

## Cooling Hierarchy Statement

project 106 King Henry's  
reference: 1902\_CH\_Statement  
date: 5<sup>th</sup> January 2021  
issued by: DF

### Cooling Hierarchy Statement

This cooling hierarchy statement accompanies and supports the application for the installation of Air Conditioning Unit at 106 King Henrys Road under the application:

The measures noted in the Local Plan Policy CC2 8.43 are noted and responded to below;

#### *1.0 Minimise internal heat generation through energy efficient design;*

Energy generation will be limited by the following upgrades and methods:

- a. All lighting will be LED
- b. A new energy efficient "A" rated boiler will installed at the property to heat the property via underfloor heating.
- c. Heating control will be managed intelligently and remotely using an intelligent system to remember routine energy use to set up heating preferences automatically
- d. Reducing wasted energy by zonal heating controls ensuring unused rooms are not heated
- e. Heating compensation to adjust the boiler output temperature depending on the temperature in your home or outside
- f. Installation of a smart electricity meter to provide accurate and real-time information about energy use, enabling informed decisions about energy management.

#### *2.0 Reduce the amount of heat entering a building in summer through orientation, shading, albedo, fenestration, insulation and green roofs and walls;*

- a. The roof of the building is being renovated with new insulation to substantially reduce heat gain
- b. All windows are being replaced with new thermally broken, high efficiency solar control glazing to windows and doors;
- c. The walls of the property are being insulated to reduce heat gain through the remainder of the envelope
- d. The orientation of the building cannot be changed due to its positioning within an existing terrace of housing
- e. Internal blinds and curtains will also reduce heat gain.

#### *3.0 Manage the heat within the building through exposed internal thermal mass and high ceilings;*

- a. As the building is existing and part of a terrace of properties with strict guidelines on development we are limited in our ability to make substantial alterations to its fabric and external appearance. However as above thermal elements are being upgraded throughout, including the insulation of internal walls, this will provide considerable benefit.

#### *4.0 Passive ventilation;*

- a. All windows are openable, providing natural and passive ventilation.
- b. The house has an open plan, allowing front to back cross ventilation.
- c. Windows are positioned on the top floor in the hallway allowing a limited "stack effect" to cool the house

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Due to the existing orientation of the building and limitations on adjusting the façade due to the context passive ventilation will not be sufficient to ensure a comfortable temperature.

### *5.0 Mechanical ventilation;*

- a. Mechanical ventilation is not appropriate as a retrofit solution due to the need for vents on the facade and extensive ductwork running through the house. Mechanical ventilation has been implemented in bathrooms but its not sufficient to cool the house in the extremes of summer.

### *6.0 Active cooling.*

Consideration has been given to solutions suggested in Camdens CPG

- a. A Ground Source Heat Pump would not be viable in this property because:
  1. This could not reasonably be constructed beneath the existing terrace of houses
- b. The single unit proposed is an Air Source Heat Pump and it can provide backup heating to reduce the gas usage as well as cooling
- c. The proposed unit has highest possible efficiency rating of A for both heating and cooling

## **Conclusion**

Whilst substantially improvements are being made to the thermal performance of the building there remains risk of the building overheating during extreme summer conditions. With working from home being a major consideration going forward, the homeowner wants to install air conditioning during major renovation works (ongoing) to ensure a suitable working environment for their young family.

Further to the above, there are numerous recent consented air conditioning in the local area and we would refer to these as precedent.