



**Extension
Samlesbury**

Stage 2 Acoustic Report
1166/AR1

20 February 2025

For:

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Contents	Page
1.0 Introduction	1
2.0 Acoustic Surveys	1
3.0 Acoustic Requirements	2

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1.0 Introduction

A new extension building is proposed towards the north west of the [REDACTED] Systems Samlesbury site.

This report outlines acoustic requirements for the proposed extension and summarises the acoustic surveys undertaken to date.

2.0 Acoustic Surveys

2.1 Environmental Sound

A detailed unmanned environmental sound survey has been undertaken at the [REDACTED] Systems Samlesbury site over a 24 hour period in order to establish the existing environmental sound levels.

The methodology and results of the environmental sound survey are presented within our Acoustic Survey Report 1166/AS1 dated 20 February 2025.

The highest L_{Aeq} environmental sound levels incident upon the facades of the proposed development have been specified based on the results of the sound survey.

These incident sound levels will be used in all subsequent analysis to establish sound performance specifications for the external building fabric elements.

The lowest L_{A90} background sound levels at the nearest noise sensitive receptors for the daytime and night-time periods have been specified based on the results of the sound survey.

These background sound levels will be used in all subsequent analysis of plant sound emissions and operational sound breakout to the nearest noise sensitive receptors.

2.2 Operational Sound

Sound data for the proposed machinery is not known at this stage. If this information is available from the manufacturer it should be forwarded for review during the Stage 3 design process.

Alternatively, if the proposed machinery is similar to existing machinery already on-site then a site visit may be arranged to undertake sound measurements during operation.

The machinery sound levels will be used in all subsequent analysis to establish sound performance specifications for the internal and external building fabric elements.

3.0 Acoustic Requirements

3.1 Indoor Ambient Sound Levels

The indoor ambient sound levels include contributions from both environmental sound break-in and building services sound.

It is proposed that indoor ambient sound levels within the proposed facility should comply with the design ranges given in BS 8233: 2014, "Guidance on sound insulation and noise reduction for buildings".

Space	L _{Aeq,T} Indoor Ambient Sound Level (dB)
Circulation	45-55

However, BS 8233: 2014 does not provide indoor ambient sound level design ranges for engineering/workshop type spaces. The 1999 edition of BS 8233 provided the following indoor ambient sound level design ranges for engineering/workshop type spaces.

Space	L _{Aeq,T} Indoor Ambient Sound Level (dB)
Heavy Engineering	70-80
Light Engineering	65-75

Additionally, the 2011 edition of BREEAM section Hea 05 provided the following indoor ambient sound level design ranges for engineering/workshop type spaces.

Space	L _{Aeq,T} Indoor Ambient Sound Level (dB)
Manual Workshops	≤ 55

Based on the above the following indoor ambient sound level design targets are proposed within the various space spaces.

Space	L _{Aeq,T} Indoor Ambient Sound Level (dB)
Circulation	≤ 55
Shop Floor	≤ 55

Sound performance specifications for the external building fabric elements and attenuation requirements for roomside plant sound emissions will be reviewed during the Stage 3 design process.

3.2 Sound Insulation

Internal wall and door constructions will be required to achieve certain sound insulation performance requirements in order to control machinery and activity sound level transfer between the various spaces. These requirements will be reviewed during the Stage 3 design process.

3.3 Reverberation

Absorbent treatment is likely to be required in order to control reverberant machinery and activity sound levels within the various spaces. These requirements will be reviewed during the Stage 3 design process.

3.4 Atmospheric Plant Sound Emissions

Plant sound levels would typically be designed to achieve 5dB below the minimum background sound levels at the nearest noise sensitive receptors with all plant operating simultaneously under normal conditions. This requirement is subject to final approval by South Ribble Council.

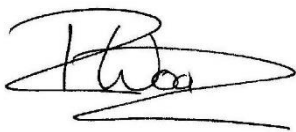
Attenuation requirements for atmospheric plant sound emissions will be reviewed during the Stage 3 design process.

3.5 Operational Sound Breakout

Operational sound breakout from items of machinery and activities should not cause a noise nuisance at the nearest noise sensitive receptors.

Operational sound breakout levels would typically be designed to achieve 5dB below the minimum L_{A90} background sound levels at the nearest noise sensitive receptors with all machinery operating simultaneously under normal conditions. This requirement is subject to final approval by South Ribble Council.

Sound performance specifications for the external building fabric elements will be reviewed during the Stage 3 design process.



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