

Code for Sustainable Homes

Les Fothergill

Sustainable Buildings Division

Sound insulation and the Code for Sustainable Homes Birmingham, October 2007



Outline of Presentation

1. Climate change and buildings

2. Government's response – Code for sustainable homes

3. Recent developments in the Code

4. Changes to guidance on sound insulation



Climate change mechanism 1

Cosmic rays effect cloud seeding and clouds can reflect heat energy. Evidence that cosmic flux has decreased is inconclusive, and its effect on temperature is thought to be small (0.1 $^{\circ}$ C).





Climate change mechanism 2

Ice core records show temperature changes can drive CO_2 concentrations. Current levels of CO_2 are highest for 600 000 years indicating that new mechanism is operating.





Temperature changes can be caused by perturbations in earth's orbit and volcanic eruptions





Recent warming can be explained if man-made factors are included





Other evidence of global warming





Stern review: Economics of climate change – projected impacts



The Stern Review on the Economics of Climate Change (2006) reported that unabated GHG emissions risk raising average temperatures by over 5 °C from pre-industrial levels. $_8$ This would transform our planet, with the poorest countries suffering earliest and most.



Climate change - projected impacts for the UK

Annual seasonal averages:

- Warmer/drier summers (spring and autumn too)
- Milder, wetter winters
- Decrease in snowfall
- Rising sea levels

deg C

4.5 4.0 3.5 3.0

2.5

2.0 1.5

1.0 0.5

More extremes events:

- More very hot days
- More intense downpours
- Possible increase in storms in winter
- High sea levels will be experienced more frequently

Change in annual average daily temperature -2080s



- Low Emissions scenario
- High Emissions scenario



Homes and climate change Precautionary Principle

- UK's total CO₂ emissions (2004): 152.5 Mt.
- Housing emissions (2004) were 27% UK total: 41MtC and are projected to grow if left unchecked



1) Source: Climate Change – The UK Programme 2006; (2) Transport does not include non-domestic aviation; (3) Source: DTI 2020 projections (July 2006) UEP 26



Homes and climate change CO₂ emissions

Over half over energy use in home is for heating; around one-fifth for hot water. Controlled through Part L and MTP.



Proportion of Carbon Emissions from Different Types of energy use in the Home

(Average household emissions 1.54 MtC/y)



Why focus on new homes?

- One third of the homes standing in 2050 will have been built between now and then so there is a significant opportunity to build in sustainability to our future way of life.
- •UK Government has long term target to reduce CO₂ emission to 60% below 1990 level by 2050.





Building a greener future: Towards zero carbon development

- All new homes be zero carbon by 2016, (with steps towards that in 2010 and 2013).
- Stamp Duty Land Tax exemption for most zero carbon homes
- Planning Policy Statement on Climate Change
- Water Regulation changes (Part G)
- Energy Performance Certificates
- Code for Sustainable Homes (went "live" on 10 April 2007)





The Government response - Code for sustainable homes

What are the key features?



- Nine categories of sustainability whole house approach
- Star rating system a tool for marketing

What are the key objectives?

- *Encourage* home builders to construct more sustainable homes
- Enable new home buyers to choose more sustainable homes
- Single document to signal the direction of future energy regulations and give certainty



Code for Sustainable Homes: minimum standards

9 Categories	Flexibility	
Energy efficiency Water efficiency	Minimum standards at each Code level	(45%)
Materials Surface water run off Waste	Minimum standards (no points) at entry	(16%)
Pollution Health & wellbeing* Management Ecology	Optional categories	(39%)

* Category 7 includes sound insulation



Code for Sustainable Homes Sustainability Rating System

Code Level	Energy (% better than Part L 2006)	Water (litres/person/day)	Other Points required
${\Join}$	10%	120	33.3
A	18%	120	43.0
☆☆☆ (2010)	25%	105	46.7
☆☆☆☆ (2013)	44%	105	54.1
፞፞፝ኇ፞፞፞፝ፚ፞ጜ	100%	80	60.1
****	Zero carbon	80	64.9
(2016)			



Code for Sustainable Homes: recent developments

Consultation on:

 \bullet

- Making a rating mandatory (April 2008) ullet
- Making Lifetime Homes an essential • element of the Code (currently 4 points)

Consultation closed on 23 October 2007





Code for Sustainable Homes: making rating mandatory

THE CODE FOR SUSTAINABLE HOMES Rating only – NOT assessment

If builder has not claimed any stars there could be either:

- A zero star certificate
- Or standard letter

(to be decided by consultation)



lifetime

homes

Code for Sustainable Homes: Lifetime Homes



- Access to the dwelling (5)
- Accessibility within the dwelling (6)
- Potential future adaptation of the dwelling (5)



Lifetime Homes

(1)	Car Parking Width
(2)	Access From Car Parking
(3)	Approach Gradients
(4)	External Entrances
(5)	Communal Stairs & Lifts
(6)	Doorways & Hallways
(7)	Wheelchair Accessibility
(11)	Bathroom & WC Walls
(14)	Bathroom Layout
(15)	Window Specification
(16)	Controls, Fixtures & Fittings
(13)	Tracking hoist route
(8)	Living Room
(9)	Entrance Level Bed-space
(10)	Entrance Level WC & Shower Drainage
(12)	Stair Lift/Through-Floor Lift

20



Introduction of Lifetime Homes

Proposal is to make Lifetime Homes standards mandatory in the Code:

- Level 6 in 2008 (current LH guidance)
- Level 4 in 2010 (possibly revised LH guidance)
- Level 3 in 2013



Code: Sound insulation Guidance updated October 2007

Criteria	Creds
Where: •airborne sound insulation values are at least 3dB higher •impact sound insulation values are at least 3dB lower OR	1
 airborne sound insulation values are at least 5dB higher impact sound insulation values are at least 5dB lower OR 	3
 airborne sound insulation values are at least 8dB higher impact sound insulation values are at least 8dB lower 	4
than the performance standards set out in the Building Regulations for England and Wales, Approved Document E (2003 Edition, with amendments 2004)	



Code: Changes in technical guidance Criteria for Robust Details

1. **Mature robust detail** (at least 100 test results) – regular assessment based on the 90th percentile of results from the last 100 site tests.

2. Little used robust detail (fewer than 100 test results) – initial assessment based on the site tests available, and reviewed regularly as new test results become available, until it becomes a mature robust detail or is rejected.

3. **New robust detail** (only initial 30 test results available) – initial assessment based on the first 30 tests needed to qualify for the robust details system, and reviewed regularly as new test results become available, until it becomes a mature robust detail or is rejected.



Code: Changes in technical guidance Pre-completion testing

Groups and Sub-groups As defined in the Building Regulations for England and Wales Approved Document E: Resistance to the Passage of Sound, Section 1 (paragraphs 1.11 - 1.17).

In addition to this, where there are steps or staggers greater than 300 mm between dwellings, dwellings without steps/staggers should be treated as a different sub-group to those with steps/staggers. This is because the presence of steps/staggers is likely to improve performance.



Code: Changes in technical guidance Award of Credits

The number of credits awarded to a dwelling is determined by the lowest performing wall or floor, regardless of whether the assessment is based on pre-completion testing, use of robust details, or a mixture of both.....

The dwellings in a group or sub-group that were tested are awarded credits appropriate to the measured performance. Other dwellings in the group or sub-group that were not tested are awarded the same number of credits as the lowest performing example in the same group or subgroup that was tested.



www.communities.gov.uk community, opportunity, prosperity

Thank You

Further information is at:

www.planningportal.gov.uk/uploads/code_for_sustainable_homes_techguide.pdf