



BARRACK STREET

SUSTAINABILITY STATEMENT

STRUCTURED HOUSE GROUP
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CONTROL SHEET

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Contents

1	Introduction
2	Standards
3	Energy and CO ₂ Emissions
4	Water
5	Pollution
6	Health and Wellbeing
7	Drainage



1. **Introduction**

This sustainability statement has been produced as part of the planning application and in line with Dundee City Council City Plan. The development is for a new build Hotel & retained façade hotel (Budget) development, with a commercial unit at ground floor level at Barrack Street, Dundee. The development will comprise of two separate buildings with individual services and utility connections to each.



2. **Standards**

The buildings will be designed in accordance with the Non Domestic Technical Handbook (2011) including all second tier documents and will comply with the Dundee City Council City Plan, that states that the building should contribute a 15% reduction in carbon emission beyond 2007 Building Regulations (Scotland).

Consideration has also been given to on site low or zero carbon technologies and may incorporate such items as gas fired CHP units to generate heating and electricity, heat pumps, photovoltaics and solar panels, as a means to reduce carbon emissions. The ambition is for each building and the commercial unit to achieve an EPC rating of 'A'.



3. Energy and CO₂ Emissions

The approach adopted takes recognition of the Dundee City Council City Plan document and the approach to energy conservation follows the energy hierarchy using three steps in order to improve the energy efficiency of each of the buildings.

Step 1: Lean Building – Firstly optimize the building form, orientation and building fabric to make the building as energy efficient as possible.

Step 2: Mean Building – Secondly optimise the performance of the building services, using good design highly efficient services.

Step 3: Green Building – Lastly make use of the most appropriate Low and Zero Carbon (LZC) technologies.

Step 1 – Lean Building

The Non Domestic Building Regulations are applicable for the development and accordingly it is proposed that the following target building fabric U values will be applied. The U-values will be confirmed on completion of the SBEM at building warrant stage.

Element	Proposed 'U' Values (W/m ² K)
Roof	0.15
External Wall	0.17
Glazing	1.4
Ground Floor	0.20

It is proposed that the building heat loss will also benefit from an air permeability target of 5m³/h@50Pa.

Step 2 – Mean Building

To minimise the energy consumption from within each of the buildings, a low combination of high frequency compact fluorescent and LED lighting is to be provided.

Control of the lighting will be in accordance with current Building Regulation requirements and consist of automatic control to all landlord areas and cluster corridors, with manual switching within individual flats.



Metering to incoming gas, water and electricity supplies will be undertaken through pulsed outputs at the primary energy centre for each building with sub metering for each buildings large items of plant.

Step 3 – Green Building

Gas fired combined heat and power plant (CHP) may be provided as a renewable energy source to each of the buildings. The CHP plant would operate as the lead heat source for each building to provide low temperature hot water to heat the building and provide a low carbon source for electrical generation.

The CHP unit with each of the buildings would be sized accordingly to match each building base electrical load. It is not anticipated that there would be a requirement to export excess electricity, but if the case arose, excess electrical supply will be fed back in to the national grid system via feed tariffs.

Carbon Emission Rate

Based on a Scottish Regulations Section 6 2015 an assessment for the scheme will be undertaken using approved Hevacomp software to generate the results to assess the reduction in carbon emission from each of the buildings as well as an exemplar for the commercial units fit out.

The emission rates will comply with the requirement of the Scottish Building Regulations 2015.

The use of LZC Technologies

Gas fired combined heat and power (CHP) plant may be provided as the lead electrical source to each of the buildings. Additionally, photovoltaic and solar hot water panels may be utilised dependent upon their suitability. Power factor correction or equivalent voltage regulation will be installed to the switch gear.

4. Water

Due to the height of the buildings it is incumbent that the pressure of the water distribution within each of the buildings is considered. To ensure pressure balancing throughout each of the buildings it is necessary to install pressure and flow devices to ensure excessive water will be drawn off on use.

These devices will be provided on all floors to ensure waste water usage is kept to an absolute minimum.

A leak detection system may be installed that will alert the each buildings of any below ground water leakage on the underground main between the statutory services water meter and the incoming location to each of the buildings and the commercial unit.



5. **Pollution**

All insulation specified and used on the development for mechanical and electrical services will be of cfc free. All gas fired plant equipment will be low NOx emission. Typically, the gas fired condensing boilers will have NOx emission rate of >40mg/kWh.

6. **Health and Wellbeing**

Natural daylight will form the basis of the overall lighting scheme for the development. An average daylight factor of 2% has been targeted for all areas of the buildings to reduce the need for artificial lighting.

7. **Drainage**

The drainage to the building and external areas will incorporate Sustainable Urban Drainage Systems (SUDS).

Current Planning guidance states that “surface water arising from a developed site should, as far as practical, be managed in a sustainable manner to mimic the surface water flows arising from the undeveloped site”. In accordance with CIRIA 697, SUDS should aim to achieve three main benefits

- **QUANTITY** – reduce the discharge rate for total run-off volume that would otherwise enter the public sewer or watercourse.
- **QUALITY** – improve the quality of water leaving the site in terms of sediment load and contaminants.
- **AMENITY** – provide an improved environment in human and ecological terms.

Items such as silt traps at the base of rainwater pipes and within ground level slot drains will also help reduce the amount of sediment in the surface water being discharged.

The combination of these elements will reduce the quantity of drainage that would otherwise be discharged into the public sewer system and will also improve the quality of the water leaving the site.