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Active Cooling Justification Statement

Planning Application Ref: 2021/1664/P

Cousins & Cousins Architects have prepared an Active Cooling Justification Statement in support of the above application. This document is to be read in conjunction with the proposed drawings and specialist acoustic plant noise assessment we have submitted to vary Condition 2 of Planning Approval 2020/0348/P.

In line with Camden policy CC2 (Adapting to Climate Change) the proposal is required to demonstrate how sustainable development principles have been considered. Camden's Energy Efficiency and Adaptation CPG requires the applicant to demonstrate a clear need for active cooling following consideration of other passive measures.

This document outlines how the proposed installation of air conditioning to the property, and the positioning of an acoustically treated single external air condenser has been carefully considered, justifying how all other methods of passive cooling have been found to be inviable given the existing external fabric of the property which is to remain.

The proposal aims to provide air conditioning to principal bedroom spaces at first and second floor only and fundamentally improve comfort cooling at night during peak summer temperatures. The following factors have been evaluated to assess alternative measures:

- The existing planning approved proposal comprises extensions to an existing building within a Conservation Area and as such the orientation and size of the fenestration to primary bedrooms cannot be altered or adapted to minimize overheating.

- The primary bedrooms are located within areas of the existing house where the thermal performance of the external envelope is in an existing condition and overheating on very hot days is expected, causing discomfort for the occupants.

- Natural ventilation is currently not sufficient to reduce heat build up to upper levels of the house which creates discomfort in rooms intended for sleeping.

- The existing window openings are retained within the primary bedrooms with replacement windows to be upgraded to 1.4 W/m2K. External shading is not considered appropriate for this context given the window locations on the primary street elevation within the Conservation Area setting (see photo opposite) however internal blinds will be used to mitigate overheating where possible.

- The existing planning approved proposal includes new floor levels however these are limited by the existing elevations and ridge height. On this basis, the floor to ceiling height cannot be increased to allow for greater natural air circulation or additional surface mounted mechanical ventilation as this would compromise headspace in habitable rooms.

- Utilising thermal mass and stack techniques is not appropriate for the existing condition and construction type.

- Water based cooling systems are not appropriate in this context as running cold water through the underfloor heating pipes would cause issues of condensation and floor build up space is limited.

Conclusion

Based on the above assessment, air conditioning is proposed with a single condenser unit located discreetly in a purpose-built acoustic enclosure within the front lightwell at basement level. As such the condenser enclosure will not be visible from the street or the gardens of the property having no impact on the appearance of the property and the wider Conservation Area. Please refer to the Acoustic Assessment appended to this application for detail of noise mitigation and acoustic enclosure performance.

Appendix A
Photograph: East facing front elevation with bedroom windows to 1st Floor highlighted in red. The principal fenestration is unsuitable for additional external shading.