

A Sustainable Way for Buildings

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UK housing
is largely
inefficient
and
expensive to
heat.



Current state of Langworthy homes – quality brickwork and construction, badly neglected



Poor use of space between rear gardens



Proposed scheme – roof lights, open space, attractive streetscape, communal outdoor space, wind turbines.



Retrofitting cavity
wall insulation

Courtesy EST



Retrofitting
external
wall
insulation

Courtesy
EST



Retrofitting
internal wall
insulation

Courtesy EST



Top-up loft
insulation




Install energy
efficient boiler

Courtesy EST



Energy Certificate

Building Energy Performance		Current rating	Average new build rating
Certificate Type	FULL		
Building Type	Home		
Whole or Part of Building	Whole		
<i>Very energy efficient - lower running costs</i>			
(100-120) A			95
(85-99) B			
(70-84) C			
(55-69) D		55	
(40-54) E			
(25-39) F			
(1-24) G			
<i>Not energy efficient - higher running costs</i>			
Main Walls	ABCDEFG		
Main Roof	ABCDEFG		
Extension Walls	N/A		
Extension Roof	N/A		
Main Floor	ABCDEFG		
Extension Floor	N/A		
Windows	ABCDEFG		
Main Heating	ABCDEFG		
Secondary Heating	ABCDEFG		
Hot Water	ABCDEFG		
GB 2004		 <small>Directive 2002/91/EC</small>	

Home energy labelling proposal



Materials

recycled content

Embodied energy

Environmental
impact

Health impacts



Which WC cistern
is the right one?

There is no
labelling system



Courtesy B&Q



Domestic
renewable energy
systems



Courtesy
Renewable
Devices and
solarcentury



Negative trends...

Domestic air conditioning only £600

Free delivery, inc VAT, inc installation.

Courtesy B&Q



Negative trends...



Plasma TV,
patio
heaters

Courtesy
B&Q



Rainwater butt for
garden watering

Courtesy Green
Building Store



Waste

Separation and
storage

Convenience





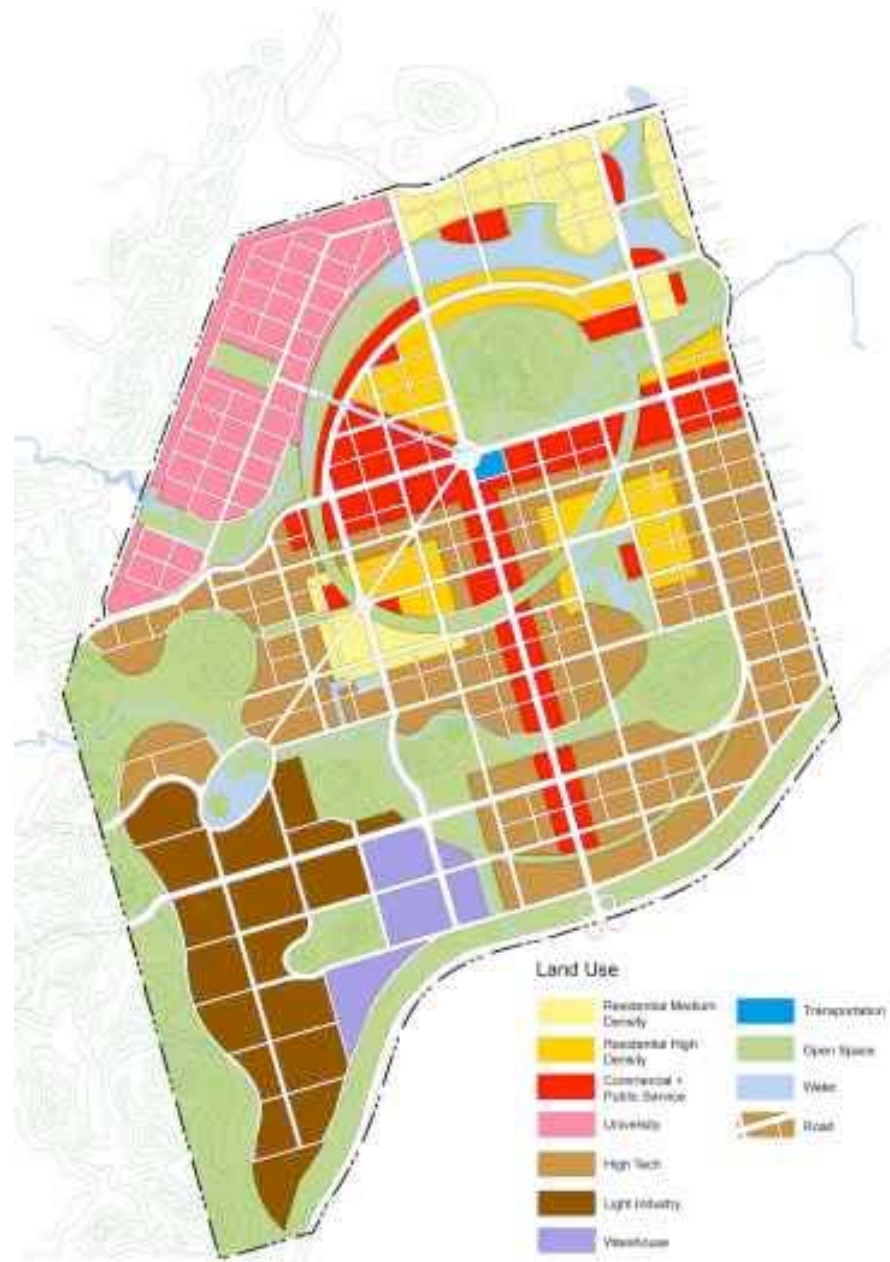
Construction
waste

Separation

Storage

audit





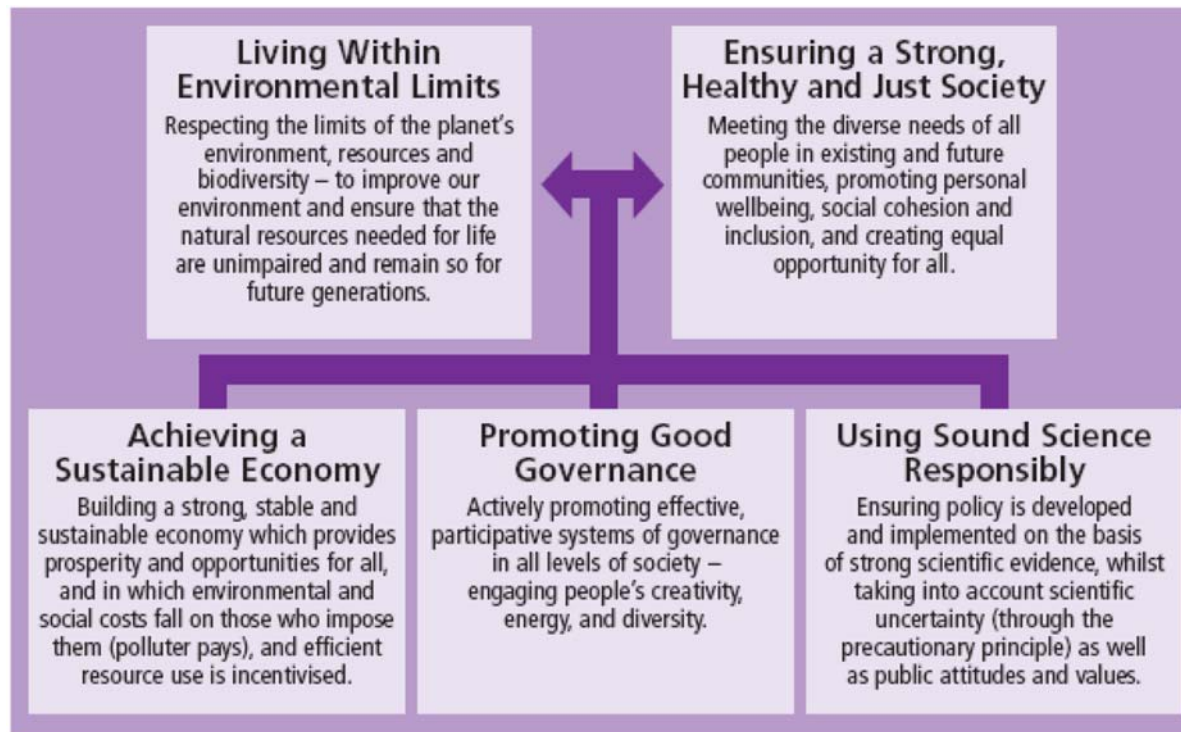
New Chinese City- Lizhou

W McDonough and Partners



Proposed science centre Swindon



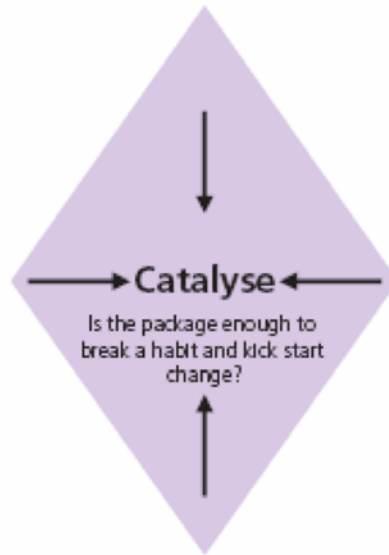


UK SD Strategy 2005 principles

Approach evolves as attitudes and behaviours change over time

- Remove barriers
- Give information
- Provide facilities
- Provide viable alternatives
- Educate/train/provide skills
- Provide capacity

Enable



Encourage

- Tax system
- Expenditure – grants
- Reward schemes
- Recognition/ social pressure – league tables
- Penalties, fines & enforcement action

Engage

- Community action
- Co-production
- Deliberative fora
- Personal contacts/ enthusiasts
- Media campaigns/ opinion formers
- Use Networks

Exemplify

- Leading by example
- Achieving consistency in policies

Behaviour change model from UK SD Strategy 2005



Sustainably
sourced timber





Thermostatic
radiator valves –
cheap and good
for energy
efficiency

Courtesy B&Q



Spray taps and
water efficient
showers are cost
neutral





Case study:

Nottingham

Ecohome

Solar collectors

Insulation

Eco materials

Water saving

Rainwater
harvesting



Case study:

Royal Borough of
Kensington and
Chelsea Flagship
Home energy
efficiency
refurbishment

Courtesy RBKC