STATEMENT ON ENERGY

This Statement on Energy analyses the energy and CO2 savings that can be achieved by utilising energy efficient design, practice and technologies from the outset of a proposed development. This form should be completed by a registered SAP assessor (for domestic) or Low carbon energy assessor (for non-domestic). This form is for planning applications **submitted after 1 September 2018**.

A. Sustainability level to be achieved

Option 1 Gold Hybrid (●) Option 2 Nearly Zero Emissions ( ) Option 3 Net-Zero Carbon ( )

B. Planning Application Number and Summary of Development

Student residential development at 249 West George St, which comprises 147 studio flats as well as communal areas, a gym and a laundry.

C. Energy Efficient Design Measures

Please explain the key energy efficient design features, including materials.

-U-Values for all fabric elements will be lower than the Section 6 Maximum U-values.
-The site will be fully electric. Heating will be supplied via direct electric heaters and Air Source Heat Pumps will provide all Domestic Hot Water.
-200m2 of Photovoltaic panels will be installed on the roof of the block.
-Energy efficient lighting throughout.

D. Energy Efficiency Measures

Please explain the measures utilised (e.g. BMS, smart meters, controls, specification, etc.)

As each Studio will have a direct electric heater, programmers will allow independent temperature control of the space.

E. Decentralised Heat

Is there an existing or proposed decentralised heat network in this area?	YES ☐	NO ☑
If yes, will the development link to the decentralised heat network?	YES ☐	NO ☑

If the development will not link in to an existing or proposed decentralised heat network please explain why below:

There are no communal Heat Networks within close proximity to the site or currently proposed, therefore it has been concluded that it is not viable to connect to a heat network.

If there is no proposed or existing decentralised heat network available, will the development install its own decentralised heat network?	YES ☐	NO ☑

If yes, please describe the proposed network below:

If no, please explain why not below:

The scale of the development is not suitable.

What is the main heating source? Electricity

F. Low and Zero Carbon Generating Technologies (LZCGT): Proposed Technologies

Please tick chosen LZCGT:

Photovoltaics	✔	Solar thermal		Geothermal	
Micro-wind		Air source heat pump	✔	Biomass	
Micro-hydro		Ground source heat pump		CHP	
Fuel cells		Water source heat pump		Heat Exchange & Recovery Systems	
Other (please name)					

Please explain why this is the most appropriate LZCGT for the development including reference to: design considerations (see SG1: Placemaking); size of the scheme; expected output in energy consumption (kWh per year); carbon emissions savings when compared with non-renewable energy source (tonnes of CO2 per year); and its location in relation to other buildings on-site and any sensitive receptors on or off-site.

Various LZCGTs were considered, taking into account the amount of space required, lack of heating demand during the summer months, potential noise issues and close proximity to other buildings

-Photovoltaics were chosen as these will reduce site reliance on grid electricity and will not impact neighbouring buildings. Modelling indicates that the 200m2 of PV will generate around 21,640kWh of electricity per year.

-ASHPs were chosen to provide DHW, as these will offer an increased efficiency over other technologies and a reduction in CO2 production. ASHPs (for DHW) were found to produce around 6.28 tonnes of CO2 per year. Point of use electric water heating would produce around 27.15 tonnes, an increase of 76.87%.

G. Estimated Energy Consumption of the Development

Using the Standard Assessment Procedure Energy Rating (SAP) for dwellings and the Simplified Building Energy Model (SBEM) for all other developments, please supply the following:

1	The **Target Emissions Rate (TER)**, which is an output from the SAP/SBEM calculation.	8.2
2	The **Compliant Dwelling or Building Emissions Rate (DER/BER)**, which is the predicted CO2 emissions for the actual proposal, which includes the low and zero carbon generating technology (LZCGT).	6.5
3	**Re-calculation of the DER/BER without the low and zero carbon generating technologies.**	11.1
4	**The percentage reduction in carbon due to renewables:** [(1-(Step 2 ÷ Step 3)) x100]	41.44

Note:
When calculating the energy contribution and CO2 emissions saved from the LZC installation the following rules should be applied:

1. The net yield of the LZC installation(s) must be used (i.e. subtract any CO2 related to the energy used by the LZC technology itself such as pumps, inverters, controllers, etc).
2. The percentage CO2 savings should be calculated using the following assumptions:
   a. It should be assumed that renewable heat energy is displacing natural gas.
   b. Renewable electrical energy is displacing grid electricity at the national CO2 conversion rate.

H. Estimated Annual Energy Consumption of the Development

Gas consumption (kWh per year)	0
Electricity consumption (kWh per year)	238,174
Others fuels (annual units, depending on the source fuel)	0

I. SAP/LCEA Assessors Details

Name of SAP/LCEA assessor	Paul Graham Miller
Name of SAP/LCEA assessor company	CIBSE
Name of SAP/LCEA assessor protocol body and registration details	LCEA196235

Print Email