



Project

Noise Assessment of an 8 Bedroom HMO above an A3 Unit
10 Clarence Place, Newport NP19 0AE

Client

Mr Chaudhary

Author

Keiron Durrant BSc (Hons) MSc MIOA

28th August 2025

Sound Acoustics Limited, Drishaig, Collimer Close, Chelmondiston, Suffolk IP9 1HX
mail@sound-acoustics.co.uk www.sound-acoustics.co.uk facebook.com/soundacousticsltd
Tel:01473 781871

Registered Office: Drishaig, Collimer Close, Chelmondiston IP9 1HX. Registered Company No. 5340816. VAT Registration No. 866 9098 61.



Summary

Sound Acoustics Ltd has been asked to carry out a noise assessment to help satisfy the Local Authority requirements for the development of the upper floors of 10 Clarence Place into an 8 bed HMO above an A3 unit. The site is located to the east of the River Usk and Newport Bridge and the Old Arts College (see Figure 1).

A survey has previously been carried out of external noise sources for an earlier application.

The assessment has found that high specification glazing and vents will be required on the Clarence Place façade to achieve the recommended conditions and criteria in BS8233:2014. To achieve this will require secondary glazing and through-the-wall mechanical ventilation. At the rear the glazing and vents can be any standard system.

Commercial sound through the structure will be controlled by a range of measures including double ceilings, wall linings and boxing in of steels etc.

Advice has also been given to help the development be capable of complying with Building Regulations Part E.

Provided the advice contained within this report is adopted we are confident that the development will be capable of complying with the criteria and provide a good standard of accommodation.

As the building is listed some of the recommendations may not be permitted and a relaxation may be required in one or more areas.

Keiron Durrant

Principal Consultant

Introduction

We have been asked by the client to carry out a noise assessment to help satisfy the Local Authority requirements for the development of 10 Clarence Place into an 8 bed HMO above an A3 unit. The site is located to the east of the River Usk and Newport Bridge and the Old Arts College (see Figure 1).

The proposal would see 8 bedrooms, each with en-suite, on the upper 3 floors (1st, 2nd & 3rd) with a small meeting room and the kitchen on the 1st floor directly above an A3 unit.

This report details the noise criteria, the survey from a previous application, assessment and recommendations to meet both the recommended conditions, criteria in BS8233:2014 and Building Regulations Part E.

The building is understood to be listed and this may limit some of the recommendations that would be necessary to meet the Local Authority requirements.

Assessment Criteria

This section outlines the criteria to be used in the assessment. This is based on correspondence regarding a previous application but is considered that the criteria will be the same. The following text in this section is taken directly from our report dated 25th October 2021 for a previous application.

We have been forwarded a copy of a memo written on 25th August 2021 by Claire Edwards (Noise and Neighbourhood Team) to Vicky Quinn (Planning Case Officer) with recommended conditions should planning permission be granted. It is understood that the memo was written in consideration of our previous report dated 1st February 2021. The recommended conditions are as follows:

Road Traffic Noise - Internal

No development, other than demolition, shall commence until a scheme has been submitted to and approved in writing by the Local Planning Authority to provide that all habitable rooms exposed to external road traffic noise in excess of 55 dBA Leq 16 hour [free field] during the day [07.00 to 23.00 hours] or 45 dBA Leq 8 hour [free field] at night [23.00 to 07.00 hours] shall be subject to sound insulation measures to ensure that all such rooms achieve an internal noise level of 35 dBA Leq 16 hour during the day and 30 dBA Leq 8 hour at night. The submitted scheme shall ensure that habitable rooms subject to sound insulation measures shall be able to be effectively ventilated without opening windows. No dwelling shall be occupied until the approved sound insulation and ventilation measures have been installed to that property in accordance with the approved details. The approved measures shall be retained thereafter in perpetuity.

Reason: To ensure that the amenities of future occupiers are protected.

N.B. No maximum noise criterion has been included in the condition. BS8233:2014 sets a maximum noise criterion of L_{Amax} 45 dB for bedrooms at night. This was used in the assessment in our report dated 1st February 2021 and will also be considered for a robust assessment.

The memo also states the following although this is not a condition:

With regards to ventilation, all affected habitable rooms on the front facade must receive ventilation that does not rely on opening windows to achieve whole building and extract ventilation rates required by Part F of the Building Regulations. Therefore confirmation would be required that any proposed system can achieve this. The ventilation unit must be rated and installed so as not to compromise the internal acoustic environment. Standard trickle vents must be avoided.

Road Traffic Noise - External

No development, other than demolition, shall commence until a scheme has been submitted to and approved in writing by the Local Planning Authority to provide that the maximum day time noise level in outdoor living areas exposed to external road traffic noise shall not exceed 50 dBA Leq 16 hour [free field]. The scheme of noise mitigation as approved shall be constructed in its entirety prior to the first occupation of any dwelling and shall be retained thereafter in perpetuity.

Reason: To ensure that the amenities of future occupiers are protected.

Noise Insulation

Prior to first occupation, a scheme of sound insulation works to the floor/ceiling structure between ground and first floor shall be implemented in accordance with details that have first been submitted to and approved in writing by the Local Planning Authority. The approved scheme shall be retained thereafter in perpetuity.

Reason: To ensure that the amenities of occupiers of other premises in the vicinity are protected.

It is understood from the memo that a level 10 dB better than normal Building regulations standard would be required.

Noise Survey

Daytime noise levels were surveyed on Friday 15th January 2021 and night-time levels were surveyed on 21st & 22nd January 2021. For both surveys a Norsonics Type 118 meter was used. The Type 118 meter and associated pre-amplifier, microphone and field calibrator are fully calibrated to traceable standards every two years by Campbell Associates (last carried out in August 2024 but relevant to the survey in August 2020). Calibration certificates are available on request. Field calibration was performed before and after the surveys and there was no drift in calibration noise levels.

The weather throughout the survey was cold (between 2 and 6°C) with no precipitation and little wind movement (forecast E for the daytime survey and W for the night-time survey both at approx. 6 to 8 mph). The road surface was damp.

The meter was positioned on the first floor for all measurements which were typically of 25 to 30 minutes duration. For position 1 at the front the meter was placed at an open window in line with the façade. This is considered to be free-field i.e. no significant reflection and no correction is necessary to the measured data. For position 2 at the rear the meter was placed on the flat roof at a height of 1.5m and 1m from the rear façade. This is considered to be impacted by a reflection off the façade and the normal -3 dB façade correction has been applied to the measured data. Measurement locations are shown in Figure 1. There was a clear view of traffic on Clarence Place at the front. At the rear there is a very minimal view of St Vincent Road due to screening from buildings.

The data (corrected for façade reflection where necessary) is as follows:

Position	Time	L _{Amax}	L _{A10}	L _{Aeq}	L _{A90}	Notes/cause of L _{Amax}
1	12:00	88.8	73.2	70.5	61.6	Child shouting outside
1	13:00	78.4	72.6	69.8	63.2	Bus
1	14:00	82.2	72.6	69.6	60.0	Bus
1	23:00	76.3	69.0	64.9	50.1	Car
1	00:00	78.7	66.1	61.7	46.5	Bus
1	01:00	74.8	65.3	60.7	45.0	People shouting
2	12:30	76.1	44.5	45.2	39.8	Neighbour's door slam
2	13:30	77.3	48.0	48.1	39.9	Neighbour's door slam
2	14:30	76.8	44.7	45.9	40.0	Neighbour's door slam
2	23:30	56.8	40.5	39.4	35.2	Cars in distance
2	00:30	61.9	38.5	37.0	32.6	People and cars in distance
2	01:30	49.8	35.9	33.6	30.6	People and cars in distance
3	15:15	79.4	67.3	63.8	56.2	Lower Dock Street 2021
3	10:00		67.0			Lower Dock Street 2015
3	22:30	69.1	57.3	54.6	43.2	Lower Dock Street 2021
3	23:00			59.3		Lower Dock Street 2015

Due to the Covid-19 lockdown at the time of the survey there was an anticipation of lower traffic flows on the roads. A further position (position 3) was chosen at Lower Dock Street where we surveyed in 2015 for a project at 110 Lower Dock Street and 33 Ruperra Street (report available on request). The 2015 data was measured at the open window in line with the façade. The 2021 data was measured 1m from the facade beneath the same window. A -3 dB façade correction has been applied to the 2021 data to allow a direct comparison to hopefully allow a lockdown correction to be determined.

The position 3 data shows little variation on the daytime level (it is in fact 0.3dB louder in 2021) but the night-time is 4.7 dB quieter. It has to be appreciated that these are only snapshots of data but it does tend to indicate that daytime levels were less affected than night-time levels. This would make sense when it is considered that essential services were still open during the day but that there were no bars, clubs or cinemas etc. open at night.

On this basis it is considered that the data in the assessment section should be corrected by +2 dB for daytime (a precautionary approach and not based on the data comparison) and +5 dB for night-time (based on the data comparison). However, any uncertainty on this is likely to be negated by the BS8233:2014 L_{Amax} criterion, which is likely to determine glazing requirements in any case (at least for bedrooms) as will be seen in the next section (N.B. the L_{Amax} criterion is not included in the recommended conditions but will be considered as it is within the British Standard BS8233:2014 relevant to this application and was included in our reports dated 1st February and 25th October 2021).

N.B. There were no identifiable sources of plant noise that would require assessing.

External Noise Assessment & Recommendations

Using the guidance in BS 8233:2014, TAN11/PPG 24 (PPG24 withdrawn but still useful) and the shortened measurement procedure in The Calculation of Road Traffic Noise (HMSO, 1988) it is possible to predict daytime road traffic $L_{Aeq,16hour}$ from $L_{A10,3hour}$ (measured during any three consecutive hours between 10:00 and 17:00hrs) by subtracting 3 dB.

The $L_{A10,3hour}$ (arithmetic average of the three measured hourly values) and resulting $L_{Aeq,16hour}$ values are as follows:

Position 1 (front) - $L_{A10,3hour} = 72.8$ dB, therefore $L_{Aeq,16hour} = 69.8$ dB

Position 2 (rear) - $L_{A10,3hour} = 46.0$ dB, therefore $L_{Aeq,16hour} = 43.0$ dB

It is our experience and that of many other acousticians that the logarithmic average of the L_{Aeq} during the first three hours of the night (starting at 23:00hrs) gives a good approximation of the L_{Aeq} which occurs over the 8-hour night. This methodology is outlined in The Little Red Book of Acoustics by Watson and Downey which is an IOA Diploma approved text (ISBN 978-0-9560012-0-7) and we have verified the validity of it with sets of our own 8 hour data from numerous sites.

The $L_{Aeq,3hour}$ (logarithmic average of the three measured hourly values) and therefore approximate $L_{Aeq,8hour}$ values are as follows:

Position 1 (front) - $L_{Aeq,3hour} = 62.8$ dB, therefore $L_{Aeq,8hour} = 62.8$ dB

Position 2 (rear) - $L_{Aeq,3hour} = 37.3$ dB, therefore $L_{Aeq,8hour} = 37.3$ dB

For maximum noise levels it is normal to meet the maximum noise level criterion (L_{Amax} 45 dB) with an allowance of 10 exceptions per night. As we have not carried out a full night survey (the number of events would have been significantly less due to lockdown) it is considered a reasonable approach to take the average of the two loudest daytime events for the maximum noise level assessment at the front. This is L_{Amax} 85.5 dB. As can be seen from the survey data this is relatively high in comparison to the typical maximum levels and makes an allowance for when the nights become busier again. At the rear we consider the loudest night event to be suitable for the maximum noise level assessment at the rear. This is L_{Amax} 61.9 dB. We do not

consider using the daytime level appropriate as this was the neighbour's door slamming which did not occur during the night survey.

The following levels obtained from the survey data and assessment above together with lockdown corrections (already applied below) will be used:

Position 1 (front)

$L_{Aeq,16hr}$ 71.8 dB

$L_{Aeq,8hr}$ 67.8 dB

L_{Amax} 85.5 dB

Position 2 (rear)

$L_{Aeq,16hr}$ 45.0 dB

$L_{Aeq,8hr}$ 42.3 dB

L_{Amax} 61.9 dB

These figures can now be used for the noise break-in calculations using the spectrum shape derived from the octave-band measurements of the traffic data.

Based on the wording of the recommended condition and the proposed layout (with all the rooms being either bedrooms or en-suites, except for the kitchen) daytime $L_{Aeq,16hr}$ levels, night-time $L_{Aeq,8hr}$ levels and the L_{Amax} levels are applicable only to bedrooms. A comparison of level and criteria indicates the level that will determine the façade requirements for the rooms and minimise the number of calculations:

Position 1 (front)

$L_{Aeq,16hr}$ 71.8 dB – 35 dB = 36.8 dB

$L_{Aeq,8hr}$ 67.8 dB – 30 dB = 37.8 dB

L_{Amax} 85.5 dB – 45 dB = 40.5 dB (determines façade requirement)

Position 2 (rear)

$L_{Aeq,16hr}$ 45.0 dB – 35 dB = 10.0 dB

$L_{Aeq,8hr}$ 42.3 dB – 30 dB = 12.3 dB

L_{Amax} 61.9 dB – 45 dB = 16.9 dB (determines façade requirement)

It is therefore clear that calculating the bedrooms for the maximum levels will provide the necessary façade requirements to meet the levels stated in the recommended condition. There is

therefore a further safety margin of around 3 to 4 dB for the daytime $L_{Aeq,16hr}$ levels and the night-time $L_{Aeq,8hr}$ levels should the lockdown corrections prove inaccurate.

Calculation 1 in Appendix A shows that the night-time maximum noise criterion for bedrooms of L_{Amax} 45 dB can be met in Bedroom 2 with R_w 49 dB glazing and 2500mm^2 of ventilation rated at $D_{n,e,w}$ 51 dB.

Calculation 2 in Appendix A shows that the night-time maximum noise criterion for bedrooms of L_{Amax} 45 dB can almost be met (1 dB shortfall) in Bedroom 3 with R_w 49 dB glazing and 2500mm^2 of ventilation rated at $D_{n,e,w}$ 51 dB. The shape and volume of this room mean that the ratio of façade area to room volume is quite high. The criterion would be met if the en-suite could be placed at the façade thereby reducing the façade and window area to the bedroom. However, this would be a restrictive layout and a 1 dB shortfall is considered acceptable for the maximum noise criterion since all other criteria will be met.

Calculation 3 in Appendix A shows that the night-time maximum noise criterion for bedrooms of L_{Amax} 45 dB can be met in Bedroom 4 with R_w 49 dB glazing and 2500mm^2 of ventilation rated at $D_{n,e,w}$ 51 dB.

Calculation 4 in Appendix A shows that the night-time maximum noise criterion for bedrooms of L_{Amax} 45 dB can be met in Bedroom 7 with R_w 35 dB glazing and 2500mm^2 of ventilation rated at $D_{n,e,w}$ 51 dB. The calculation assumes a ceiling of two layers of 12.5mm SoundBloc in conjunction with roof tiles and the appropriate thermal insulation.

The higher rated glazing is likely to require double-glazing with a secondary glazing over a large void. There will be specialist manufacturers/suppliers of such systems but if there is any difficulty we would recommend a system such as 6/12/4 with a 150mm void and then 4 or 6mm secondary glazing (we cannot guarantee this would meet the suggested rating but it will provide a very high level of sound insulation). The whole system must effectively seal in the respective frames (it is assumed these will need to be openable as potential fire escapes and for cleaning).

If existing glazing is to be kept a secondary system as described above will still achieve a high level of sound insulation but it is not possible to say whether this will meet the criteria.

The ratings for the vents are very high and for a site such as this we believe a through the wall mechanical system would be suitable. A typical mechanical vent would be the Titon Sonair or equivalent. These rely on a combination of a small free area and attenuating design to reduce

noise to very low levels whilst the fan provides a variable flow rate from background trickle ventilation in the off position to rapid purge ventilation on high setting with varying amounts in between to suit the wishes of the occupier. The Titon Sonair is capable of meeting these high requirements and also produces fan noise levels that are below the noise levels required by the recommended worst-case night-time condition (i.e. less than 30 dBA). The specification extract from the technical manual is shown in Appendix B to help satisfy the Local Authority of the suitability of this product.

There are no specific acoustic ratings for the rear. The external levels are below the external levels stated in the recommended condition and do not require a scheme to be submitted. However for confirmation that the rear will be acceptable, with attenuation requirements of between 10 and 17 dB, this can easily be met with standard double glazing and standard trickle vents (these in combination typically provide around 25 dB attenuation). Open windows would be acceptable for rapid ventilation with perhaps a few occasions where the BS8233:2014 L_{Amax} criterion would be exceeded at night (partially open windows in a facade typically provide around 12 to 15 dB attenuation).

Internal Noise Assessment & Recommendations

We understand the Local Authority would like to see a level of sound insulation between the ground and first floor that is 10 dB better than the standard Building Regulations Part E requirement of $D_{nT,w} + Ctr$ 43 dB. The criterion would therefore be $D_{nT,w} + Ctr$ 53 dB. It is agreed that this would be a desirable level. However, in our experience this can sometimes be difficult to achieve, despite best intentions, due to limitations of the building. We originally hoped to test the sound insulation of this construction as a basis of our recommendations. However, during our visit it wasn't possible to do this due to openings in the floor. Our recommendations will be based on achieving the + 10 dB requirement (to the best of our judgement) but a sound test on the floor at the earliest possible time will help to confirm these.

The floor between ground and first floors is currently a mixture of concrete and timber joists with timber deck. There are currently no ceilings (at the time of our visit). Under the shared amenity space/terrace at the rear there are timber joists supported on RSJs (every two metres).

The perimeter walls are exposed masonry. There is a masonry wall separating the entrance hall and stairwell to the HMO from the ground floor. There is a cupboard under these stairs.

Due to the proposed use of the ground floor as an A3 unit all of the above areas will need treating acoustically. Our recommendations to meet a criterion of Part E + 10 dB are as follows:

The concrete floor should be made good and be fully sealed. Timber floor areas should have 200mm dense mineral wool batts placed between the joists and the underside should be lined with two layers of 15mm SoundBloc fixed via resilient bars. The final layer should be taped and jointed. The junction between concrete and timber floors should be fully sealed.

A further ceiling of two layers of 15mm SoundBloc (or alternative plasterboard of equivalent weight) should be installed beneath the primary ceiling and concrete floor with a minimum distance of 300mm between the lower face of the upper ceiling/concrete and the upper face of the lower ceiling. The final layer should be taped and jointed or skimmed. The new ceiling should either be supported on a metal frame or independent ceiling joists. The metal frame option must be suspended on acoustic hangers (e.g. British Gypsum Gypframe acoustic hangers). The new joist option should be fixed to the structural walls only, using metal joist hangers built into the masonry or to a wall plate. There should be a clear gap of at least 25mm

between the top of the new joists and the ceiling above (still maintaining the minimum 300mm distance). The depth of the joists should be sized appropriately to the room dimensions. There should be 100mm mineral wool roll on top of the ceiling. You must check the acoustic recommendations can be supported by the existing constructions. The metal framed ceiling option would have to be supported off the existing joists rather than the resilient bar ceiling and this would require very careful detailing to allow the supports for the lower ceiling to pass through the upper ceiling without compromising the resilient bar isolation or the integrity of the upper ceiling. We therefore recommend the fully independent joist system (fixed to the structural walls) as being preferable.

If the ceiling conflicts with the windows (i.e. if the required drop of the ceiling comes below the top of the windows), it is acceptable to reduce the cavity size to form a pelmet recess or step in the immediate area around the window, but this frame should still be independent of the ceiling/concrete above or make use of resilient bars on timber battens to maintain a high degree of isolation.

Where the open ground floor is beneath the shared amenity area/terrace the same ceilings are recommended but the resilient bar could be omitted and the void could be reduced. There is no requirement for the ceilings in the areas at the rear which are separated from the open ground floor area by doors e.g. toilets, kitchen etc.

The recommended ceilings are necessary to achieve the criterion and should not be penetrated for lights or any services (please advise if this is necessary). Surface mounted lights would be acceptable and heating/cooling units should be mounted on the walls or be surface mounted on the ceiling or mounted within a fit-out ceiling.

The underside of the stairs should be lined with the same plasterboard lining as the main ceiling with an independent lining, again the same, directly beneath. The void behind the two linings is not critical (this area is beneath a non-habitable area and the intention is to limit flanking noise to the habitable area). The above assumes that the door to this space is solid timber and kept shut when not in use. If this is not the case then include resilient bar in the upper ceiling and additionally line the masonry inside this space (see wall lining recommendation).

Where possible the ceiling could be used to acoustically isolate the steel joists supporting the floors (additionally pack mineral wool batts in to the webs of the steels) provided none of the new structure or plasterboard touches the steelwork. If this is not possible the steelwork must be boxed in with an independent frame (not touching the steels) and be lined with the same

lining as the ceilings with mineral wool loosely wrapped around the steel flanges and mineral wool roll or batts packed in the webs of the steels. N.B. steel is a very efficient conductor of sound and any contact with the acoustic works will lower the performance of the overall construction. Any vertical steels should be treated in a similar way.

There is the potential for flanking noise in the masonry walls. The following is offered as a potential upgrade to the walls around the main open ground floor area (beneath the HMO and including the A3 unit side of the wall to the hall/stairs of the HMO) in most effective order first:

Sealing render/plaster to the masonry then an independent lining of two layers of 12.5mm SoundBloc on an independent frame positioned at least 10mm from the masonry (keep this gap clear) with mineral wool in between the studs.

Sealing render/plaster to the masonry then Gypliner Universal system with two layers of 12.5mm SoundBloc with mineral wool in the void.

Thick render/plaster around 25mm.

If the floor is tested and doesn't meet the criterion due to flanking then a more effective flanking measure would be required. We would therefore recommend the independent lining to avoid additional work later on. This has additional benefits in that it will provide a flat even surface and it would be acceptable to run cables in the void and have sockets (provided cables do not pinch between frame and wall). It will also significantly improve the horizontal sound insulation to the neighbouring unit.

Build ceilings and seal to the perimeter walls before installing wall linings.

We are confident that the above measures are capable of meeting the criterion. This doesn't necessarily mean that the A3 unit wouldn't be heard but we believe it offers an acceptable level of sound insulation.

Additional Part E Advice

This information is not necessary for planning purposes but it is considered that it will be helpful in the overall early design of the project to avoid common problems later on. The advice should be followed to ensure the sound insulation values in Part E are capable of being met. However, as the building is listed there may be some restrictions on what you can do and you should discuss this with the appropriate authority. There may be alternatives (although we have considered the most appropriate measures to deal with all aspects including flanking noise control) or Building Control may have to accept a lower level of sound insulation if the works cannot be carried out due to the listed status.

HMO rooms are normally small and there is little opportunity to de-couple the joists (cut them and support them) to prevent flanking noise between rooms. It may also be difficult to fit a twin stud wall in between the rooms that would be necessary for normal separation between dwellings. It is therefore necessary to use proprietary products to control flanking noise and achieve the required separation in a smaller area. Our advice is as follows:

Place timber blocking between joists at the line of the bedroom (including en-suites) separating walls (where walls are perpendicular to joists) and seal the edges with mastic to make airtight.

Install a 20 kg/m² ceiling e.g. 2 layers of 12.5mm SoundBloc under all bedrooms (including en-suites).

Install separating walls between bedrooms and between bedrooms and all communal spaces (this applies to all en-suites as well). This should be a 75mm timber or 70 metal stud with resilient bars (both sides for timber and one side for metal), with 50mm Acoustic Partition Roll in the void and line each side with 2 layers of 12.5mm SoundBloc.

Lay a floating floor to the existing floor (do not screw or nail) such as ScreedBoard 28 or Foundation 35 (or equivalent product) on all bedrooms and en-suite floors. This is for vertical separation as well as its role in stopping noise transfer along floorboards and joists (i.e. horizontal separation). Sanitary ware should be built off a timber plinth to the same height as the floating floor to provide a solid structure for fixing. The plinth and all room perimeters should be isolated from the floating floor using a flanking strip which will be available from the floor supplier (this is used to not only prevent the floating floor touching the structure but it also isolates the skirting from the floating floor). Failure to do this will lower the performance significantly.

Install a further 20 kg/m² ceiling e.g. 2 layers of 12.5mm SoundBloc under all bedrooms (including en-suites) this time fixing to resilient bars which in turn are fixed to 25mm battens fixed through the upper ceiling to the joists. There should be 25mm mineral wool roll between the battens.

On the top floor there only needs to be the first ceiling but this must be fixed using resilient bars if there are timbers spanning one bedroom to the next. It is assumed that the separating wall will be taken to the roof and the ceiling will butt to the separating wall. If the wall has to stop short of the roof (Part E advises that it should be built to the roof) then lay at least 200mm mineral wool on top of the ceilings.

Follow all advice from the manufacturer on the installation of the resilient bars, ensuring they are fixed the correct way using the correct length screw for each layer of plasterboard.

Any soil/waste pipe passing through a separating construction into another room or internal space should be wrapped in lightweight mineral wool and be encased in two layers of standard plasterboard on both sides of the separating construction.

Doors to the bedrooms should be rated at R_w 29 dB or higher or have a mass of 25kg/m² and be fitted with acoustic seals (including the threshold where practicable). Intumescent or brush seals do not count as acoustic seals. Acoustic seals are readily available as retrofit items from companies such as Norseal and Lorient. The latter produce seal packs for doors which comply with Part E and Part B at the same time (see Lorient Approved Doc E packs). It will be far cheaper to fit acoustic seals to the correct weight door than to install proprietary acoustic doorsets. Without acoustic doors and effective seals the walls are unlikely to pass the sound tests due to the close proximity of the doors.

Part E requires that communal areas giving access to rooms for residential purposes should be treated with acoustically absorbent materials to reduce the build-up of sound. This is particularly relevant where the entrance door from a communal area leads directly into a habitable room (as is the case here). You should allow for an acoustically absorbent ceiling throughout the communal areas (you could ask Building Control whether they require this or whether it could be reduced to just the stairwell area around the bedrooms). The ceiling should provide an average absorption coefficient of 0.6 (or Class C absorption). This could be achieved with the appropriate suspended ceiling tiles (e.g. Armstrong Dune Max or Ultima) or a perforated plasterboard ceiling such as Gyptone Quattro 41 on 50mm battens fixed underneath the lower plasterboard ceiling.

Assessment Conclusion/Discussion

Sound Acoustics Ltd has carried out a noise survey and prediction assessment to help with the development of 10 Clarence Place into an 8 bed HMO above an A3 unit.

The survey was carried out during Covid restrictions and the data has been corrected to compensate for the quieter noise levels experienced during lockdown.

The Local Authority had suggested a condition for a previous application based on L_{Aeq} noise (similar to an average) whereas our original assessment (report dated 1st February 2021) included assessment of maximum noise levels at night which determined the façade requirements. For this application we have calculated to this higher standard which means that all recommendations for bedrooms will ensure that the recommended condition is capable of being met. This is considered a sensible approach and in line with BS8233:2014. It also provides an additional robust safeguard.

The calculations show that high specification glazing and vents will be required on the Clarence Place façade to meet the recommended conditions and BS8233:2014 guidance levels. To achieve this will require secondary glazing and through-the-wall mechanical ventilation. At the rear the glazing and vents can be any standard system.

The level at the rear is predicted to be $L_{Aeq,16hr}$ 45.0 dB and there is therefore no need to demonstrate a scheme to meet the $L_{Aeq,16hr}$ 50 dB stated in the condition for amenity areas.

As there is no significant industrial/mechanical or commercial noise (other than from the A3 unit) it is considered that a BS4142:2014 assessment is not necessary. Any commercial sound from the A3 unit breaking out to outside via the glazing will be adequately controlled by the façade measures necessary to control traffic and people noise.

Commercial sound through the structure will be controlled by double ceilings, wall linings, boxing in of steels etc. The recommendations for this are based on achieving a separation of 10 dB better than Part E requirements between ground and 1st floor. This is considered to be more than adequate for typical bar/restaurant levels.

Provided the advice contained within this report is adopted we are confident that the development will be capable of complying with the conditions and provide a good standard of

accommodation. As the building is listed some of the recommendations may not be permitted and alternative design (where possible) or a relaxation may be required in one or more areas.

Figure 1 - Site and Survey Location

● = approximate microphone position



Appendix A – Calculation 1, Bedroom 2

Project	10 Clarence Place			Consultant	Date		
Client	Mr Chaudhary			KMD	26th Aug 2025		
Contract	25047						

Measurement Location	Source	
Enter Facade Correction	0 dB	

Element	10/200/6 Double Glazing	
Area 1 - Glazing	4 m ²	10/200/6 Double Glazing
Area 2 - Non Glazed	5.6 m ²	façade
Area 3 - Non Glazed	0.0025 m ²	acoustic vent
Area 4 - Non Glazed	0 m ²	No data
Angle of incidence	35 degrees	0 degrees is normal to element

Receiving Room	Description
Height of room	3 m
Width of room	3.2 m
Length of room	3.2 m
Volume of room	30.72 m ³

Frequency Hz	63	125	250	500	1000	2000	4000	8000	
Reverberation time (sec)	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	
Absorption (sabines)	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1	

Frequency Hz	Index	63	125	250	500	1000	2000	4000	8000	
External dB	Lmax	87.5	89.5	83.4	80.6	81.8	78.0	68.3	62.9	
External Freefield										
External Freefield	Lmax dB	87	89	83	81	82	78	68	63	

Additional Correction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Comment here why
10log(cos(angle))	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	

Enter SRI Ref. No.	Area
46	4
façade	5.6
acoustic vent	0.003
	0

Combined SRI	32	36	43	45	47	53	57	58	
---------------------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	--

10logS(tot)	S = 9.603	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8
10log(4T/0.16V)		-5.5	-5.5	-5.5	-5.5	-5.5	-5.5	-5.5	-5.5

Internal Lmax dB	59	57	44	40	38	29	15	8	45
-------------------------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	----------	-----------

Comments
 Calculation 1
 Bedroom 2
 Glazing shown is Rw 49 dB
 Vent is 2500mm2 at Dn,e,w 51 dB
 Façade data is typical masonry wall

Appendix A – Calculation 2, Bedroom 3

Project	10 Clarence Place	Consultant	Date
Client	Mr Chaudhary	KMD	26th Aug 2025
Contract	25047		

Measurement Location	Source
Enter Facade Correction	0 dB

Element	10/200/6 Double Glazing
Area 1 - Glazing	3.6 m ² 10/200/6 Double Glazing
Area 2 - Non Glazed	3.7 m ² façade
Area 3 - Non Glazed	0.0025 m ² acoustic vent
Area 4 - Non Glazed	0 m ² No data
Angle of incidence	45 degrees 0 degrees is normal to element

Receiving Room	Description
Height of room	2.7 m
Width of room	2.7 m
Length of room	2 m
Volume of room	14.58 m ³

Frequency Hz	63	125	250	500	1000	2000	4000	8000	
Reverberation time (sec)	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	
Absorption (sabines)	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	

Frequency Hz	Index	63	125	250	500	1000	2000	4000	8000	dB(A)
External dB	Lmax	87.5	89.5	83.4	80.6	81.8	78.0	68.3	62.9	86
External Freefield										
External Freefield	Lmax dB	87	89	83	81	82	78	68	63	86

Additional Correction	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	Distance/higher up
10log(cos(angle))	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	

Enter SRI Ref. No.	Area									
46	3.6	31	35	46	46	46	56	65	67	10/200/6 Double Glazing
façade	3.7	35	40	44	45	51	56	58	60	
acoustic vent	0.003	5	6	12	16	17	20	24	25	
	0	0	0	0	0	0	0	0	0	No data

Combined SRI	32	35	43	44	46	52	56	58	
---------------------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	--

10logS(tot)	S = 7.303	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6
10log(4T/0.16V)		-2.2	-2.2	-2.2	-2.2	-2.2	-2.2	-2.2	-2.2

Internal Lmax dB	60	58	45	40	39	30	16	9	46
-------------------------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	----------	-----------

Appendix A – Calculation 3, Bedroom 4

Project	10 Clarence Place		Consultant		Date	
Client	Mr Chaudhary		KMD		26th Aug 2025	
Contract	25047					

Measurement Location	Source
Enter Facade Correction	0 dB

Element	10/200/6 Double Glazing
Area 1 - Glazing	1.6 m ² 10/200/6 Double Glazing
Area 2 - Non Glazed	2.9 m ² façade
Area 3 - Non Glazed	0.0025 m ² acoustic vent
Area 4 - Non Glazed	0 m ² No data
Angle of incidence	45 degrees 0 degrees is normal to element

Receiving Room	Description
Height of room	2.7 m
Width of room	1.8 m
Length of room	4 m
Volume of room	19.44 m ³

Frequency Hz	63	125	250	500	1000	2000	4000	8000	
Reverberation time (sec)	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	
Absorption (sabines)	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	

Frequency Hz	Index	63	125	250	500	1000	2000	4000	8000	dB(A)
External dB	Lmax	87.5	89.5	83.4	80.6	81.8	78.0	68.3	62.9	86
External Freefield										
External Freefield	Lmax dB	87	89	83	81	82	78	68	63	86

Additional Correction	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	Distance/higher up
10log(cos(angle))	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	

Enter SRI Ref. No.	Area
46	1.6
façade	2.9
acoustic vent	0.003
	0

Combined SRI	32	35	42	44	46	51	55	56		
10logS(tot)	S = 4.503	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	
10log(4T/0.16V)		-3.5	-3.5	-3.5	-3.5	-3.5	-3.5	-3.5	-3.5	
Internal Lmax dB		56	55	42	38	36	28	14	7	43

Comments
Calculation 3
Bedroom 4
Glazing shown is Rw 49 dB
Vent is 2500mm2 at Dn,e,w 51 dB
Façade data is typical masonry wall

Appendix A – Calculation 4, Bedroom 7

Project	10 Clarence Place			Consultant	Date		
Client	Mr Chaudhary			KMD	26th Aug 2025		
Contract	25047						

Measurement Location	Source	
Enter Facade Correction	0 dB	

Element	4/12/6 Double Glazing	
Area 1 - Glazing	0.75 m ²	4/12/6 Double Glazing
Area 2 - Non Glazed	4.1 m ²	façade/roof
Area 3 - Non Glazed	0.0025 m ²	acoustic vent
Area 4 - Non Glazed	0 m ²	No data
Angle of incidence	90 degrees	0 degrees is normal to element

Receiving Room	Description
Height of room	2.1 m
Width of room	1.8 m
Length of room	2.7 m
Volume of room	10.206 m ³

Frequency Hz	63	125	250	500	1000	2000	4000	8000	
Reverberation time (sec)	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	
Absorption (sabines)	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	

Frequency Hz	Index	63	125	250	500	1000	2000	4000	8000	
External dB	Lmax	87.5	89.5	83.4	80.6	81.8	78.0	68.3	62.9	
External Freefield										
External Freefield	Lmax dB	87	89	83	81	82	78	68	63	

Additional Correction	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0	Screening/higher up
10log(cos(angle))	-6.0	-6.0	-6.0	-6.0	-6.0	-6.0	-6.0	-6.0	-6.0	

Enter SRI Ref. No.	Area									
13	0.75	19	23	23	30	41	41	39	41	4/12/6 Double Glazing
façade/roof	4.1	24	29	37	44	50	55	55	55	
acoustic vent	0.003	5	6	12	16	17	20	24	25	
0	0	0	0	0	0	0	0	0	0	No data

Combined SRI	23	27	30	37	45	47	46	48	
---------------------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	--

10logS(tot)	S = 4.853	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	
10log(4T/0.16V)		-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	

Internal Lmax dB	60	58	48	39	32	26	17	10	45
-------------------------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------

Appendix B – Sonair Specification

NL

5 TECHNICAL DATA

EN

5.1 Conformity statement

Brink hereby declares that the Sonair described in this user manual complies with the European legislation and the requirements set by KEMA.

DE

5.2 Technical specifications

Dimensions

310 (L) x 445 (H) x 134 (W)

Housing:

Plastic ABS, color white (RAL 9003)

Energy consumption

220-240 V ~ 50 Hz, max. 21 Watt at 90 m³/h

Ventilation capacity

Max. 25 l/s (90 m³/hour) with a G3 filter, stepless adjustable

Noise aspects*

Capacity	Sonair F+		Sonair A+	
	L_{LAk}	$L_{pA:10m^2}$	L_{LAk}	$L_{pA:10m^2}$
60 m ³ /h	23,0	23,5	28,0	28,5

Sound-absorbing properties (in combination with G3 filter and DV100F duct)*

Sonair F+: $D_{n,e,w}$ = 56 dB (ISO 717-1:1996)

Sonair A+: $D_{n,e,w}$ = 52 dB (ISO 717-1:1996)

*Based on Peutz test rapport # A 1368-1