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NOISE MANAGEMENT PLAN – NON-RESIDENTIAL SPACES

PLANNING CONDITION 14

CROWN HOUSE, HUDDERSFIELD

REPORT REFERENCE NO. J005131-8238-CW-01

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Document Control Sheet

Details of Assessment	
Client	Abode Residences
Document Title	Noise Management Plan Non-residential Spaces, Crown House, (Condition 14)
Report Reference	J005131-8238-CW-01

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01	20/12/2024	Chris Wright	Initial	Issued
02				

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This report has been prepared based upon a scope of works and associated resources agreed between the client and Philip Dunbavin Acoustics Ltd (PDA). This report has been prepared with all reasonable skill, care and diligence and has been based upon the interpretation of data collected. This has been accepted in good faith as being accurate and valid at the time of the collection. This report has been based solely on the specific design assumptions and criteria stated herein.

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1.0 SUMMARY

The Noise Management Plan (NMP) has been produced on behalf of Abode Residences, to address the requirements of Condition 14 of planning application ref: '*2022/62/93932/W*' which states the following:

> *"Prior to the hereby approved development being brought into use, a noise management plan shall be submitted to and approved in writing by the Local Planning Authority. The plan shall detail the control measures that will be taken to ensure that undue noise does not arise from the non-residential use of the development site and the control measures to ensure there will be no loss of amenity to the occupiers of neighbouring apartments. The approved noise management plan shall be implemented before use commences, reviewed periodically and retained thereafter".*

With the recommended noise management procedures in place there is unlikely to be any loss of amenity to the occupants of the apartments adjacent to the non-residential areas.

It is considered that compliance with this Noise Management Plan represents best practicable means for minimising noise associated with the operation of the non-residential uses and therefore, it is our recommendation that Condition 14 be discharged.

2.0 SITE DESCRIPTION

The site is located at the former Crown House office building off Southgate in Huddersfield. The proposal is to convert the former office building to form student accommodation with various non-residential and communal spaces on the ground floor. The ground floor layout can be seen in the Figure below:

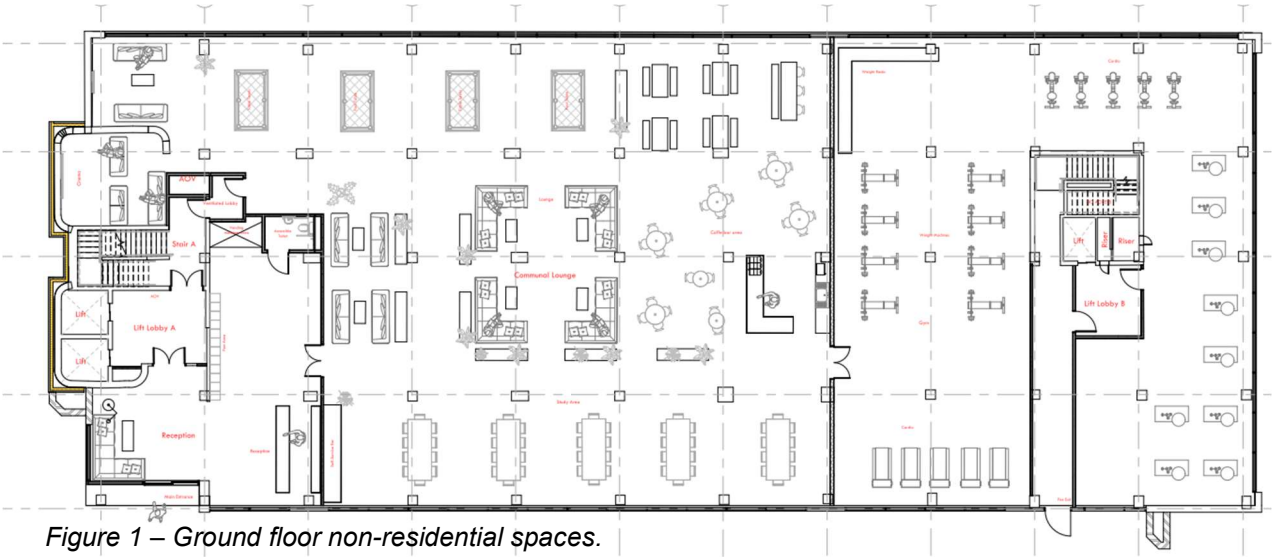

Figure 1 – Ground floor non-residential spaces.

The drawings provided to us indicate the following non-residential uses are proposed within the development:

- Reception Lobby
- Communal Lounge
- Study Area
- Café / Bar Area
- Cinema
- Gym

It is understood that the communal spaces are for residents use only and will not be publicly accessible.

We would not expect any significant sources of noise to be associated with the use of the reception lobby, communal lounge or study area. The main potentially noise generating non-residential uses are considered to be the café / bar area, cinema room and the gym.

The nearest noise sensitive receivers are considered to be apartments at 1st floor level directly above the non-residential uses. With regards to the separating floor we note that Approved Document E "Resistance to the Passage of Sound" 2003 edition provides guidance to meeting the requirements of the Building Regulations 2010. The document provides specific values of sound insulation that are required in a number of situations. In the case of the airborne sound insulation of both separating walls and floors, Approved Document E stipulates that these partitions should achieve a minimum performance of 43 dB $D_{nT,w}$ + C_{tr}.

For the purposes of this assessment it is assumed that the separating floor between the non-residential spaces and apartments above achieves the minimum sound insulation requirements of the Building Regulations ADE.

Recommendations are provided in the following section with regards to noise management procedures which may be implemented to ensure there will be no loss of amenity to the occupiers of neighbouring apartments.

3.0 NOISE CONTROL MEASURES

It is recommended that the following noise control measures are implemented on site prior to occupation and retained thereafter.

3.1 Noise Limits for Audio / Visual Equipment

The main potentially noise generating non-residential uses are considered to be the café / bar area, cinema room and the gym. With regards to any sound amplification equipment installed within these spaces we would recommend that a music noise limit of 75 dBA is introduced.

In addition, it should be ensured that any loud speakers are resiliently mounted from the building structure using proprietary anti-vibration hangers such as those available from AV Industrial Products, Christie & Grey or similar

On this basis we have calculated that the WHO Guideline internal noise levels for residential use during the daytime are likely to be comfortably achieved with the adjacent apartments.

Note that these limits are for guidance only and assume that the separating floor achieves the minimum airborne sound insulation requirement of the Building Regulations Approved Document E 2003 (ADE). Where the performance of the floor is designed to exceed the requirements of ADE, higher limits may be suitable.

3.2 Curfews / General Management Protocol

We would recommend that curfews are introduced such that the noise generating shared spaces (bar / gym and cinema) are not be used during the potentially more sensitive night-time period (23:00 – 07:00).

General management protocol should be in place to ensure that nose generation is limited to acceptable levels e.g. signage up in shared spaces reminding patrons to respect neighbours when using and entering / leaving shared spaces, reminders that loud music should not be played and rowdy behaviour not tolerated etc.

3.3 Impact Noise Due to Gym Equipment

Untreated gym equipment is liable to introduce impact noise into floors onto which the equipment is rigidly connected or into floors where weights are dropped. As such we would make the following recommendations with regards to noise management within the residents gym.

Free Weights

In the case of weights being dropped these can be difficult to remediate in terms of impact noise and as such, we would not recommend that 'free weights' are used in gyms within mixed used developments.

Where a free weights area is proposed, it will need to be ensured that some form of impact resistant floating floor be utilised to minimise the amount of vibration entering the structure.

A specialist supplier should be consulted to determine suitable finishes for the free weight area of the proposed gym. Typical products are available from Pliteq, TVS Acoustics or CMS Danskin.

In addition, we would recommend that an induction procedure is put in place to ensure that gym users are informed on how to use gym equipment correctly. Emphasis should be placed on the correct handling of free weights specifically, placing weights on the floor rather than dropping them and re-racking them carefully to reduce excessive noise. We would suggest that management staff take an active role in monitoring gym use to ensure users are aware of this requirement and reprimand repeating offenders.

Aerobic Exercise Machines

Exercise machines using bodyweight only such as running machines / treadmills / step machines etc should be isolated using either vibration pads or proprietary fixings between the machine and the floor. Typical treadmill vibration control pads are available from Pliteq or Custom Audio Designs.

Weight Machines

Machines which use a stack of weights and pulleys in order to provide resistance when exercising will need treatment to the weight stack to ensure that impacts due to the weights dropping back into the resting position on the machine are not transmitted to the floor slab. Typically this requires a resilient 'Impact Washer' to be inserted below the stack of weights to prevent impacts when the weights drop back into position. Typical products are available from TVS Acoustics or CMS Danskin.

4.0 MONITORING

Keeping of Records

It will be the responsibility of the site supervisor / management to monitor operations and ensure that the control measures are being implemented effectively. The site operator should keep records of compliance with this Noise Management Plan. This will include the following:

- Details and duration of any breach.
- All complaints received will be logged as per the complaints form attached within Appendix 1.
- The findings of inspections and actions taken.

Regular Review of Control Measures

It is considered that the NMP is to be a living document and the control measures shall be reviewed as a matter of course if:

- There are any significant changes to the operation of the non-residential spaces
- A complaint is received from an occupant with regards to noise from the non-residential spaces

Any alterations to the NMP will be agreed with the Local Planning Authority by prior written agreement.

This Noise Management Plan will take effect from the date of first occupation.

APPENDIX 1 – COMPLAINT LOGGING FORM

Noise Complaint Form	
Date of Report	
Time and date of call	
Name and address of caller	
Telephone number of caller	
Date, time and duration of reported noise	
Description of character of noise: e.g. loud /distance, continuous, intermittent, hum, bangs, clatter	
Any other comments about the reported noise	
Potential noise source that could have given rise to the complaint	
The activities being undertaken at the time of complaint	
Any other relevant information	
Follow up	
Actions taken	
Date of call back to complainant and summary of call back conversation	

Recommendations	
Change in procedures	
Any changes to Noise Management Plan	
Date changes implemented	
Form completed by:	Date:

APPENDIX 2 – DEFINITION OF ACOUSTIC TERMS

The decibel

This is the basic unit of noise, denoted dB.

A Weighting

This is a weighting process which simulates the human ear's different sensitivity at different frequencies. A weighting can be shown two typical ways, 50 dB(A) L_{eq} or 50 dB $L_{Aeq.}$ Both mean the same thing. (See below for a definition of L_{eq}). The dB(A) level can be regarded as the overall level perceived by human beings.

L_{eq} and $L_{eq(s)}$

This is the equivalent continuous noise level which contains the same acoustic energy as the actual time-varying sound. In other words it is a kind of average noise level. It is denoted dB L_{eq} or, for A-weighted figures dB(A) L_{eq} or dB L_{Aeq}. It can also be expressed in terms of frequency analysis (see later). $L_{eq(s)}$ is the sample L_{eq} level.

L_n

This is the level exceeded for n% of the time. It is denoted dB L_n or, for A-weighted figures dB(A) L_n or dB $L_{An.}$ It can be expressed in terms of frequency analysis (see later). L_{90} is the level exceeded for 90% of the time and is a measure of the lowest level typically reached. L_{10} is the level exceeded for 10% of the time and is the highest level typically reached. L_{50} is the level exceeded for 50% of the time and, mathematically, it is the median.

L_{max}

This is the maximum level reached during a measurement period. The "time constant", or the ability of the equipment to respond to impulses is usually expressed along with it, e.g. "Fast", "Slow", etc. It is denoted dB L_{max} or, for A-weighted figures dB(A) $L_{max,}$ dB $L_{Amax,}$ etc. It can also be expressed in terms of frequency analysis.

Frequency Analysis

Whereas dB(A) gives a very useful overall figure, it has its limitations in that it cannot be used to model or predict the effect of noise control and mitigation as this nearly always has radically different performance at different frequencies.

Frequency analysis expresses an overall noise level at each frequency or band of frequencies in the audible range. Octave band analysis divides the audible range into 10 bands from 31.5 Hz to 16 kHz and the noise level in each band can be expressed in any form e.g. L_{eq}, L_{90}, L_{max} etc. One third octave band analysis uses 30 bands.

Narrow band analysis takes the process to resolutions of less than 1 Hz. This is useful for identifying the existence of tones (whines, hums, etc.) and in pin-pointing the sources.