Clitheroe Community Health Facilities
Energy Statement

An initial energy assessment of the building has been carried out using Hevacomp Licensed Software Package for compliance with Building Regulations Part L2A & SBEM requirements.

Reference has been made to CIBSE Energy Codes and ENCODE in respect of energy performance. In addition this development is being designed to achieve a BREEAM Excellent Rating and energy usage and water usage will be assessed against BREEAM New Build 2011 to achieve the excellent rating.

Renewable energy measures have been considered, however in view of the location of the site a number of recognised renewable energy systems have been disconnected, these include:-

Wind Turbines – The restricted area of the site with public lighting to two sides and developments to the other two sides result in the site not being suitable for provision of any meaningful wind turbines.

Bio Mass Boilers – Wood chip / pellet burning boilers have been considered however, the large fuel storage hoppers and regular vehicular deliveries of the fuel would not be suitable for this site. Also in view of the proposals for in patients within the facilities, dual fuel boilers will be required to provide the necessary standby heat source. This is not practical with biomass boilers without excessive expenditure.

Solar Panels – Solar panels for heating of domestic hot water are not suitable for Hospital premises due to low temperatures achieved and time taken to reheat the stored water. Problems also encountered with low temperature is the potential risk of legionaries disease.

Heat Pumps – Heat pump technology is a recognised renewable energy source. Ground source / geothermal heat pumps have been considered however vertical bore holes or horizontal closed loop circuits which require large areas of open ground to be effective and are not considered suitable for this site.

PROPOSALS

It is proposed to achieve savings in CO_2 emissions in excess of 10% by improvements to the overall thermal performance of the building and by incorporating onsite renewable energy. This will be achieved by elements of the building construction having improved thermal properties (reduced U-values) and the following improvements to the installed Mechanical and Electrical Services:-

Photovoltaics – A Photovoltaic installation is proposed which will contribute savings in imported grid electricity and reductions in CO_2 emissions. The photovoltaic panels are proposed to be located on the sloping south facing roof of the new building. The area and capacity of the PV Panels will be determined to satisfy the reduction in CO_2 emissions, compliance with Building Regulations and contribute towards the required BREEAM Rating.

Lighting – Lighting throughout the building will incorporate high frequency, low energy luminaires for reduced energy consumption together with automatic lighting control.

Building Management System – The building is to incorporate a BMS automatic controls system for control and monitoring of all building services which will also monitor all energy usage via Smart Energy Metering together with energy produced by photovoltaic installations. The control system will incorporate zone controls to heating & ventilation systems throughout the building to facilities auto switching of service to area / department of the building when not in use, this will particularly provide control to the 24 hour occupied areas and the Monday to Friday areas.

SITE ENERGY DETAILS

Heating – Central low pressure hot water boilerplant, primarily fired by natural gas with light fuel oil standby. Boilerplant will be high efficiency dual fuel boilers.

Domestic Hot Water – Domestic hot water storage calorifiers will be provided, heated from the dual fuel boilers.

Cold Water – A new incoming mains cold water supply will serve the site from the adjacent United Utilities infrastructure. On site water storage will be provided.

Electricity – The site is to have its own dedicated electricity substation served from the adjacent Electricity North West infrastructure.
The site is to have full generator back up.
A photovoltaic installation will be incorporated into the project, any surplus electrical output will be exported off site.

Metering – In addition to the metering of the incoming Utility supplies, energy sub meters will be provided to each department and individual items of plant and equipment.