

Electrical Contractors' Association

Sustainability – a view from the supply
chain

SCALA/SCEME/CLAW study day - workshop

Paul Reeve, CFIEMA CEnv
Head of Safety and Environment, ECA

Carbon reduction opportunities

Hierarchy for reducing a building's 'carbon footprint'

Reduce the need for energy
in the buildings design

Use **energy more efficiently**
in the building

Supply energy from
renewable sources



1.

2.

3.

Seven ways to help reduce carbon...

1) Improve the building and equipment

Maintain/replace equipment, power factor correction, voltage reduction

2) Lighting

Optimise lighting (e.g. reflectors), efficient lamps and lighting units (including high frequency)

3) Controls and meters

Building management controls, smart or local metering, new localised control panels for boilers, pumps, fans

4) Sensors and timers

Daylight or movement sensors, programmable systems, timers for lighting or building support equipment.



Seven ways to help reduce carbon...

5) Renewable energy (!!)

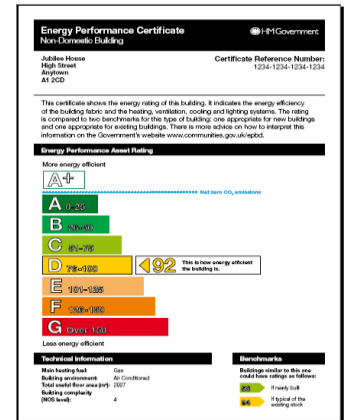
Micro-renewable 'low to no carbon' energy systems such as roof-mounted solar units (water heating, PV solar cells, heat exchangers)

6) Allow the first five carbon reduction measures to work together

(design, installation, commissioning, maintenance!)

Design and service integration = energy performance

ECA members - '2nd tier contractors' to architects etc.



**We are *messing around in the margins*
if we don't tackle *existing buildings*...**

“New build accounts for about 1% of the built environment annually”

“ the bulk of buildings n 2020 will have been built decades ago...”

“most 2050 buildings are already standing...”

Carbon Reduction Commitment



- Applies to large *non-energy intensive* public/private sector organisations (using over 6,000 megawatt hours of electricity p.a.)
- Measure and report energy use (produce 'carbon footprint' report)
- Appear in an annual '*league table*' of organisations' energy performance
- Buy carbon allowances (starting at £12 per tonne of CO₂)
- Thousand of smaller energy users will also need to monitor and report their energy use.

Refurbishment and extension opportunities

M&E contractors often have *exclusive access* to domestic customers

Can steer customers:

- away from 'energy inefficient' installations
- to cost-effective measures

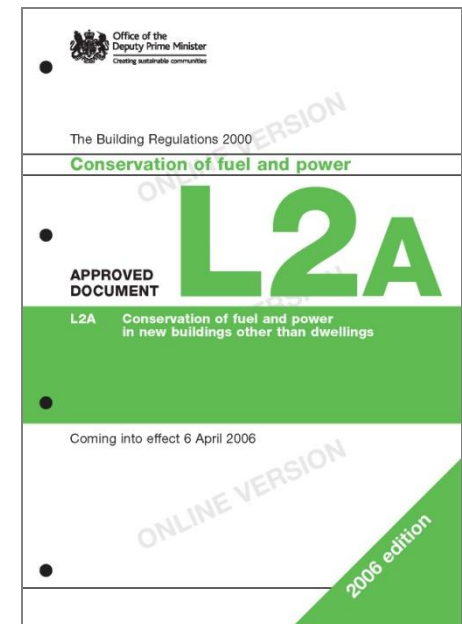
Biggest opportunity:

- get the green measures right when doing other work



'Part L' – new and existing buildings

- Expected October 2010
 - the documents are out now
- Include more on:
 - *existing buildings*
 - *green renovation standards*
- Revised Energy Performance in Buildings Directive also going for tougher Standards
- Wales wants to achieve even more!



Building is increasingly including...

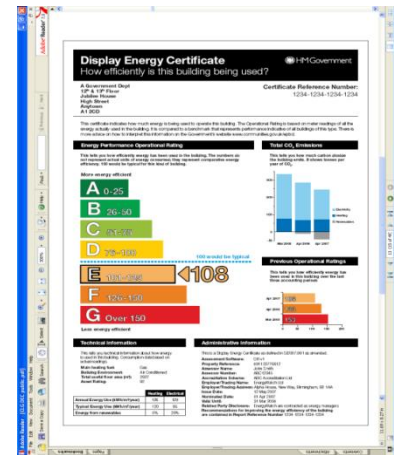
- Clients and majors –supply chain excellence
- Carbon footprinting
- Process efficiency
- Offsite manufacture
- Service provision – not just installation

Reduce gap between design and performance

Need to design *for operation, not for effect*

- a beautifully designed building may suffer from 'value engineering', other changes compromises and poor communication
- it can also be run very badly

Bring the specialists on board early
(SEA Guide on integrated teams)
Engage with the facilities manager



m&e sustainability



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in association with:



I'm looking for...

- ▶ Regulations
- ▶ Glossary

Welcome

Welcome to the M&E Sustainability website, a single source of topical and technical information for mechanical and electrical contractors provided by the ECA and the HVCA. The site is designed to help you take advantage of the many business opportunities being created by the growth in demand for sustainable building services projects.

Here you will find detailed technical guidance on the design and installation of renewable technologies, environmental and waste management strategies, relevant legislation and best practice standards.

It is designed specifically for the m&e professional so you will only find information here that is relevant to you, your business and your marketplace.

If you have any queries about the site or suggestions for content please contact the site editor Ewen Rose.

ECA and HVCA – working together on sustainability.

Case study:

Greenest ever chiller lands at Westminster

The largest ever hydrocarbon refrigerant chiller for a British building services application is installed at the historic Church House building in Westminster close to the Houses of Parliament.

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"The industry is poised on the edge of one of the most significant growth periods in its



Questions, comments and ideas please!

Multi-Story Car-Park – 14 levels – 3,000 luminaires

Installed in 1997 as 1x58w and 2x58w High Frequency IP65 fittings

Car-Parks open 24/7

Customer requested to change all T8 58w lamps to 35w T5 using lamp adapter kits.

End User offered in cooperation with Manufacturer/Contractor/Distributor

- Manufacture of bespoke gear trays to take T5 lamps. Lower cost and lower energy than T5 adapters.
- Low occupancy areas to have dimmable luminaires with presence detectors to save more energy
- High daylight areas to have daylight link
- Simple control system without digital or low voltage control wires – for ease of installation and maintenance
- Microwave detectors to cover large areas with minimum wiring and cost

Original Request value: £ 30k

Project cost: £ 350k

But...annual energy saving: £ 300k