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TECHNICAL NOTE ON NOISE
80 ACCRINGTON ROAD, BURNLEY

1. INTRODUCTION

1.1. BACKGROUND & OBJECTIVES

Graeme Phillips, the client, commissioned E3P to prepare a Technical Note on Noise in consideration of the proposed change of use of ground floor from public house (sui generis) to furniture workshop at 80 Accrington Road in Burnley. It is understood that Burnley Council have raised concerns in relation to potential noise impact from proposed operations.

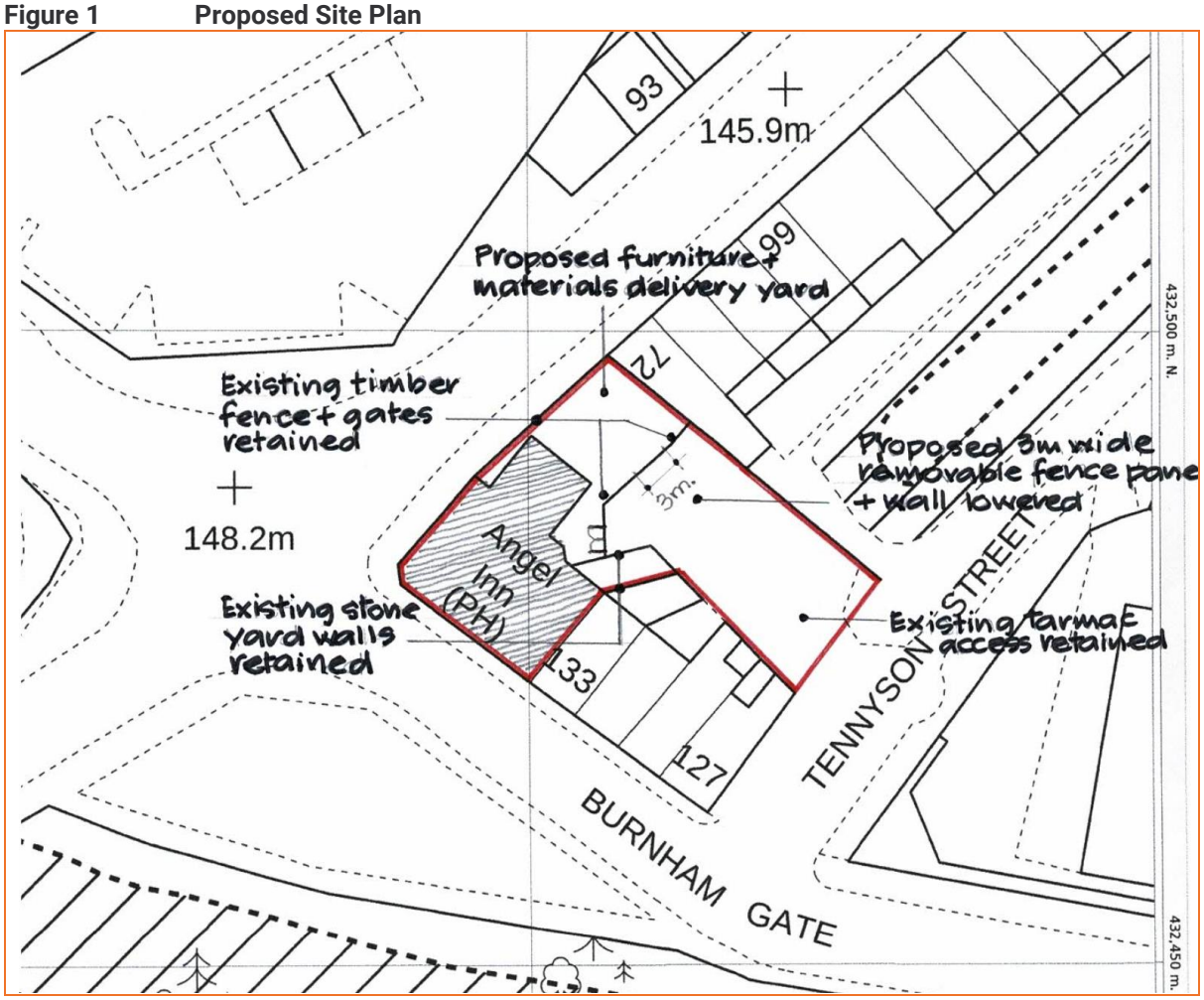
As such, E3P have provided the Technical Note which includes for professional analysis and judgement on the potential noise sources and their impacts upon adjacent receptors based on information provided by the client and Smith & Love Planning Consultants, the planning consultant.

1.2. PROPOSED DEVELOPMENT

E3P understands that the client intends to convert the ground floor of the former Angel Inn Public House to a conservation workshop which is to be used for the restoration of antique furniture using hand tools and small machinery. Furthermore, it is understood that the external area is to be allocated as a material delivery yard where the client will utilise the use of a van to move furniture rather than be used by any machinery or Heavy Goods Vehicles.

A hand annotated Proposed Site Plan has been provided detailing this location.

Figure 1 Proposed Site Plan



2. PROPOSED SOUND SOURCES

It is important to note that the trade of antique restoration and conservation is about restoration and rebuilding antique works that were crafted by hand and the restoration process aims to replicate this hand-crafted process with a single employee working at the site.

E3P understand that work would primarily involve hand tools with the rare use of power tools. The daily typical use of such power tools would not be considered typical.

Any major woodworking work is to be subcontracted out.

The use of woodworking power tools is very limited, and the proposed use is not as a machining/production workshop but rather a hand-crafted antique conservation workshop. Indeed, the proposed equipment is considered hobbyist level for working on small items of timber/parts of existing furniture.

Where power tools are to be used, these are to be restricted to hand tools only, such as power drills, electric saws and electric sanders. Electric saws are only used on occasion to cut wood for repairs, e.g. furniture feet, table surfaces.

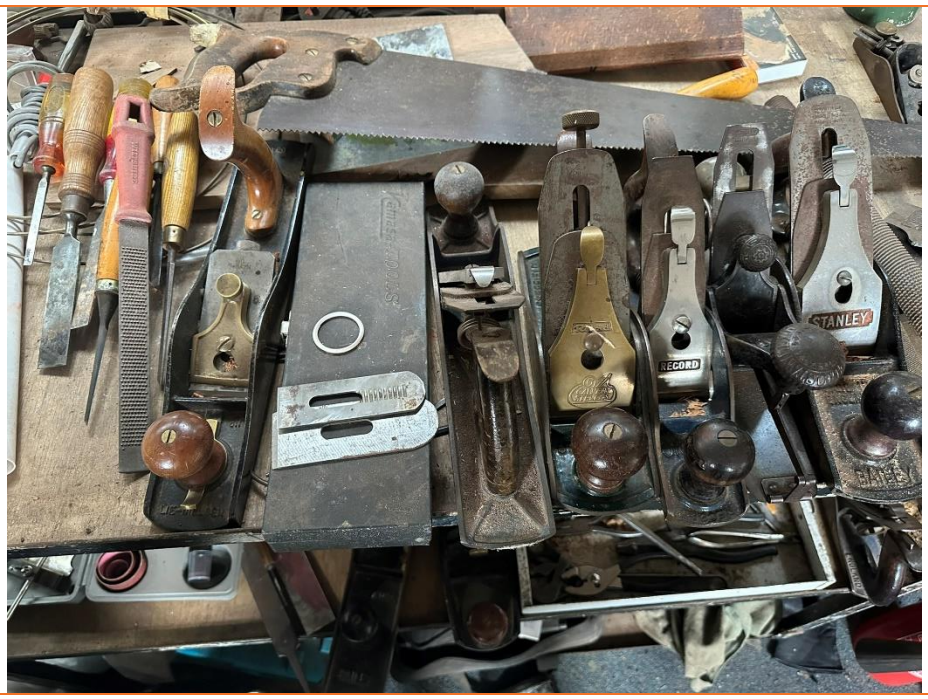
It is understood that all electrical tools have been selected to be as low a noise level as possible to avoid the need to wear hearing protection. For these, the client has provided a breakdown of the equipment to be used and its duration per month.

Table 1 Proposed Machinery and Usage

MACHINERY	USE	USE PER MONTH	DURATION PER MONTH (MINUTES)
Startrite 352 Band Saw	Cutting and shaping small pieces of timber	4	10
Small combination machine – Bravissima Sicar 350.	Small circular saw, planer, thicknesser for cutting and shaping small pieces of timber to replace or back antique furniture	4	10
Hand power tools (electric drill, sander, router, buffer)	All work by hand – tools to assist.	Occasional per day	-
Grinder	To cut any metal or stone.	2	10
Grinding machine	Sharpening chisels	4	10
Vacuum cleaners	Dust collection	Weekly	10
Portable extractors	Dust collection	Weekly	10
Fret saw	Cutting and shaping/fret work	4	10
Belt sander	Sanding	2	10
X cut saw	Cutting small pieces of wood	4	10

The client has provided the following picture showing the main tools which are to be used 99% of the time.

Picture 1 **Hand tools**



Hand tools include:

- Planers.
- Screwdrivers.
- Hand drills.
- Saws,
- Hammers.
- Chisels.
- Pliers.
- Clamps; and
- Gouges.

Examples of furniture to be conserved/restored are shown below:

Picture 2 Example furniture

3. POTENTIAL SOUND IMPACT AND DISCUSSION

In order to consider the potential noise impact of the development, the receptors must be identified. Here, the first-floor residential apartment above the proposed site is, understood, to be used by the client as owner occupier of the building. As such, it is reasonable to assume that any owner, occupier of the building would be associated with the proposed site. Accordingly, the closest receptors are noted to be adjacent properties.

When considering the potential sources of noise, E3P have determined that the main potential impact is via the use of a bench mounted circular saw, hand held circular saw, extraction, sander and grinder.

As such, E3P have considered noise level data from BS 5228-1:2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites- Part 1: Noise' which includes sound levels data for heavy machinery as well as hand held equipment. Additionally, E3P have used library source data for the remaining equipment. The resultant noise levels are given below:

- Hand held circular saw – 77 dB L_{Aeq} at 10 m (150 mm blade).
- Bench circular saw – 78 dB L_{Aeq} at 10 m (660 mm blade).
- Grinder – 99 dB L_{WA} sound power level.
- Orbital sander – 74 dB L_{WA} sound power level.

No information is available on dust extractors of this scale and so a noise level equal to the bench circular saw is used which is considered worst case.

The above do not allow for any time correction.

For any assessment of this type of usage, normally a BS 4142:2014+A1:2019 'Methods for rating and assessing industrial and commercial sound' assessment is conducted.

However, given the low usage of the above, this level of assessment is not considered applicable. Nevertheless, the potential noise from the site, during a 1-hour daytime period has been considered. Accordingly, Table 2 below shows the expected noise levels from each piece of equipment assuming 5-minute usage in a typical hour period (considered worst-case given the maximum 10-minute usage in a month).

Table 2 Calculation of typical noise levels

MACHINERY	SOUND PRESSURE LEVEL AT 5 m ($L_{Aeq,T}$) (dB)	TIME CORRECTED SOUND PRESSURE LEVEL AT 5 m ($L_{Aeq,T}$) (dB)	COMBINED SOUND PRESSURE LEVEL INSIDE AT 5 m ($L_{Aeq,T}$) (dB)
Hand held circular saw	83.0	72.2	78
Bench circular saw	84.0	73.2	
Grinder	77.0	66.2	
Orbital sander	52.0	41.2	
Dust extractor	84.0	73.2	

The above calculated noise level is an hourly noise level assumed to be centrally within the workshop, assuming equipment evenly spread, with the worker using each equipment for 5 minutes during an hour period.

The workshop area is located on the western corner of the ground floor with the closest receptors located in the adjacent dwelling and to the north east.

For adjacent dwellings, it is understood that the internal configuration of the workshop would mean that any sound from the workshop would need to pass through two stone walls (one internal and one party wall). It is reasonable to assume that the sound reduction of this configuration would be at least 55 dB and distance from the equipment would also provide, at least, an additional 6 dB reduction. As such, any noise break through associated with the party wall would be minimal and likely inaudible especially considering the existing road traffic sound.

For receptors likely to be susceptible to internal to external break-out, E3P have considered a sound reduction of 29 dB for any glazing units, assuming windows are kept closed, the noise is likely to pass through in the north east area of the development and a distance correction of -12 dB for the separation distance of 20 m (6 dB per doubling of distance from 5 m to 20 m).

This results in an expected noise level of 37 dB at the façade of the closest plot. This level of noise is considered low, especially considering the frequency of this occurring is not considered typical. So even worst-case assumptions when all hand tools and equipment are used at once returns a low level of noise.

The real-world resultant noise levels on a day-to-day basis would be inaudible from the site.

When considering noise impact in relation to commercial activities, BS 4142 states:

> *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.*

Although measurements have not been undertaken, the above statement still applies here with any assessment based on typical operating conditions. As such, typical operations at the proposed site do not normally include power/electrical tools.

Accordingly, E3P consider there to be no adverse impact, even assuming worst-case conditions, and noise should not be a determining factor in the determination of the application.

I trust the information provided in this letter report is satisfactory however if there is anything further, please do not hesitate to contact me.

Yours sincerely,
For and on behalf of E3P Ltd

Lee Faulkner
Associate Director