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Simplified Building Energy Model (SBEM)

The Simplified Building Energy Model (SBEM) is the default method for assessing both target and proposed levels of CO_2 emissions for non-residential buildings.

It was developed for the Department of Communities and Local Government (DCLG) by the Building Research Establishment (BRE).

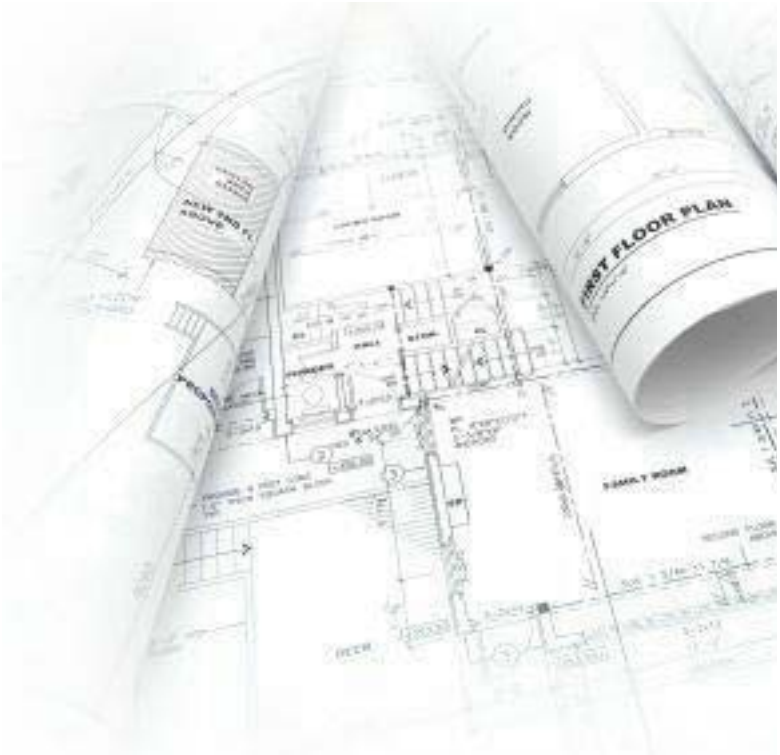
The 2006 revision to Part L of the Building Regulations means that for the first time all new buildings will have to meet a target rate for CO_2 emissions. Further revisions to the Building Regulations in 2010, 2013 and 2016 are planned.

SBEM provides an analysis of the energy consumption of all buildings (other than dwellings), used in support of the National Calculation Methodology (NCM) and the Energy Performance of Buildings Directive (EPBD). The calculation method is also used in determining CO_2 emission rates for new buildings for compliance with the new Part L2A of the Building Regulations (England and Wales) and equivalent Regulations in Scotland and N Ireland.

Key Benefits

The SBEM software:

- Provides an analysis of a building's energy consumption
- Calculates energy use and CO_2 emissions based on a description of the building's geometry, construction, use, HVAC and lighting equipment
- Assists the design process enabling specific advice to be given so that Building Regulations compliance is achieved
- Provides recommendations for improvements to the design with the minimum of complications and cost



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The Assessment Process

The National Calculation Methodology (NCM), the procedure for demonstrating compliance with Building Regulations for buildings other than dwellings is used to calculate the projected annual energy use for a proposed building and compare it with the energy use of a comparable "notional" building. Both calculations make use of standard sets of data for different activity areas and call on common databases of construction and service elements.

A similar process is used to produce an "asset rating" in accordance with the EPBD. The NCM therefore comprises the underlying method plus the standard data sets. It will produce a rating of 1 (worst) to 100 (zero emissions).

There are two stages to the assessment process:

1. At the 'design' stage – an assessment needs to be completed and submitted to the Building Control Body or Approved Inspector at the same time as the Building Control Application.

2. At the 'as-built' stage – when the build is completed, a pass certificate will need to be produced and presented to the Building Control Body and approved by the Inspector.

The information required to complete the assessment is similar to that of undertaking a SAP assessment. The calculations need to be performed by a suitably qualified 'Competent Person', as certified by BRE or other accredited body.

Relevant Legislation:

- Energy Performance of Buildings Directive 4th January 2003
- National Calculation Methodology
- Building & Improved Inspectors Regulations 2006 Parts L2a, L2B
- (Note: first inspection of all existing a/c systems over 250kW by 4th January 2009 & of all others by 4th January 2011

Who We Are

HSR are leading independent providers of energy and environmental auditing and consulting services. We operate throughout the UK and offer specialist environmental services, energy assessments and certification, including Audits, Energy Performance Certificates (EPCs) and Display Energy Performance Certificates (DECs).

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