**Overheating**

*Overheating of Buildings*

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Top floors and south facing rooms get sunny and overheat
Not just through the glass

Weather fronts keep UK mild

Back to back 19th Century design relic
What is it still doing here in the 21st C?
Fiduciary Rules?

Planners insist on top floor additions setback
Lightweight construction with wrong insulation needs air-con

Roof Top extensions
Usually overheat
Try as hard as you like with bits and pieces

Winter: Small windows to the north, big windows to the south
Summer: Small windows to the south or solar shading needed

South facing for winter solar gains
And summer overheating?
Investing in Opportunities

100% Glass facades
20th century construction
Fuel poverty (cooling) or wellbeing might stop it

The sun moves around the building
In big buildings you can move away from the heat to cooler parts on extreme days

Keep heat in its place of arrival
Maintain safe refuge on the cooler side
Insulate internally
Close doors

Hot floor slabs fitted with under floor heating pipes can move heat to the colder parts

Thin lightweight coverings offer no protection from solar radiation heat gains

Profiled Metal roof cladding
No insulation or sandwich panel
Both ineffective against solar gains

Concrete and Asphalt Flat Roof
No insulation
High Decrement Delay
No overheating

Old timber and asphalt roofs keep you roasting in summer
Radiant versus Conductive heat flows
Insulation needs to resist both or overheating occurs

Wrong, right and no insulation
Some work some do not
Choose carefully

Building Integrated Renewables
Is it really a good idea?
I don’t think so

An Assortment Of Cavity Walls
• Since its forced introduction and demise of the solid brick wall in 1919 the cavity wall has served a purpose.
• It kept the weather out
• It stopped the suns radiant heat
• As regulations started to stop us wasting heat, insulation was introduced into the cavity with varying levels of success
• But for the 21st century its on its last legs
• 300 mm of full fill cavity wall insulation is at the upper limit
• Lintels and Cavity tray DPCs are struggling to keep up

This Presentation on GBE:
• Find this file on GBE website at:
  http://GreenBuildingEncyclopaedia.uk/?P=15750
• It will continue to be added to over the next year

Feedback
• These files are created by generalists with a big dollop of green flavour
• These files are updated from time to time
• We are not experts so from time to time these file may get out of date or may be wrong.
• If you feel that we have got it wrong please let us know so we can put it right

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