

**39 Fitzjohn's Avenue  
London  
NW3 5JY**

## **Energy and Sustainability Statement**

**Prepared For:  
39 Fitzjohn's Avenue LTD**

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## **1. Executive Summary**

In support of the planning application for the proposed development at 39 Fitzjohn's Avenue, and to comply with the London Plan and Camden Council's requirements on environmental sustainability and efficient energy design an Energy and Sustainability Statement has been produced.

The Energy and Sustainability Statement contained herein describes the recommended solution to service the proposed development in the most energy efficient and sustainable manner, following the Camden Planning Guidance CPG3 on Sustainability for work on existing domestic properties.

The conversion, extension, and refurbishment of the development will result in new and more efficient heating plant being installed, glazing being replaced with double glazed units, improvement fabric efficiency throughout, and water saving techniques to ensure the proposals are in line with Camden's policy requirements set out in Section 2 of this report.

## **2. Introduction**

In support of the planning application, an Energy and Sustainability Statement study that examines the potential for reduction of carbon emissions for the proposed development at 39 Fitzjohn's Avenue, Hampstead NW3, has been compiled on request of the Applicant.

The existing house is a detached part 2 and part 3 storey private dwelling with accommodation at basement, ground, first, and second floors with additional accommodation in the roof space which will be converted into 20 apartments.

In addition there is an existing standalone dwelling that will be refurbished internally, but will remain as a single family dwelling.

Camden Council has specific requirements with regards to reductions on carbon emissions for all work to existing building as listed in Chapters 4 and 9 of the Camden Planning Guidance CPG3 on Sustainability, this includes:

- Improvements to the buildings overall efficiency that should constitute approximately 10% of the overall project cost.
- Developments involving the conversion of 5 or more dwellings will be expected to be designed in line with BREEAM Domestic Refurbishment
- Developments are encouraged to achieve at least 60% of the unweighted credits in the Energy and Water categories, as well as 40% of the Materials category.

This report demonstrates how this development will strive to comply with the Camden Council guidance on energy and sustainability.

A separate BREEAM Pre-Assessment has been prepared demonstrating the development targeting a level of 'Very Good' and the minimum percentages for Energy, Water and Materials indicated above.

### 3. Passive Energy Efficiency Measures

The active cooling and heating demand has been minimised as far as possible through passive design measures including efficient building fabric, improved building air tightness and efficient lighting.

#### *Building fabric U-values*

The thermal efficiency of the building elements affects the heating and cooling demand of the building (and thereby affects the demand for natural gas and electricity).

Improvements to the existing fabric elements of the building will be achieved wherever possible. Existing windows will be upgraded and replaced with new double glazed windows.

Although the majority of the building is existing, the new elements of the building will have significantly better u-values to help reduce the energy consumption of the building (except in cases where the new elements need to match the existing in appearance).

Below is a list of the building regulations, and the more stringent target U-values for this development:

Element	Building Regulations (W/m <sup>2</sup> K)	Proposed for 39 Fitzjohn's Ave (W/m <sup>2</sup> K)
Wall	0.30	0.25
Floor	0.25	0.20
Roof	0.20	0.18
Windows	2.0	1.8

*Table 5 U-Values as proposed for the proposed development comparison to Part L 2013*

#### *Natural Ventilation*

All windows to the apartments will be replaced and provided with trickle vents and will be openable to allow for purge ventilation.

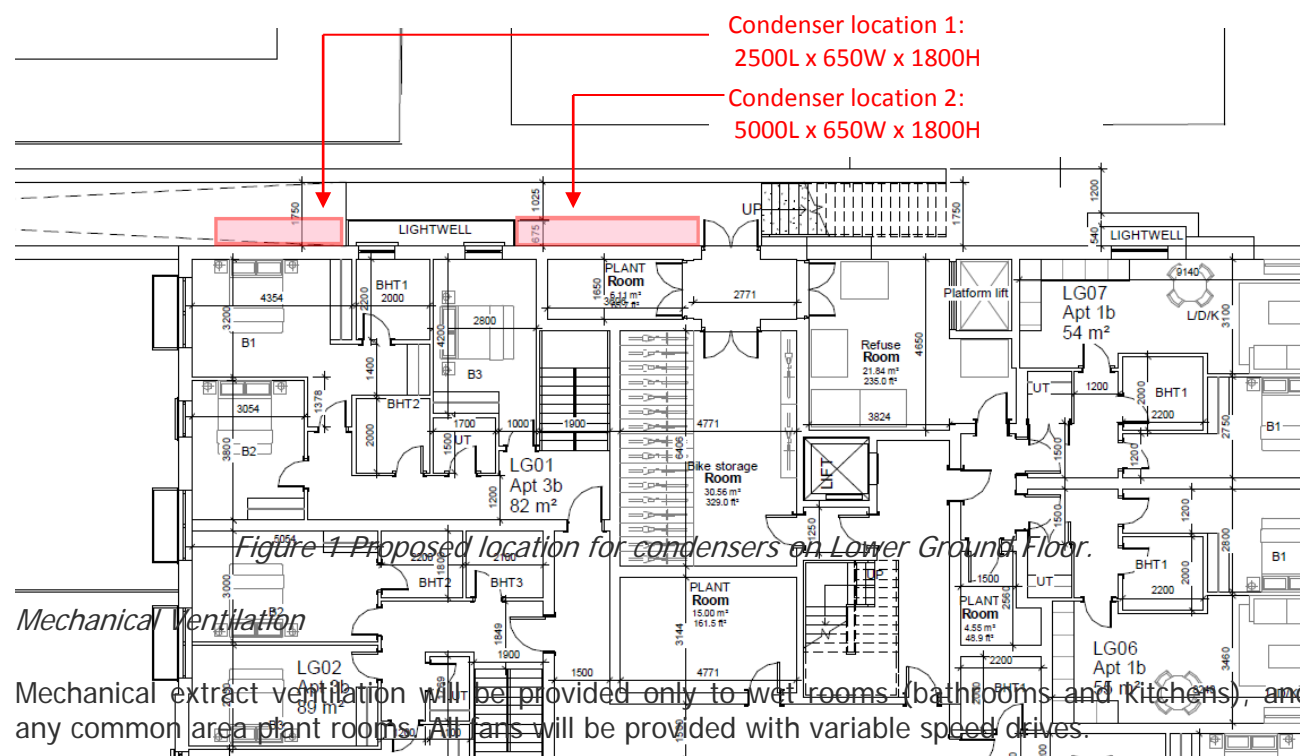
#### 4. Active Energy Efficiency Measures

##### HVAC systems

The efficiency of the mechanical systems has a significant impact on the amount of energy which the building consumes in order to deliver the required heating and cooling loads. Highly efficient equipment will be specified for this development, and wherever practically possible equipment from the government's Energy Technology List will be selected.

New highly efficient boilers will be installed to each flat to provide the space heating and domestic hot water for each of the apartments. These will be located within dedicated utility cupboards and will have flues to the closest external walls. The space heating will be delivered to the apartments through an underfloor heating system providing a more efficient and even distribution of heat.

A new high EER centralised split system will be installed to provide the cooling required for the apartments. The different apartments will have independent internal cooling units but will be joined together and served by communal condensers in order to reduce the number and size of the external units required. All 20 apartments will be served by only 6 condenser units. The figure below demonstrates the proposed locations for these condensers on the outside of the building.



##### Lighting Systems

Lighting represents a significant portion of the annual carbon emissions of this development. In order to maximise the natural light and reduce the energy consumed in order to generate artificial light, the following energy efficiency measures have been specified:

- Energy efficient lighting specified for all areas (LEDs);
- Minimal external lighting to paths and entrances;
- Security lighting on movement sensors;
- PIR sensors in relevant zones (e.g. corridors/plant rooms/stores).

## 5. Water Efficiency Measures

### *Water Efficiency*

Low flow and flush sanitaryware will be installed throughout to reduce the need for potable water inside the apartments.

### *Rainwater Harvesting*

A simple rainwater harvesting system will be installed to reduce the potable water required for the irrigation of the communal gardens. A number of different options have been investigated ranging from simple water butts to a centralised communal pumped system.

The localised water butt system would be gravity fed by individual downpipes located throughout the gardens to ensure adequate coverage.

Alternatively a centralised communal system would collect all rainwater from roof areas, and store this in an underground buried tank in the garden. This would then be pumped and used to feed a number of taps located throughout the gardens to serve for irrigation only.

Further development of the design will determine which system is the most appropriate option for the proposed development.

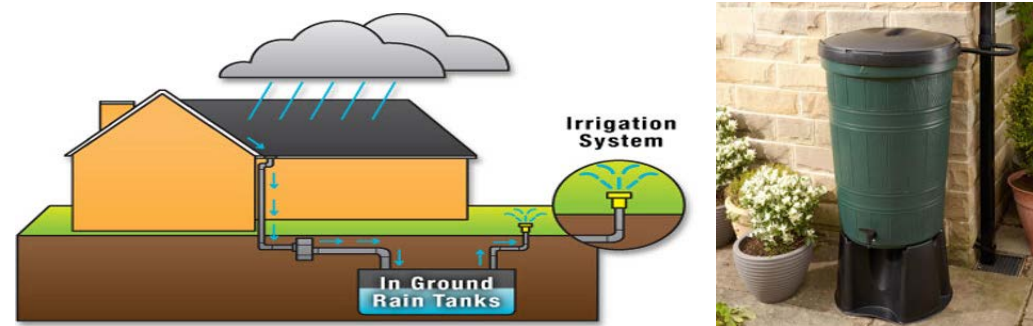


Figure 2 Examples of rainwater harvesting systems central vs localised.

## 6. Conclusion

In order for the development to achieve the required energy carbon reductions in line with planning policies and to comply with minimum energy requirements for BREEAM the proposed development must achieve:

- Improvements to the buildings overall efficiency that should constitute approximately 10% of the overall project cost.
- Developments involving the conversion of 5 or more dwellings will be expected to be designed in line with BREEAM Domestic Refurbishment
- Developments are encouraged to achieve at least 60% of the unweighted credits in the Energy and Water categories, as well as 40% of the Materials category.

The refurbishment of the development will result in new and more efficient heating plant being installed, glazing being replaced with double glazed units, improvements to fabric efficiency throughout, and water saving techniques to ensure the proposals are in line with Camden's policy requirements set out above.

A separate BREEAM Pre-Assessment has been prepared demonstrating the development targeting a level of 'Very Good' and the minimum category percentages indicated above.