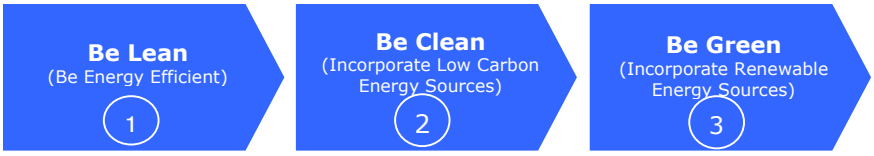
The approved scheme proposed to meet Code for Sustainable Homes (CfSH) level 4 against the 2010 Part L of the Building Regulation. Since the planning application CfSH has been withdrawn and Part L has been updated.

1.0 ENERGY

The proposed development is now targeting compliance with the Building Regulations Part L 2013 and compliance with the targets of CSH 2010 Level 4 which is 25% improvement in CO_2 emissions over Part L1A 2010 approved scheme.

To achieve the above target the Energy Hierarchy Approach detailed below has been considered:



Be Lean

Energy efficiency measures have been a key focus of the strategy, particularly driven by the Fabric Energy Efficiency targets introduced with Part L1A 2013 of the Building Regulations. Fabric performance and passive design measures alongside active efficiency considerations have been thoroughly investigated in order to ensure compliance with the Building Regulations, and CSH targets.

The design proposals currently being considered are:

- Heating will be provided to the property using gas fired condensing boiler (s) that will be highly efficient (up to 90% efficiency).
- Automatic controls of the heating, cooling and domestic hot water systems etc including time, temperature and zone controls will be provided to make sure that the building services are not in operation when they are not needed.
- All mechanical ventilation systems will be provided with heat recovery, where appropriate.
- Energy efficient pumps, fans etc. will be provided for the development's engineering systems.
- Thermal insulation will be provided to all domestic hot water cylinders/calorifiers and all associated distribution pipework to minimise heat losses.
- Minimisation of lengths and diameters of 'dead legs'.
- Components such as fans, pumps and refrigeration equipment will be efficient and appropriately sized to have no more capacity for demand and standby than is required for the task so as to operate at their optimum levels.
- The development will be constructed with materials that have 'U' values that exceed the minimum requirements of Part L of the Building Regulations
- Limitation of unnecessary ventilation heat losses by providing building fabric which is reasonably air tight, but still provide adequate ventilation to comply with Part F of the Building Regulations.

- Installation of class A rated white goods.

- Provision of the required lighting levels whilst minimising energy consumption by effectively controlling the lighting systems by:

    - Using energy efficient lamps and luminaires.
    - Having either suitable manual/automatic switching or both.
    - Having suitable energy consumption metering.
    - Having been appropriately commissioned.
    - Using lighting system which are efficient and make use of daylight where possible/practical
    - Avoiding the use of lighting when spaces are unoccupied by means of local switching to facilitate user control.

Be Clean

It is proposed to include a 5kWe, 12kWth Combined Heat and Power (CHP) unit in the development to provide domestic hot water base load and proportion of the heating load for the building. The electricity generated by the CHP will be distributed around the development and into the electrical network if needed. The use of this co-generation improves the overall efficiency of the primary energy delivered to the site with a corresponding reduction in the development's CO_2 emissions.

Be Green

It is proposed to use 20m² of photovoltaic panels located at roof.

The current design achieves average 23.91% CO_2 emissions reduction beyond AD Part L 2013.

The achieved reduction in CO_2 emissions should be sufficient to comply with CSH 2010 Level 4 which is 25% improvement in CO_2 emissions over Part L1A 2010.

2.0 WATER

Domestic water system within each apartment will be designed to meet water consumption equivalent to requirements the Code for Sustainable Homes 2010 level 4 water consumption of no more than 105 litres per person, per day.

A number of measures will be incorporated in order to help reduce the demand for mains water, including the selection of high efficiency water appliances, taps, showers and WC's.

3.0 Summery

The current proposed scheme not only meets the water and energy targets required of the approved scheme, but exceeds this with an additional 23% of carbon saving, by the use of the same amount of PV as originally proposed, the installation of a central energy centre with CHP and also significantly improved thermal performance of the building (such as reduced losses U values for walls, windows, floors and roofs) between the approved and proposed scheme.