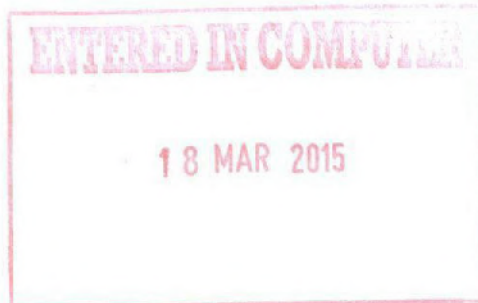
Robert and Lorna Ferguson



Lorna Ferguson  
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Email: [Lorna@fakebake.co.uk](mailto:Lorna@fakebake.co.uk)

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SCANNED

Mr & Mrs R Ferguson  
Beechfield  
Blairingone  
PERTH & KINROSS  
FK14 7LR

Development Quality Manager  
Perth and Kinross Council

Dear Sir

**Lambhill Retrospective Application. 13/01174/FLL**

**We wish to object to the above retrospective application for the following reasons:**

**1. Contrary to the local plan**

The daily operation at this plant had been proven to be an industrial process ( legal precedent, Midlothian versus Buccleugh Estate 1962 ). The area is zoned for agricultural/forestry so this operation is contrary to the local plan.

**2. Site Layout Plan**

If P & K officers were to visit this operation, they would find that the greater site of several hectares is littered with log and chipping piles associated with the chipping process and lorries can be seen turning/loading on both upper and lower concrete pads. This is contrary to the site area plan submitted with the application which is clearly wrong.

**3. Lorry Movements**

Local residents find the numerous lorry movements and nocturnal operations upsetting and intrusive, which is affecting their quality of life.

**4. Noise Impact Assessment**

The most recent noise impact assessment by AECOM has been found to be inconsistent with BS4142 and contrary to the advice given by P & K's EHO and should be rejected. Further, the idea of using an articulated trailer, or a dynamic log pile as an acoustic baffle would prove to be unworkable given the current level of enforcement.

**5. Background**

We would remind you of the well documented long history of abuse at this site and the promises made to Blairingone by the Scottish Parliament. Also the negligence by P & K at not having the site restored to agriculture post open-cast mining.

**6. Air Pollution**

There already seems to be a film of dust over our cars at present and we would have grave concerns for health issues should planning permission be granted.

We urge you to reject this application.

Yours faithfully

Robert and Lorna Ferguson



**Tracy McManamon**

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**From:** Marion Anness [REDACTED]  
**Sent:** 18 March 2015 09:47  
**To:** Development Management - Generic Email Account  
**Subject:** Lambhill Planning application 13/01174/FLL

Dear Sir/ Madam

Lambhill Retropsective Application 13/01174/FLL

We wish to object to the above application for a number of reasons.

1. Traffic

We have noticed a marked increase in lorries to and from the site which have to pass through the village of Blairingone. Many do not follow the speed limit especially when children are going to school and the noise and impact they have is noisy and potentially hazardous.

2. Noise levels

There has been an increase in noise levels from this site that is disruptive to many local residents.

3. Contrary to local plan

We thought this area was to be used for agricultural/ forestry use. This operation is neither and seems to be an industrial site.

4. History

The history of this site and the promises made are well known and this application falls short of what the community expects for this site and we expect PKC to consider this.

Yours faithfully

Marion and Nigel Anness  
Gateside Cottage  
Solsgith  
By Dollar  
FK14 7NB





**Mrs Judith Murray (Objects)**

**Comment submitted date: Thu 19 Mar 2015**

We wish to object to this application.

The noise which is currently originating from this site is a continuous monotonous noise which disrupts the tranquility of the area.

We live within 2 miles of the site and depending on the direction of the prevailing wind can hear the operation throughout the day.

We are not convinced that the existing noise tests were appropriate or thorough and they need to encompass what is a prevailing westerly wind pattern.

Regards,

John and Judith Murray



**Mrs Catherine Reekie (Objects)**  
**Comment submitted date: Mon 15 Jul 2013**

I object to this planning application on the following grounds.

The use falls under class 5,6 and 11 and not agricultural or forestry as suggested by the council.

The land in question is zoned as suitable for agricultural ONLY and not an industrial processing facility.

The site in question is not identified in the local & structure plans as a site suitable for industrial use.

There is no material benefit to support a change of use in this instance

Significant traffic and noise pollution.

There are considerable environmental, health, Noise, air and wildlife implications associated with an industrial processing operation of this nature that are not being considered..

Loss of visual amenity.

Loss of a right of way secured via prescriptive rights through the site over the last 24 years or more.

Industrialisation of the countryside.

Loss of amenity and open space.

As well as the above comments, I object to the fact that The applicant is already storing waste materials outwith the application area and has dumped scrap equipment in the small pond nearby ? P&KC should investigate these issues.

I also stated in my last objection that this company has now been operating, it would seem without planning permission and I as many others find the noise from their operations intrusive. This planning application was submitted in May last year and so far the applicant is carrying out his business where we have suffered noise nuisance at 5.50am, 6.10am and 23.50pm most weeks.

As I stated in my last objection the main trunk road running through Blairingone is already a busy road with constant articulated lorries "charging" through it, it is truly worrying that given the already high volume of heavy good traffic on this road that Perth and Kinross council would even consider an increase to this over a 24hr period, thus increasing the already high potential for accidents. The entrance to this site onto the main road is at the end of the village. Lorries crossing this throughout a 24hr period has significant potential to increase the already high possibility for accidents due to the already high level of motorists not observing the 30mile limit through the village especially during the night.

I moved to Blairingone to enjoy the countryside, the wide variety of wild life and live a healthier life style, I have no desire to breathe in industrial dust, be bombarded by noise pollution or be restricted in the opportunities living in the countryside provides. as one of the other objector stated I did not move here to live in a "row of houses" in an industrial site.

I object to this proposal and echo the quote from Dorothy-Grace Elder MSP who said "if ever a village has been raided and pillaged repeatedly it is Blairingone. Industry has hauled benefits out of it and put nothing back in return, Scotland owes a debt to Blairingone". The speaker of the Scottish Parliament said "Blairingone should now be left in peace". This proposal does nothing to leave Blairingone in peace

