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Environmental Standards Statement

In support of the full planning application for:

41 Edge Lane, Manchester, M21 9JU

APPLICATION REFERENCE: 135093/FO/2022

Erection of a 2 storey semi-detached dwellinghouse, with accommodation in the basement and roof, following demolition of existing dwellinghouse.

On behalf of Mr. Imran Sarfraz



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1.0 Introduction:

This Environment Standards Statement has been prepared to support the submission of the planning application reference 135093/FO/2022 and will address the d the provision of renewable energy within the development and how the proposal will achieve the environments standards as outlined within the City Council's Guide to Development in Manchester SPD/SPG, (chapter 4) and Core Strategy policies EN4 and EN6.

2.0 Energy Efficiency:

The strategy for reducing energy consumption within the proposal home will follow the energy hierarchy below.

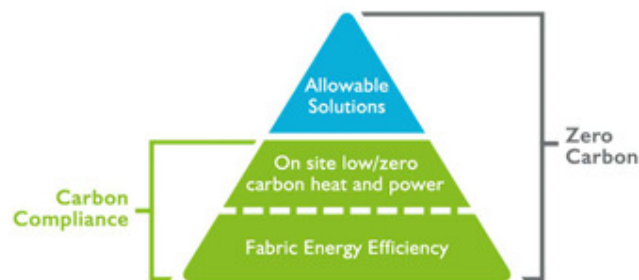


Figure 1- Carbon Offsetting within the context of the Zero Carbon Homes regime – Zero Carbon Hub

3.0 Reduce Energy Demand:

Passive measures included within the design of the new proposal's home to reduce energy use and the associated CO2 emissions include.

- Enhanced insulation to the building envelope which exceeds Building Regulation requirements
- Reduced air permeability standard

4.0 Enhanced insulation to the building envelope:

Limiting heat losses across the entire building envelope will future proof the energy efficiency of the proposal over its whole life. To achieve this, the base fabric thermal U-Value requirements as detailed within Approved Document L2A 2013 of the Building Regulations will be significantly improved upon. The following table shows the limiting U-values required to achieve Building Regulations compliance, compared to the targeted values, which far exceed the Building Regulations requirements minimum.



Approved Document L2A U-Value comparison

Building Element	AD L2A limiting U-Value (W/m ² .K)	Target U-Value (W/m ² .K)
Roof	0.25	0.14
Wall	0.35	0.27
Floor	0.25	0.13
Windows	2.2	1.4

5.0 Elevation Design:

The glazed proportion of the building elevation has been designed to maximise the use of natural daylight to offset demand for artificial lighting, together with the use of occupancy control. At the same time as being designed to maximise passive solar gains in winter, the glazing will be designed to minimise thermal losses and summertime gains, through the use of high-performance glazing, optimising the glazed to opaque proportion of the glazing and enhanced insulation levels above the minimum set down by Building Regulations.

6.0 Reduced Air Permeability:

A significant percentage of heat loss and associated energy use is due to air infiltration associated with poor air tightness. By improving on the air tightness of the building it is possible to reduce infiltrations rates and thus reduce the heat losses, energy use and the associated CO₂ emissions. The proposal's home will be constructed to improved building air tightness criteria beyond the level required to comply with the Building Regulations.

7.0 Energy Efficiency:

High efficiency installations, controls and equipment will be incorporated as follows.

7.1 Highly efficient Heating, Ventilation and Hot Water systems

All parts of the building will be fitted with highly efficient heating, ventilation, and hot water systems to reduce the carbon and CO₂ emissions as much as possible. The most efficient products on the market will be considered for this project at the design stage. It is currently proposed that a highly efficient gas fired boiler shall be used to provide space heating via radiators. Whilst many of these areas will be subject to being fit out by others, we have assumed a services strategy for each space to complete our calculations.

Hot water shall be provided by highly efficient gas fired condensing boiler plant.

Heat recovery ventilation units will be provided to reduce energy usage. All ventilation fans will have a low specific fan power to minimise the energy used.



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8.0 Energy efficient lighting

All areas of the proposed home will incorporate energy efficient low energy lighting throughout (LEDs).

9.0 Sustainability Performance

A range of sustainable features are proposed to be part of the scheme as follows:

9.1 Energy

To address the causes of climate change by reducing emissions of greenhouse gases, in particular carbon dioxide generation, the development would look to be as energy efficient as possible and incorporate generate energy from low or zero carbon technologies. The proposal has sought to reduce its overall energy consumption as summarised below.

Energy Efficiency Measures:

The following key energy efficiency design measures to reduce emissions have been incorporated in the building's design:

- External shading and limited glazing on west/south/east facades to avoid the need for active cooling and limit overheating.
- Proposed new thermal element U-values.
- Energy efficient external lighting with minimum lux levels, photocell operation and dawn to dusk time switches to reduce the minimum safe lighting level for security.
- Energy efficient lifts which operate on standby during off-peak periods, have energy efficient lighting and a regenerative drive unit to recover energy from its operation.
 - Building Energy Management System (BEMS) to provide accurate and robust control with monitoring, regular maintenance, and inspection.
 - Inverter drives installed on all fans/pumps to control the speed of each fan/pump to accurately match the duty and load.
- Energy-efficient heat recovery ventilation system designed to achieve a specific fan power of no greater than 2.1W/(litre.s-1);
- Common areas, corridors and store areas to use dimmable PIR control to reduce energy use and reduce running costs based on reduced operation.
- Photoelectric sensors provided in luminaire fittings adjacent to windows to allow for dimming when sufficient natural light will be available.
- Low flow PIR controlled wash hand basin taps; and
- Air permeability of 5m3/m2.hr @ 50Pa or less.



10.0 Water

To conserve water by promoting water efficiency, rainwater harvesting and Sustainable Drainage Systems (SuDS) are proposed. The proposed development will aim to develop a water strategy that reduces water demand through its design and specification. Consideration has been given to the efficient use of water in the construction phase and the team will require the contractor to monitor water consumption during the construction phase.

It will ensure that the building limits its water consumption by specifying water efficient sanitary fittings in the shower and toilet facilities to conserve water at its point of use where feasible. Rainwater harvesting for pitch irrigation is also proposed.

11.0 Materials

Wherever possible, the materials' specification and products used for the proposed development will display the following characteristics:

- Low embodied energy that requires little processing
- Locally sourced
- High recycled content including steel, glass, cladding and flooring products
- Reused materials including reclaimed materials
- Durable
- Can be re-used, recycled, refilled, recharged, or reconditioned
- Lightweight to reduce volume of materials and require less fuel during transport
- Accredited to a recognised environmental standard

12.0 Waste Management

Best practice techniques to prevent and minimise waste during the design and construction phases of the development will be considered, as follows:

• Prior to commencement of the construction phase, a site waste management plan (SWMP) will be produced by the developer to limit the on and off-site environmental impacts of construction. The SWMP will detail:

- Recycled and secondary materials
- Waste reduction
- Waste segregation
- Waste recovery
- Waste disposal

• A target of 90% of waste to be diverted away from landfill will be established for the construction phase of the development.

• This scheme will promote the minimisation of waste in site development and seek to maximise the use of recycled materials in construction.