

1-6 Retrofitting Practical Toolkit for Architects

RIBA South/South East, SusCon,
SEEDA, ESF, BSSP; GreenSpec and ech₂o

This & contained presentations

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Retrofitting: Spring Series

Avoiding repetition for anyone attending many,
3 of 6 standalone events make structured whole

Consistency with variety between last 4

Part 1 & 2 with 3, 4 , 5 and/or 6

Spring

- 1 From Global imperative to Retrofit objectives
 - Why use an Architect?
- 2 Retrofit: Generic Issues & objectives
- 3 Retrofitting: Domestic Properties

Retrofitting: Autumn Series

Part 1 & 2 with 3, 4 , 5 or 6

Autumn

- 4 Retrofitting Historic Properties
- 5 Retrofitting On The Larger Scale
 - Community Issues
- 6 Public Building Retrofitting
 - Government Issues

Site Visits

- Venue: buildings where retrofitting has occurred that will in themselves be the site visit(s)
- Speakers to arrive early
- Speak with facilities manager
- Speak with receptionists
- Analyse the building
 - photographic images of building's parts
- Do a virtual visit
 - describing issues and solutions

1 From Global imperative to Retrofit objectives

Reading: 30th March

Dorking: 31st March

Brian Murphy of GreenSpec

From Global imperative to Retrofit objectives

- The following aspects of sustainable retrofit will be covered,
- Global Imperative include an over view of the contribution the built environment makes to climate change focusing on the building types in question.
- Refurbishment/Retrofit statistics
- Retrofit Jargon Buster
- Hierarchies: carbon/energy, water, resources,
- Design Objectives: Is Code Level 5 (energy) enough?
- TSB Retrofit Programme and potential outputs
- Services Issues and strategies for solutions
- Human Issues: equipping the building is not enough the occupants make it work or fail, how to accommodate them
- Retrofit Information Resources and websites

Retrofitting: Professionals

Why use an architect?

Marketing opportunity?

Retrofitting – Why use an architect?

- Thorough briefing process can lead to tailored solutions
- Designed, planned, anticipated, no surprises
- Can see the vision, can plan the building, can anticipate the construction sequence, can design the whole, can integrate the services, can comply with all the rules.
- Briefing the design team to work towards a coherent environmental solution
- Integrated design: many players, one conductor
- Right first time? Exploring more than one scenario of integrated building fabric and services
- Architects can have a wider understanding of materials and methods to consider
- Green Policing of materials and construction: independently of the builder and his supply chain and financial deals
- Aesthetics: compared with surveyors or technicians?, no exclusivity.
- How do you develop a wide understanding rapidly?
- Joining forces with other green designers in all disciplines.
- Green networking and membership groups.
- Tools at your disposal to justify the solution.

2 Retrofitting Generic Issues & Objectives Rev 2

Winchester: 14th April & Bexley 28th April
Brian Murphy of GreenSpec
Cath Hassell of EcH2O

Retrofit Generic Issues and objectives

- Core Issues that would apply to all building types:
- Surveys, Test and analysis
- Design issues:
- Building Performance: Thermal. Moisture, Acoustic and Airtightness v Leakiness: Indoor air quality
- Resource Efficiency: materials, energy, water
- Building use patterns and impact on fabric and services
- Information sources: publications and websites
- Materials and methods
- solar access roofs,
- Green walls, Green roofs
- T&CP Planning issues, One building at a time or many,
- Regulations,
- Finance and funding
- Fuel, Energy & Services:
- Fuel Choices and Carbon impact
- Energy provision and demand reduction,
- Heating, Ventilation & Heat Recovery
- Water demand reduction, use and reuse
- GSHP, WSHP, ASHP, and pavement
- where permitted ST, PV, PV-T and ST pavement
- Energy Supplier Obligations, metering.
- ESCos & MUSCos

Services

- Fuel, Energy & Services:
- Fuel Choices and Carbon impact
- Energy provision and demand reduction,
- Heating, Ventilation & Heat Recovery
- Water demand reduction, use and reuse
- GSHP, WSHP, ASHP, and pavement
- where permitted ST, PV, PV-T and ST pavement
- Energy Supplier Obligations, metering.
- ESCos & MUSCos

3 Retrofitting Domestic Properties

Winchester: 19th May & Guildford: 20th May
Brian Murphy of GreenSpec
Cath Hassell of EcH2O

Retrofitting: Domestic Properties

- Design issues:
- Building Performance:
- Domestic use patterns
- Decrement delay
- Appearance
- Conservatories v Solar spaces
- Materials and methods,
- Insulation: Internal, external or none
- Party walls
- Party floors
- Glazing issues,
- Planning T&CP issues,
 - Permitted development rules
- Finance and funding:
- Getting beyond the 'Sarah Beeny effect'
 - (Profit before Planet)
- from Sustainable enterprise to Sustainable outputs'
- Fuel Poverty
- Aged clients
- Grey economy, pensions and zero running cost aspirations
- VAT & DIY rule changes

4 Retrofitting Historic Properties

Autumn

Brian Murphy of GreenSpec
Cath Hassell of EcH2O

Retrofitting Historic Properties

- Design issues:
- Building Performance:
- Thermal: to insulate or **not to insulate**
- Insulation issues: Internal external, **none**
- Decrement delay
- Party walls
- **Air leaky** v Airtightness strategy,
- Moisture management
- Moisture permeability and moisture mass
- Flood protection, damage and repair
- Materials and methods,
- Windows and doors: Upgrades, refurbishment if permitted
- Glazing issues with conservation solutions,
- Autonomous site
- Fuel and Energy demand reduction,
- Resource Efficiency: energy, water
- Planning T&CP issues,
- Listing
- Conservation Officers
- Permitted development rules do not apply
- Planning Portal
- solar access and existing roofs,
- Limitations on Renewable Energy and Insulation

5 Retrofitting on a Larger Scale

Autumn

Brian Murphy of GreenSpec

Cath Hassell of EcH₂O

Retrofitting On The Larger Scale

- **Community Issues:**
 - Community engagement
 - Communal activity
 - Communal Composting and waste
 - Community funding
- **Design issues:**
- **Building Performance: Multi use, use patterns**
- **Materials and methods,**
- **Blocks of flats: overcladding**
- **Terraces: one at a time or many**
- **Green walls, Green roofs**
- **Community Services**
 - Communal energy
 - Communal water
 - Communal Heating (District Heating) CH&P,
 - ESCOs & MUSCOs
 - Fuel and Energy demand reduction,
- **Use patterns and energy demand spread and balance**
- **Heating and Ventilation.**
- **Metering and monitoring to drive down waste**
- **Interlocks between fabric and services**
- **Resource Efficiency: energy, water**

Community Issues:

- Community engagement
- Communal activity
- Community funding
- Communal Composting and waste

6 Retrofitting: Public Buildings

Autumn

Brian Murphy of GreenSpec

Cath Hassell of EcH₂O

Public Building Retrofitting

- Government Issues:
- Learning opportunity for all occupants
- Government departments:
Showing by example:
- Setting standards by example
- Infrastructure
- Sustainable Drainage Systems
- Private communications, Private power and Private heat
- Municipal Waste Segregation and Composting
- Flood protection, damage and repair
- CRC Carbon Reduction Commitment
- Major obligations, targets must be met Operational as well as Capital
- Building Use patterns:
- Schools, Hospitals, Government and mixed use
- Time tables v extensions
- PFI or not
- Legacy and new working together Replacement & Demolition
- Reuse by others?
- Design issues:
- Building Performance:
- Health(y) Buildings
- Finance and funding:
- Resource efficiency: Money
- CAPEX v OPEX

Retrofitting Practical Toolkit for Architects

RIBA South/South East, SusCon,
SEEDA, ESF, BSSP; GreenSpec and ECH₂O
2010 Programme Sustainable Construction

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