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DETAILS PURSUANT TO CONDITION 5 PLANNING PERMISSION 2020/1351/P (AS AMENDED)

UNCOMMON HOLBORN
81 - 87 High Holborn
London
WC1V 6NU

01.00 DETAILS PURSUANT TO CONDITION 5 PLANNING PERMISSION 2020/1351/P (AS AMENDED)

01.01 "CRITICAL TYPE" WINDOWS - EXISTING

The design team has worked with the window manufacturers together to design a high performing replacement to the existing single glazed windows.

The objective is that the new windows will look as similar as possible to the existing ones, while delivering a much better thermal and acoustic performance to comply with current building regulations and modern standards for office buildings.

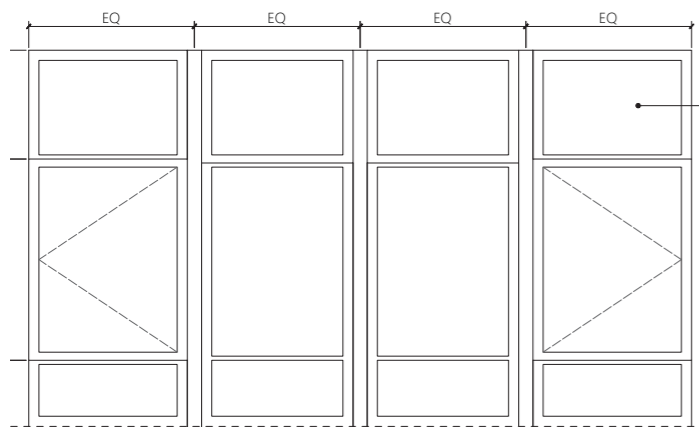
The windows hereby described are located on Eagle street facade and on the inner elevations of the building.

The building is not listed, but it is located in a conservation area. However, only the High Holborn frontage is considered to be a positive contributor and therefore the elements included within this document are not considered to be of historical interest.

For ease of comparison between the existing and proposed windows (on the next page) the photos have been annotated with key dimensions, as appropriate.



Image of existing single glazed window to be replaced



Elevation of the existing windows

01.00 DETAILS PURSUANT TO CONDITION 5 PLANNING PERMISSION 2020/1351/P (AS AMENDED)

01.02 “CRITTAL” TYPE WINDOWS - PROPOSED

Although high aesthetic has been paramount throughout the refurbishment design exercise, performance was a key driver in the design outcome of the window design and building throughout.

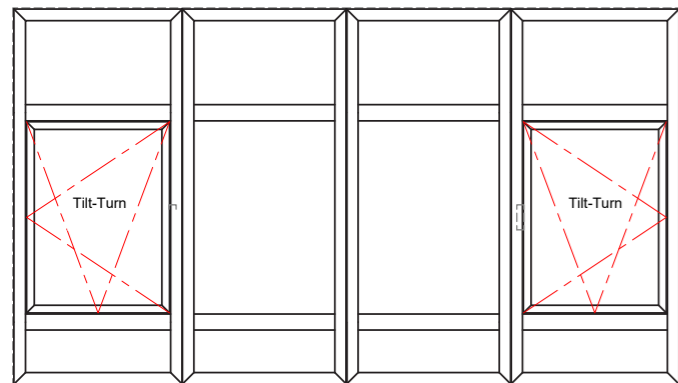
The existing windows are single glazed and offer no thermal breaks which translate into a poor thermal and acoustic performance. Achieving building regulation compliance required the windows to be upgraded to double glazed units with thermally broken aluminium frames.

The performance is driving the slight increase in thickness of the frames as it is not possible to provide a perfect match to the existing windows and meet the requirements of the building regulations.

We have, where possible, matched the dimensions of the existing windows as closely as possible. The exception lies on the horizontal transoms where their thickness is slightly larger than the existing to provide the performance required while matching the panellization and opening scheme of the existing windows.

The colour selected for the window framing has been welcomed by the planning team on their site visit. The colour is RAL 7047, a very light grey, which matches the colour of the surrounding stone facade. Any mastic joints will also match that of RAL 7047.

A sample has been installed on site for planning approval.



Elevation of the proposed windows



Image of the proposed double glazed window

02.00 SUPPORTING INFORMATION

02.01 ACOUSTIC AND THERMAL PERFORMANCE TARGETS

Supporting information on the performance targets for the refurbishment scheme:

Thermal performance

The thermal performance of the existing single glazed aluminium windows is estimated to be around 4.8W/m² and therefore not in line with building regulations.

The upgrade of the building envelope was a key driver of the refurbishment, providing thermal comfort to the future tenants and a more efficient energy strategy which will have beneficial impacts in energy consumption.

A thermal model has been developed for the scheme and performance targets are as described on the table on the right. The overall proposed window system will achieve an u-value of 1.8W/m² and the glass will achieve a G-value of 0.65, providing a significant upgrade of the thermal performance.

Acoustic Performance

Please see on the right an extract from the acoustic report which highlights the measurements on external noise levels and vibration intrusion undertaken in 2021.

The requirements for the new glazing acoustic performance have been set in accordance with “the British Council for offices guide”. All windows apart from the ones on the High Holborn facade are to achieve a minimum rating of 30dB.

With the acoustic performance being a critical item on delivering a suitable working environment, the proposal has gone beyond the minimum requirements, delivering 37dB.

BREEAM

The client and design team are committed to reduce the carbon footprint of the scheme for both construction and operations/use stages. A BREEAM target of Excellent is being pursued. Improving the envelope performance of the building is key to achieving a sustainable energy strategy

Build element	U-Values (W/m ² K)
Ground floors	0.58
External walls	1.69
Basement Walls	0.55
Roofs	0.18
Windows G = 0.65	1.8
Rooflights G=0.65	1.8
Entrance doors	3

3.0 External Noise & Vibration Intrusion

3.1 Environmental Noise

auricl undertook measurements of worst-case external noise levels affecting the building on Thursday 30 September 2021. The measurements were taken with the measurement microphone mounted on a tripod approximately 1.5m above pavement level on the High Holborn side of the building.

The measured internal noise levels are shown in Table 3.1.

Figure 3.1 Measured External Noise Levels

Parameter	Measured $L_{eq,T}$ Sound Pressure Level (dB) at Octave Band Centre Frequency (Hz)						L_A (dB)
	125	250	500	1k	2k	4k	
L_{eq}	70	67	66	66	62	56	70
L_{max}	86	84	83	86	79	79	89

The British Council for Offices Guide recommends that external noise intrusion levels should not exceed **NR 38 (L_{eq})** in Cat A Speculative Offices or **NR 35 (L_{eq})** in meeting rooms.

In addition, the Guide recommends that noise intrusion levels should not normally exceed **55 dB $L_{Amax(fast)}$** in open plan/speculative offices, but occasional exceedances may be permitted for infrequent or irregular environmental noise sources.

We have undertaken calculations to determine the acoustic requirements of the new glazing, based on the above.

The glazing should be specified and selected to achieve the minimum sound reduction indices specified in Table 3.2.

Figure 3.2 Acoustic Specification for Glazing

Facade	Minimum Sound Reduction Index (dB) at Octave Band Centre Frequency (Hz)					
	125	250	500	1k	2k	4k
High Holborn	19	24	32	35	35	35
Other Façades	15	17	24	30	30	30

The sound reduction performance shall be determined in accordance with BS EN ISO 10140-2: 2010. This will involve testing in 1/3 octaves from at least 100Hz to 5000Hz inclusive.

The test results, together with suitably converted octave band results from 125Hz to 4000Hz, shall be provided for fully representative test samples – including representative glazing, frames, seals, opening and sliding lights etc.

The results for the tested samples shall be submitted to and approved by auricl.

As a guide, we would typically expect the specified acoustic requirements for the High Holborn façade to be achievable using double glazing achieving an overall laboratory sound insulation performance of at least R_w 34 dB (e.g. 6mm glass / 16mm airspace / 6mm glass).

For the other façades, we would expect R_w 30 dB glazing to be sufficient (e.g. 4mm glass / 12mm airspace / 4mm glass).

The above advice is for guidance purposes only and other glazing/airspace configurations may also achieve the specifications.

Any glazing selections should be based on the detailed acoustic specifications presented Appendix B.

The glazing specification is based on closed windows, with ventilation and cooling provided by mechanical means. In general, the internal noise criteria will be exceeded when windows are open.

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