

SUSTAINABILITY STATEMENT

**NEW DWELLING
ON LAND TO THE REAR OF
235 HILLSIDE ROAD
ST GEORGE
BRISTOL
BS5 7PX**

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BS5 7PX**

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SUSTAINABILITY STATEMENT

Introduction

With reference to the Bristol Development Framework Core Strategy, regarding climate change and sustainability, the proposed scheme, where practicable, will accord with the policies listed below :

- BCS13 : Climate Change
- BCS14 : Sustainable Energy
- BCS15 : Sustainable Design and Construction
- BCS16 : Flood Risk and Water Management

When applying these policies, consideration will be *proportionate to the scale of the development* and will, therefore, be tailored accordingly. Consequently, this statement and the SAP ratings, Appendix B refers, will attempt to ascertain whether carbon emissions can, albeit theoretically, be reduced by at least 20%, over and above that required by Building Regulations, by increasing the thermal efficiency of the insulation, where possible, and providing renewable energy. This will be governed by the constraints of the premises, currently available materials and the type of air source heat pumps installed.

Policy BCS13 : Climate Change

Requires the development to both mitigate and adapt to climate change.

To comply with the policy, the development will :

- use optimal levels of thermal insulation
- provide passive ventilation by way of the new window openings
- encourage walking and the use of public transport. Cycling is not being considered at this time due to site constraints, and the site being within easy walking distance of the local amenities.

By improving the thermal characteristics of the building envelope will lead, by design, to a consequent reduction in the carbon emissions.

Policy BCS14 : Sustainable Energy

Sets out the requirement for the development to minimize its energy requirements and incorporate renewable and low-carbon energy supplies to reduce its carbon dioxide (CO₂) emissions.

1. Energy Strategy

The policy requires the provision of detailed calculations in support of this statement. This has been achieved by using the Standard Assessment Procedure (SAP) to calculate existing and predicted energy and emissions savings. Although the development will be insulated, in accordance with current Building Regulations requirements, air source heat pumps will be introduced to reduce the carbon footprint. This has been summarized below, using the modified standard template (Appendix 1 : Standard templates for Energy Strategies) of the Bristol City Council Climate Change and Sustainability Practice Note 2013.

1.0 Energy Summary Table

	Regulated Energy Demand (kW/yr)	Regulated CO2 emissions (kgCO2/yr)	CO2 saved	% CO2 reduction
Baseline energy demand and emissions Building Regulations Part L compliance (equivalent to the Target Emissions Rate TER for new build, or building regulations compliant BER for existing buildings)	6828	1607		
Proposed scheme after energy efficiency measures	6623	1559	48	2.99
Proposed scheme after energy efficiency measures and CHP (if suitable for the development) or non-renewable district heating – 'residual emissions'	-	-	-	-
Proposed scheme after renewables	2328	1208	351	22.51
Total CO2 reduction beyond baseline emissions			399	24.82

2. Detailed Measures

2.1 Energy efficiency measures

	Part L Values (2013 - or most current)				
Element or System	Dwellings Lower	Dwellings Notional	Non-Dwellings Lower	Non-Dwellings Notional	Proposed
Wall	0.3	0.3	N/A	N/A	0.17
Roof	0.2	0.2	N/A	N/A	0.11
Floor	0.25	0.25	N/A	N/A	0.15
Windows/Doors	2.00	2.00	N/A	N/A	1.60
Permeability	N/A	N/A	N/A	N/A	N/A

Proposed heating system will be by way of an electrically operated boiler.

2.2 On-site CHP and connection to off-site district heating

Not under consideration, at this time.

2.3 On-site renewables

The heating and hot water will be an electrical combination boiler and radiators. Radiators to be controlled with TRV's.

Renewable power – enter the total installed capacity (kW)	4.25
Renewable power – enter the estimated annual yield (kWh) from renewable measures generating electricity	3455
Renewable heat – enter the total installed capacity (kW)	N/A

2.4 Allowable solutions

No allowable solutions are proposed

Additional saving on residual emissions from allowable solutions (kgCO ₂ pa)	N/A
Total savings on residual emissions from renewables and allowable solutions (%)	N/A

BCS15 : Sustainable Design and Construction

This part of the policy, aimed at all major and super-major developments, requires a BREEAM and/or Code for Sustainable Homes to have been submitted as a major part of the Sustainability Statement.

Waste and Recycling

Refuse storage and recycling will be within the site. Please refer to Appendix for details.

Water

Water efficiency

Toilets will be fitted with dual action flushes whilst the kitchen sink, bath and washbasin will be fitted with aerated taps to reduce water flow to 8 litres/minute.

BREEAM and/or Code for Sustainable Homes

Some of the measures contained in the Code for Sustainable Homes, despite the size of development under consideration, will be adopted to minimize environmental impacts in an effort to improve the conversion from offices to residential.

Category 1 : Energy and Carbon Dioxide Emissions

Dwelling Emission Rate

CO₂ dwelling emission has been calculated in accordance with SAP2012 to show that the emissions rate is no greater than the projected figure.

Internal Lighting

100% of low energy fittings will be used to minimize energy consumption.

External Lighting

Any burglar security lighting installed will have a maximum wattage of 150W and be fitted with movement detecting shut off (PIR) and daylight cut off devices. All other security lighting will be Dawn 'til' Dusk.

Low or Zero Carbon (LZC) Technologies

It is proposed to install photovoltaic panels on the west facing roof slope to produce a minimum of 20% of the total energy demand.

Category 2 : Water*Internal Water Use*

WC's already fitted with dual flush.

Taps to the wash hand basins, bathroom sink, and kitchen sink to be fitted with flow restrictors.

Category 3 : Materials

In accordance with Approved Document Part L1B

Category 4 : Surface Water Run-off*Management of Surface Water Run-off from developments*

Provision of water butt(s) will be provided, if practicable.

Flood Risk

This site is in Flood Zone 1.

Category 5 : Pollution*Global Warming Potential (GWP) of Insulants*

Not applicable

NOx Emissions

Primary water and space heating will be through use of an electrical combination boiler and radiators.

Category 6 : Health & Wellbeing*Daylighting*

Daylighting conforms to average daylight factor.

Category 7 : Management

Common sense will prevail in the appropriate use of the dwelling.

All works will be constructed in a considerate manner with regards to the environment.

APPENDIX

B&Q Cycle Storage

Product Information

This Store it out ultra plastic bike store is ideal for securely storing bicycles, wheelie bins and general outdoor items.

- Maximum volume capacity - 2000 L
- Locking mechanism - Combined door and lid bolt (lock sold separately)
- 1 year B&Q Guarantee

Features and Benefits

- Comes with: Lockable door bolt (padlock not included) & lid lifters for wheelie bin storage
- Piston-operated lid for easy opening and closure. Lid-to-lid chain for hands free bin opening.
- This bike store is supplied with comprehensive fitting instructions and fixings provided. 2 people required to build this bike store
- We recommend that bike stores are sited on pre-laid, level, solid and dry ground, with a foundation of either a wooden base, concrete or paving to give a stable and even footing.
- Accommodates two adults and two children's bikes, or two wheelie bins
- The dimensions given refer to the external dimensions of the product unless otherwise stated.

Technical Specifications

Height (mm)	1340mm
Width (mm)	1770mm
Depth (mm)	1130mm
Material	Polypropylene
Colour description	Beige & brown
Locking mechanism	Combined door and lid bolt (lock sold separately)
Roof Design	Barrel
Fixings supplied	Fixings supplied
Weight (g)	41500g
Assembly required	Assembly required



B&Q Bin Storage

Product Information

This Store it out arc plastic garden storage box is ideal for storing and protecting garden essentials.

- Maximum volume capacity - 1200 L
- Locking mechanism - Padlock-ready door bolt for added security
- 1 year B&Q Guarantee

Features and Benefits

- Can accommodate two 240L council wheelie bins which are easy to access with double doors and piston-operated lid for a smooth opening
- This garden storage box is supplied with comprehensive fitting instructions and fixings provided. 2 people required to build this garden storage box
- We recommend that garden storage boxes are sited on pre-laid, level, solid and dry ground, with a foundation of either a wooden base, concrete or paving to give a stable and even footing.
- The dimensions given refer to the external dimensions of the product unless otherwise stated.

Technical Specifications

Height (mm)	1200mm
Width (mm)	1460mm
Depth (mm)	820mm
Material	Plastic
Colour description	Grey brown
Locking mechanism	Padlock-ready door bolt for added security
Fixings supplied	Fixings supplied
Assembly required	Assembly required

