Stantec

Technical Note

Title:	Technical Note - Acoustics	Prepared By:	Lawrence Norman
Project/File:	331510108	Date:	November 2026

Reference: Ruskin Fields – Technical Note on Noise

Introduction

Stantec UK Limited (Stantec) has been commissioned by Welbeck Land Limited to undertake a noise impact assessment to support an outline planning application for a proposed residential development at the Land at Ruskin Fields (North), Northern By-pass Road (A40), Oxford, OX3 9BZ.

An environmental sound survey was undertaken in February/March 2026 to determine the existing sound climate at locations considered representative of the site.

Analysis of the results of the environmental sound survey and 3D acoustic modelling of the site has been undertaken to determine the suitability of the site for residential development with regard to both sound levels within residential dwellings and external amenity areas across the site.

Noise is not considered to be a constraint to the allocation of this site. Suitable internal and external sound levels can be achieved using established, readily available design measures. The proposed design includes embedded mitigation to minimise noise exposure in sensitive areas, such as use of the proposed built form overlooking the A40 providing significant acoustic shielding to rest of the development, and a natural buffer provided by a significant set back from the A40.

Internal Noise Levels – Windows Closed

The calculated incident sound levels have been used to determine the likely internal sound levels within dwellings at the proposed development. A preliminary assessment based on typical construction details demonstrates that suitable internal levels are achievable. Specifications will be confirmed at detailed design.

Calculations indicate that suitable internal ambient noise levels, meeting the guideline levels of BS 8233:2014, can be achieved across the site. Standard external façade constructions (glazing and ventilators) are anticipated to provide sufficient sound insulation for dwellings in the southern area of the site. Enhanced façade constructions, using readily available acoustic glazing and trickle ventilators or mechanical ventilation systems, would achieve suitable internal levels for dwellings overlooking the A40 and in the eastern area of the site.

Table 1 provides a summary of the indicative required acoustic performances for external façade construction elements.

Table 1. Required Acoustic Façade Performance and Indicative Constructions

Façade Location	Room Type	Example Glazing and Ventilator Type and Indicative Performance
Apartments Overlooking A40	Bedroom	Acoustic Double Glazing - 38 dB R_w Through Wall Acoustic Ventilator - 40 dB $D_{n,e,w}$
	Living Room	
Apartments in the Centre of the Site / Houses in the East of the Site	Bedroom	Acoustic Double Glazing - 34 dB R_w Acoustic Trickle Ventilator - 35 dB $D_{n,e,w}$
	Living Room	Double Glazing - 32 dB R_w Standard Trickle Ventilator - 31 dB $D_{n,e,w}$
Houses to the South of the Site	All	Double Glazing - 32 dB R_w Standard Trickle Ventilator - 31 dB $D_{n,e,w}$

Internal Noise Levels - Overheating

Analysis of external sound levels around the development has been undertaken to identify where the noise requirements of Approved Document O (Overheating) can be met using openable windows, and where alternative approaches should be considered.

Figure identifies the façades where night-time external sound levels exceed the simple method criteria in Approved Document O. Where the facade is not highlighted opening windows can be relied on to control overheating. For the highlighted façades, alternative mitigation can be designed in as the layout is developed. Dynamic thermal modelling will be used to demonstrate compliance with the requirements, depending on the final site and dwelling layout.

Figure 1. Areas where Alternative Means of Mitigating Overheating will Likely be Required

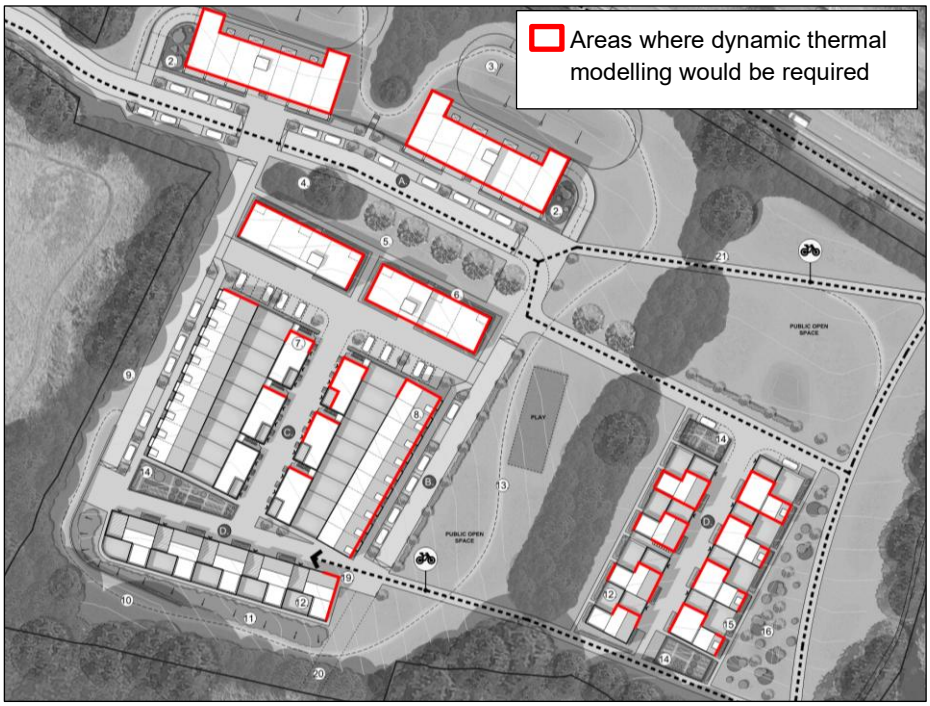


Image Courtesy of ECE Architecture

Sound Levels in External Amenity Spaces

The calculated external sound levels across the site vary depending on the distance from the A40 and the shielding provided by the proposed built form. External noise levels of less than 55 dB $L_{Aeq,16hours}$ are typically suitable, in line with guidance provided in BS 8233:2014.

Sound levels in private amenity areas in the western areas of the site are anticipated to be suitable as:

- The continuous built form overlooking the A40 will provide significant shielding to the private gardens of the proposed houses on the western side.
- The building layout will be optimised such that private balcony spaces are provided on the shielded façade of the apartment blocks, away from the A40. Sound levels could be further attenuated by designing the form of the balconies to include features such as solid balustrades, side panels or acoustically absorptive undersides.
- Sound levels could be further reduced by providing enhanced barrier treatments around the gardens in central areas.

Suitable sound levels in the private gardens of dwellings in the eastern part of the development can be achieved through design measures. These include orientating dwellings so the gardens are south of the buildings, or including enhanced boundary treatments (such as taller garden fences or walls) to provide shielding from the A40.

The design of the development will aim to deliver suitable sound levels in the external amenity areas across the site, to avoid significant adverse effects and to mitigate adverse effects, by applying practical design solutions alongside other design considerations such as heritage views, flood risk areas, drainage and existing underground utilities.

Conclusion

Stantec UK Limited (Stantec) has been commissioned by Welbeck Land Limited to undertake a noise impact assessment for a proposed residential development at the Land at Ruskin Fields (North), Northern By-pass Road (A40), Oxford, OX3 9BZ.

An environmental sound survey and 3D acoustic modelling of the site have been undertaken to calculate the sound levels across the site based on the Masterplan layout provided by ECE Architects.

Analysis of the calculated sound levels has been undertaken to determine the suitability of the site for residential development with regard to both sound levels within residential dwellings and external amenity areas across the site.

Calculations indicate that suitable internal ambient noise levels, in line with the guideline levels of BS 8233:2014, can be achieved across the site using standard external façade constructions, or enhanced constructions where dwellings overlook the A40.

The assessment shows that openable windows can generally be relied on to control overheating while meeting the noise requirements of Approved Document O across shielded areas of the site. Dynamic thermal modelling during detailed design will be required to coordinate a design solution across the other areas of the site.

Sound levels in private amenity areas are anticipated to be suitable across the development. In the eastern area, this can be achieved through dwelling orientation or enhanced boundary treatments.