NET_Learning with Urban Social Enterprise USE

London Launch 2017
5 minutes to share 40 years of experience!
BrianSpecMan Murphy of National Green Specification Ltd.

This Presentation on GBE:

- Find this file on GBE website at:
- http://GreenBuildingEcyclopaedia.uk/?P=12845
  NET_Learning links to:
  - GBE Jargon Buster (parts will appear in NET-Learning website soon)
    - http://GreenBuildingEcyclopaedia.uk/?P=10400 9000 terms 450 pages (shop)
  - GBE Performance Specification & NBS
  - Green or Violet materials & Insulation Properties
  - GBE Issue Paper: Overheating CPD
    - http://GreenBuildingEcyclopaedia.uk/?P=145
  - GBE Grenfell Fire (scratching the surface)
    - http://GreenBuildingEcyclopaedia.uk/?P=15721
  - GBE Construction Resources Showroom CPD
    - http://GreenBuildingEcyclopaedia.uk/?P=258

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Co-funded by the Erasmus+ Programme of the European Union

NET_Learning project is moving forward...
what is coming next?

London Launch 2017

Focus: Retrofit

25/09/17 8

Focus: Retrofit

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Robust Green Design & Specification can save the planet for human occupation

if only we know how
and we defend our choices

Profits > People > Planet
V
Healthy Environmental Resourceful Appropriate Competent Effective Yardstick

Match the building performance and application requirements with material properties Don't focus on the price

Avoiding overheating in summer

GBE Issue Paper: Overheating CPD
http://GreenBuildingEcyclopaedia.uk/?P=145

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Avoiding fires in tall building cladding

Topical subject after the Grenfell Residential Tower Fire in London

GBE Grenfell Fire (initial analysis)

http://GreenBuildingEcyclopaedia.uk/?P=15721

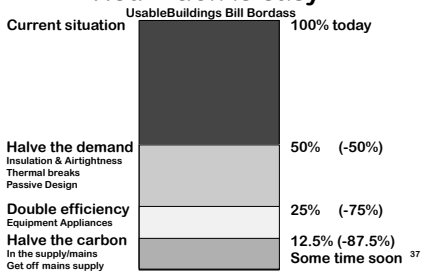
Trapping heat in winter

GBE Issue Paper: Overheating CPD

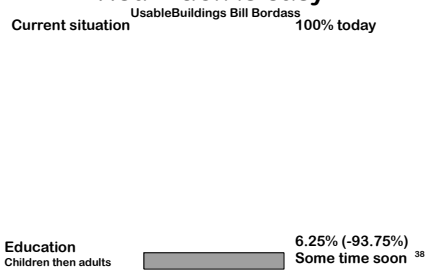
http://GreenBuildingEcyclopaedia.uk/?P=145

Targets

Achieving 80% Carbon Reduction is easy!



Achieving 80% Carbon Reduction is easy!



Built Environment Existing Property

UK Housing Stock Stats

- The UK has the oldest housing stock in the developed world
- One in five UK homes were built before 1918
  - 50% of homes are over 50 years old
  - 20% are over 100 years old and have solid walls
- 6 million homes were classified as 'non decent'
- More than 800,000 were vacant
  - could be refurbished properly and unhindered
  - making way for a further 800,000
- Buy-to-leave-empty was on the increase
- Brexit may put an end to that?

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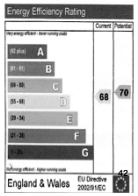
EPC Energy Performance Certificate's

- Current energy efficiency rating bands
- all homes:
  - 41% rated band E
- Houses
  - 10% of band A or B in 2006.
- Flats:
  - 39% band D
  - 25% bands A-C
- But what matters to people?
- Location, Location, Location:
  - Schools catchment areas
  - Good areas v bad
  - Trains v good roads,



SAP Standard Assessment Procedure energy efficiency rating

- Scale: worst 0-100 best
- Housing stock average SAP rating:
  - 1996: SAP = 42
  - 2006: SAP = 49
  - 2010: SAP = 52
- Many not energy efficient
  - Mean rating SAP = 52
  - Target rating SAP = 80

Built Environment Retrofit Stats & Objectives

UK objectives

- Existing housing stock: release150 m tonnes CO2/annum
- older buildings contributing disproportionately.
- November 2008 Climate Change Bill
  - Revised target:
  - 80% reduction in carbon emissions by 2050
  - 100% is impossible looking at buildings alone
- sustainable refurbishment best practice will contribute significantly
- central & key part of market transformation of the construction sector.

Scale of Mass Retrofitting

- 27 m homes
- By 2030 all buildings: Low Energy
- Need to retrofit:
  - 500,000 properties/annum before 2020
  - 240,000/annum 2020 onwards
- The longer the recession lasts and the longer we take to start
- the faster we will need to go when we do start
  - 700,000/annum was 2010 requirement

Economic opportunity

- £135 bn/annum industry needed
- £28 bn over 8 years (domestic)
- £3.5 bn/annum
- 3500 homes/day
  - (but not in a day that would be madness,
  - or Television entertainment
  - And bad construction methods to boot)
- 40,000 – 150,000 jobs created
- But the economy was flat
  - everybody was cutting back making the challenge even greater later
- GreenDeal never got going
  - 2nd attempt starting
- ECO did a lot of work some very badly

Unregulated Domestic Repairs Sector

"Grey Economy" with no skills for repairs		
Governance	**CAD jockeys**	**Repairers**
No Regulation of Constructors Repairers	"Architectural Services"	White van man
Weak Consumer Law	No PII Professional Indemnity Insurance	"Grey Economy" = Black Market
Consumer Exploitation	I Can CAD	Customer Exploitation
Office of Fair Trade	Little building know-how	Jack of all trades master of none
Trading Standards Officers	Buildings not Architecture	No Prior training
Check a trade .com lists	Inappropriate or incompetent work	Claim work is needed when none required
Consumer feedback on manners and cleanliness	Light touch by Development Control	Bad work will get worse

Construction Industry: unskilled for Retrofit

Construction Industry not ready for retrofit			
Governance	**Architects**	**Constructors**	**Education/Skills**
No Regulation of Constructors	Philosophical Theory	New-Build College Knowledge	Out of Sync Syllabus
Weak Consumer Law	Graphic Design	Brick and Pitch know-how	New Build Only
No protection of term "Architect"	New Build College Knowledge	No Customer Interface Training	Trade by Trade
No Qualification for Builders needed	No Refurbishment know-how	Single Skills or Jack of all trades	Multi-skilling seen as Devils Work
Bankrupt Directors in business again in days	Little or no Building Physics	Not ready for MMC or IMC	No interdisciplinary understanding
Rely on word of mouth	Little or No Materials Science	Not trained in BREEAM driven building	No Refurbishment Know-how training
Little black book	Little or No Number Crunching	No refurbishment know-how	No Future proofing skills

GreenDeal Delivery Mechanism

Green Deal Code of Practice BSI PAS 2030				
UKAS (approved standards)	Product Requirements	UKAS (approved standards)	Green Deal Provider Licence	OFT
Assessor /Advisor standards	Performance Specification	BSI PAS 2030 & Update	Green Deal Provider	Office of Fair Trade
Green Deal Assessment Surveys	Manufacturers & Approved Products Wrong properties	GreenDeal Installer	Manage Process	FSA
Certification Body	Manufacturer's Approved installers	Certification Body	CoRE Green Deal Coordinator	Financial Services Act
Accredited Assessor/ Advisors	Golden Rule	Accredited Installers	Provide customer Service	Development Control
Domestic / Commercial Assessors/Surveyors	Pay for itself within 25 years or product guarantee period	Signed off installations	Engage the GD assessors, advisors, installers	Fiscal Incentives Barriers
Domestic / Commercial Advisors/Designers	Product Guarantee Warranties	Installation Warranties	Guarantor	Weak Contract/ Specification
Professional Indemnity Insurance	Dictates the repayment period	SWIGA or CIGA		Weak Contract Administrator
				Error Corrections

GreenDeal Stalling Mechanisms?

Development Control		
T&C Planning Permission	Listed Building Consent	Building Control
Permitted Development	Conservation Areas	Extending part
EcoBling	Conservation Officers	Altering part
External Insulation Full Applications?	Postcode lottery	Required upgrading more
Postcode lottery	Outside/inside insulation building appearance	Limited scope of interest
System already under stress	Protective of historic fabric	Limited scope for judgement
Using delaying tactics	Limited permitted activity	Limited expertise with old building extreme upgrades

GreenDeal etc. Fiscal Incentives Or Barriers?

Fiscal Incentives? v economic recovery barriers?				
CRC	ECA	FIT	RHI	VAT
Carbon Reduction Commitment	Enhanced Capital Allowance	Feed In Tariff	Renewable Heat Incentive	New Build 0%
Big Industry Players	Tax reduction after installation	Renewable Electricity Generation	Renewable Heat Generation	RMI +20%
Government Estate	ETL	Money saved	Money saved	Refurbishment +20%
Pay in advance for Carbon consumed/ created	Energy Technology List	Money paid back	Money paid back	Retrofit +20%
Reduce Carbon to reclaim money	WTL	Good ROI Return On Investment	Good ROI Return On Investment	Energy saving +20%
Energy efficiency	Water Technology List	Government decides the rewards are too generous	Government decides the rewards are too generous?	Carbon Reduction +20%
Government decides the rewards are too generous turned into tax	Complex paperwork	FIT reduced to 21p & based in EE Certs	Keep an eye on the news	Low carbon Materials +20%

Post-GreenDeal Salvage Mission?

Picking up the pieces when it all goes wrong		
Environmental Health Officer & EA	EHO & BCO	Building Control Officer
Moisture penetration	Moisture rising in walls	Frost action on cold walls
Condensation & Spores	Damp penetration	Brick and stone frost damage
Mould starts growing	Embedded timber	Mortar frost damage
Asthma becomes prevalent	High moisture content	Unstable masonry
Toxic mould	Dry rot or wet rot	Unstable walls
Toxic buildings	Timber failure	Unstable structures
Toxic waste	Floor collapses	Condemned buildings

Tactics

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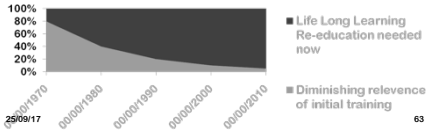
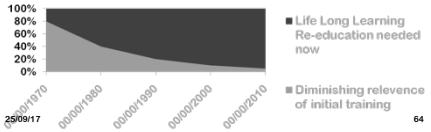
Professional's 'College Knowledge'

- Many of us studied 10, 20, 30, 40 years ago
- Diminishing relevance



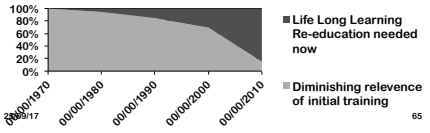
Lecturer's 'College Knowledge'

- Many of them studied 10, 20, 30, 40 years ago
- Diminishing relevance today & they are still teaching our future professionals

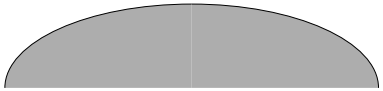


Trademan's Skills Training

- Many of you learned 10, 20, 30, 40 years ago
- Diminishing relevance



Learning Curve Forgetting Curve



70's & 2 Oil Crisis
80's Energy World @ Milton Keynes UK
Architects Journal: Energy Studies
Few individuals embraced the learning and carried the batten, full time, long term
Most Forgot

GBE

Community Retrofit: Energy Efficiency

Lessons learned from past grant funding

 © GBE 2010-2017 BrianMurphy RetrofitTTT

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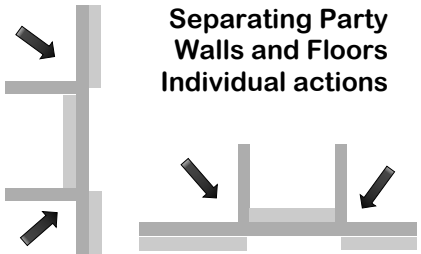
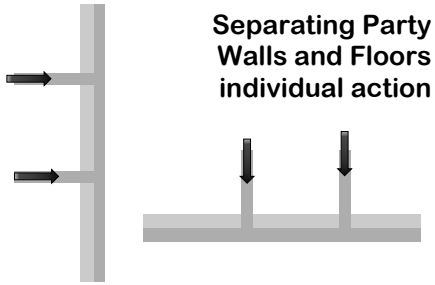
Separating Party Walls and Floors Individual actions



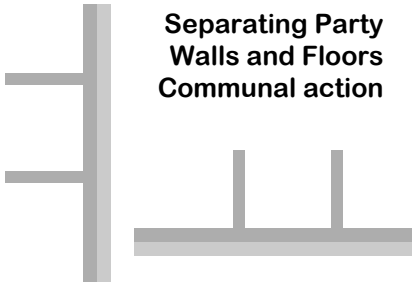
- Section Plan

Separating Party Walls and Floors individual action



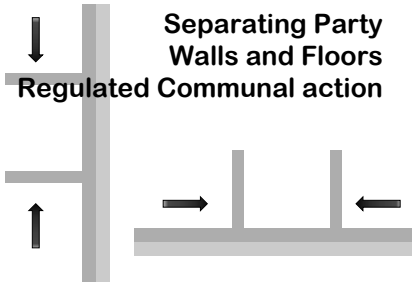
- Section Plan

Separating Party Walls and Floors Communal action



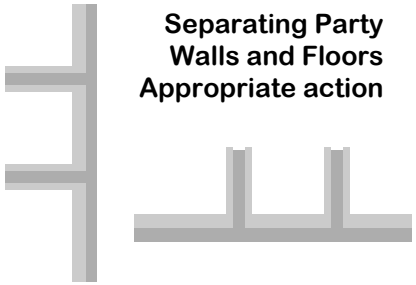
- Section Plan Exploits Thermal Mass

Separating Party Walls and Floors Regulated Communal action



- Section Plan Exploits no U value

Separating Party Walls and Floors Appropriate action



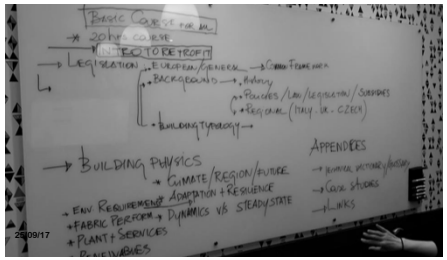
- Section Plan Hides all thermal mass

EU Permitted development

UK Not permitted without planning permission

Council Departments at logger heads

NET-Learning 20 hour course is just the start and is here today



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