ARUP

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Technical Note

Project title	Selkirk House, 166 High Holborn and 1 Museum Street, 10-12 Museum Street, 35-41 New Oxford Street and 16A-18 West Central Street, London, WC1A 1JR
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Subject	Section 73 Application – Air Quality

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1. Introduction

Ove Arup and Partners Limited (Arup) has been commissioned by Lab Selkirk House Ltd (the Applicant) to provide a technical note in support of a Section 73 application for the approved development at Selkirk House, 166 High Holborn and 1 Museum Street, 10-12 Museum Street, 35-41 New Oxford Street and 16A-18 West Central Street, London (Application Number: 2023/2510/P).

Following the planning commission, design changes have been proposed for the approved development and the summary of changes is provided in the Section 73 Design Statement[1]. This note is aimed at addressing the air quality elements to support the Section 73 application and the scope of work is presented below:

- Review of the Section 73 design update; and
- Determine the implication of design changes to air quality mitigation requirements.

This document should be read in conjunction with the Air Quality Assessment submitted for planning and supporting technical notes produced by Arup, as detailed below:

- Air Quality Assessment for planning, produced in May 2023[2]

[1] DSDHA (2024) Section 73 Design Statement

[2] Air Quality Assessment for the detailed planning application of Selkirk House, Final Version, 26 May 2023

- Technical supporting note for planning, produced in June 2023[3]
- Detailed air quality modelling to inform the MEP strategy[4]
- Technical supporting note responding to issues raised by the London Borough of Camden (LBC) and the Greater London Authority (GLA)[5]
- Technical supporting note to provide air quality modelling updated to the current year (2022)[6]

2. Review of the Design Update

The summary of design changes as part of the Section 73 application have been reviewed. All changes are associated with 1 Museum Street, a commercial building with proposed office use. The only changes that are relevant to air quality are associated with the façade of 1 Museum Street. The changes in relation to the 1 Museum Street servicing strategy, basement levels and ground floor have been scoped out as they will not affect air quality or exposure. The relevant design changes for air quality are as follows:

- *Building levels have been adjusted to suit detailed design development of MEP and Structural strategies for the building – the overall building height and massing remains unchanged*
- *Operable panels across all facades have been replaced with openable windows within the glazed area to improve overall building thermal performance and futureproof flexibility.*

The sections below provide comparisons between the proposed changes and the original design and determine if the proposed changes would be material to the original air quality assessment.

Building levels

The original building levels at 1 Museum Street have been compared with the revised levels detailed in the proposed changes. The revised plans elongate the parapet level by 1.2m, by lowering levels 1, 5, 8 and 11, each level by either 0.2 or 0.3 m.

The air quality modelling included sensitive receptors representing heights at each floor level derived from elevation plans submitted for planning. Given that the height revisions within the Section 73 are minimal, the original receptors assessed for air quality are considered representative. On this basis, the updated building levels result in no material differences and the conclusions of the air quality assessment and supporting technical notes remain robust.

Operable panels

Based on information provided by the design team, the change from operable vent panels to openable windows at 1 Museum Street applies to all façades (north, west, south and east) and all elevations (office levels L01 – L18). The ventilation strategy would then use openable windows

[3] Air Quality Technical Note, Update to modelling using ATC data commissioned by the applicant, 23 June 2023

[4] Air Quality Assessment, Detailed air quality modelling to inform the MEP strategy, Final Version, 8 November 2023

[5] Air Quality Technical Note, Responses to issues raised in relation to air quality by the London Borough of Camden and the Greater London Authority, Final Version, 6 November 2023

[6] Air Quality Technical Note, Air quality modelling updated to the current year (2022), 11 October 2023

and Mechanical Ventilation Heat Recovery (MVHR) with particulate matter filtration. This proposed design change is considered to be not material as both operable vents and openable windows use natural ventilation; therefore, the exposure locations for the future users at all façades would remain the same as the original air quality assessment. It is also understood that the air intake locations of the MVHR would remain at the same locations as the original design, at roof level and to the rear of the Vine Lane block and therefore, these changes would result in no material differences to the original assessment.

3. Implication of design changes to air quality mitigation requirements

As described in the air quality assessment and technical notes submitted for planning, air quality modelling was undertaken to understand the concentration levels on each façade and at a range of elevations for the current (2022) and opening year (2029) of the approved development.

The modelling results showed that nitrogen dioxide (NO_2) and particulate matter (PM_{10}) concentrations were not a constraint to the air quality strategy. For the opening year, they were predicted to be below the national air quality standard of 40µg/m^3 along all facades at all levels of 1 Museum Street. The same results are true for the current year, except for the façade facing High Holborn where NO_2 concentrations are predicted to be above the national standard of 40µg/m^3 and are predicted to be within 5% of the national standard from the 2nd floor onwards. As marked in the air quality positive strategy, a future-proofing mitigation system would be in place to manage exposure to outdoor air quality. The relevant measure is provided in Table 1 and the arrangement remains valid for the updated openable windows design, providing a system in place to identify air quality issues so the openable windows can be closed. In relation to fine particulate matter ($PM_{2.5}$), the air quality impacts would be mitigated through the detailed design and mechanical ventilation strategy.

As the proposed design changes are not considered to be material (see section 2), the current design and mitigation arrangements detailed in the original air quality assessment are still valid.

4. Conclusion

This note has been prepared to address the air quality elements to support the Section 73 application. The summary of the design changes have been reviewed, and changes with the potential to affect air quality or exposure were considered in more detail.

The revised floor levels were reviewed and sensitive receptors representing heights at each floor level in the air quality assessment are considered representative.

The change from operable panels to openable windows was reviewed. Given the exposure locations for the future users would remain the same as detailed in the original Air Quality Assessment, the change is not material and the mitigation measures are still appropriate and valid.

In conclusion, the proposed design changes are not considered to be material and the Air Quality Assessment and accompanying technical notes submitted to LBC remain valid.

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Table 1: Air quality positive measure on operable windows

Measure	Summary of the measure	Reasons for undertaking measure	Expected benefits	Assessment and reporting			How will this measure be secured
				Method	Quantitative	Qualitative	
Air quality and climate alert system for operable windows	An air quality and climate alert system will be in place for the control of the operable windows at the 1 Museum Street building	Managing exposure	Allow residents and employees to manage their own exposure to outdoor air pollution and control the use of operable windows	It is proposed that the Facilities Management Team will operate a "traffic light" system within 1 Museum Street to provide advice to occupants on when it would be appropriate to open windows. This system will consider temperature as well as air quality (monitored locally) to provide a "green light" to occupants to open windows when external air quality is within acceptable limits and the external temperature is appropriate to provide free cooling to discourage energy wastage.	No	Yes	Through occupier engagement and marketing