

Project

Acoustic Assessment: Nursery Addendum

Prepared for

Castleoak Care Developments Limited
and
RST Topsham Road (Exeter) Ltd

By

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Revision History

Revision	Date	Comments

Summary

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This report is to act as an addendum to the original report C/42494/T01v2/CVS.

SRL Technical Services Limited has been commissioned by Acorn Property Group to do a noise assessment to support the planning application for a nursery within a residential development on Topsham Road, Exeter. This report details existing noise levels affecting the site and outlines mitigation needed to meet internal and external noise limits given in BB93.

We have used our noise survey data to determine the required acoustic specification for glazing and ventilation strategy to satisfy the anticipated planning condition, as detailed in section 4.0 of this report.

Acceptable internal noise levels can be achieved throughout using standard thermal glazing.

Non-acoustic ventilation can be provided in the façade facing directly away from Topsham road, and a small area (around 20,000mm²) of non-acoustic ventilation can be installed in the side façade. If ventilation is required in the Topsham Road façade then it will need to be acoustically treated.

External play area for the nursery should not have a negative impact on the local residential properties.



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1.0 Introduction

Acorn Property Group are preparing a planning application for a large residential development on the site of the Exeter Royal Academy for Deaf Education (ERADE), which is situated off Topsham Road. This site is to consist of a one care home, one block of assisted living accommodation, 149 dwellings (flats and houses) and a nursery.

Our original report C/42494/T01v2/CSV addresses the noise impact on the residential buildings, including the care home and assisted living accommodation. This report is to act as an addendum to that report and deals with the nursery.

The main noise source affecting the site is road traffic on Topsham Road to the north; a plan of the proposed development is given in Figure 1 below.



Figure 1: Proposed Nursery Location

2.0 Noise Policy and Criteria

There is no strict guidance for nurseries, therefore we have decided that it would be most suitable to assess a nursery under the guidelines of BB93 as it can be classed as an educational building.

2.1 BB93 guidance

Table 1 below lists the upper limits for internal noise levels in the different learning and resource areas for the scheme, as set out in BB93.

Type of Room	Upper limit for indoor ambient noise level, dB LAeq, 30mins
Reception, classrooms, sport, science, practical	35
Staff prep (work room)	35
Offices, staff room	40
Kitchens	50
Toilets, Cloakrooms	50

Table 1: Upper Limits for Indoor Ambient Noise Levels

During normal midseason weather conditions, BB93 states these noise levels can increase by 5dB in rooms which are naturally ventilated (NB - not applicable when target is ≥ 45 dB LAeq, 30mins). Any mechanical systems (or the mechanical part of a hybrid system) must not exceed the limit in Table 1 below.

In summertime, to prevent overheating, noise levels for mechanical systems can be relaxed to 5dB higher than the levels in Table 1 (and be up to 55dB LAeq in a naturally ventilated room), if the increased ventilation is under the control of the teacher. This is for the hottest 200 hours of the year.

When an 'intermittent boost' is required for dispersing fumes in practical spaces, the above summertime criteria also apply if the additional ventilation is under the direct control of the teacher.

Note, crosstalk attenuators may be required to maintain the sound insulation between rooms if they are connected by common ductwork.

3.0 Noise Assessment

3.1 Noise Survey and Data

Attended noise measurements were taken from 10:30 to 15:00 on Friday 15th September 2017 on the roads surrounding the site, using a receiver approximately 1.5m off the ground. Details of the survey can be found in our previous report, reference C/42494/T02v2/CVS.

3.2 Glazing and ventilation recommendations

Glazing and ventilation specifications are given below for the façades of the nursery, I have summarised them in table 2 below. Please note these are the minimum requirements, therefore glazing with higher sound insulation performances are also acceptable.

Room Type	Façade	Glazing Requirement	Ventilation
Nursery Main Room	Topsham Road	32dB Rw	If ventilation is required, it will need to be acoustically rated
Office	Topsham Road	32dB Rw	Standard Trickle Ventilator
Nursery Main Room	Side Façade	32dB Rw	Up to 20,000mm ² of Non-acoustic Ventilation
Nursery Main Room	Rear Façade	32dB Rw	Non-acoustic Ventilation

Table 2: Glazing and Ventilation Strategy Summary

Any thermal double glazing is expected to be capable of achieving the 32dB Rw requirement (for example 4mm glass, 12mm spacer, 4mm glass).

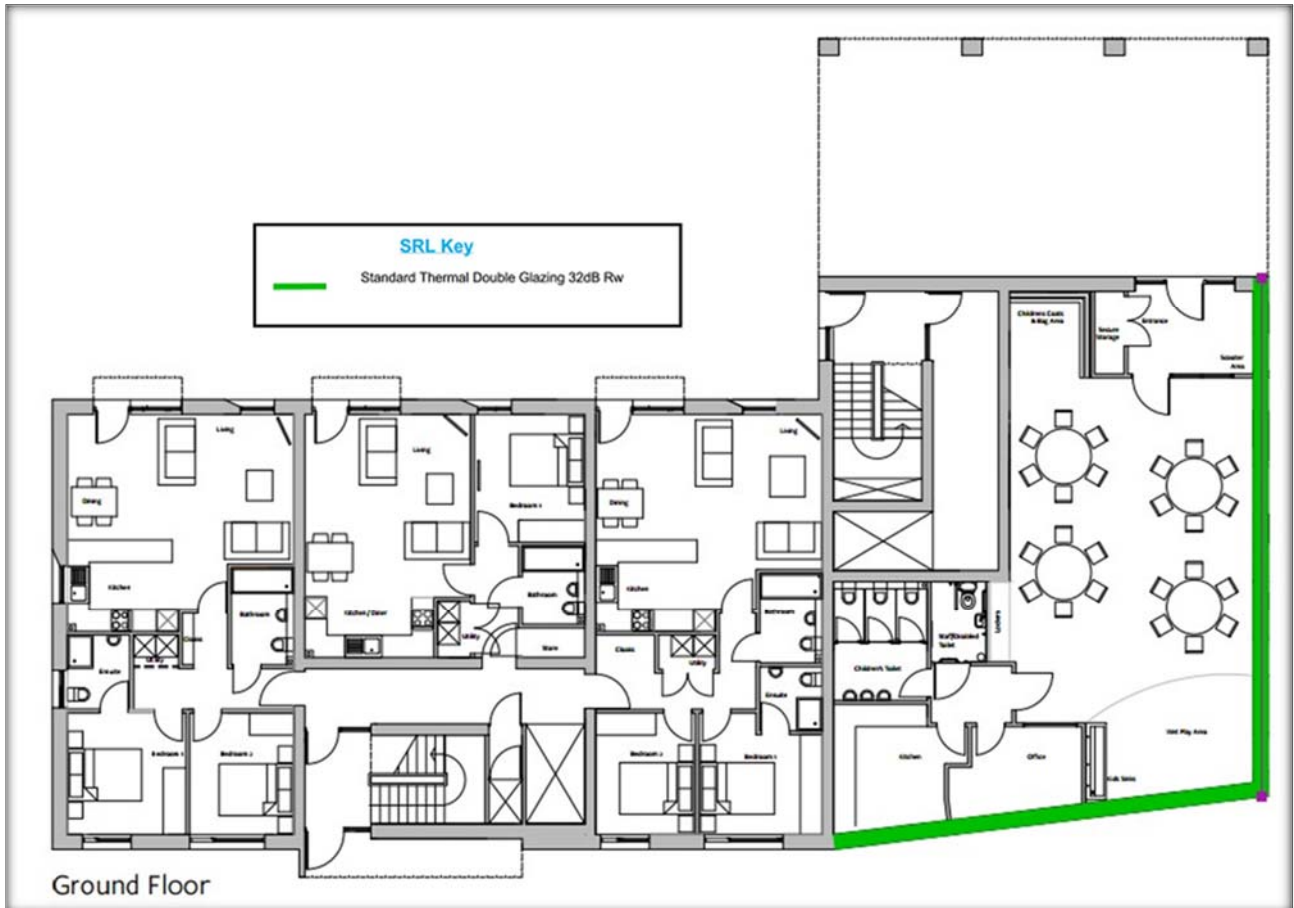


Figure 2: Proposed Nursery Layout Showing Glazing Requirements

3.3 External areas

The nursery has a covered external play area and will accommodate up to 30 children.

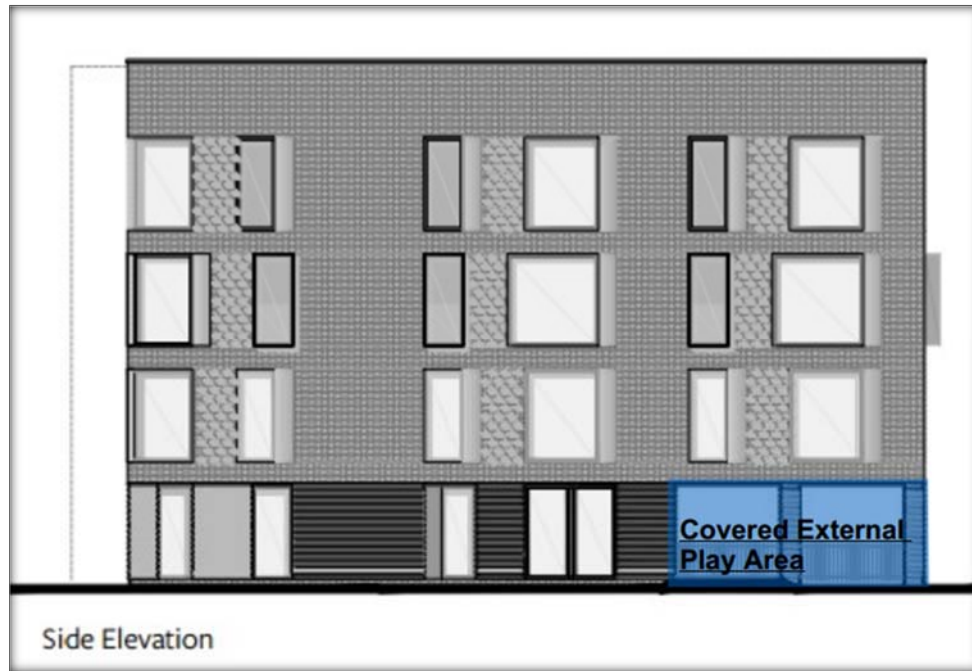


Figure 3: Elevation, External Play Area

We have various archive data relating to general 'play' activities in the external areas of schools. Noise levels from typical play or nursery/primary children are around 46dB LAeq at a distance of 25m, with typical maximum noise levels of 51dB LAI. This data relates to around 25 children pupils in an external area. It is assumed that the nursery will only be open during the daytime. The nearest houses are 10-15m away and so we expect noise of children to be around 52dB LAeq and 57 dB LAI at the housing.

The main noise source for the site is Topsham road, which is adjacent to the nursery. Topsham Road noise levels are predicted to be around 55dB LAeq and 65 dB LMax which is higher than the noise due to 'play' activities in the external areas of schools. Therefore, it can be assumed that the addition of an external play area for up to 30 nursery children will not have a noticeable impact on the noise levels.

Furthermore, the existing site is currently a school and there is a school located opposite the site, which means that the noise of children playing will not change the acoustic character of the local area.

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