



**Conservation of Fuel  
and Energy - Dwellings**

**L**

**Building  
Regulations  
2011**

**Technical  
Guidance  
Document**



**Comhshaol, Pobal agus Rialtas Áitiúil**  
Environment, Community and Local Government



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Chartered Engineer



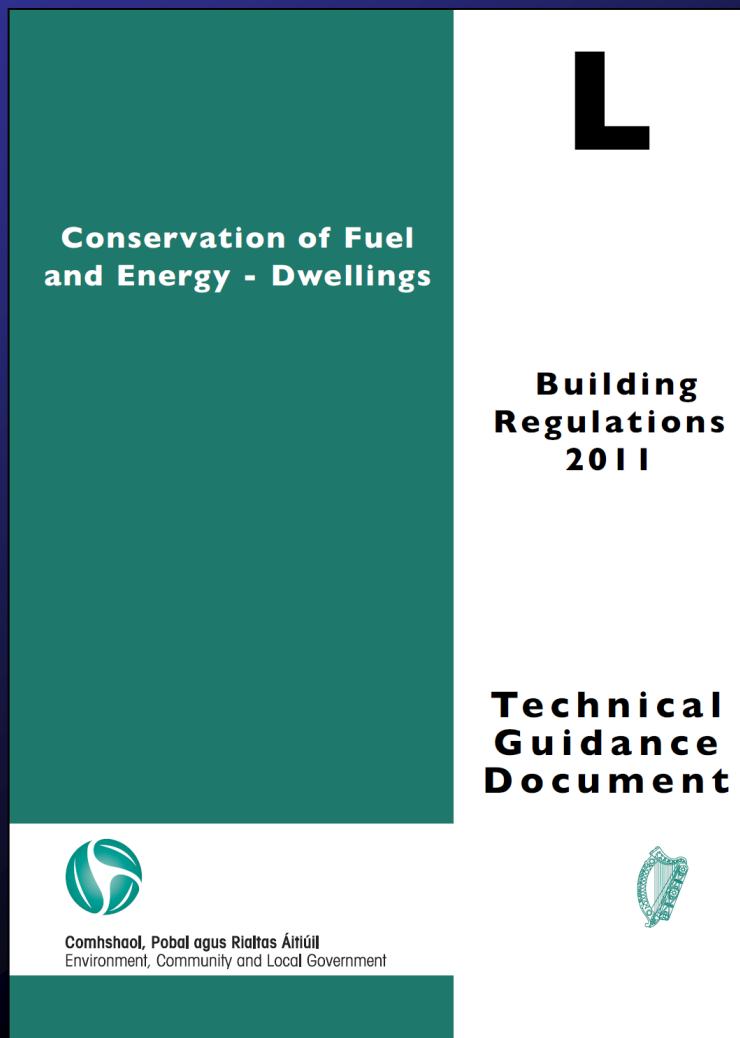
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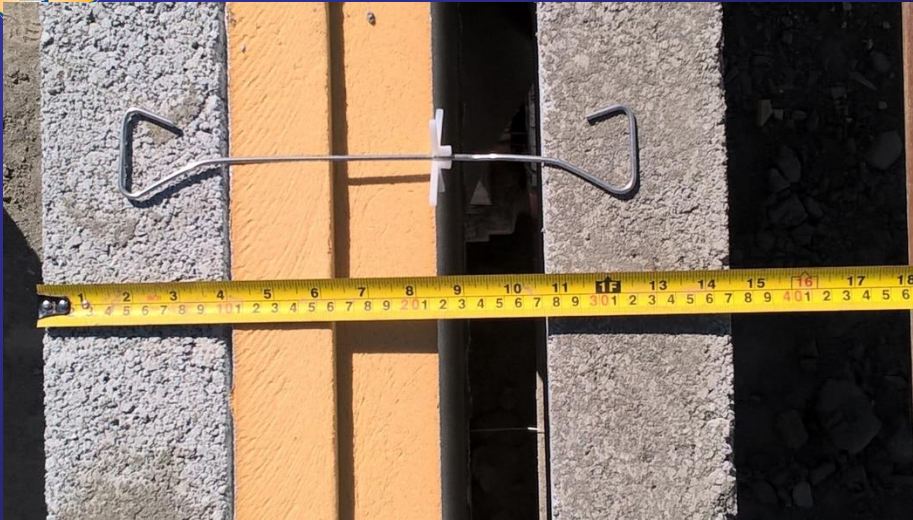
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## Unfamiliar Domino's



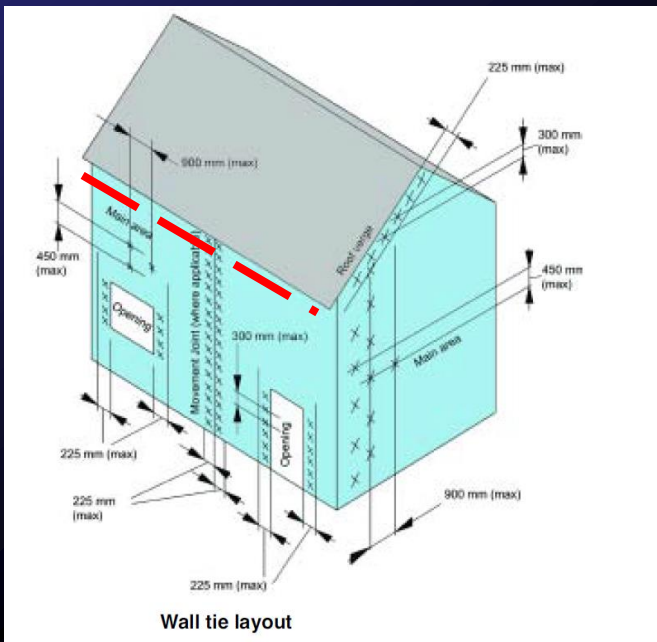
- Cavity Walls
  - Wall Ties
  - Fire
  - Sound
- Cold Bridging
  - Door Thresholds
  - Projecting Windows
- PV Panels
  - Tiles
  - Fixings
- Solar Panels
  - In Roof
  - On Roof
- Heat Pumps
- Over Heating



- Cavity Walls

- Cavity Width

- 50mm / 40mm Min



- Wall Ties

- General c/c's
- Edge c/c's
- What Edges?
- Embedment Depth



- Cavity Walls
  - Fire
    - Eaves
    - Verge
  - Sound
    - Party Wall







# Cold Bridging

- Door Threshold
  - DPC
  - Insulation





- Cold Bridging
  - Projecting Windows







- PV Panels
  - Fixings
  - Design
  - Number





- PV Panels  
– Tiles







- Solar Panels
  - IAB Certificate
    - In Roof
    - On Roof
  - Fixings



- Heat Pumps
  - Wall Design
  - Fixings
  - Reverberation
  - Maintenance





# Overheating

The following is extracted from NF44 & NF 46

Understanding overheating –  
where to start:

An introduction for house builders and designers

Overheating in new homes

A review of the evidence

Available from the NHBC Foundation Website.

[www.nhbcfoundation.org](http://www.nhbcfoundation.org)

NHBC Foundation = NHBC + BRE Trust





# Introduction to Overheating

Overheating is the accumulation of warmth in a building to an extent where it causes discomfort to the occupants.

Health impacts include an increased risk of illness from

- respiratory & cardiovascular diseases
- Discomfort
- Reduced performance

Higher night time temperatures increase the risk to health due to

- inability to recover from daytime stress
- Interruption to sleep



# Introduction to Overheating

## Vulnerable Groups

- Infants
- Elderly
- Socially isolated
- Urban dwellers
- Obese
- Chronic disease sufferers

Summer heat wave UK 2003 – 2000 extra deaths

Northern France 2003 - heat wave lasted 3 weeks & resulted in 15,000 excess deaths

No regulations in relation to dwellings overheating at present



# Principles of Overheating

Over heating may be caused by

- A single predominant factor or
- A number of compounded problems

Fundamental Concerns to understand & address

- Excessive heat gains from internal & external sources
- Inappropriate or ineffective ventilation



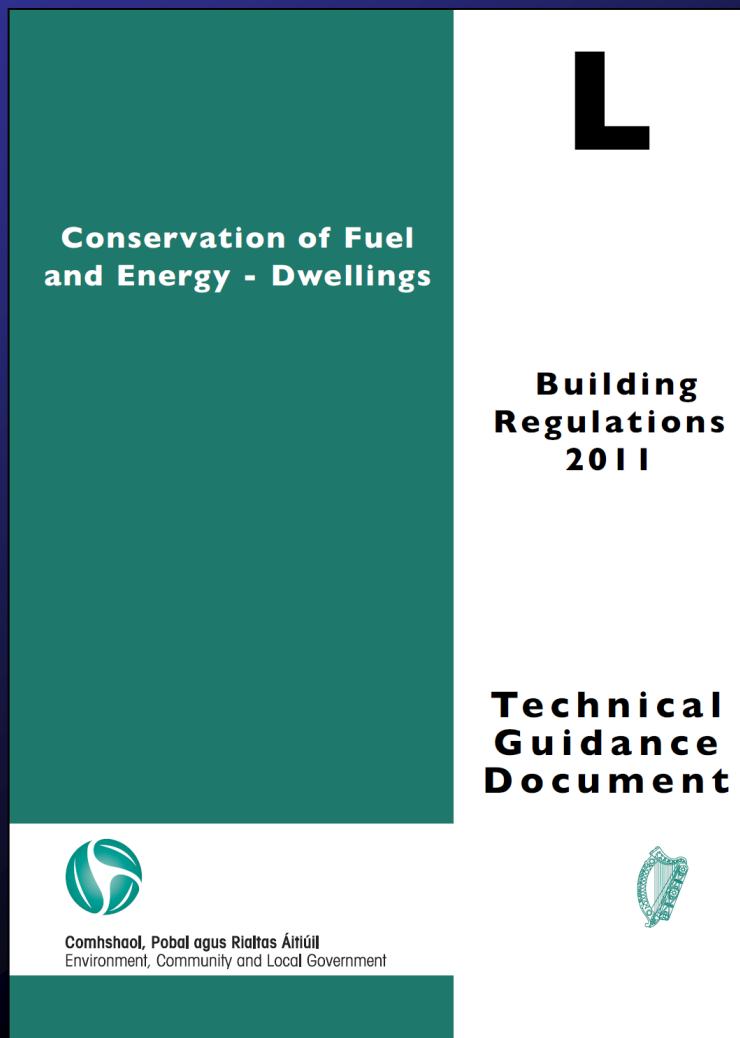


# Overheating

- Factors that increase the risk of overheating
  - External Gains
  - Internal gains
  - Ventilation strategies
  - Site context
  - Urban Heat island
  - Orientation
  - Building design
  - Thermal Mass
  - Services design
  - Cumulative effects



## Unfamiliar Domino's



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# Contact HomeBond

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# Thank You

*HomeBond*

