

## BUILDING ENERGY PERFORMANCE PROCEDURE

THIS DOCUMENT SUPPORTS THE  
COUNCIL'S ENERGY POLICY (ENPOL2013)



### Contents

### VERSION CONTROL

This document is reviewed annually to ensure it is accurate and up to date.

No.	Version	Date	Initials	Description
1	1.0	27 August 2013	JF	Approved by Transport & Environment Committee

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## 1 APPLICATION

This procedure applies to all elected members, employees and contractors of the City of Edinburgh Council (CEC) who work in Council owned or leased buildings.

## 2 BACKGROUND

The City of Edinburgh Council has put this procedure in place to cover aspects of building performance relating to energy efficiency and emissions reduction within the Council. This procedure provides a clear outline of building management actions to be taken to meet the objectives and targets within the energy policy (ENPOL2013).

## 3 OPERATIONAL PERFORMANCE

The Council (Technical Support Services) already records energy data as outlined within the Measuring, Monitoring and Analysis procedure

In addition to recording and analysing this data individually, the Technical Support Services team shall produce operational ratings for its large corporate sites. This will initially include the Council's top 100 CO<sub>2</sub> emitting sites and will be produced based on consumption for 2012/13.

This is the start of a wider benchmarking program which will see buildings being grouped as per their building type, age, fabric, use etc. The use of operational performance league tables will also be considered as part of the Council's energy and water awareness campaign.

Headline performance information will be disseminated to Facility Management staff on a regular basis. This will enable greater understanding of those premises which are underperforming in terms of efficient energy use and enable a greater level of internal reporting.

## 4 ASSET PERFORMANCE

Each public building with a floor area greater than 500m<sup>2</sup> requires an Energy Performance Certificate (EPC) to be displayed in a prominent place within the building (as per the Energy Performance of Buildings Directive (applicable Scottish legislation detailed in the legal register within the Energy and Emissions Reporting procedure). An EPC provide the assets rating of the building based on the fabric of the building and not on how it is being used. As per the recast of this directive an EPC rating (A-G) will be required to be displayed in all public buildings over 250m<sup>2</sup> by 2015. The EPC should be displayed in any marketing/sales particulars for all public buildings over 500 m<sup>2</sup> now. (A copy of an EPC has been included in Appendix 1).

The Council in 2008 procured the services of contractors to produce EPCs for over 300 buildings down to 500m<sup>2</sup>. EPCs for sites which are sold or let should be carried out on an on-going basis.

## 5 HEATING AND COOLING

The recommended temperature for a building during the heating season is 18-21°C as per table below (unless special dispensation is given). The heating standard will apply between agreed operational hours, except for holidays, and during the heating season. Exemptions will apply to special schools. Based on weather conditions facility management may take the decision to extend or shorten the heating season. **The heating season will run from 1st October to 30<sup>th</sup> April.**

### Preset Temperatures

Heating season: October to April	
Office	18-21°C
Classroom	18-21°C
Libraries	18-21°C
Community Centres	18-21°C
Residential care homes	23°C
Gyms/Sports Halls	12-18°C
Non heating season: May to September	
Desired temperature for all spaces	24°C +4 / - 6°C

### Warm up

Portable heaters shall not be used within Council properties except within the following constraints:

- where permanently installed as part of the designed heating system;
- in areas where Facility Management has agreed that electrical heaters are necessary to maintain the recommended environmental air temperatures and has issued suitable heaters;
- in the event of heating system failure, such heaters may be issued by Facility Management.
- it shall be the Council's policy wherever practical to modify such areas and eliminate the need for temporary electric heaters.

Individuals are prohibited from using their own heaters in Council buildings.

### Cool down

The Council is aware that in certain circumstances additional cooling is required and that there are a range of Council buildings where there is no mechanical cooling. However there are many ways in which to achieve a cooler air temperature than turning to mechanical cooling.

The following steps should be taken before activation of mechanical cooling:

- Switch off – minimise heat output from equipment by switching it off when not required. The location of this equipment is also important. Placing it in a well-ventilated space will reduce heat gains.
- Ventilate – open windows and other natural ventilation means.

Portable fans shall **not** be used within Council properties except within the following constraints:

- When agreed by Facility Management.

Individuals are prohibited from using their own fans in Council buildings.

### **Simple heating improvement measures**

Where there are local controls such as thermostatic radiator valves (TRVs) installed these should be set to obtain the desired room temperature. There are several important aspects of these controls that all staff should be aware of.

- The area surrounding the TRV/temperature sensor should be free from obstruction which will give an inaccurate reading of the temperature, causing over or under heating.
- TRVs should be set to **off** if windows are to be opened as the cool air will cause the TRV to open and the radiator will further heat the room. Once the windows are closed, the TRV can then be turned to the optimal setting.
- Heater emitters such as radiators and floor grills should be free from obstruction.

## **6 BUILDING ENERGY MANAGEMENT SYSTEMS (BEMS)**

The Council operates a network of building energy management systems (BEMS) to control heating, ventilation and cooling equipment and where appropriate to enable remote monitoring and control. BEMS allow for more sophisticated control strategies with remote monitoring and adjustments to ensure that faults and energy waste is identified early and that potential energy savings are maximised. A strategic review of the BEMS is currently underway. This will inform a programme of BEMS upgrade across the estate. This will increase the energy efficiency of buildings and allow for better monitoring.

Where available, BEMS will be used to control operational parameters as set within this procedural document(s).

For staff who work in buildings where there is a BEMS, details of the BEMS specification and requests can be made to the Facilities Management Helpdesk [corporateproperty.helpdesk@edinburgh.gov.uk](mailto:corporateproperty.helpdesk@edinburgh.gov.uk) Telephone 0131 529 7878

In order to allow appropriate monitoring and targeting of consumption, operational hours must be defined and agreed by Facility Managers. Any scheduled changes to operational hours need to be recorded and an assessment of the energy impact considered by Facility Management. Physical changes to the property or service delivery such as an increase in work force or a computer upgrade should also be

recorded. Retaining such information will contribute towards the qualitative assessment of consumption.

## 7 MAINTENANCE

When reactive and planned maintenance is required on building fabric and services then the energy efficiency of the building should be at least be maintained or, preferably, enhanced.

Corrective and improvement actions should be considered at all times based on lifecycle costings and energy efficiency.

### **For example:**

Controls - if a lighting or heating controller fails then it must be replaced with an equivalent or improved controller and not simply bypassed/removed. By-passing of plant/controls to keep a property operational should only be used as a short term solution. Measures shall be taken to ensure that energy efficient operation of plant is maintained.

Insulation – If work is required to be carried out on pipe work or fabric then existing levels of insulation must be maintained/replaced or enhanced.

## 8 METERING

Any works that require new electricity, gas or water supplies to be connected or existing supplies to be upgraded or disconnected must be notified to the Council's suppliers through Corporate Facilities Management. This is so that the supply benefits from the Council's energy contract. This also allows costs and carbon emissions for all sites to be tracked through suppliers. Rates outwith Council contracts can be significantly more expensive than Council procured contract rates.

Template site works forms can be obtained directly from Corporate Facilities Management. These forms should be submitted to Technical Support Services within appropriate time frames.

## 9 IT EQUIPMENT

There is an increased presence of flat screens being erected in Council buildings. These screens are often left on continuously. Facility Management staff (security staff) will switch off any large plasma screens if they are still on when staff are doing their security check of the building at the end of the working day. However, the priority is that staff should take responsibility to switch off their own monitors and any adjacent screens when not in use and at the end of the working day.

A procedure for the Council's approach to good energy practice with respect to 'mobile' and desk top (fixed) IT equipment will be developed to support the policy's objectives and targets.

## 10 USER ENERGY MANAGEMENT RESPONSIBILITIES

The Council appreciates that all staff have a varied role within the organisation and are limited by these roles with regards to the actions that they can undertake to control energy usage. The Council has however set out some basic rules which set a minimum standard which should be adhered to **by all staff**.

In the first instance the room temperature should be measured if there are issues with people feeling uncomfortable. It must be remembered that individuals have different temperature preferences and actions that maintain your own comfort levels which do not affect others should first be exploited. This includes dressing appropriately based on the weather and your personal preference.

### USER RESPONSIBILITIES

- Electrical equipment – **Switch off** when not in use.
- Lighting – **Switch off** when not required.
- Heating - **Check** the room temperature first and then adjust controls, to the appropriate setting not to max. **Do not overheat rooms!**
- Cooling - **Check** is the heating on? Can you adjust controls before opening a window or switching on air conditioning?
- Communication – **Inform** facility management when you see a waste of energy or when you have an idea to reduce wasted energy. If you do not inform facility management the issue may not be resolved.

## 11 CONTINUOUS IMPROVEMENT

Facility Management will work with individuals to address local site specific issues to improve comfort levels

In order to ensure continual improvement the actions outlined within this document shall be reviewed annually with an aim to further support the objectives of the energy policy (ENPOL2013).

Appendix 1 – EPC Example

Energy Performance Certificate for buildings other than dwellings

Energy Performance Certificate	Building Energy Performance		Scotland	
	Calculated asset rating using DesignBuilder v.1.8.1.001 [SBEM]	Building type Office	Current rating	
	<b>Carbon Neutral</b>		Excellent	
	<b>A</b> (0 to 15)			
	<b>B</b> (16 to 30)			
	<b>C</b> (31 to 45)		C	
	<b>D</b> (46 to 60)			
	<b>E</b> (61 to 80)			
	<b>F</b> (81 to 100)			
	<b>G</b> (100+)		Very Poor	
	<b>Carbon Dioxide Emissions</b> The number refers to the calculated carbon dioxide emissions in terms of kg per m <sup>2</sup> of floor area per year			<b>42</b>
	Approximate current energy use per m <sup>2</sup> of floor area:			<b>148 kWh/m<sup>2</sup></b>
Main heating fuel: Natural Gas		Building Services: Heating with Nat. Vent.		
Renewable energy source:		Electricity: Grid supplied		
Carbon Dioxide is a greenhouse gas which contributes to climate change. Less Carbon Dioxide emissions from buildings helps the environment.				
<b>Benchmarks</b>				
A building of this type built to building regulations standards current at the date of issue of this certificate would have a rating:		38	C	
Where the accompanying recommendations for the cost effective improvement of energy performance are applied, this building would have a rating:		41	C	
<b>Recommendations for the cost-effective improvement (lower cost measures) of the energy performance</b>				
1. Some spaces have a significant risk of overheating. Consider solar control measures such as the application of reflective coating or shading devices to windows.				
2. Add local time control to heating system.				
3. Consider installing building mounted wind turbine(s).				

Address: Waverley Court, 4 East Market Street, Edinburgh, EH8 8BG  
 Conditioned area (m<sup>2</sup>): 21410  
 Name of protocol organisation: BRE, [EPC00086]  
 Date of issue of certificate: 22 Jan 2009 (Valid for a period not exceeding 10 years)  
 This certificate is a requirement of EU Directive 2002/91/EC on the energy performance of buildings.  
**NB THIS CERTIFICATE MUST BE AFFIXED TO THE BUILDING AND NOT REMOVED UNLESS REPLACED WITH AN UPDATED VERSION AND FOR PUBLIC BUILDINGS DISPLAYED IN A PROMINENT PLACE**