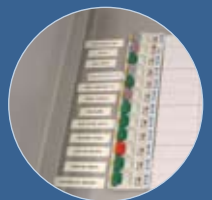
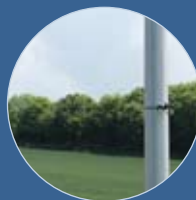




Built Environment Research and Consultancy Services

Centre for Energy and the Environment



Built Environment Research and Consultancy Services

Building Design Advice

The Centre for Energy and the Environment provides design advice and research into innovative solutions across a range of disciplines.

Thermal Modelling

We undertake thermal modelling to reduce energy consumption, improve thermal comfort for occupants, demonstrate compliance with building regulations and assess resilience to the effects of climate change.

Acoustics

We assess and optimise room acoustics, internal airborne and impact sound insulation, noise from building services, and noise ingress and egress. Tools at our disposal include ray tracing software and sound insulation prediction software.

Lighting

We model natural and artificial lighting to ensure that illuminance levels are achieved whilst optimising solar gain.

Environmental Policy

We assist local authorities or organisations in shaping their environmental policy on a sound scientific basis.

Masterplanning

We assist in the formulation of long-term development plans, including site selection and renewable energy potential at a regional level.

Local Planning Policy

We have experience in advising local authorities on local planning policy aimed at reducing carbon emissions, including obligating developers to adopt solutions such as district heating, uplift on building regulations and sustainable transport provision.

Institutional Policy

We can review existing environmental objectives and advise on optimal trajectories towards targets.

Performance Assessment

The Centre has a large collection of building monitoring equipment and over forty years' experience in monitoring and assessing outcomes.

Building Certification

We provide Display Energy Certificates (DECs) and level 5 Energy Performance Certificates (EPCs), based on client energy data.

Energy Management

We advise on submetering, automatic meter reading, data processing and analysis. Energy and carbon auditing can be undertaken to identify where energy is consumed and the most cost-effective approach to reducing consumption.

Possibilities may include upgrades to the building fabric and building services, management interventions and the installation of renewable energy technologies.

Soft Landings

We carry out reconciliation of installed metering and verify the performance of controls and metering systems against temporary monitoring.

Data Collection

We install temporary monitoring equipment to record parameters including electricity, gas and water consumption, temperature and humidity, CO₂ concentration (indicating ventilation adequacy), heat flux, solar gain, plant operation and user actuation of doors, windows and lights.

Acoustics

We maintain a set of acoustic measurement equipment with UKAS-traceable calibration. This can be used to verify room acoustics parameters including reverberation, speech transmission index, airborne and impact sound insulation and background noise levels, as well as to undertake noise surveys to BS 4142.



Sustainable Transport

The Centre has experience in monitoring and modelling the environmental impacts of transport.

Carbon Audits

We undertake carbon audits of transport policies, schemes and vehicle fleets.

Local Air Quality Assessments

We use commercial dispersion modelling and GIS software to assess current and future pollution levels from road transport at sensitive receptors, and monitor concentrations in the field to verify the results.

Noise Assessments

We measure noise levels around transportation sources and predict the effects of changes in traffic flow.

Other Services

We are able to apply our expertise to a wide range of engineering and environmental challenges. Recent examples include:

- Specification and implementation of a large monitoring and control system for an environmental chamber for the University of Bath
- Development of bespoke software allowing architects to conduct simple acoustic predictions and to carry out screening tests of on-site performance
- Development of bespoke spreadsheet tools to aid in the sizing of biomass heating plant and assess compliance with local planning requirements
- Development of bespoke equipment based around embedded computing devices to convert between digital communications protocols and record data
- Training courses in low carbon building design and building acoustics

Research and Consultancy

Contracts

Contact the Centre to discuss your requirements and we will provide a quotation based on our standard rates and terms for research or consultancy as appropriate.

South West Energy and Environment Group (SWEEG)

SWEEG is a collaborative research partnership between public sector organisations in the South West which aims to share information and research on energy and environmental issues in the built environment.

As a coordinating member, the Centre for Energy and the Environment carries out technical research for the group. All research completed by the Centre for the partnership is disseminated among its members, and work of wider interest is published in technical and academic journals.

Research is presented at biannual members' meetings.

Current SWEEG Members include:

- Devon and Cornwall Police
- Devon County Council
- East Devon District Council
- Exeter City Council
- Teignbridge District Council
- University of Exeter

Public sector organisations can join SWEEG as either full members, who benefit from low fees by committing funding on an annual basis, or as associate members, who pay an annual membership fee then commission work at a reduced rate.

Contact the Centre for further information about SWEEG membership.



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