





Eco-refurbishments of office interiors

Brian Murphy of GreenSpec

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Retrofitting Practical Toolkit for Architects

Rev 9 %%%
RIBA South/South East, SusCon, SEEDA, ESF, BSSP; GreenSpec and echno
2010 Programme Sustainable Construction

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Eco-Refurbishing

- Non-domestic
- Offices
- Homes/Housing
- Health
- Retail
- Industrial/Warehousing
- Education
- Others?

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Scope


- Eco-refurbishments of office interiors
 - CRC Carbon Reduction Commitment and GreenDeal affect Building Services and Building fabric and may force an interior refurbishment
 - but are unlikely to inform the refurbishment of a office Interior.
- What does?
 - Letting Agents, Company Culture or Business aspirations?
 - CSR or Staff Health, Wellbeing, Happiness, Green issue or Appearance, Churn, Fashion?
 - Pll or D&B?
- Brian Murphy will introduce materials, methods and principles of design, sources of information and assessment methods to consider and adopt.

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Eco-refurbishment Briefing

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Drivers?

- CRC Carbon Reduction Commitment
- GreenDeal
- Building Services and Building fabric
- may force an interior refurbishment
- but are unlikely to inform the refurbishment of a office Interior.

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What does influence?

- Letting Agents
- Company Culture?
- Business Aspiration
- CSR or Staff Health, Wellbeing, Happiness,
- Green issue or Appearance, Churn, Fashion?
- PII or D&B?

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Letting Agents

- Influence over:
- building façade (100% glazed)
 - Forces air conditioning
- services (air conditioned)
 - Drives up energy demands
 - Opposite of CRC & GD ambitions
- Initial fit outs (cheapest replaceable)
 - Or shell and core (ideally)
- Between tenant fit outs (avoid if poss.)

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Company Culture?

- Might be very influential
 - Corporate branding
 - Might be quirky
 - Or it might be conformist
- Will influence the style of the interiors
 - And the reusability of it by others at the end of its life
 - The more quirky the more likely to end up in landfill
 - Or it may have salvage value
 - Will the quirky client object to reuse by others?

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Business Aspiration?

- Efficiency of layout
 - Nett to Gross ratios
 - Optimum furniture layout
 - CRT to LCD improvements
 - H&S at Work Act & Code of practice
- Efficiency of people
 - Flexibles space
 - Non work space
 - Relaxation space

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CSR or Staff Health, Wellbeing, Happiness,

- CSR Corporate Social Responsibility
- In the Community
- Or CSR in house?
- Healthy Environment
 - Indoor Air Quality
 - Materials Choice

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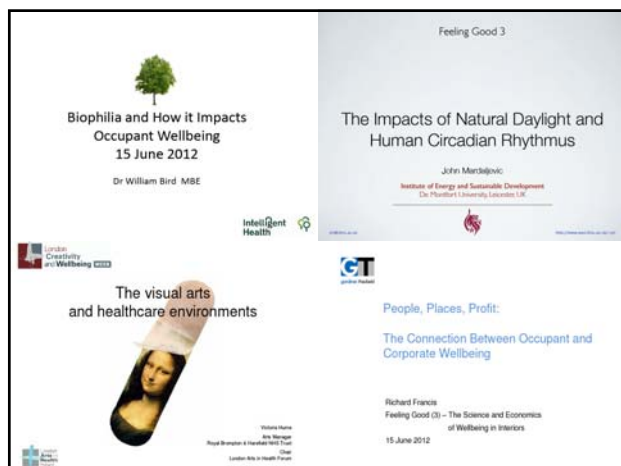
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Wellbeing & Happiness

- Wellness seminars recently at Building Centre
 - Evidence based Design
- Physiological responses to built environment
 - Via the eyes (not visual responses)
 - Discovered 15 years ago and still learning what it all means
 - Analysis of layout for response to these stimuli
 - Value of Art in public buildings

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Green issue v Appearance, Churn, Fashion?

- What triggers interior refit?
 - CRC & GD will in time
- Other reasons:
 - Maintenance
 - Appearance of carpets
 - Grime on surfaces
 - Fashion
 - Boredom
 - Churn forces change of layouts
 - exposes surfaces that need redecoration

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www.greenspec.co.uk
www.capem.eu

- PII Professional Indemnity Insurance
 - Competent Design
 - Prescriptive Specification
 - Or equivalent and Reviewed
- D&B Design & Build
 - Employer's Requirements
 - Brief or Performance Specification
 - Substitution without Review
 - Cheapest solution
 - Novated therefore no policing
 - Stuff the Requirements?

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Eco-refurbishment Design

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Considerations to adopt.

- Principles of design,
- Methods
- Materials
- assessment methods
- sources of information

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Principles of Design

- If it will be replaced frequently
 - Make sure it is a low impact material
 - Change it to a long life material that wont be changed as frequently
- Make sure its tough enough to be dismantled and reused without repairs
- Reuse reclaimed
- Change as little as possible
- Reuse what is there

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GPP Green Public Procurement

- Government Funded buildings
- Furniture specification and purchasing
- Specification must have 10% remanufactured/reused
- Industry is gearing up to provide this service

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Eco-refurbishment Methods

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Methods: Partitions

- Demountable partitions
- Relocatable Reusable partitions
- Moveable partitions/screens/dividers

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Methods: Platform floors

- Platform floors do permit rewiring
 - Mostly flexible cables
 - Spare floor outlet boxes: stored under floors
 - Rearrangement possible
 - but carpet tiles and platform floor tiles size mismatch
 - Need spare carpet tiles stored under floor
 - Ventilation floor outlets flexible layout?

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Methods: Suspended Ceilings

- Dictated by partition layout or visa versa
- Suspended ceiling layouts
 - rarely rearranged
 - Justification: Uniform lighting levels
 - rarely have flexible cabling or ducting above
- Plenum ventilation is ultimate flexibility
- Avoid ceilings if possible:
 - Expose and exploit thermal mass
 - Design service & cable trays instead
 - Interface with partitions to resolve

Eco-refurbishment Materials

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Materials

- Use low carbon materials
- Use plant based materials
- Use solid materials without adhesives
- Low VOC materials but not high chemical to mimic properties of high VOC

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Building with reclaimed components & materials

Buro Happold Guide

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Design to Use Recycled

- Determine local resources and quantities
- Reserve materials
- Design Accordingly
- Flexibility in design to adapt as procurement develops

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Recycled Construction Products & Materials

Recycled Upcycled Downcycled

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Refurbishment Information Websites

Refurbishment Government & Advisory Bodies Used & New Materials

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Reduce Reuse Recycle Websites

Waste Hierarchy, Reduce, Reuse, Recycle, Recover, Exchange, Local & Green Construction Product Websites

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Interior Materials

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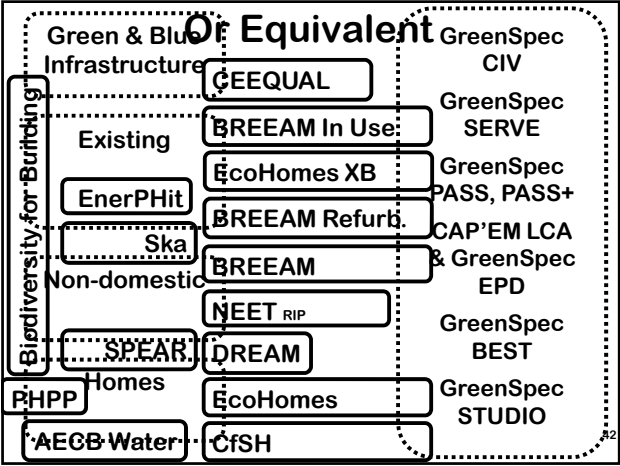
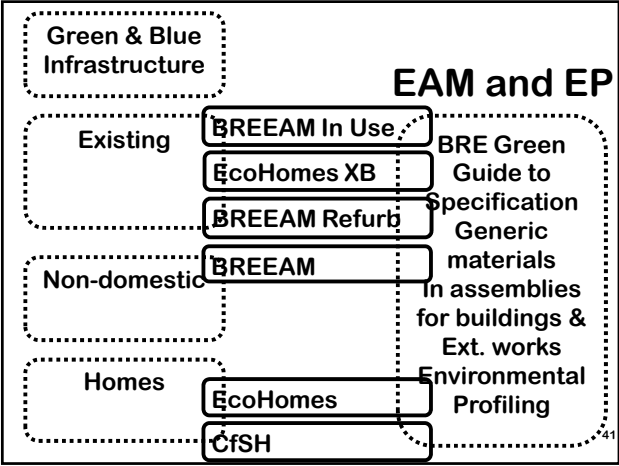
Assessment Methods

- Ska in preference to BREEAM
- Addresses resource efficiency in broad terms

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