

Concerning  
1 Berkley Rd London NW1 8XX

Via email

08 April 2021

To whom it may concern,

1 Berkley Rd - Cooling hierarchy and adapting to climate change CO2 policy statement

The London Plan 2016 Policy 5.9 on Overheating and Cooling intends to reduce the impact of the urban heat island effect in London as temperatures build up over the summer and to reduce overheating due to the increase in energy consumption of active cooling devices employed to provide comfort cooling. The property in question is at particular risk of overheating due to being located in the central activities zone where roads absorb more solar radiation than green spaces. In line with this policy a number of measures have been applied at 1 Berkley Rd to combat overheating whilst also reducing reliance on air conditioning systems and this is demonstrated by the following actions designed in line within the cooling hierarchy below.

1. Minimise internal heat generation through energy efficient design.

A new hot water cylinder is being installed with high levels of insulation to reduce standing heat loss and all hot water pipework including secondary return pump is to be thoroughly insulated to reduce wild heat gains.

Low energy LED lighting is to be installed throughout the property reducing heat generation of lighting equipment.

2. Reduce solar heat gains

Insulation installation throughout the building including walls and roof have been introduced reducing the amount of heat travelling into the property via thermal conduction.

Due to the property location in a conservation area, the application of external blinds or external shading above external windows has been deemed not appropriate. Similarly, the alteration of any of the windows in size to help reduce solar gains is not permitted. Internal blinds however will help to reduce heating effects of direct sunlight.

3. Manage heat within the building through exposed internal thermal mass and high ceilings.

Where possible ceilings have been kept above 2.6m to reduce perception of high room temperature. High thermal mass in the masonry wall build up will assist by slowing down the effect of overheating over the course of the day.

4. Passive ventilation

The property is dual aspect with openable windows on the front and rear elevations. These can be opened to provide effective cross ventilation. This is intended to provide low energy overheating solution for a substantial part of the summer season.

## 5. Mechanical ventilation

Dedicated extract ventilation will be provided for the audio-visual equipment to reduce heat build-up.

A whole house mechanical ventilation system with heat recovery (MVHR) will provide passive cooling with the summer bypass function. During night-time operation cool external air is transferred inside to contribute to reducing internal temperatures. The MVHR system will also help to improve efficiency levels when active cooling is used by recovering cool energy when the external temperature is hotter than that internally.

## 6. Active cooling system.

Dedicated recirculating fan coil unit air to air refrigerant cooling systems for each of the first and second floor habitable bedrooms have been allowed for to ensure that cooling is only used when necessary and levels of active cooling can be controlled by each occupant to be kept to a minimum. Active cooling units with the latest R32 refrigerant help to reduce the global warming potential of the heat pump installation in the uncontrolled future event that the refrigerant system were to leak to the atmosphere.

## 7. Solar PV System

A solar PV system with 2.4kWp capacity will generate clean energy during the daytime helping to reduce the impact of the active cooling energy consumption.

## 8. Summary

Due to the restriction imposed by the conservation area and therefore the absence of external shading on the south facing front elevation active cooling will be necessary to provide comfortable internal temperatures at peak overheating times during the summer season. This however will only be used in exceptionally hot circumstances with passive openable window cross ventilation being the primary solution to prevent overheating.

I hope this provides some explanation but do get in touch if any further clarification is required.

Yours sincerely,

**Kaspar Bradshaw**

Project Manager