

Sustainability, Energy and Resource assessment

Fabric First

The development adopts a fabric first approach with the Notional Building Regulations Part L U-values and specifications being met and surpassed wherever possible.

Passive measures such as glazing, orientation, insulation, reduction of thermal bridging, biodiversity etc. are generally more cost-effective ways to reduce energy use than “active” measures, such as renewable technologies.

Criteria to be employed: Internal lighting is assumed to be provided by 100% energy efficient bulbs • We have assumed that Accredited Details for Linear Thermal Bridging are to be used and an initial calculation has been made for the “y” value.

The **U Values** that should be used are: • External Walls - 0.18 W/m²K • Roof – 0.12 W/m²K • Windows - 1.2 W/m²K • Doors – Not included - assumed communal spaces to be heated. • Air permeability of 5m³/hr/m² @50Pa • At this stage a natural ventilation system has been modelled (Part F System 1) • Gas combination boilers have been modelled with an efficiency of 90%. • Materials will be selected for their low embodied energy where possible and specifications which score highly in the Green Guide to Specification used. • Good thermal mass will also help reduce in-use energy demand.

Passive measures generally have much less embodied Carbon, since on the whole they are design considerations rather than “bolt-on” extras. Passive measures proposed for this site include:

- Increased U Values above Building regulations backstop values

Using high quality, sustainably sourced materials with good “Green Guide” ratings where possible •

Supplying low-energy lighting inside and outside.

Lighting Low energy LED high efficiency lighting fixtures and fittings will be installed with each unit having a smart meter for monitoring energy use.

Potable Water efficient sanitary fittings shall be supplied throughout the building.

Utilities assessment – there are existing services, including electricity, gas, water and foul drainage within the area.