



Project

Kenavon Drive
Noise Impact Assessment

Prepared for

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Version History

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PI	07/02/2025	First issue	Heulwen Peters BSc (Hons) MIOA
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Summary

Berkeley Homes has constructed the Huntley Wharf development off Kenavon Drive in Reading.

The ground floor of the “Mid Block” will be a restaurant. Above this restaurant there is a first-floor void space. Berkeley Homes proposes to convert this space above the restaurant into 4 residential dwellings (flats).

Reading Borough Council has requested an assessment of noise break-in from the restaurant to the proposed dwellings.

We have calculated noise levels from the restaurant in the proposed dwellings. Our calculations show that noise levels from the restaurant are not likely to exceed 20 dBA in the proposed first-floor dwellings above.

Noise break-in to the proposed dwellings due to all other typical environmental noise sources are expected to be up to 35 dBA in line with BS 8233:2014 *Guidance on sound insulation and noise reduction for buildings*.

Given that the cumulative noise level is in line with our proposed limit of 20 dBA for bedrooms, we do not predict that noise from the restaurant will have a negative impact on the proposed residential dwellings. Therefore, no further noise mitigation is necessary to protect the future amenity of residents.

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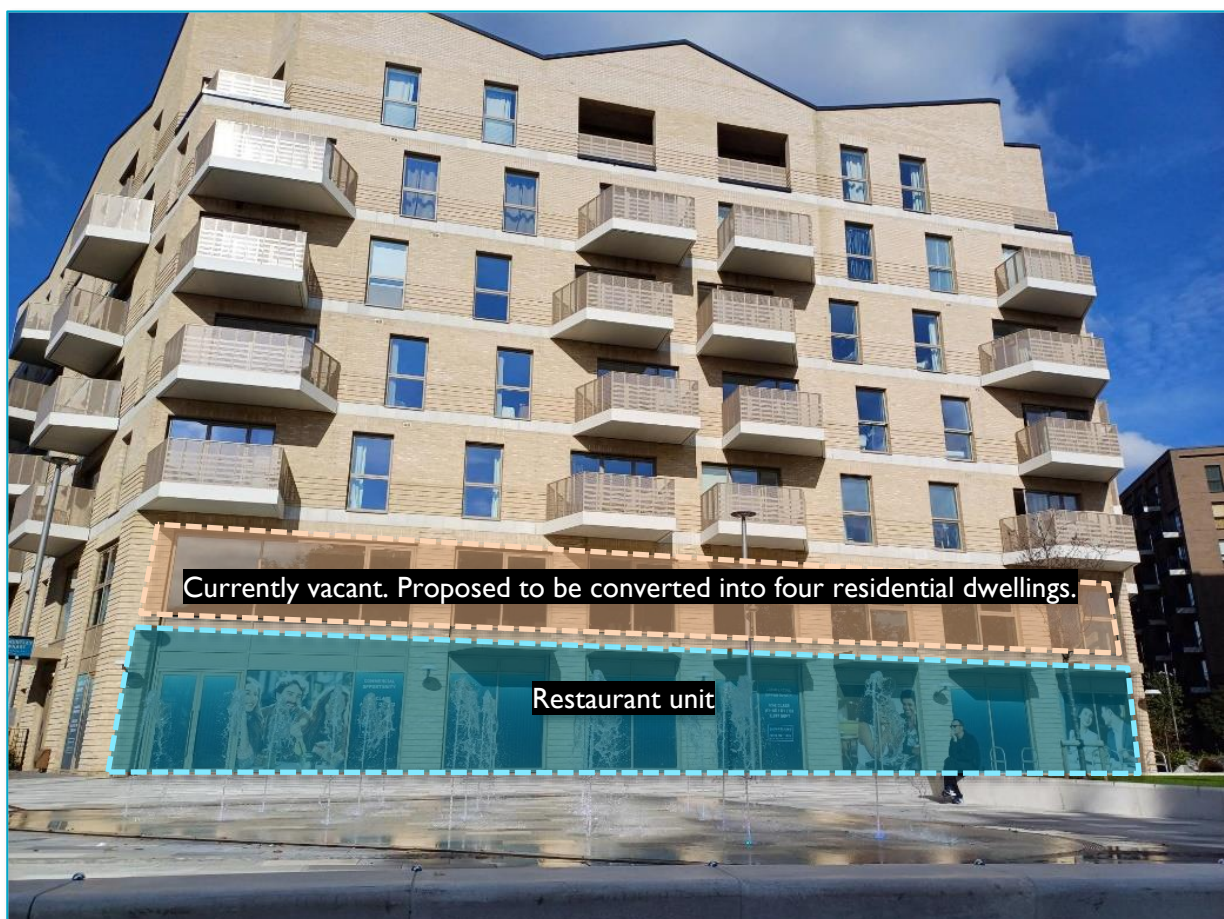
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1.0 Introduction

Berkeley Homes has completed the residential development known as Huntley Wharf, located off Kenavon Drive in Reading, Berkshire.

The “Mid Block” is a residential-led mixed-use block, comprising a restaurant on the ground floor frontage and a vacant space above. Berkeley Homes proposes to convert the space to become four residential dwellings (flats).

Figure 1 - Indicative project plan



Reading Borough Council has requested an assessment to determine the noise impact of the ground floor restaurant on the proposed first-floor dwellings.

Therefore, SRL Technical Services Ltd. has been commissioned by Berkeley Homes to provide a noise impact assessment for the proposed conversion.

2.0 Noise guidance

2.1 Pre-application guidance

Reading Borough Council has provided the following in response to Berkeley Homes' pre-application proposal for the conversion of the first-floor space relating to noise and vibration. Please note that at the time this response was received by Berkeley Homes the proposal was to change the use of the ground floor restaurant into a gym. This proposal has since been abandoned by Berkeley Homes.

For future occupiers of the proposed residential units, the proposed measures to protect amenity from noise and disturbance from the proposed ground floor gym use would need to be demonstrated. Therefore, it is particularly important in this case that this noise source is considered, to specify whether there is any structure-borne noise (e.g. continued dropping of items onto floor from within the gym) that may affect residents? This will need to be demonstrated, with the onus on you to do so.

Noise and disturbance for future residential occupiers could also arise from the indicated 24 hour a day use of the proposed gym. At present, condition 61 (as replaced in application PL-24-1163 at the site) limits Class D2 uses (which a gym would fall into under the pre-2020 use class changes) to 0600-2300 Monday to Saturday & 0800-2200 Sundays and Bank/Statutory Holidays. The reason for this condition is stated as being in order to protect existing and future local residents from unreasonable disturbance arising from the uses, in accordance with Policies CC8, EN16 and CR6 of the Reading Borough Local Plan 2019. Accordingly, it is unclear how nearby residents amenity, such as these 'new neighbours' on the newly created first floor would be protected if this condition were effectively removed for a proposed gym use? It would be for you to demonstrate that existing and proposed residents amenity would be maintained.

...

Turning to consider the proposed gym use, the proposed floor plan appears to include the typical facilities expected of such a use. As such, the quality of the space for the intended use appears to be suitable. The more pertinent issue surrounds how a gym use would integrate into the building without causing a harmful amenity impact to existing and future nearby residential occupiers. Your future proposals should include a noise and vibration impact assessment, with this needing to include a specialist section of structure borne noise, owing to the proposed gym use. In terms of your intention for any future gym use to have possible 24 hour a day use, I am presently unconvinced whether this would sufficiently protect both current and future nearby residential occupiers from noise and disturbance. Instead, I consider that an unrestricted use could cause a detrimental impact on the living environment of existing and future residential occupiers. I would suggest that the onus would be on you to seek to justify the proposed hours of use and how residential amenity from noise and disturbance would be maintained. The onus will be on you to demonstrate this.

2.2 BS 8233:2014 *Guidance on sound insulation and noise reduction for buildings*

In residential developments, noise levels must be controlled so that acceptable internal noise levels are achieved. For this assessment, we have used the guidance in BS 8233:2014 *Guidance on sound insulation and noise reduction for buildings* (BS 8233) to set proposed targets for the new dwellings on the first floor. These are summarised in Table I.

Table I - Summary of Indoor Ambient Noise Levels from BS 8233

Room Type	Time Period, hh:mm	
	Day, 07:00 to 23:00	Night, 23:00 to 07:00
Living Room	35 dB $L_{Aeq,T}$	-
Dining room/area	40 dB $L_{Aeq,T}$	-
Bedroom	35 dB $L_{Aeq,T}$	30 dB $L_{Aeq,T}$

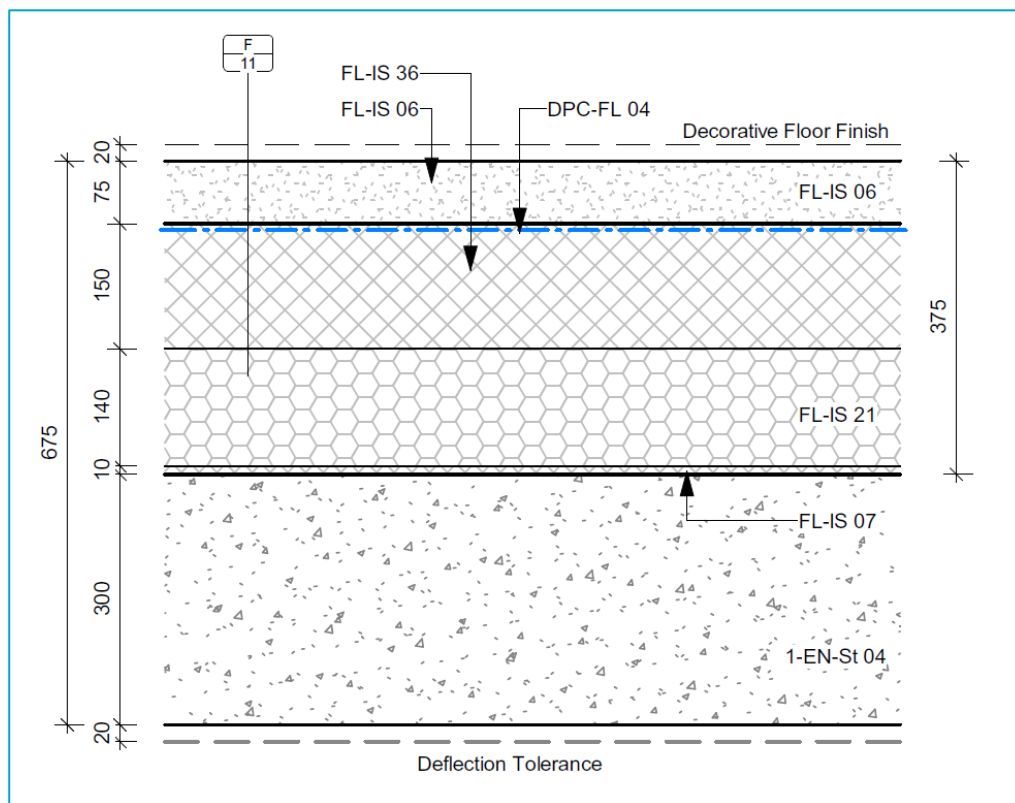
3.0 Assessment

3.1 Proposed floor construction

As shown below in Figure 2, the proposed floor construction that will separate the restaurant from the proposed first-floor dwellings will comprise:

- 75mm Isocrete Fast K screed (fast cure). Specification to be confirmed by specialist and in accordance with NHBC 2019 requirements.
- Vapour barrier min. thickness 0.12mm (500 gauge). Visqueen Vapour Barrier or similar approved. Lapped and taped as per manufacturer's instructions.
- 150mm Jabfloor (or equal) HP 70 (or equal) EPS Insulation (0.032 W/mK) to be laid in strict accordance with manufacturer's specification.
- 140mm Cordek (or equal) "Floor" EPS former, Filcor grade 45 (or equal) to SE specification (0.036 W/mK)
- 6mm resilient layer Isorubber base
- 300mm reinforced concrete slab to SE details.

Figure 2 - Proposed floor construction



3.2 Floor sound insulation performance

We have been provided with on-site sound insulation test performance data for the proposed floor construction by Berkeley Homes which has been used elsewhere in the development; the floor construction has a tested on-site performance of 59 dB $D_{nT,w} + C_{tr}$ (taken from test Sound Advice Acoustics Ltd. report reference SA.SI.106.10080 dated 17/12/2024).

Using the tested on-site performance of the floor construction in combination with SRL library data, we have calculated a Sound Reduction Index (SRI) of at least 61 dB $R_w + C_{tr}$ to be used in noise transfer calculations from ground floor restaurant to first-floor dwellings.

3.3 Restaurant to dwellings – sound transfer via floor

We have assumed the noise levels shown below in Table 2 for inside the restaurant. This is based on SRL library data for measured noise levels inside restaurants and is representative of a worst-case scenario of up to 80 dB $L_{Aeq,T}$ in the restaurant. In reality, this is the limit of the Control of Noise at Work Regulations 2005 and hearing protection would be required above this level.

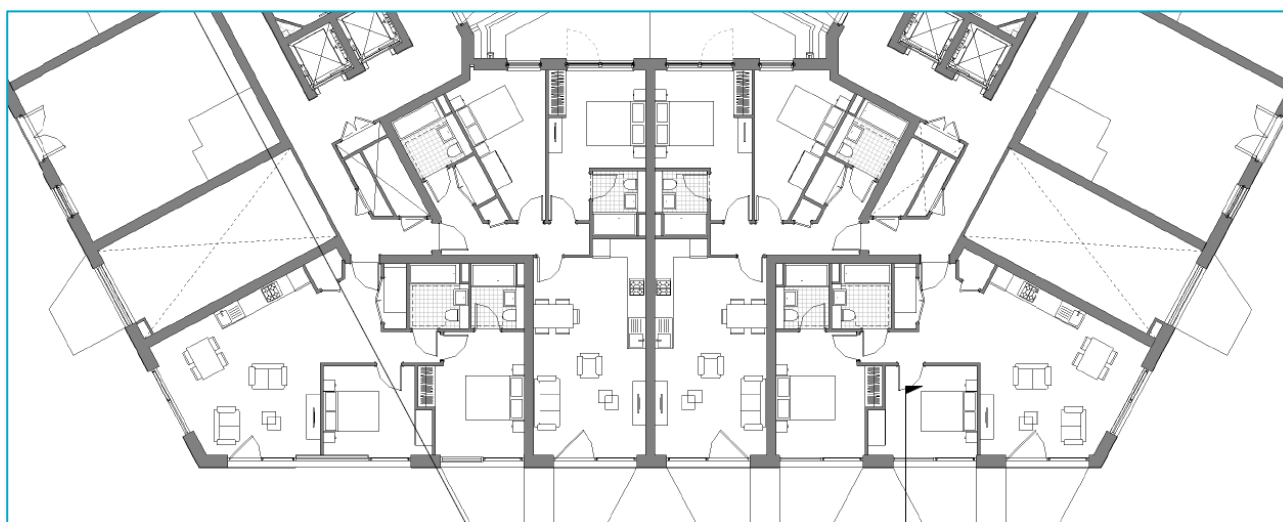
Table 2 - Reverberant sound pressure level assumed in the restaurant as a worst-case scenario

Octave band centre frequency, Hz	63	125	250	500	2k	2k	4k	dBA
Noise level, dB	72	67	79	78	74	73	62	80

Based on the above stated restaurant operational noise level of 80 dB $L_{Aeq,T}$, and the assumed performance of 61 dB $R_w + C_{tr}$ for the separating floor, I have predicted that noise levels in the habitable rooms of the dwellings above are not expected to exceed **20 dBA**.

These calculations are based on room dimensions as shown in the PRP floorplans reference KD-PRP-MID-01-DG-A-2111 dated Dec 2024 as shown below in Figure 3. We have assumed that the dwellings have a ceiling height of 2.7m.

Figure 3 - Snippet from KD-PRP-MID-01-DG-A-2111 dated Dec 2024



Flanking via the external wall construction is not expected to significantly impact on predicted noise levels and noise transfer to the proposed dwellings. There is no continuous curtain walling between the spaces on the façade.

3.4 External noise break-in

If the restaurant will have an external seating area out front, then the noise impact of this must also be considered on the proposed first-floor dwellings.

We assume that the glazing and ventilator strategy for the proposed first-floor dwellings will mimic that of the rest of the existing residential dwellings above that storey as approved.

Considering this – whilst the noise levels do decrease slightly floor-by-floor as we move up the façade of the building with diminishing reductions as outlined in Table 3 below – the noise *impact* of any external seating area at the front of the restaurant will be no different on the first-floor properties than those as approved on the second floor and above.

Table 3 - Reduction in facade noise level as we move up the building

Level	02	03	04	05	06
dBA reduction in façade noise level compared to L01 façade noise level from any external seating area at the front of the building	-2.3	-1.2	-0.8	-0.6	-0.5

3.5 Assessment of impact

For noise from the restaurant to have a negligible impact, we propose that noise from the restaurant needs to be at least 10 dBA below the lowest guideline noise level in BS 8233. Therefore, if noise from the restaurant is less than or equal to 20 dBA, it is reasonable to assess that restaurant noise will not typically be audible.

We predict a total noise level of up to 20 dBA associated with the restaurant in the proposed first-floor dwellings breaking-in via the floor. This is a worst-case assessment assuming a very high noise level of 80 dB $L_{Aeq,T}$ in the restaurant and a pessimistic assessment of the floor's airborne sound insulation performance.

Environmental noise break-in to the proposed dwellings due to all other typical environmental noise sources is expected to be up to 35 dBA in line with the BS 8233 criteria given in Table 1 of this report with glazing and trickle ventilators with performances equal to those of the façade at the residential dwellings on the second-floor and above as approved.

Given that the impact is less than, or at worst equal to, our proposed noise limit, we do not predict that noise from the restaurant will have a negative impact on the proposed first-floor residential dwellings. Therefore, we do not recommend that any further noise mitigation is necessary to protect the future amenity of residents.

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