SUSTAINABILITY & ENERGY STATEMENT

Proposed new dwelling:
Land adjacent to 36 Hampton Park, Cotham, Bristol, BS6 6LH

Statement and Part LA calculations prepared by:

[redacted]
Energy Saving Experts Ltd

[redacted]

1/ Introduction

The aim of this Energy Statement is to demonstrate compliance with the requirements of Bristol Development Framework Core Strategy - Policies BCS 13-16 as applicable.
In respect of each of the issues in BCS 13-16, this Sustainability Statement sets out what possible measures have been explored, which measures have been adopted and integrated into the design and, where relevant, why it was not feasible to incorporate certain measures into the proposed development.

The proposed is a new dwelling at Land adjacent to 36 Hampton Park, Cotham, Bristol, BS6 6LH. This Statement and calculations have been completed in line with Part L 2021 and the requirements of the BCS as above.

Please refer to the Application drawings submitted with the planning application.

2/ Building Regulations

No Building Regulations submission has been made in respect of the proposed development.
Important Notice:
This Statement and accompanying SAP calculations are for the purpose of a Planning Application ONLY and must not be used for Building Regulations purposes. We accept no responsibility for errors arising if these calculations and statement content is used for Building Regulations compliance.

Part L Calculation – Methodology

The building was assessed using SAP to establish a baseline energy use and CO2 emissions, the Notional Building, and to determine the same for the Proposed Building. The Proposed must be lower than the Notional to demonstrate a pass. In addition, to satisfy BCS requirements, normally a minimum of 20% additional CO2 savings should be met through on-site renewables.

SAP was also used to calculate the additional 20% reduction from on-site renewables.

3/ BSC13 – Climate Change

Requires the development to both mitigate and adapt to climate change.
Renewables
A small solar PV array was proposed on the flat green roof.

EV charging
Due to no off-street parking EV charging is not proposed.

Ventilation
The ventilation strategy for the building is for MVHR with openable roof windows for summer cross ventilation.

Heat Network
The proposed site is outside of the city heat networks.

Urban Heat Island
In terms of green space and reducing urban heat islands, the proposed site has its own green space and a green roof.

CO2 emissions in the building will improve upon the minimum requirements of the Building Regulations.

4/ Bristol Development Framework Core Strategy

BSC14 – Sustainable Energy
Provides criteria for assessing new renewable energy schemes. Requires new development to minimise its energy requirements and then incorporate an element of renewable energy to reduce its CO2 emissions by a further 20%.

The following hierarchy has been adopted.
1. Minimising energy requirements.
2. Incorporating renewable energy sources.
3. Incorporating low-carbon energy sources

Orientation
The proposed building is as the existing site constraints and is orientated on a E/W axis, making use of the current site boundaries.

Thermal Elements
All new thermal elements will be insulated to meet current Regulations.

The external walls are cavity construction with a u value of 0.14.

The roofs are a u value of 0.15.

The solid ground floor will have a u value of 0.13.

Doors and windows will be double glazed with a u value of 1.2, rooflights 1.3

Daylight
There is adequate daylight into the building via the proposed windows and doors.

Solar Shading
Additional solar shading is not required, no overheating risk has been identified.

Thermal Bridges
The new thermal elements will be designed to mitigate thermal bridges.

Air Tightness
Air testing is targeted at 3.0

Selection of heating systems
Heating and cooling systems are selected in accordance with the heat hierarchy set out in policy BCS14.

Combined heat and power
CHP requires substantial demand for heat and appropriate demand for power to be viable and in this building this would not be so.

District Heating
Policy BCS14 requires that within Heat Priority Areas (as identified in the Core Strategy), major developments connect to existing heat networks where available. Where a network is not available major developments within Heat Priority Areas should incorporate infrastructure to connect to district heating networks in the future where feasible.
The proposed is not within any of the existing or planned city centre district heating networks although it is within the heat priority area. The development is under 1000m2 TFA (67m2) and therefore not a major development requiring connection to the heat network.

Mechanical & Electrical Services
The proposed heating is by an ASHP to radiators and underfloor heating.

The heating and hot water will include control systems appropriate to the system.

Ventilation will be MVHR with a summer bypass.

Lighting is 100% LED low energy.

See Appendix 1 – Standard Template for Energy Strategies for further details of energy and co2 emissions reduction.

Renewable Energy
Solar PV
A solar PV system is proposed maximising the flat green roof slope of approximately 1.5 kWp consisting of 3 x 500W panels.

Solar Thermal
Solar thermal is possible; however, however a solar PV, if added, would have a wider benefit from the limited roof space than solar thermal. Therefore, solar thermal is not proposed.

Heat Pumps
A heat pump is proposed.

Biomass
A biomass boiler is not practical for this small size of house due to fuel storage considerations.

Wind
A wind turbine would not be appropriate for this building to due to the possible turbulence experience din an urban environment, and the ack of an appropriate average annual wind speed.

Allowable Solutions
There are no further technologies considered to contribute from allowable solutions.

5/ BSC15 – Sustainable Design and Construction
Requires all development to engage with issues around sustainable design and construction.

Waste and recycling
The proposed will have internal/external waste & recycling provision.

If required, there will be a Construction Site Waste Management plan followed during construction work, and recycling of materials identified and reused where possible. Demolition of existing structures are mainly internal divisions and the existing roof.

A policy of monitoring and diverting from landfill will be adopted throughout the construction period. There is adequate site space to store materials before disposal.

Water
There will be low flush toilets and low flow showers, with an internal water use target of 125 ltrs/pp/day.

Materials
All new Materials will be Green Guide Rated.

Flexibility and adaptability
The proposed building will unlikely be suitable non ambient persons due to its internal layouts.

Green Infrastructure
Biodiversity -There may be some ecological value to the existing site, however, a survey has not been undertaken.

Surface water run-off will be managed by appropriately designed rainwater attenuation to be included at detail design.

Green roof is proposed.

Bird and bat boxes, where appropriate may be mounted to the rear of the property.

ICT
The building will have the provision of high-speed broadband access should the final design determine it necessary.

Sustainability Standards
There are no additional standards sought.

6/ BSC16 – Flood Risk and Water Management
Principally addresses the issues around development in a flood risk area but also require all development to include water management measures to reduce surface water run-off.

According to the Gov.uk website there is a very low risk of flooding from surface water and rivers

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04/11/25

Summary Table

1.1.1. No district Heat connection

The summary table should be supported by a written explanation of the measures proposed and a full set of calculations as set out under "Detailed Measures" below. Where relevant, the proposed measures should also be shown on the application drawings.

	Regulated Energy Demand (MWhr/yr)	**Regulated CO2 emissions (tonnes/yr)**	**CO2 saved (tonnes/yr)**	**% CO2 reduction**
Baseline Part L TER	3.39	0.932		
Proposed scheme after energy efficiency measures	2.858	0.418	0.514	55.1%
Residual Emissions Proposed scheme after energy efficiency measures and CHP (if using)	n/a	n/a	n/a	n/a
Proposed scheme after on site renewables	1.717	0.274	0.144	34.4%
Total CO2 reduction beyond Part TER		0.274	0.658	70.6%

1.2.1 Residential energy efficiency table

Notional Building TER without PV (kg/CO2/m2)	Emissions for the proposed building with energy efficiency alone (kg/CO2/m2)
13.81	6.2

1.2.3 Energy efficiency measures

Provide a summary table of U values taken from the SAP /SBEM calculations:

	Part L Values (2021)

Element or System	**Dwellings New**	**Proposed New**
Wall	0.18	0.14
Roof	0.15	0.15
Floor	0.18	0.13
Windows /Doors	1.4	1.2
Permeability	8.0	3.0

Provide a description of the proposed heating system unless it is CHP, connection to district heating or renewable.

The proposed model of ASHP is to be confirmed, however for the purposes of this submission a Vaillant 3.5kW Arotherm has been input.

1.2.5 On-site renewables

Set out what renewable energy sources have been incorporated into the proposed development and the resulting estimated annual yield (kWh).
This can include emission savings from the use of renewable fuels to power CHP.

Renewable electricity – enter the total installed capacity (kW)	1.5 kWp
Renewable electricity – enter the estimated annual yield (kWh) from renewable. measures generating electricity. (Where available apply recognised standard methodologies such as the Microgeneration Certification Scheme (MCS) methodology for Solar PV)	1140 kWh
Renewable heat – enter the total installed capacity (kW)	3.5 kW
Renewable heat – enter the estimated annual yield (kWh) from renewable. measures generating heat	902 kWh

1.2.6 Allowable solutions

Where the full requirements of policy BCS14 cannot feasibly delivered on-site, and an alternative approach has been agreed with the planning authority, set out any further savings that will be achieved together with a description of the agreed allowable solution.

Additional saving on residual emissions from allowable solutions (kgCO2 pa)	n/a
Total savings on residual emissions from renewables and allowable solutions (%)	n/a

[redacted]

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SAP reports for the proposed, and proposed with renewables (For DER/TER CO2 emissions and kWh figures only – For planning purposes only, NOT to be used for Building Regs compliance)