Halifax Building Society
New Oxford Street
London

Construction Noise Impact Assessment Report

24942/CNIA1

03 November 2017

For:
Wates
Station Approach
Leatherhead
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Document Control

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Attachments

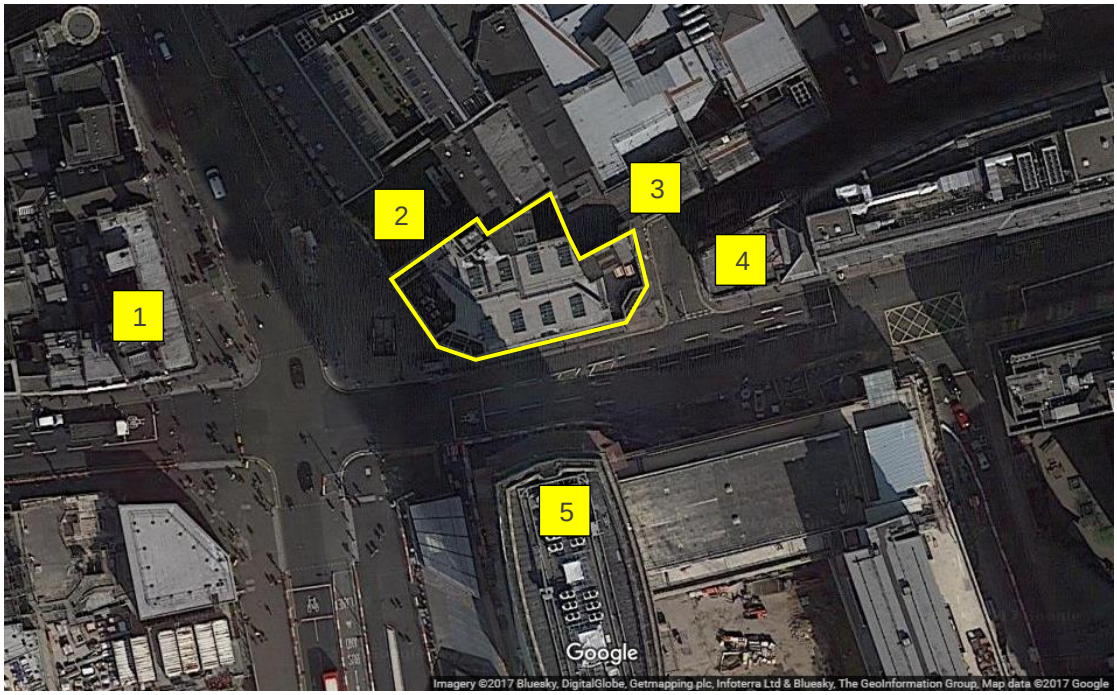
1.0 Introduction

Wates have been appointed as the main contractor for the internal demolition and construction works at 118-132 New Oxford Street, in the London Borough of Camden.

This report presents an assessment of the predicted noise levels likely to be associated with the proposed works.

2.0 Site Description

The site is located on 118-132 New Oxford Street, London and falls within the borough of Camden's jurisdiction. The building is a basement, ground, plus 6 storey development. Works will be carried out in the basement, ground, and first floor levels of the building. The floors above are occupied under B1 use. Neighbouring buildings are located on all façades of the building. The ground floor of the building has a full glass façade on all sides, while the first floor has a masonry façade with inset windows. See location map below with neighbouring properties annotated.



Site Plan (maps.google.co.uk)

Annotation	Building description
1	1 Tottenham Court Road
2	Dominion Theatre (Front Façade)
3	Bainbridge House
4	114 - 117 New Oxford Street
5	Centre Point

3.0 Strip Out / Demolition Works

3.1 Proposed Plant

The following table shows the proposed plant for this phase.

Plant	Activity	dBA @10m
Road saw	Removal of existing pot & beam floors & cutting concrete slab for lift shaft pit extension	91
Core drill	Various	85
Circular saw	Various	78
Cumulative Noise Level of All Plant Operating Simultaneously		**92**

3.2 Impact Assessment

We have created a 3D CadnaA noise map to assess the airborne impact on nearby receptors during this phase. See noise map below.

The table below outlines the maximum noise levels calculated at each receiver when windows are fully open.

Building description	dBA @ façade
1 Tottenham Court Road	77
Dominion Theatre (Front Façade)	87
Bainbridge House	82
114 - 117 New Oxford Street	84
Centre Point	84

4.0 Fit Out Works

4.1 Proposed Plant

The following table shows the proposed plant for this phase.

Plant	Activity	dBA @10m
Circular saw	Various	78
Handheld drill	Various	75
Cumulative Noise Level of All Plant Operating Simultaneously		**80**

4.2 Impact Assessment

We have created a 3D CadnaA noise map to assess the airborne impact on nearby receptors during this phase. See noise map below.

The table below outlines the maximum noise levels calculated at each receiver when windows are fully open.

Building description	dBA @ façade
1 Tottenham Court Road	65
Dominion Theatre (Front Façade)	75
Bainbridge House	70
114 - 117 New Oxford Street	72
Centre Point	72

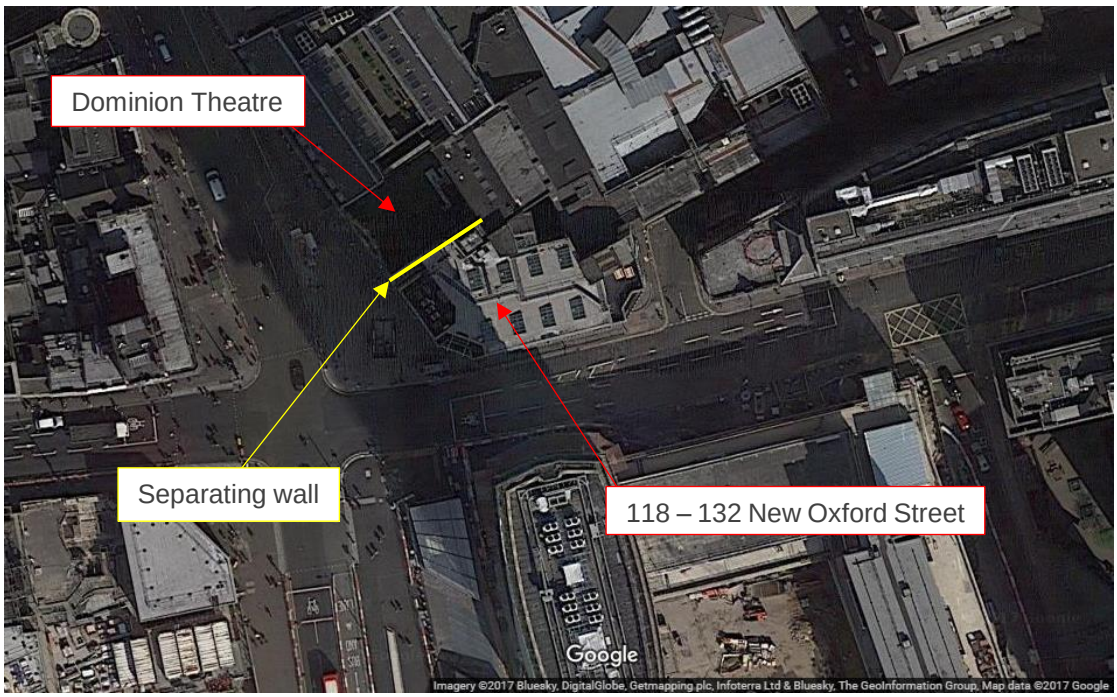
5.0 Discussion

The assessment in Sections 3.0 and 4.0 assume that the proposed plant items are operating at their worst-case locations on site i.e. at the boundary/window, and assume that windows are fully open. It is likely that on site windows will be fully open, partially open, or closed depending on the works undertaken.

The receiver noise levels are likely to be reduced by approximately 10 dB when windows are partially open, and by approximately 27 dB when all windows are closed.

6.0 Structure Borne Noise

118-132 New Oxford Street is potentially structurally connected to the Dominion Theatre on the north façade as shown below.



Separating wall between 118-132 New Oxford Street and Dominion Theatre (maps.google.co.uk)

There are also offices located on the 2nd – 6th floors above where works will be carried out.

It is not possible to accurately model structural noise through the separating wall. Structural and airborne noise transfer can only be accurately determined with on-site measurements while works are carried out.

BS 5228 – Code of practice for noise and vibration control on construction and open sites – Part 1: Noise, states the following regarding structure borne noise.

"Those seeking to determine suitable noise control targets for construction operations should be aware of the particular noise problem that can occur when such operations take place in existing buildings that are either occupied or contiguous with occupied buildings. Vibration introduced directly into the structure by equipment such as breakers, hammers and drills might attenuate only slowly as it is transmitted through the structure"

Appendix A

The acoustic terms used in this report are defined as follows:

dB — Decibel - Used as a measurement of sound level. Decibels are not an absolute unit of measurement but an expression of ratio between two quantities expressed in logarithmic form. The relationships between Decibel levels do not work in the same way that non-logarithmic (linear) numbers work (e.g. 30dB + 30dB = 33dB, not 60dB).

dBA — The human ear is more susceptible to mid-frequency noise than the high and low frequencies. The 'A'-weighting scale approximates this response and allows sound levels to be expressed as an overall single figure value in dBA. The $_A$ subscript is applied to an acoustical parameter to indicate the stated noise level is A-weighted

It should be noted that levels in dBA do not have a linear relationship to each other; for similar noises, a change in noise level of 10dBA represents a doubling or halving of subjective loudness. A change of 3dBA is just perceptible.

$L_{eq,T}$ — $L_{eq,T}$ is the equivalent continuous sound pressure level. It is an average of the total sound energy measured over a specified time period, *T*.

L_p — Sound Pressure Level (SPL) is the sound pressure relative to a standard reference pressure of 2×10^{-5} Pa. This level varies for a given source according to a number of factors (including but not limited to: distance from the source; positioning; screening and meteorological effects).