7.0 Energy Considerations

Reducing the energy consumption of the building stock is a priority for The Highland Council; not only to help in combatting climate change but also to reduce overall running costs.

7.1 Energy Use

Buildings are one of the heaviest consumers of natural resources and account for a significant portion of the greenhouse gas emissions that affect climate change. 40% of the UK's energy consumption is building related. Energy Use in Local Authority Buildings is not only a significant environmental factor for The Highland Council but also a cost factor; there is therefore not only a social obligation to minimise a buildings energy use and its environmental impact but also a strong economic one.

All M&E design tender submissions should be shown to be energy efficient with an option appraisal identifying why a particular design was chosen over others, a relevant EPC showing the energy consumption figures and an SBEM calculation (where relevant) detailing the building energy use.

7.2 Energy Management

Energy management is the process of monitoring, controlling and conserving energy in a building or organisation. Energy management is the key to saving energy; it is not a one-off exercise, to be effective it needs to be an ongoing process. There are a couple of ways of managing the energy used within a building; through Facilities Management and well-designed Energy Management Systems.

Reducing the energy use within all existing buildings along with ensuring all new buildings are as energy efficient as possible is a primary aim of the Highland Council. The Councils Energy Management Project Plan details this.

7.3 Green Council

The Highland Council was one of the first of Scotland's 32 Local Authorities to sign Scotland's Climate Change Declaration in January 2007. The Council then reaffirmed its commitment to delivering greener and more efficient services in the Highlands by re-signing the Declaration in May 2008.

As a signatory, the Council is committed to producing an annual statement on local progress towards mitigating climate change and identifying how the local Authority should adapt to its likely effects.

Through the Climate Change Working Group (The Green Council) The Highland Council aims to -

- Mitigate against climate change through the reduction of greenhouse gas emissions from its own estate and practices.
- Mitigate against climate change through the reduction of greenhouse gas emissions in the Highlands through the range of services provided by the Council and in partnership with other statutory, voluntary and private sector organisations.
- Adapt its services to deal with the impact of global warming and extreme weather events (considering both threats and opportunities) and in particular regarding impacts of large-scale flooding and community level.

One aspect of this is to ensure that the council is working towards reducing the energy consumption and carbon footprint of its building stock. The council must therefore ensure that any M&E services designed are as energy efficient and sustainable as possible.

7.4 CRC Energy Efficiency Scheme

The CRC Energy Efficiency Scheme (previously named the Carbon Reduction Commitment) is the UK's first mandatory carbon trading scheme.

The CRC Energy Efficiency Scheme is a mandatory emissions trading scheme, targeting emissions currently not included in the EU ETS or Climate Change Agreements. This scheme will include for example, supermarket chains, hotel chains, office-based corporations, government departments and large local authorities (including Highland Council). The scheme has been developed by the Department of Energy and

Climate Change (DECC) in partnership with the Scottish Government, the Welsh Assembly Government and the Department of Environment Northern Ireland.

The Department of Energy and Climate Change developed the CRC Energy Efficiency Scheme (Carbon Reduction Commitment) to help deliver the UK's pledge to reduce greenhouse gas emissions by at least 80% from 1990 levels by 2050.

Participants successful in reducing energy consumption will not only save money on energy bills but will need to purchase fewer allowances; these savings should be well in excess of the costs of participation. In addition, participants that perform well will also be placed higher in the performance league table, which will be published annually by the Environment Agency, boosting their reputation as an energy-conscious organisation.

It is for these reasons that The Highland Council must ensure that any new M&E systems perform as efficiently as possible, ensuring low energy costs and carbon generation.

7.5 Energy Performance Certificate (EPC)

EPCs carry ratings that compare the current energy efficiency and carbon dioxide emissions with potential figures that a building could achieve. Potential figures are calculated by estimating what the energy efficiency and carbon dioxide emissions would be if energy saving measures (detailed within the detailed recommendation section of the EPC) were put in place.

The council intends to use the detailed recommendation section within the EPC to undertake works which would help reduce the amount of energy used and the carbon dioxide emitted within each building.

The Highland Council has a legal responsibility to have a valid EPC for every building in its stock. A relevant EPC should therefore be included in the tender submission for all design projects.

7.6 Simplified Building Energy Model (SBEM)

As advised in Section 6.5; every new commercial/industrial/retail building The Highland Council constructs after 7th April 2006 requires an SBEM calculation along with any new extensions to existing commercial buildings, where the total useful floor area is greater than 100m^2 and greater than 25% of the total useful floor area of the existing building.

An SBEM calculation including all supporting electronic files should be included (when relevant) in the tender submission package.

7.7 Fuel Options & Running Cost Appraisal

The Highland Council has developed a Fuel Options & Running Costs Appraisal spreadsheet which gives a detailed breakdown of the differing fuel options and relevant running costs.

In order to properly assess the running costs of any mechanical design this spreadsheet must be filled in and presented along with the tender submission, giving an immediate overview of the options available and how the chosen fuel option was decided upon.

7.8 In-use Monitoring of Performance

In order to ascertain whether a building is performing well with regards to its energy consumption The Highland council monitors the energy use within its building stock and regularly checks meter readings ensuring that all buildings are performing as expected and that any energy saving measures which are being installed are working to reduce the energy consumption, as expected.

Note: Heat meters installed within plant rooms and biomass containers must be installed at a height and location which is easily accessible from ground floor level should the meters need to be manually read. Additionally, the heat meters and associated components should be clearly labelled to show which circuits they monitor.