CIBSE ASHRAE Group

How Controls, Commissioning & Collaboration are coming together to **narrow the performance g**ap

Mike Malina 20/05/2015

Keeping it all going – the importance of maintenance to Sustainability



an industry insider's view





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Mike Malina



a new brand; a new HVCA



B&ES / BCIA Conference 2014

10:80:10



Ten per cent of the total lifetime cost of the average commercial building is invested in its construction.

Eighty per cent is spent on **operating the building** for its time of use. A major function is the maintenance process The remainder of the total cost is in dismantling and demolition.

This means that ninety per cent of a building's costs are entirely influenced by its design, construction and operation.

Maintenance should not just be an add-on – it's fundamental.

We have to be much more than building services engineers

Buildings involve plant, services and People

We have to be:

Psychologists – people behaviour

Educators – awareness to control and operate

Communicators – making the message relevant – what's in it for "me"

Diplomats ! - coping with competing priorities

Waste / Inefficiency - Double Trouble – Energy source and in our buildings



Energy Hierarchy - What Delivers an energy efficient Building?

Reduce the need for Energy in the buildings design

Use Energy more efficiently in the building – Controls – Use a Building Energy Management System (BEMS)

> Supply Energy from Low Carbon and Renewable Sources where appropriate

! 🖪	Shorter	Financial Payback	Longer		ning fossil fuels used as
		2	3	efficie and pl	ntly as possible nased out as as practicable
\langle	More	Environmental benefits		Less	

History repeats!

Existing systems in buildings

So what about Low Carbon & Renewable systems?

Solar Water and Heating **Ground Source Heat Pumps** Air Source Heat Pumps **Biomass Bio-Fuels** (Liquid) **Rainwater Harvesting Grey Water Systems** Photovoltaics for Microgeneration **Micro Wind Energy** Micro Hydro Generation Systems Fuel Cell Technology Anaerobic Digestion * **Combined Heat and Power** Water Conservation Mechanical Heat Recovery Ventilation Wireless Control Technology Passive ventilation and light systems Integrated and Hybrid systems technologies **Energy Efficiency** Low Energy Lighting

Are these integrated with each other or the existing building systems?

Technology Hype

New technologies are over hyped by some of the media and vested interests

Visibility / Profile

EECM - Essential profile

Peak of Inflated Expectations

Energy Efficiency / Commissioning /Controls / Maintenance (EECM)

EECM - Current profile

Plateau of Productivity

Period of realisation

Low Carbon / Renewables

Trough of disillusionment

Technology Trigger

Time

Based on the Hype Cycle: - Gartner Group.

What's the image – Sustainable Buildings 2050

New Build 10%



Key Areas for delivering and operating a low carbon energy efficient building. The 6 C's

Commissioning

Continuous Commissioning

Controls

Communication

Competence

Compliance

www.goo.gl/5pCHT

Delivering Sustainable Buildings

an industry insider's view







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In the realm of ideas everything depends on enthusiasm; In the real world, all rests on perseverance!





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