

Energy and Sustainability Statement

**In support of Application for Planning Approval
To Camden Council - Ref: 2019/5783**

At

**2 Swains Lane,
Highgate
London N6 6QS**

**PBA
63 Grosvenor Street
Mayfair,
London W1K 3JG
Tel: 0797 464 5325**

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Amended – March 2021

(See explanatory notes on page 9)

1.0 INTRODUCTION

This Energy and Sustainability Statement is submitted in support of and in line with Camden's Policy CC1 for all new residential developments, to show 19% CO2 reduction below that of Part L 2013 of the Building Regulations.

In addition, it considers the principals of sustainability from the start of the design process, incorporating aspects of design as follows:

- **Site Assessments and Layout.**
- **Transport & Movement.**
- **Sustainable Energy Use.**
- **Passive Solar Design –**
 - **- Solar Photovoltaic**
 - **- Solar Water Heating**
- **Natural Daylighting.**
- **Ventilation – Natural & Mechanical.**
- **Underfloor Heating Systems.**
- **Heat Pumps.**
- **Energy Efficiency and Choice of Materials.**
- **Waste Management, Residential & Retail Unit.**
- **Minimizing Construction Waste.**

2.0 Site Assessments & Layout

- 2.1 As noted in our Design & Access Statement, the existing premises comprise a single storey retail unit at ground floor level (A1 Use Class), extending fully to the rear abutting a two storey house, the upper floor forming a two bedroom flat occupies by the owners family. The retail unit fronts onto the pavement of Swains Lane.
- 2.2 The premises as they stand are now old and long passed its best condition. Both upper parts and ground floor levels are in a poor state of repair and the flat above is well below the modern design standards of today.
- 2.3 The adjoining owner to the East at No 4, operates as a Pharmacy and has erected a small building at first floor which is used as an office and is set back 2m from the frontage.
- 2.4 The building occupies the full extent of width and depth of the site, leaving no margin for external storage or amenity area within the site boundaries.
- 2.5 It is understood that a Highways Contribution will be appropriate for this application in accordance with Local Plan Policy A1, and we note that if Planning Permission is to be granted, the site will be viewed as a Car Free Development and a 106 Agreement will be required.
- 2.6 With the various alterations taking place over the years the visual impact remains untidy, leaving a very disorderly area and wasteful use of space at the upper level.
- 2.7 The site boundary to the West abuts the Carob Tree Restaurant, with the front section given to a gated delivery access from Swains Lane.
- 2.8 It has been possible to transform a small and rather poorly utilized site, into a useful, economic and sustainable mixed development which also carries the support of the local Dartmouth Park Conservation Area.
- 2.9 As noted in our Design and Access Statement, the layout has accommodated Access for All where possible, cycle rack, storage for waste and re-cycled waste within each unit all in a very restricted site area.
- 2.10 Transport is provided almost on the doorstep with regular bus service operating in all directions.
- 2.11 In terms of amenity space, the location is within a short walk of Hampstead Heath with community facilities such as: tennis courts, playing fields and vast areas of open space.

2.12 Local shops and restaurants are close at hand.

2.13 The key objectives of the design have been to:

- To create a highly sustainable scheme.
- Create & maintain employment uses.
- Provide new residential accommodation.
- Improve the look of a very run-down street scene.

3.0 Transport & Movement, Parking & Drainage

3.1 We note that under T2 of Camden's Local Plan requires a, 'Car Free Development'.

3.2 There is a regular bus service very close by which provide access to the center of town and all other directions.

3.3 The main outfall drainage for storm and foul water will remain undisturbed, with new connections made in accordance with the new site layout.

4.0 Sustainable Energy Use in the Building

4.1 It is intended for the scheme to be provided with, 'energy efficient' condensing boilers, linked to a passive solar design to assist with the hot water supply.

4.2 It is also the intension to incorporate a Solar Photovoltaic design to contribute to the electrical energy consumption of the building. When production exceeds demand the energy will be directed to the National Grid, thus providing potential income to the occupiers.

4.3 The position of the solar panels are not yet shown on the drawings, but there is a large expanse of flat roofed area which could easily accommodate the panels. Direction to the siting of these is sort from the Planning Authority during the process of this application. – **OMITTED**

- 4.4 Fitted white goods such as: washing machines, dish washers, will be linked with efficient running times and minimum use of heating elements.
- 4.5 Lighting will be operated from movement sensors to switch off automatically when the room is unoccupied.
- 4.6 Thermostic valves will be fitted to radiators as appropriate, assuming a wet – system is chosen.
- 4.7 Consideration is given to the use of underfloor heating system, established as being energy efficient over a large surface area, again linked to the solar panel system.
- 4.8 The use of non-ventilated hot water cylinders plus the high, 'bar' pressure in this area will avoid the need for, 'power shower units'.
- 4.9 All matters regarding conservation of fuel and power will be installed to the standards **in excess** of Part L of the Building Regulations. The resulting SAPs rating will provide an indication of a carbon dioxide level of 19%, **lower** than that presently required by Part L of the Building Regulations.

5.0 **Passive Solar Design – OMITTED**

- 5.1 **Solar Photovoltaic** – it is proposed to engage this system to provide the best possible renewable energy source to the building. The conversion of the sun's rays into usable electrical energy will contribute to the energy consumption and may even assist the national grid if the production exceeds demand. In its location the panels can face towards the ideal Southern Orientation. **OMITTED**
- 5.2 **Solar Water Heating** – it is also intended for this system to pass its energy directly into the unventilated hot water cylinder, thus reducing input from the mains boiler (gas or electric to be decided), further reducing cost and carbon footprint. All these points to be discussed with the planning officer for the appropriate course of action within current Planning Policy. **OMITTED**

6.0 **Natural Daylighting**

- 6.1 Windows and sky lights have been designed to permit good natural day lighting levels evenly across the plan layout. They will be fitted with, 'trickle vents' in the heads of window frames to give natural ventilation and blinds to control some heat loss/gain as needed. The sky lights will be triple – glazed and windows will be double glazed with argon gas fill cavity.

7.0 Ventilation – Natural & Mechanical

- 7.1 **Natural** – Trickle vent fitted to heads of all windows to give 4000m² of free air passage. Windows will be openable with controlled stays & fasteners.
- 7.2 **Mechanical Ventilation** – Air circulation is to be provided by a: fan assisted, air inlet and extract system, which takes the fresh air from outside and passes it through a small air filter. The incoming fresh air is circulated via ducting in the ceiling void of the shop area and exhausted to the opposite end of the building and out to the fresh air. The systems provide a silent and efficient means of ventilation to stale air, having hardly any moving parts and using very little energy.

8.0 Underfloor Heating System

- 8.1 In view of the small scale of the residential part of this scheme, it is considered both efficient and prudent in spatial terms to consider an underfloor system whether water matrix or electric mat type.
- 8.2 The large heated floor area provides an even and efficient distribution of warm air circulation and avoids the spatial intrusion of radiators in the confines of a small domestic layout.
- 8.3 Further consideration to the actual type of heating to be used will be given at the technical design stage, suffice to say it will be the most energy efficient at this small domestic/commercial level.

9.0 Heat Pumps - OMITTED

- 9.1 A number of heat pump systems have been considered, ranging from taking heat from the ground, water or air. In this location, it was found that the latter (air), is the only really practical form we can consider.
- 9.2 The intention is to install an air source system placed at a suitable point on the flat roof, which will operate on the same principle as a refrigerator, but will extract heat from the outside air, directing it inside as needed.
- 9.3 They are clean, efficient and cheap to run. **OMITTED**

10.0 Energy and Efficiency of Material Choice

- 10.1 As stated in the BRE Green Guide to Specification, materials have been chosen for their properties rated A in terms of durability, insulation values, local availability etc. It is noted that undue travel distances for the delivery of materials should be avoided, appropriateness to the local built environment is important and to maintain conformity to the planning policy for the area.
- 10.2 The external fabric of the building will be cavity wall construction, comprising a face brick outer skin, 125mm high performance fully filled cavity Jabfill insulation, 100mm aerated concrete inner block with plaster dabs and skim finish, to give U value of .14, and in excess of Part L requirement.
- 10.3 The ground floor construction will comprise: a reinforced over site concrete slab, dmp, 120mm thick Kingspan TF70 insulation, 100 s/c screed and chosen floor finish to give in excess of .11 U value.
- 10.4 Intermediate floors: reinforced concrete with 70mm sound block insulation, 70mm floor screed to comply with Building Regulations.
- 10.5 Flat roof: reinforced concrete floor, 60mm Kingspan OPTIM – R insulation board to give .007w/m, 3 layer, hot rolled bituminous felt with solar reflective top layer.
- 10.6 Upper front elevation: outer face of insulated, colour – coated aluminium sheeting on 22mm wpb ply boards, on 150mm treated timber framing, 150mm Kingspan wall boards, vapour barrier with inner skin of 25mm insulated gypsum wall board and skim finish, giving well below Part L requirements.
- 10.7 All the above materials are within easy reach of the site.

11.0 Waste Management – Residential & Retail Unit

11.1 Adequate space for recycling and non – recycling waste is accounted for in the design layout for the retail unit on the ground floor and proposed residential accommodation above.

11.2 In accordance with Camden’s Refuse Collection Policy, specially coloured bags are issued separating re-cyclable and non – recyclable waste which are to be put out on the adjacent pavement area on collection days.

12.0 Minimizing Construction Waste

12.1 Due to the advanced age of the property, it is unlikely that a significant amount of existing construction material will be re-usable, however, some roof tiles may have survived, roof timbers and timber joists could be taken to the second hand building materials depot instead of the land fill site. Broken items of masonry can, perhaps be stored on site for reuse as hard core fill as base material under ground floor slab, or as a base under new foundations. Instructions regarding this will be issued to the contractor when the construction phase is reached. All waste will be deposited at a locally registered waste management site.

12.2 It may also be noted that the adjoining wall to the left, (facing the building from the road), is in fact, a Party Wall between Nos 2 & 4. This wall will have to be maintained and possibly under pinned so work to the foundations at this point will be specialized.

12.3 The foundations to the rhs may prove to be adequate and therefore save unnecessary excavation and removal of earth.

12.4 The foundations to the front and rear elevations will also be checked for adequacy and reused if possible.

13.0 Summary

- 13.1 It is the intension of this report to provide a review of the proposed development in context, highlighting the relevant sustainable criteria all in accordance with, Camden's 'Sustainability Guidelines' wherever possible.
- 13.2 The details incorporated will provide the 19% CO2 reduction required which is below the standard notes in Part L of the Building Regulations.
- 13.3 Clearly some aspects of sustainability are not relevant to this proposal, or not achievable due to local conditions or site restraints. One such issue is the very tight and restricted space of this site, the close proximity to other properties and narrow pavement to the roadside on Swains Lane.
- 13.4 The appraisal has identified a number of, sustainable elements within the design layout, which illustrate the commitment to sustainability from the design team and the owner.

**Peter Brown BSC Hons Arch Dip Arch ARIBA
P B A,
63 Grosvenor Street,
Mayfair,
London W1K 3JG**

- 14.1 At the outset, the spatial restrictions presented to us on this site and close proximity to other shops and offices, has made it very difficult to accommodate large areas of plant and equipment.
- 14.2 To this end it has been decided to omit the installation of the ASHP units.
- 14.3 The choice we have made is a simple & efficient system of air **inlet** and filtered **extract** which will provide an adequate passage of air flow within the shop. It will be housed within the ceiling space and will be silent, unobtrusive, with low cost, little maintenance and very low carbon emissions.
- 14.4 The shop is well frequented at most times during the day, forming a constant flow of foot traffic in & out. The air extract system will balance the ventilation created by the continuous opening and closing of doors and people movement and help to maintain a controlled environment throughout its daily usage.
- 14.5 The provision of solar panels has also proved a difficult item to incorporate and has been omitted. The choice of the flat roof design is the right look for this particular location, but presents difficulties in siting the panels without them looking very unsightly to the surrounding area.
- 14.6 In all other respects, the design is heavily biased towards high levels of insulation, efficient heating systems, thermostatic controls to heating and hot water & treble glazed window units, all adding up to an efficient, low emissions conscious system.
- 14.7 Having worked through the many aspects of design on this site, with its considerable spatial restrictions, we consider that the omission of these two items is the most feasible and practical solution for this design.

End

