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26 King's Mews
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Sabbadin Corti.

Energy and Sustainability Statement

26 & 27 King's Mews

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RIBA
Chartered Practice

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1.0 Introduction

1.1 The Project

This Energy and Sustainability Statement has been prepared by Sabbadin Corti Limited on behalf of the owners of 26 King's Mews, in support of a Planning Application for the demolition of the existing office/warehouse at 26 King's Mews, erection of part three, part four-storey office building with basement, and amalgamation with the existing office building at 27 King's Mews, in the London Borough of Camden.

The proposal is prepared in response to the client brief, in line with national, regional and local planning policy. The design of the proposals has been carefully considered regarding townscape, materials and architectural language to integrate with the character of the existing surrounding context. The design looks to create a functional, well utilised commercial space that is a positive and sensitive addition to the street and the overall surrounding area.

1.0 Introduction

1.2 Energy Strategy Summary

Be lean measures have been optimised for the proposed development including a façade that optimises the building envelope performance minimising unwanted infiltration, heat gains, and heat losses. It has been carefully designed to minimise the effect of thermal bridges including the use of high performance thermal breaks where feasible. Enhanced U-values, acoustic and thermal insulation will be incorporated with high thermally rated windows.

Natural daylighting has been achieved through glazing provision whilst balanced with minimising unwanted solar gain during summer months. This will improve occupancy comfort and reduce the requirement for lighting. Low energy lighting and associated smart controls will be provided.

Mechanical ventilation incorporating high efficiency heat recovery ventilation will be used throughout and controlled with thermostats in every room to optimise for energy consumption.

The development will also be provided with a PV array to reduce the energy consumption of the building and generate on site renewable energy. Additionally, a Green Tariff energy source will be selected.

1.0 Introduction

1.3 Sustainability Strategy Summary

This section summarises the Sustainability Strategy for the Proposed Development which has been informed by national, regional and local policies – that is, Building Regulations Part L, the Greater London Authority (GLA) London Plan (2021), the London supplementary planning guidance (SPG) on Sustainable Design and Construction (2014) and Camden Local Plan (2017).

Healthy workplace
The Proposed Development aspires to create healthy and safe workplaces which enhance wellbeing through designing the building to enable good levels of internal daylight levels, thermal comfort, access to external amenity areas, safety and security. Measures to encourage physical exercise such as a new gym space on the lower ground floor and the provision of additional cycling parking spaces have been implemented. Additional security measures will be put in place, and external lighting will be designed to minimise night-time light pollution and provide safe access to the Proposed Development.

Enhancing the environment
The Proposed Development will introduce additional planting where possible. All timber used in the scheme will be FSC, sourced from sustainable forests wherever possible. All materials will be min. B-rated in accordance with the BRE Green Guide to Specification. Where new materials are to be specified, minimising the embodied carbon of these materials is a target for the project. This will be achieved through maximising the % of recycled content within material specifications and selection of low carbon alternatives wherever possible.

Helping the environment
A building that is truly sustainable must be constructed using locally sourced, sustainable materials, materials that can be supplied without any adverse effect on the environment. Therefore, where practical, materials should be sourced from local suppliers, reducing the environmental impacts and CO_2 emissions associated with transportation to the site.

Designed for performance
As part of the Proposed Development delivering high quality, sustainable design and construction, the Proposed Development will be resilient and promote sustainable living. A Travel Plan will be developed; which will set out targets and measures for promoting sustainable transport by the occupants – including walking, cycling and public transport.

2.0 Local and National Policies

2.1 Camden Local Plan

In line with policies CC 1 and CC 2, the Council will require the development to incorporate sustainable design and construction measures.

Policy CC 1 Climate Change Mitigation

The Council will require all development to minimise the effects of climate change and encourage all developments to meet the highest feasible environmental standards that are financially viable during construction and occupation.

We will reduce carbon dioxide emissions through following the steps in the energy hierarchy. This will be achieved by taking passive design measures, selecting excellent performing new fabric, having energy efficient services and renewable energy generation.

We will minimise the need to travel by car and promote public transport thanks to the highly accessible location of the development and the mix of land uses in the surrounding area.

Policy CC 2 Adapting to Climate Change

The Council will require development to be resilient to climate change

All development should adopt appropriate climate change adaptation measures such as:

1. The protection of existing green spaces and promoting new appropriate green infrastructure
1. Not increasing, and wherever possible reducing, surface water runoff through increasing permeable surfaces and use of Sustainable Drainage Systems
2. Incorporating bio diverse roofs, combination green and blue roofs and green walls where appropriate and
3. Measures to reduce the impact of urban and dwelling overheating, including application of the cooling hierarchy

A blue roof is proposed, increasing the area of permeable surface and mitigating flood risk.

We will minimise internal heat generation and reduce heat absorption through high performing walls, roofs and fenestration.

2.0 Local and National Policies

2.2 National Policy

Building Regulations: Approved Document Part L

Approved Document Part L (2021 edition incorporating 2023 amendments), is the Building Regulation relating to the conservation of fuel and power in buildings. It has two parts, Part L1 relates to dwellings and Part L2 relates to buildings other than dwellings. The development will be assessed under Part L2.

Part L of the Building Regulations is the mechanism by which the government is driving reductions in the regulated CO_2 emissions from refurbished, change of use and new buildings. For new buildings, Approved Document Part L has four performance metrics as follows:

– Primary energy target
– $C0_2$ emissions target
– Fabric Energy Efficiency (FEE) target
– Minimum standards for fabric and fixed building services

3.0 Energy Strategy

3.1 GLA Energy Hierarchy Be Lean

Be Lean: Use less energy

Achieving a harmonious equilibrium between heat retention, internal heat generation, and effective heat dissipation is essential for any development. Given that the building fabric significantly influences the overall energy assessment and performance, a recommended enhancement involves upgrading the thermal strategy. This entails optimizing Part L2 fabric parameters wherever feasible, as illustrated in the table below.

Roof	0.18 W/(m^2 K)
Wall	0.16 W/(m^2 K)
Floor	0.18 W/(m^2 K)
Windows	1.6 W/(m^2 K)
Doors	1.6 W/(m^2 K)
Entrance Door	3.0 W/(m^2 K)
Air Permeability	8.0 m^3/(h m^2)

Table 1. Current Part L2

Strategies for Energy-Efficient Design

1. Implementing appropriately sized windows to maximize daylight while mitigating excessive solar gain and heat loss.
2. Employing top-tier building fabric.
3. Maintaining a design air permeability rate of 8.0 m^3/(h m^2) across all floors.
4. Thoughtfully designing to minimize the impact of non-repeating thermal bridges, incorporating high-performance thermal breaks when applicable.
5. Installing lighting systems with a luminous efficacy of at least 45 lamp-lumens/watt (equivalent to an “A” rating) in most areas.
6. Incorporating automatic controls with occupancy and daylight sensors for lighting in a majority of spaces.
7. Implementing mechanical ventilation systems with heat recovery on every floor.

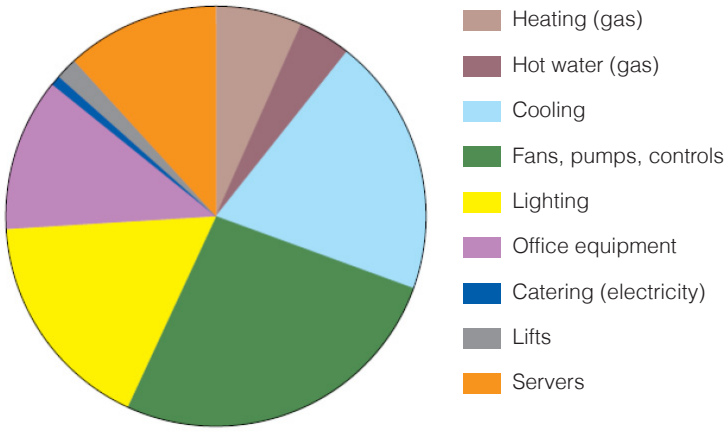
3.0 Energy Strategy

3.2 GLA Energy Hierarchy Be Clean

Be Clean: Supply energy efficiently

The “Be Clean” segment delves into the efficient use of energy by adopting methods that conserve energy when supplying services to the building, such as hot water and ventilation. The proposed strategy for the development is outlined below.

Heating and Hot Water	Ventilation
Highly efficient heat pump technology, which will provide heating and cooling to the new units.	To minimise unnecessary heat loss trhrough ventilation, it is proposed that a Mechanical Ventilation Heat Recovery (MVHR) system is utilised, achieving high thermal efficiency of minimum 80% while maintaining a low energy consumption with Specific Fan Power (SFP) not exceeding 1.9W/ls (SAP 2012)
Hot Watter Supplied with Electric point of use	
Time and Temperature Zone Control Delayed Start Thermostat	All ductwork shall be insulated where necessary to prevent unwanted heat gain / loss.



Average Energy Use Breakdown On An Office Building (CIBSE TM 54)

3.0 Energy Strategy

3.3 GLA Energy Hierarchy Be Green

Be Green: Use renewable energy

The “Be Green” segment assesses various technologies aligned with The London Renewable Toolkit for consideration in new developments. The selection of the most viable method involves evaluating renewable technologies to ascertain their potential in meeting the development’s renewable targets.

Technology	Viability	Ventilation
Solar (Photovoltaic)		There is space to install photovoltaic panels on the roof. The system will provide renewable energy to all the floors.
Solar Thermal (Hot Water)		As with the photovoltaic panels, there is potential to install a small solar thermal array to the roof to provide hot water to the new offices.
Wind Turbine		Due to the location, the uneven and turbulent wind patterns that can be expected to occur near buildings, the effective operational time is likely to be limited. Additionally due to noise, vibration, reflected light and shadow flicker it is not best practice to locate in close proximity to residential areas.
Biomass		Biomass technology could potentially offer a solution to satisfying heating and hot water loads to the project. However, it has been discounted as there is no space allocation for the pellets on site.
Combined Heat and Power		A small, centralised CHP could provide a good level of CO_2 reduction. However, initial studies found an inadequate heating and electrical demand within the scheme to justify a CHP system.
Air Source Heat Pump (Cooling)		Air Source Heat Pumps could be installed to future proof the units and provide efficient cooling. The system will need to be A rated and should have a COP at no less than 3.5. Rooftop plant room is available for condenser units.
Ground Source Heat Pump		The use of horizontal ground source heat pumps is inhibited because of the areas required for the horizontal ground loop system. The site would also be difficult to accommodate both a vertical borehole system or plateau setup, in regards to safe working area and lack of open available space. Ground Source Heat Pumps have therefore been discounted based on these potential constrains.

4.0 Sustainability Strategy

4.1 Sustainable Measures

Sustainable Timber Sourcing
All timber utilized for fundamental or finishing building elements within the project will be procured from responsibly managed and sustainable forests or plantations. Such timber products stand out as the sole genuinely renewable construction material commonly employed, as growing trees not only provides an ongoing source but also absorbs and fixes CO_2. Forests additionally serve as crucial habitats for a diverse array of plant and animal life, preserving essential ecology and fostering biodiversity.

Local Material Procurement
For genuine sustainability, construction should prioritize locally sourced, sustainable materials, those that can be obtained without causing adverse environmental effects. Hence, wherever feasible, materials should be acquired from nearby suppliers, thereby diminishing the environmental impacts and CO_2 emissions linked to transportation to the site.

Reuse and Recycling Initiative
The incorporation of increased recycling opportunities involves specifying recycled materials whenever possible, ensuring that, even when new materials are used, the maximum recyclability is considered at the end of the buildings' lifespan. Any surplus material from the original construction can be recycled and repurposed as aggregate. Opting for materials with high recycled content also contributes to saving processing or manufacturing energy, with such content categorized as either post-consumer or post-industrial, indicating the stage at which a material is reclaimed in its life cycle.

Lifecycle Assessment Methodology
A comprehensive Life Cycle Assessment serves as a tool for evaluating the environmental impacts of a product, process, or service throughout its entire lifecycle, from design to disposal. This assessment will be conducted during the technical design stage.

Climate Change Adaptation
The new building will undergo assessment using the CIBSE TM 52 Design Methodology for the Assessment of Overheating Risk in European Buildings. This approach allows the design team to evaluate overheating risks and devise a strategy for future adaptation to climate change.

Climate Change Mitigation
The development will employ low-carbon technologies such as heat pumps, Mechanical Ventilation with Heat Recovery (MVHR), and renewable technologies. This strategy ensures future-proofing and actively contributes to the mitigation of climate change.

Biodiversity Enhancement
Roof planters will not only improve aesthetics but also create a healthier and more natural habitat contributing to the wellbeing of the people using the outdoor spaces. Beyond providing greener spaces, the installation of a blue roof will bolster thermal mass, safeguarding units from overheating (acting as a natural heatsink). Additionally, the blue roof will facilitate natural sustainable drainage treatment, diverting the initial rainfall away from the main drainage system, thereby reducing flood risks.

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