



Energy Efficiency Best Practice in Housing Cost Benefit of Lighting



Energy efficiency's major impact

In the UK, most of our electricity is generated by fossil fuel-fired power stations which release high levels of carbon dioxide (a greenhouse gas) into the atmosphere.

New build properties possess increasingly high thermal performance. The result is that lighting and appliances can now account for up to 75% of total fuel costs, 33% of CO₂ emissions and about 20% of total energy use. Using energy efficient lights will reduce electricity consumption, delivering potential savings of approximately 900,000 tonnes of CO₂ over 10 years.

Reducing the energy demand for lighting, as recommended by Best Practice standards, can yield economic, environmental and social benefits to your organisation, your tenants - and to the wider community.

You can reduce energy demand for lighting by:

- using energy efficient lamps and luminaires (light fittings)
- directing light where needed (task-directional lighting)
- controlling the use of light
- making the most of daylight

Energy efficient lighting can:

- reduce tenants' running costs
- reduce CO₂ emissions
- reduce maintenance costs for communal areas through longer life expectancy
- contribute towards achieving Housing Corporation Scheme Development Standards. These require evidence to show that the energy efficiency standards for new build, rehabilitation and refurbished housing comprise a package of energy efficiency improvement measures compatible with the requirements of the appropriate Best Practice programmes
- enable you to comfortably exceed Building Regulations (England and Wales), pre-empting future tightening measures

To comply with The Building Regulations 2000 (England and Wales), Approved Document L1 - Conservation of Fuel and Power in Dwellings, a dedicated energy efficient fitting is required at one location for every three rooms. They must be in areas of highest likely use, therefore giving the most substantial savings. Whilst these will vary with layout and occupancy patterns, they are generally the hall, living room and landing. External lighting fixed to the dwelling must only take energy efficient lamps or have controls to turn the lamps off when not required.

There is no current requirement for Northern Ireland and Scotland.

Lifetime cost comparison

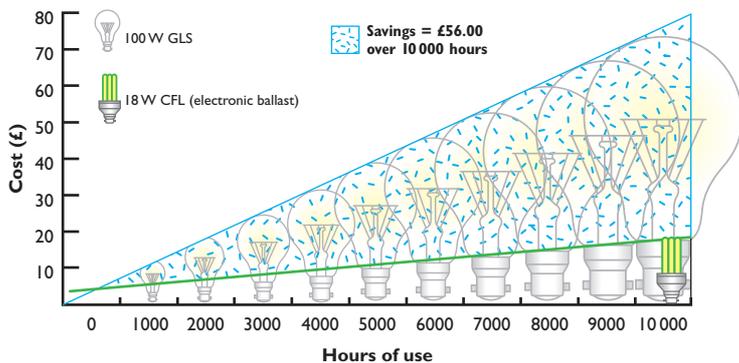
Compact Fluorescent Lamps (CFL) -v- General Lighting Service (GLS)

The table below shows the running costs of GLS lamps and a CFL over the 10,000 hour life of a CFL. It compares a 100 W GLS lamp with a dedicated fitting comprising an 18W pin-based CFL.

	100W GLS	18W CFL plus electronic control gear (3W)*
Cost -	£0.30	£4.00
Life (hours) -	1,000	10,000
Total lamp cost (over life of 1 CFL)	£3.00	£4.00
Total electricity cost (Cost of electricity £0.07/kWh)	£70.00	£14.00
Total costs	£73.00	£18.00
Savings		£55.00

*The cost of the dedicated fitting is in the order of £6 - £12 (ex works) higher than a fitting designed for an incandescent lamp. However, this is a one-off cost which is not incurred on replacement lamps and is not included in these calculations.





Because of their inefficiency (90% of the energy they use is given out as heat), incandescent lamps contribute to meeting the heat demand of a building during the heating season. Consequently, changing to energy efficient lighting will result in an increase in energy used for heating (known as the heat replacement effect). This additional energy will partially offset the cost and CO₂ savings attributed to energy efficient lighting.

Specification

Every opportunity should be taken to specify dedicated energy efficient light fittings (where the electronic ballast is contained within the fitting, which ensures that only energy efficient light bulbs can be used). Whilst promotional activities, such as giving out free CFLs, can encourage use of energy efficient lights in the short term, specifying dedicated fittings will enable tenants to reap long term savings. It will also guarantee reductions in CO₂ emissions.

What is current Best Practice and where can I find it?

Now that you have heard the economic, social and environmental benefits, here's how to find out more about Best Practice:

New build:

Energy Efficiency in New Housing – Summary of Specifications for England, Wales and Scotland (CE12)

Energy Efficiency in New Housing – Summary of Specifications for Northern Ireland (CE24)

Refurbishment:

Energy Efficient Refurbishment of Existing Housing (GPG155)

Further reading:

Low energy domestic lighting – 'looking good for less' (GPCS 441)

Domestic lighting innovations (ADH001)

Low energy domestic lighting (GIL 20)

Energy efficient lighting – a guide for installers (CE61)

Energy-efficient lighting for housing – exemplars for builders, installers, owners and managers (GPCS361)

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