

## TECHNICAL NOTE TO ASSESS THE POTENTIAL BREAK-IN NOISE FROM THE PROPOSED FIRST FLOOR RESIDENTIAL FLAT INTO THE CAMDEN PEOPLE’S THEATRE ON THE GROUND FLOOR

### Introduction

This Technical Note serves as an addendum to ACCON’s report “58-60 Hampstead Road – Sound Insulation Assessment” dated 28<sup>th</sup> September 2015 with reference A2524/N/005 and assesses the likely noise levels within the Camden People’s Theatre resulting from potential noise generated within the proposed first floor flat.

### Source Noise Levels

In order to assess the noise impact on the theatre of a residential use directly above the theatre, it is necessary to determine what noise levels may be produced within the flat. The rooms directly above the theatre will be a bathroom, living room, bedroom and kitchen. The potential noisy activities and typical noise levels are displayed in **Table 1** below.

**Table 1: Activity Noise Levels**

Activity	Noise Level (dBA)
Talking	60 – 70
Television	60 – 70
Washing Machine	75 – 80
Vacuum Cleaner	80

### Noise Levels within Camden People’s Theatre

It can be seen from **Table 1** that the highest noise levels which may be produced within the flat are up to 80 dBA. **Section 5.2** of ACCON’s report A2524/N/003 specified a floor that will achieve an  $R_w$  of 67 dB. Utilising the same formula detailed in **Section 6.1** of ACCON’s report A2524/N/003, which is reproduced below, the potential resultant noise level within the theatre can be predicted.

The formula that will be used is:

$$SPL2 = SPL1 + 10 \log \left( \frac{S}{A} \right) - SRI$$

Where: SPL2 = the sound pressure level within the theatre;

SPL1 = the sound pressure level within the flat;

SRI = the SRI of the floor;

S = the area of the floor in m<sup>2</sup>; and

A = the absorption area of the theatre in m<sup>2</sup>.

A source noise level of 80 dBA within the proposed first flat will be reduced to approximately 10 dBA within the Camden People’s Theatre.

## **Audibility within Camden People's Theatre**

Existing ambient noise levels within Camden People's Theatre are approximately 42 dBA  $L_{Aeq}$  when there is no activity within the theatre.

In order for noise levels to be inaudible, they should be at least 10 dB below the ambient noise level in all frequencies.

It can be seen that the predicted noise level will be approximately 32 dB below the existing ambient noise level in the theatre and therefore it can be reasonably assumed, especially given that the ambient noise levels will be made up primarily of lower frequency traffic noise, that the activity noise from the flat will be inaudible during quiet moments in the theatre.

## **Installation of Washing Machine**

The washing machine should be installed such that it is acoustically isolated from the floor to prevent the transfer of vibration into the floor.

## **Footfall Noise within Camden People's Theatre**

The floor that ACCON have specified within **Section 5.2** of the report A2524/N/003 will significantly reduce any footfall noise breaking into the theatre from people walking over the first floor such that it is unlikely to be audible. The specification of the acoustic treatment to the floor does not include any floor finishes, in line with current good practice. Therefore, if a hard floor treatment (such as vinyl, tile or laminate flooring) is installed instead of carpet, then this should not be to the detriment of the overall sound insulation. A soft floor treatment, such as a carpet with a good quality underlay would be preferred, however, as there is a bathroom and a kitchen proposed directly above the theatre then it may not be possible to install carpet throughout the entire area.

David Yates  
Senior Acoustic Consultant  
ACCON UK Limited.  
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