



From Global Imperative To Material Choices





Sustainability Definition

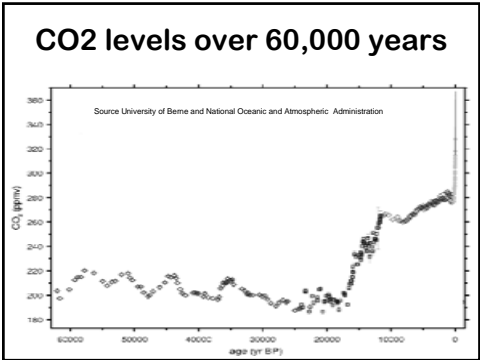
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Global Imperative

- Imperative
- No more BAU Business As Usual
- Principles of green specification

Climate change & Resource Depletion

- Climate change is the biggest problem facing humanity today
- We need to be aware of how we produce and use resources: energy materials water
- And the consequence of our current habits
- We squander without thought
- We must adapt & we need to mitigate
- Any Sceptics in the room?





Consequences of no action

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Extreme weather events

- UK floods, autumn 2000
 - Insurance pay-out £1bn

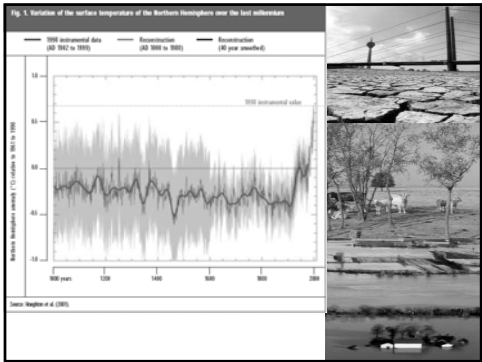
Extreme weather events

- European floods 2002
 - 37 deaths
 - \$16bn direct costs



Extreme weather events

- European heat-wave 2003
 - 30,000 deaths
 - \$13.5bn direct costs



Extreme weather events

- UK flooding – one village Boscastle 2004
 - £50m estimate of costs

Extreme weather events

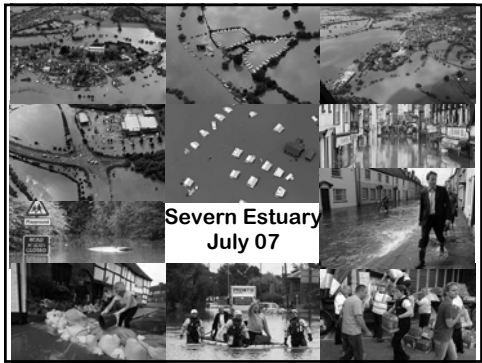
- UK floods, June July 2007
 - Insurance pay-out estimate £ 2.5 bn

Hull June 2007

- 1/6th of annual rainfall fell in one day
- 1 in 400 year event
- 7000 homes flooded
- 27,000 people affected
- £1.5 bn damage done
- ¼ of the people not insured adequately
- £14m from Government Crisis Fund

Severn Estuary July 07

- Tukesbury, Gloucestershire
- 10,000 flooded homes
- 8,000 insurance claims made
- 340,000 people affected by water cut off
- 250,000 power supply at risk
- £1 bn damage done
- £10m from Government disaster fund





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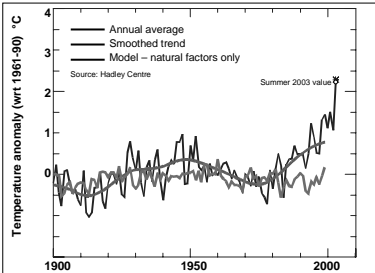
Fuel Poverty: Heating

- Rising fuel costs since 2003
- Poor cannot afford to heat their homes
- Government plan to eradicate FP by 2010 will fail
- 3m more may fall into FP by then

Fuel Poverty: Cooling

- 100% glazed façade offices have become the norm
- Solar shading is not normal
- Rising fuel costs
- Offices cooling will not be affordable

Extreme Record events every month and year
Annual EU summer temperatures



Changes or
Business as usual?

Climate change 'cost \$60b' in 2003

- Climate change may have cost the world over \$60 billion in 2003,
- triggering a spate of natural disasters
- a deadly heat wave in Europe
- massive flooding in China
- U.N. Environment Program (UNEP)
- cost of natural disasters had risen 10 percent from \$55 billion in 2002 and was part of a worrying trend of climate change.

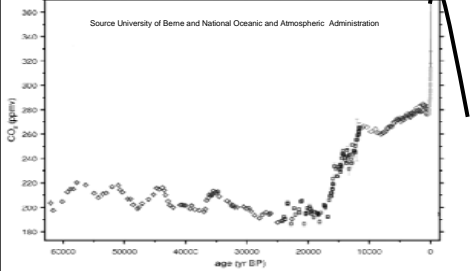
Creating a low carbon economy

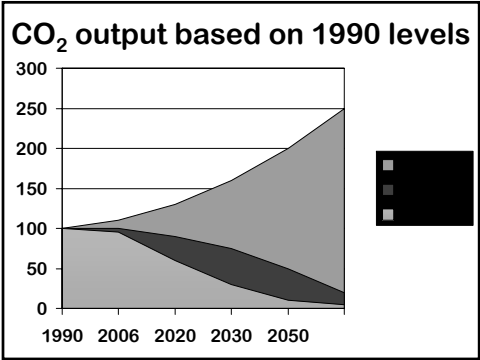
- Energy White Paper February 2003
- Overall objectives:
 - UK to cut CO₂ emissions by 60% by 2050 (QS)
 - real progress by 2020 (not in Queen's Speech 2006)
 - Maintain reliability of energy supplies
 - Promote competitive markets in the UK and beyond
 - To tackle fuel poverty by 2010
 - poor unable to heat inadequately insulated homes
 - (Coincides with Decent Homes Programme Completion)
 - (rich unable to cool 100% glazed façade offices)



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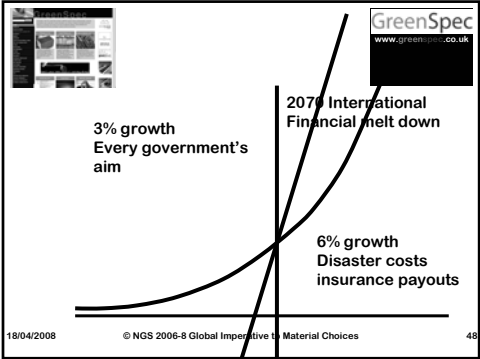
CO2 levels over next 43 years?
How do we get there?





Global Financial Instability

- Oil Barrel costs send ripples around globe
- Financial institution melt downs send ripples around globe
- US Mortgage crash, a US problem that became global
- Food shortage or rising costs causing riots
- Large national economy turn down affects many other countries
- UK Housing market failing locals but foreign buyers keep pushing the prices up



Efficiency Drive?

- PPS1 suggests local/regional targets should be set
- 2006 Code for Sustainable Homes and Building Regulations Part L in conflict
- 2007 GO-East prevents Cambridge CC T&C Planners from requiring improved efficiency of future development above Building Regulations

GreenSpec
www.greenspec.co.uk

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The real scientists are in agreement

- Number of peer reviewed articles in scientific press in previous 10 years: 928
- Percentage of articles in doubt about the cause of global warming: 0%
- Consensus on this scale is rare indeed in the scientific community

Public Awareness of issues

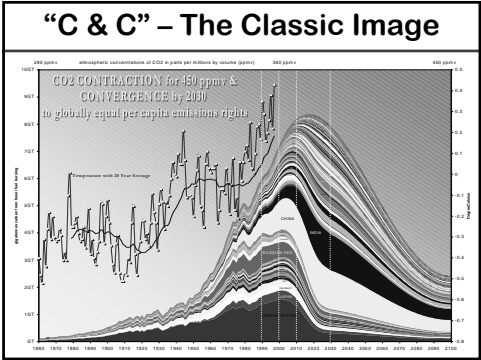
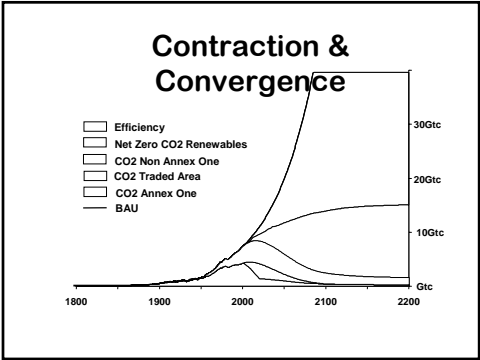
- The media promotes another story
- Number of articles in popular press about global warming in past 14 years: 636
- Percentage of articles in doubt about the cause of global warming: 53%
- No wonder the public are confused

Globalisation of Consciousness

- Comic Relief
- Band Aid
- Live Aid
- Live Earth
- G8 Summit Protests
- Globalisation Revolts
- Fairtrade popularity market penetration
- Supporting Local Producers (Food)

Procurement Rules

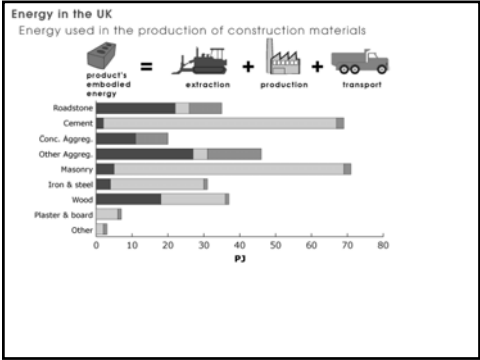
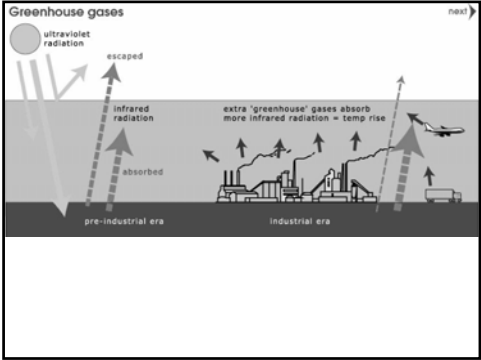
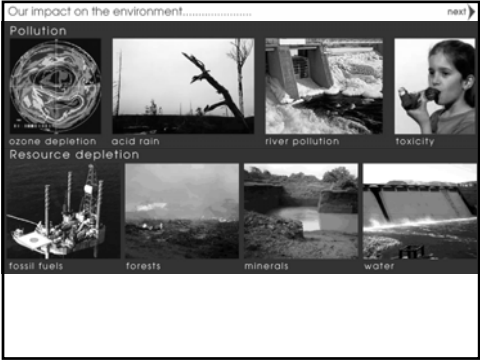
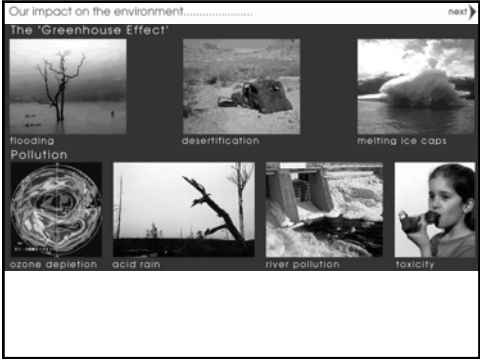
- Anti Local Procurement
- EU European Union Procurement Directive V2 (improvement)
- WTO World Trade Organisation Rules
- Encourage Fairtrade and non-FSC
- Government advice FSC is good
- Industry pressure: FSC and PEFC are =

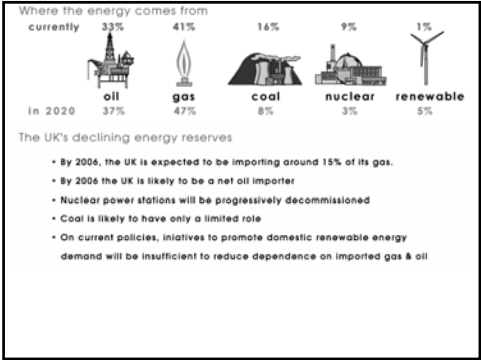
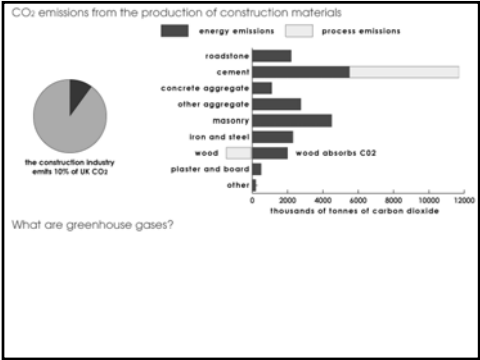


- ### Sir Nicholas Stern Report
- The Economics of Climate Change – Nov 2006
 - Investment in environment now
 - Short term cost:
 - 1% of Global GDP (gross domestic product)
 - Long term cost:
 - 11-14% of Global GDP if not dealt with now

- ### The Stern review
- examines the economics of climate change and stabilising of greenhouse gasses.
 - It estimates that the cost will be high – about 1% of global GDP
 - but that the cost of not doing so will be significantly higher, estimated to be between 5% and 20% of global GDP.

- ### The Green package
- Dec 2006
 - Code for Sustainable Homes
 - Zero Carbon Homes by 2016
 - But still a voluntary code of practice
 - Level 1 = Building Regulations Part L
 - Level 6 = Low Carbon



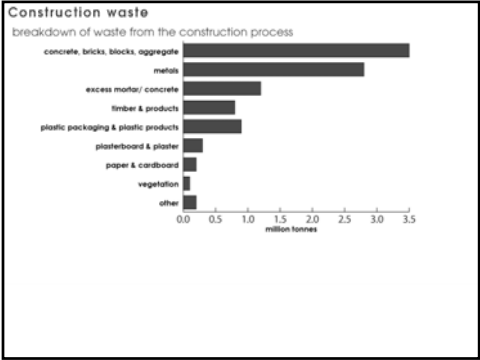
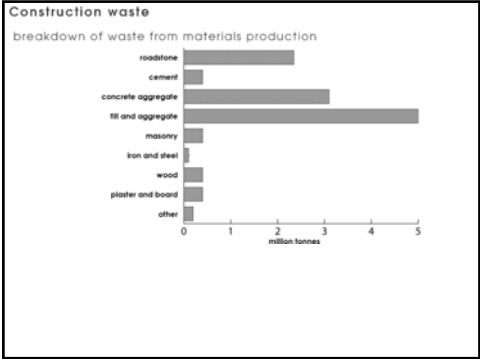
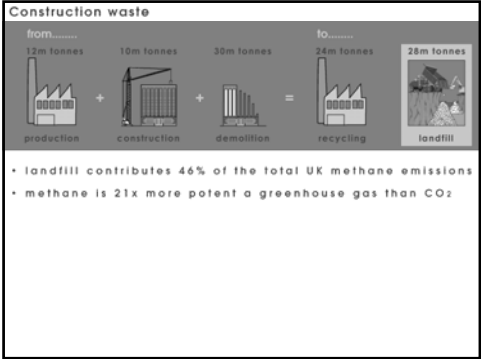


Lighting

- UK lighting consumes 20% of electricity demand
- More in many other countries
- 40% in Thailand

Wastefulness

Light Pollution = Energy Profligacy

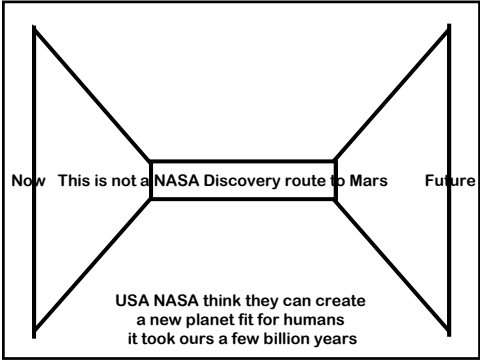
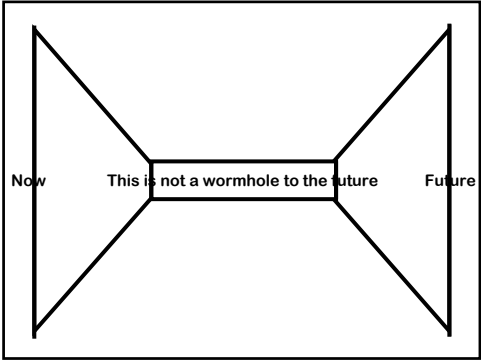
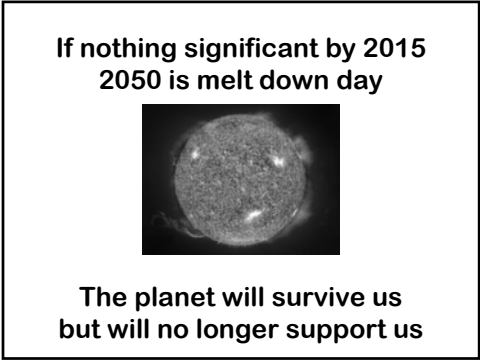
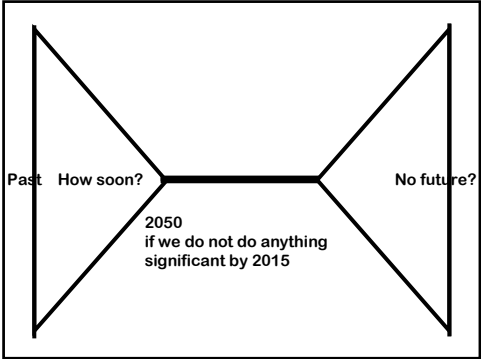
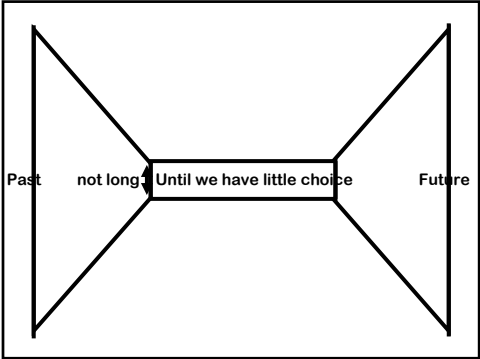
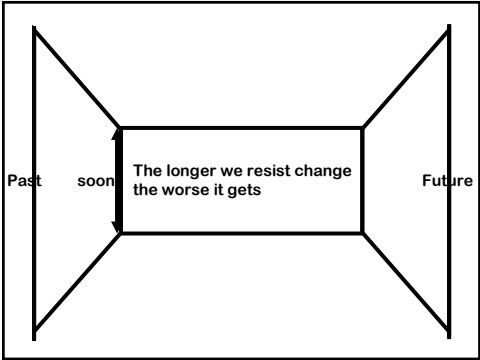
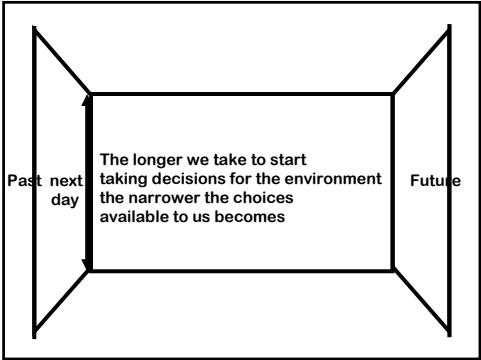
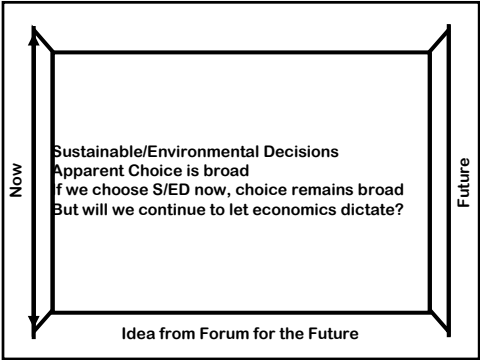


The built environment

- Consumes about 50% of energy produced (transport 25% and industry 25%)
- Nearly 50% of CO₂ emissions in the UK are caused by building, maintaining and occupying buildings
- Improvement in building design would have a significant impact on emissions and energy consumption
- Landscape: Waste, Embodied energy in materials, Transport, Lighting, Pumps,

How does this affect me?

- How can I have any influence on it all?
- EA: don't wait for the other person to start, you show the way, they will follow
- Environment is everybody's responsibility
- All the contracts, conversation and contacts you have, you will show the other parties what they can copy.



We (average UK Citizen) live a 3 planet lifestyle. we only have one



Ethiopia has already been there Darfor is there now and there are not enough of them to share between us. We each need to sponsor two Darforians to keep them on the brink of death to maintain our lifestyles

Challenges

- On the face of it buildings would seem to be the first most important things for those interested in 'green' design.
- But in fact it is a tricky issue for many designers and their clients.
- Client's are not asking for change
- We haven't seen a need to change
- We don't want to change
- We wouldn't know how to change
- So we don't change

Fresh Intake

- LSBU and many others are training students to go out into the world to design buildings
- The Construction Industry needs you to come and sort us out
- We need a fresh new look at the way we do things
- We need to radically change
- Are you up for the challenge?

Alumni Awakened

- CEM and many others are training students to go out into the world to design buildings
- Sustainability was missing
- Their past students now see recruits with new skills and feel they missed out
- They need to catch up, add sustainability to their considerable experience, to take a fresh new look at the way they do things
- The need to radically change
- Are you up for the challenge?



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Green Construction