Estates Services Utility Management Policy

Version 2.0

Valid from March 2011

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Introduction

The University of Strathclyde is committed to the responsible management of energy and water resources. Improving energy and water efficiency, and militating against global green house gas emissions, are key strategic objectives of Estates Services.

Estates Services (ES) have adopted a utility management policy which provides clear guidance on the management of natural gas, electricity, and water on our campus. This policy describes the key issues which are being addressed, sets out the objectives, targets and performance standards which are to be achieved, and clarifies individual roles and responsibilities.

Utility management requires student and staff led demand minimization, alongside sensible investment in technical efficiency improvements. Estates Services are responsible for monitoring and reporting utility consumptions, improving awareness of utility issues, supporting students and staff to make informed decisions, and investing in best value technological improvements.

University students, staff, and business partners must recognize their role in managing energy and water responsibly and accounting for the resource impacts of their individual choices and actions.

University Sustainability Policy

The University Sustainability Policy

The University is committed to ensure that sustainability and responsible citizenship are embedded in all its operations. The University reviewed its Environmental Policy in 2006 and now seeks to build upon this through the development of a Sustainability Policy.

Sustainability is the maintenance of the environmental, social and economic systems so as to meet the needs and desires of humans in a just way for the future. It embraces the wise use of environmental resources and the concept of sustainable development which is "meeting the needs of a generation without compromising the ability of future generations to meet their own needs" (Brundtland Report 1987). The University's Sustainability Policy recognises the social, economic and environmental responsibilities of the University across its activities and outlines the University's commitment to the principles of sustainable development. It also recognises the University's role in the exchange of information and good practice and in stimulating debate with communities over sustainability within and beyond the campus.

The University is committed to sustainability and seeks to become progressively more sustainable through time by:

- supporting students and staff to work and live in more sustainable ways
- exceeding relevant legislative requirements and demonstrating best practice
- integrating sustainability into all strategies and activities of the University
- embedding sustainability perspectives throughout the University's research, knowledge exchange, teaching and learning activities
- assessing and reviewing progress against a framework of performance indicators and targets
- enhancing mechanisms and capacities for more sustainable practices in the management and maintenance of the University's estates
- reducing waste, energy use and resource consumption
- contributing to the development of and quality of life in Glasgow, Scotland and internationally
- engaging with communities to enhance knowledge of sustainable living and engage with debates over sustainability.

14.02.2008

Objectives & Targets

Aim

The aim of the **Utility Management Policy** is to communicate to all stakeholders the operational objectives and strategic approach to the responsible and efficient use of water, natural gas, and electricity within all Universities properties.

General Objectives

The University of Strathclyde will:

- Maintain internal environments at appropriate conditions.
- Monitor the utility performance of all University buildings.
- Publically report the utility performance of all University buildings.
- Seek to understand the drivers and patterns of utility consumption in all buildings and processes.
- Improve the utility performance of the University estate in line with 'Good' and preferably 'Best Practice' targets for higher education facilities.
- Communicate University targets for utility performance to all students and staff.
- **Communicate** building targets for utility performance to all heads of departments to better inform management decision making.
- Comply with all **legislative and regulatory requirements** and stay abreast of all national, international and sector objectives and targets.
- Deliver highly efficient new and refurbished buildings through the Sustainable Design Quality Standards.
- **Demonstrate that maximum efficiency** has been obtained in existing buildings when no further efficiency improvements can be achieved.

Specific Objectives

The University of Strathclyde will:

- Commit £285,000 in SALIX funded projects before March 2011.
- Install demand interval metering which can monitor 90% of campus energy consumption by September 2011.
- Invest annually in automatic interval metering on all electricity, gas, and water supplies
- Invest annually in automatic heating and lighting system controls
- Devolve departmental utility budgets within the Resource Allocation Model (RAM).

Objectives & Targets

Performance Targets

The University of Strathclyde will:

- Invest £300,000 per annum on energy and water efficiency improvements.
- Monitor and report campus energy and water consumption on an annual basis, with the target of¹:
 - A 10% reduction in campus electricity consumption by August 2015.
 - o A 10% reduction in campus gas consumption by August 2015.
 - A 5% reduction in campus water consumption by August 2015.
- Maintain a spend rate of 2% on all SALIX funded energy efficiency improvement projects.
- Monitor and report, annually, the energy and water performance of all University buildings, with the aim of:
 - Publishing building specific energy and water performance indicators through 2010/11.
 - o Establishing building specific energy and water efficiency improvement targets through 2010/11.

¹ The utility and water baseline is the 2009/10 academic year.

Roles & Responsibilities

Roles & Responsibilities

The Principal and Vice-Chancellor

• to take on the role of institutional champion for Utility Management and to act as the accounting officer for the University's performance in this area.

Senior Officers, Deans, Heads of School and Department, Directors

- to take leadership responsibility for the implementation of the Utility Management strategies within their areas of responsibility.
- to adopt operating procedures within their areas of responsibility which will maintain efficient use of energy and water resources.
- to liaise with the Energy and Environment Manager to deliver agreed actions set out in departmental utility reports.

The Energy and Environmental Manager

- to coordinate the implementation of energy efficiency improvement actions across the campus, financed through SALIX and other budgets.
- to provide Senior Officers, Deans, Heads of School and Department, Directors periodic energy reports.
- To report to the Principal and Vice-Chancellor, annually, progress against policy targets and objectives.

Students and Staff

- to take cognizance of the Utility Management Policy and actively contribute the delivery of the targets and objectives under the guidance of Senior Officers, Deans, Heads of School and Department, and Directors.
- To identify opportunities for improved utility efficiency in their area of study, work, or research.
- To report building defects and potential utility waste to the Estates Services helpdesk

Stakeholders

• to take cognizance of the Utility Management Policy and actively contribute the delivery of the targets and objectives through their interaction with the University.

Monitoring & Review

Monitoring and Review

Progress against the objectives and targets set out in the Utility Management Policy will be monitoring through the Estates Services Sustainable Development Group, chaired by the Energy and Environment Manager. An annual progress report against policy targets and objectives will be prepared for the Principal and Vice-Chancellor.

Implementation Strategies

Implementation Strategy

Utility management objectives will be delivered through three main action areas: planned building refurbishment as set out in the Estates Development Framework (EDF2); energy efficiency investment through the SALIX ring fenced fund; and ongoing awareness raising among students and staff and stakeholders.

Energy Efficiency Investment Strategy

In 2008 the University partnered with SALIX Finance to create an energy efficiency investment fund to accelerate the implementation of the Carbon Management Implementation Strategy. A ring fenced fund of £750,000 was created to fund energy efficiency improvements across the campus. Estates Service work to an energy efficiency investment strategy which prioritises potential projects according to their financial payback and their gross energy reduction potential over the project lifetime. The simple financial payback on all projects is targeted at less than 5 year so that these savings can be re-invested into the ring fenced fund. All projects are coordinated within the EDF2 programme, planned maintenance works, metering and control improvements, and client department requirements.

Estates Services Sustainable Design Quality Standards

Estates Services have developed the **Sustainable Design Quality Standards** as a set of performance targets which act as a framework for achieving sustainable built development. All major construction and refurbishment works are guided by the Sustainable Design Quality Standard which sets out strict energy efficiency targets. New buildings and large refurbishments are required to demonstrate outstanding energy strategies which incorporate passive energy solutions and best practice energy efficiency technologies. This includes the promotion of passive energy solutions such as natural ventilation and daylight, air tight and thermally insulated building envelopes, and the use of high efficiency lighting and heating equipment.

Awareness and Communication

The University is committed to ensuring that all staff, students and stakeholders understand their obligations in actively supporting the delivery of the objectives and targets set out in this policy. Estates Services will support Senior Officers, Academic and Professional Services leaders to contribute to the Utility Management Policy objectives and targets by providing department specific utility consumption profiles and key performance indicators, and promoting best practice advice, induction packs for new staff and students, and embedding utility management procedures as key responsibilities of managers across the University. The proactive use of print and electronic media will promote the University as a thought leader in the field of responsible energy management.

Thermal Comfort Policy

University thermal comfort standards provide a clear and consistent approach to maintaining space temperatures within University buildings. Estates Services will seek to ensure occupant comfort is maintained, under normal conditions, during core hours. Individual thermal comfort preferences will undoubted vary; space temperature standards are meant to satisfy the majority of occupants while ensuring responsible management of energy and the minimisation of energy waste and carbon emissions.

Operating Schedules

Operating schedules for the majority of heating, ventilation, and cooling equipment across the campus are programmed and monitored centrally by Estates Services through the Building Management System (BMS). The BMS allows Estates Services to continuously monitor internal conditions and to control heating, ventilation, and cooling.

Programmable schedules allow the University to maintain space temperatures while rooms are occupied, and allows set points to be reduced while spaces are empty.

If heating is required out with normal operating hours a formal request must be made to Estates Services. Extended operating hours will be programmed into the building management system as per the dates and times on the written request.

Space Temperatures (Summer)

Comfort cooling is energy intensive and contributes significantly to energy waste and unnecessary carbon emissions. Overheating in buildings will be investigated by Estates Services where monitored space temperatures are observed to rise above 28°C for a significant portion of annual occupied hours.

Where existing comfort cooling is in place cooling temperature set points must be set to no lower than 25°C.

Mechanical cooling may be provided following a detailed case for investment and the approved of the Head of Building services. The detailed case for investment should demonstrate that:

- Space temperatures rise above 28°C for a significant portion of the annual occupied hours.
- Building users actively manage all discretionary heat loads.
- All reasonable passive measures have been implemented and have been proven to be ineffective.
- Existing natural ventilation systems are consistently unable to manage heat loads from the area.
- Close temperature control is required for specific scientific equipment or research.

Space Temperatures (Winter)

The University 'heating season' runs from September to June. During this time heating systems are programmed as follows:

- Space heating will be provided from 9:00 17:00.
- The temperature set point for academic and office space is typically 19-21°C.
- Consideration is given to occupant activity, room conditions, and heating system type.

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Space Type	Temperature Set Points ²	General Schedule
Offices	19-21°C	9:00 – 17:00 Monday to Friday
Lecture Halls	19-21°C	9:00 – 17:00 Monday to Friday
Seminar Rooms	19-21°C	9:00 – 17:00 Monday to Friday
Teaching Spaces	19-21°C	9:00 – 17:00 Monday to Friday
Sports Hall	13-16°C	9:00 – 17:00 Monday to Friday
Laboratories	19-21°C	9:00 – 17:00 Monday to Friday
IT Suite	19-21°C	9:00 – 17:00 Monday to Friday
Corridors	19-21°C	9:00 – 17:00 Monday to Friday
Circulation Areas	I 3-20°C	9:00 – 17:00 Monday to Friday
Light Work	16-19°C	9:00 – 17:00 Monday to Friday
Heavy Work	11-14°C	9:00 – 17:00 Monday to Friday
IT Suite Corridors Circulation Areas Light Work Heavy Work	19-21°C 19-21°C 13-20°C 16-19°C 11-14°C	9:00 – 17:00 Monday to Friday 9:00 – 17:00 Monday to Friday

Table 1 - Thermal Comfort (Winter)

Heating systems generally start up prior to 9:00 to ensure spaces are up to temperature prior to occupation. As rooms get up to temperature, heating circuits may cycle on and off as required. A 'cold' radiator may mean your room is already at its appropriate temperature.

Appropriate Clothing

Staff and students are expected to adapt their clothing appropriately for the likely external and internal environment. In some instances, adapting to the internal environment by adjusting clothing levels is the most appropriate strategy to deal with short term over or under heating.

Complaints about Heating and Cooling

Heating and cooling system faults in your area should be reported to the Estates Services helpdesk by email at estates.helpdesk@strath.ac.uk or by telephone at 0141 548 2164.

Please note that the vast majority of heating and cooling investigations reveal that space temperatures are correctly maintained as per the thermal comfort policy. If you feel your working environment is either too hot or

² (January, 2006), Environmental Design, CIBSE Guide A, (7th edition). All space temperature targets for thermal comfort in buildings are based on recommendations from the Charted Institute of Building Services Engineers .

too cold please confirm the actual space temperature prior to contacting Estates Services. If you do not have a room thermometer, please contact <u>dean.drobot@strath.ac.uk</u>.

Portable Heating Equipment Policy

All installations of portable heating or air conditioning equipment on the University campus must be managed in cooperation with Estates Services. The following issues associated with portable heaters require the cooptation of all students and staff:

- Portable heaters may create a health safety risk if misused or installed incorrectly.
- The high heat gain caused by portable heaters interferes with the control of primary heating systems, propagating heating control problems throughout the building.
- Electric heating is energy and carbon intensive relative to centralized primary heating systems.

The use of portable heaters on the University campus will only be authorized under the following conditions:

- Estates Services are unable to maintain environmental conditions in a particular room or area as per the thermal comfort standards set out in this policy.
- Estates Services have authorized the use of a portable heater for a specific location for a specific time period.
- The Head of Department and the departmental safety coordinator are notified of the installation.
- Portable heaters have passed a Portable Appliance Test (PAT), authorized by Estates Services, as per the requirements of the Electricity at Work Regulations 1989.

Any unauthorized portable heating or air conditioning equipment will be removed by Estates Services. Equipment may be recycled, or redeployed at the discretion of Estates Services.

Complaints about Heating and Cooling

All heating and cooling faults should be reported through the Estates Services helpdesk, either by email at estates.helpdesk@strath.ac.uk or by telephone at 0141 548 2164. This will allow the problem to be documented, prioritised, and investigated by Estates Services staff. Cold calling of Estates staff should be avoided.

Please note that the vast majority of heating and cooling investigations reveal that space temperatures are correctly maintained as per the thermal comfort policy. If you feel your working environment is either too hot or too cold please confirm the actual space temperature prior to contacting Estates Services. If you do not have a room thermometer, please contact <u>dean.drobot@strath.ac.uk</u>.

Energy Efficiency Specification Policy for Equipment

As per the University Sustainable Design Quality Standards, all electrical equipment purchased by individual departments should meet the following requirements:

- 'A' rating
- Appropriate control to minimize energy use, such as the minimizations of standby power.

Green Energy Procurement Policy

The University purchase 100% 'green' electricity from their electricity supplier in order to support the development of the Scottish renewable energy sector.