Sustainability Statement

Produced on behalf of Capezio UK 37 Endell Street Covent Garden WC2H 9EE

Bobblehat Ltd
Capezio
37 Endell Street
Covent Garden
London
WC2H 9EE

Sustainability Statement for Bobblehat Ltd in relation to HVAC works undertaken at 37 Endell Street Covent Garden WC2H 9EE on behalf of Capezio UK.

Existing Site.

The site, 37 Endell Street, is located on a retail/residential street in Covent Garden London.

The site sits between access to residential flats above the unit and a private restaurant to the right. The Ground floor is a retail space, with the basement comprising a staff tea point, WC, and storage. The retail area access includes a streetside entrance and fire exit to the rear of the store, which accesses a mezzanine deck. In addition, the floor has access via the stairwell to the basement areas at the back and front of the store.
The ground floor interior finish includes exposed brickwork to the perimeters and a single-glazed timber façade to the store entrance. The ceiling comprises a double-skinned 12.5mm plasterboard ceiling with timber joists. A further plasterboard ceiling is 600mm above this.
The Glazing overlooking the mezzanine deck to the rear right of the store are single-pane sash windows.

Existing Heating & Cooling.

Several wall-mounted radiators currently heat the unit to the ground and Basement areas and there is no option for cooling the unit. The mezzanine deck currently has two condensers installed from a neighbouring property that are not in use. Condensers already in situ suggest that approval had been granted on previous occasions for a similar installation.

HVAC Alterations to an existing site.

The proposed alterations are to include the installation of both Ventilation and Air Conditioning on the ground floor. The basement is to remain in its current state. The Air conditioning is to comprise of two ceiling recessed 4-Way Blowing ceiling cassette systems controlled by a new condenser installed onto the mezzanine deck to the rear of the unit. Ventilation extraction will also be located above the mezzanine deck. Both these elements have been agreed upon with the neighbouring landlord and
have been acoustically tested and found to be within acceptable BS legislation regarding background noise.

Factors considered when installing:

As part of our sustainability study into the needs and requirements for HVAC being installed at 37 Endell Street, we took into consideration the following:

- **Staff Welfare.**
  The existing unit's heating capacity needs to be increased for the size of the unit. As a popular retailer, the footfall through the entrance doors affects the unit's airflow. During colder months, the current heating system cannot heat and maintain a constant temperature for the staff working on the retail floor. The Workplace Health and Safety and Welfare regulations 1992 obligates employers to provide a reasonable workplace temperature. Given that the retail assistants and other members of the retail floor find themselves stationary for periods of the day, the obligation of the client to achieve a constant minimum temperature of 16oc would be challenging.

- **Building preservation.**
  The UK's current seasonal temperature changes cover a wide range of temperatures at either end of the scale, and with no ability to maintain the unit's constant temperature, the building is exposed to this range of temperatures. These drastic temperature changes will impact the longevity of the building, and without maintaining a consistent temperature throughout is likely to experience more significant wear and tear. The ability to maintain this temperature via an HVAC installation will help mitigate this.

- **Noise Pollution.**
  As previously stated, acoustic testing for noise pollution has been undertaken and found to be within acceptable BS legislation concerning background noise. Considering this and the store's open times, which are within regular working hours, the systems will only run during this period to minimize the effects on the surrounding environment and residents.

- **Minimising internal heat generation through energy-efficient design.**
  One of the most effective ways to reduce energy consumption and associated carbon emissions in buildings is to minimize internal heat generation. This can be achieved through energy-efficient design, including the use of efficient lighting, equipment, and appliances. In addition, using natural daylight to illuminate buildings can reduce the need for artificial lighting, further reducing energy consumption. The unit's front is a partially glazed façade with windows to an external mezzanine deck on the ground floor. The unit maximizes the use of these glazed areas by not blocking the light entering the unit through vinyl decals or furniture.

- **Reducing the amount of heat entering the building in summer through orientation, shading, albedo, fenestration, insulation and green roof walls.**

  I. **Orientation**: Buildings should be designed to maximize exposure to the north or south and minimize exposure to the east and west, which receive the most direct sunlight. The unit already forms part of an existing building so no alterations can be made to this.
  II. **Shading:** The unit in question is located amongst high-rise commercial and residential units so shading occurs naturally due to this, however Overhangs, awnings, and other shading devices can be used to block direct sunlight from entering the building.
  III. **Albedo:** The use of light-coloured, reflective materials on roofs and walls can reduce the amount of heat absorbed by the building. The external façade has

been finished in white to help assist this. The unit is located on the ground floor with residential accommodation on the upper floors so no alterations are to be made to the existing roof.

IV. **Fenestration:** Window design and placement can impact the amount of heat entering a building. Windows should be placed to maximize natural ventilation and minimize solar heat gain. The external façade is to remain as existing and due to the unit being part of a terrace natural ventilation is achieved where possible through this and the window bays to the rear right of the ground floor area onto the external mezzanine deck.

V. **Insulation:** The existing unit is lined with exposed brickwork and a timber/glass façade. All glazing is single-paned with the mezzanine window bays completed in timber these are to remain as existing however High-quality insulation can prevent heat from entering the building, reducing the need for cooling.

VI. **Green Roofs and Walls:** Vegetated roofs and walls can reduce the amount of heat absorbed by buildings, improving energy efficiency. As the unit is located on the ground floor of a multi-use building no amendments to the roof will be undertaken.

- **Managing the heat within the building through exposed internal mass and high ceilings.**

  Once heat enters a building, it must be managed effectively to maintain a comfortable indoor environment. Two strategies that can be used to manage heat within a building include:

I. **Exposed Internal Thermal Mass:** Building materials with high thermal mass, such as concrete and brick, can absorb and store heat during the day and release it at night when the outside temperature is cooler, reducing the need for active cooling. As previously highlighted, the unit's perimeter walls are exposed brickwork. The unit's ceiling comprises of double skinned 12.5mm gypsum plasterboard with a further ceiling located above a 300mm ceiling void.

II. **High Ceilings:** High ceilings can improve air circulation within a building, reducing the need for mechanical ventilation and cooling. The works undertaken have maintained the existing ceiling height throughout the unit as to not compromise the air circulation and air volume calculations were undertaken on this basis to ensure the required HVAC installations were met.

- **Passive Ventilation.**

  Passive ventilation uses natural ventilation to maintain indoor air quality and temperature. Strategies that can be used to achieve passive ventilation include the use of operable windows, natural ventilation stacks, and ventilation louvers. Whilst there isn't the option of louvers all window bays in the unit are operable and are to be maintained throughout the lease to ensure this remains the case.

- **Mechanical Ventilation.**

  Mechanical ventilation uses mechanical systems, such as fans and ducts, to circulate air within a building. Mechanical ventilation can be used in conjunction with passive ventilation to improve indoor air quality and reduce the need for active cooling. The

proposed installation includes the installation of a Lossnay unit to improve ventilation whilst recovering heat energy to maximize efficiency.

- **Active Cooling.**
  Active cooling uses mechanical systems, such as air conditioning units, to cool the air within a building. Active cooling should be used as a last resort after all other strategies, such as passive ventilation and mechanical ventilation, have been employed. Active cooling uses mechanical systems, such as air conditioning units, to cool the air within a building. Active cooling should be used as a last resort after all other strategies, such as passive ventilation and mechanical ventilation, have been employed. In this instance, the installation is to include mechanical ventilation to enhance air flow and reduced the need for the air conditioning units to be used continuously. As in line with the shops opening hours the units will only be active when necessary and will not be required to run through unsociable hours outside of store opening hours.

Concluding Statement.

As a concluding statement, the installation is to be undertaken in a unit that forms part of an existing dwelling. Whilst an energy-efficient design has been implemented to ensure the best possible outcome in reducing energy consumption the current insufficient heating available coupled with the minimal impact the installation will have on neighbouring tenants suggests this installation should be deemed as acceptable and should be granted planning permission through the relevant authority. In this instance, Camden Council.

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Ben Newman
Director