PLANNING APPLICATION 2022/3204/P

SWAN HOUSE, HIGH HOLBORN, LONDON, WC1V 6AA

ENERGY CONSIDERATIONS

1.0 Introduction

1.1 This document has been prepared with input from Michael Jones & Associates Engineering Consultants and Stewart Watson & Co Building Surveyors in response to Camden's email dated 28th October 2022 seeking clarification on the energy approach to the proposed development.

1.2 The planning application is for 'minor' development comprising the replacement of an old, inefficient and unreliable air conditioning system at the property.

1.3 The building is currently occupied as offices with air conditioning and the rents reflect this. If the air conditioning was not replaced, this would lead to issues of derogation from grant and failure of the landlord to meet the lease requirements.

1.4 The main glazed elevation faces south, to High Holborn. It is impractical to simply rely on natural ventilation due to the traffic noise. When the existing system failed during the very hot summer, tenants had to send their staff home due to the heat. It is the applicant's belief that overheating is a realistic prospect without replacement cooling.

1.5 If the system was capable of repair, the client could have repaired it, without consultation with the planners. However, due to its age this was not an option. It is relevant to note that if it was capable of repair, its continued operation would perpetuate the use of a highly inefficient system. This is the scheme's fallback position.

2.0 Alternatives to Replacement of the Existing Cooling

2.1 In terms of alternative measures, these have been reviewed, but are not feasible at the property. Options such as stack ventilation, reduced glazing to south and west facing elevations, opening windows to noisy elevations, cannot practically be applied to an existing building.

2.2 You have suggested solar powered ceiling fans, but these are not considered a realistic equivalent to the existing cooling and would not meet the obligations to the tenants.

2.3 Furthermore, PV panels would not be appropriate in respect of cooling a commercial building of this size. The main roof area has limited available space. The rear roof areas are not suitable as they are positioned behind the property at a lower level, and north facing, thereby shaded by default.

2.4 Air Source Heat Pumps would not provide the level of cooling required to support this commercial building.

3.0 Energy Efficiency

3.1 The system proposed is a highly efficient DX Heat Recovery external plant, serving internal fan coil units, arranged on a floor-by-floor basis, integrated with a controlled mechanical heat recovery ventilation system for each floor.

3.2 The previous system comprised central chiller plant providing cooling to the offices in the summer, and gas fired central heating to the offices via perimeter radiators, providing heating in the winter.

3.3 As part of the drive to improve the energy efficiency of the building, the landlord has removed the gas fired central heating, including the gas supply to the building. This has been possible due to the ability of the new replacement comfort cooling to provide both cooling in the summer and heating during the winter.

3.4 Furthermore, the new heating/cooling installations are arranged on a floor-by-floor basis, with the heating/cooling operating in co-ordination with individual controlled mechanical heat recovery systems per floor. Each floor is independently controlled, rather than a centrally controlled installation serving floor areas, whether they are occupied or not – the replacement systems are controlled locally by occupants only when occupied and in-use.

3.5 The original central chiller plant was life-expired, and this included the associated chilled water circulating pump sets, controls, and other related equipment, all of which were electrically driven and controlled via aged centralised controls. This type of aged and centrally controlled system is inefficient by modern standards due to operational and standing losses, with central plant and related equipment operating, circulating water through the system, whether required or not. This is all now eliminated with the consolidated replacement systems.

3.6 Associated to this, there were 2no. previously installed large capacity central mechanical supply and extract air-handling units: one on the main roof serving floors 4/5/6, and one on the lower rear roof, serving floors 1/2/3. These were aged and inefficient systems, each served with heater batteries and cooling coils, in turn served with circulating low pressure hot water (LPHW) and Chilled Water (CHW) via a distribution flow/return pipework installation for each service. This included running the associated circulating pump sets, all of which are no longer necessary.

3.7 The replacement system and the removal of central boiler plant, chiller plant and air-handling plant, allows the building owner to significantly reduce energy use by default, with the modern consolidated floor-by-floor systems that have replaced the central systems.

3.8 The new system is a far more efficient mode of heating/cooling/ventilation than the original/previous systems and, if operated correctly in occupation, will reduce electrical energy use (kWhrs) by anywhere between 20% – 40% annually, when compared to previous usage figures.

3.9 In addition, there will be no gas usage in the future for this building, which is a net 'gain'. Gas would have been a significant energy use when serving low pressure hot water heating to the AHU coils and the perimeter heating in the offices – most likely a 50/50 split across a 12-month period.

3.10 In seeking to improve the EPC rating of the building, the refurbishment works at the upper floors have also replaced aged lighting, with new LEDs with PIR lighting controls, fully compliant with current building regs, all of which is an operational improvement and will reduce energy demands at the property.

4.0 Planning Policy Considerations

4.1 At strategic level, London Plan **Policy SI 2 Minimising greenhouse gas emissions** contains guidance for 'major' developments. As noted above, the application is a 'minor' development for the replacement of existing units.

4.2 The Lean, Clean, Green cooling hierarchy can be appropriately applied to new developments where fabric choices and design approach is considered at the outset and energy is integral to the scheme. Applying the hierarchy to an existing building is more difficult. Notwithstanding this, we believe the scheme responds to the cooling hierarchy.

4.3 One of the fundamental aims of the refurbishment of the offices is to improve the EPC rating of the building and use less energy (Be Lean) and this will be achieved with the new units and other measures outlined above. There are limited options for tapping into existing networks, such as CHP, particularly for an existing building (Be Clean) and renewable options such as PV panels (Be Green) cannot be incorporated in the scheme for the reasons outline above. Overall, however, the fundamental aim of reducing energy usage will be achieved by the scheme.

4.4 We acknowledge that Camden has declared a climate emergency and careful control over heating/cooling plays a part in responding to this. We also acknowledge that Local Plan **Policy CC2 Adapting to Climate Change** is intended to apply to all development.

4.5 Having regard to the energy savings outlined above, it is considered that the proposed development meets the terms of the policy in reducing energy requirements at the property in the most efficient way, responding to the fact that it is an existing building. Specifically, the new systems will use far less energy, be much more controllable and having modern efficiencies in operation by a significant and measurable amount in the future.

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11th November 2022