Wales Building Regulations 2013 Part L

Existing non-domestic buildings

September 2012

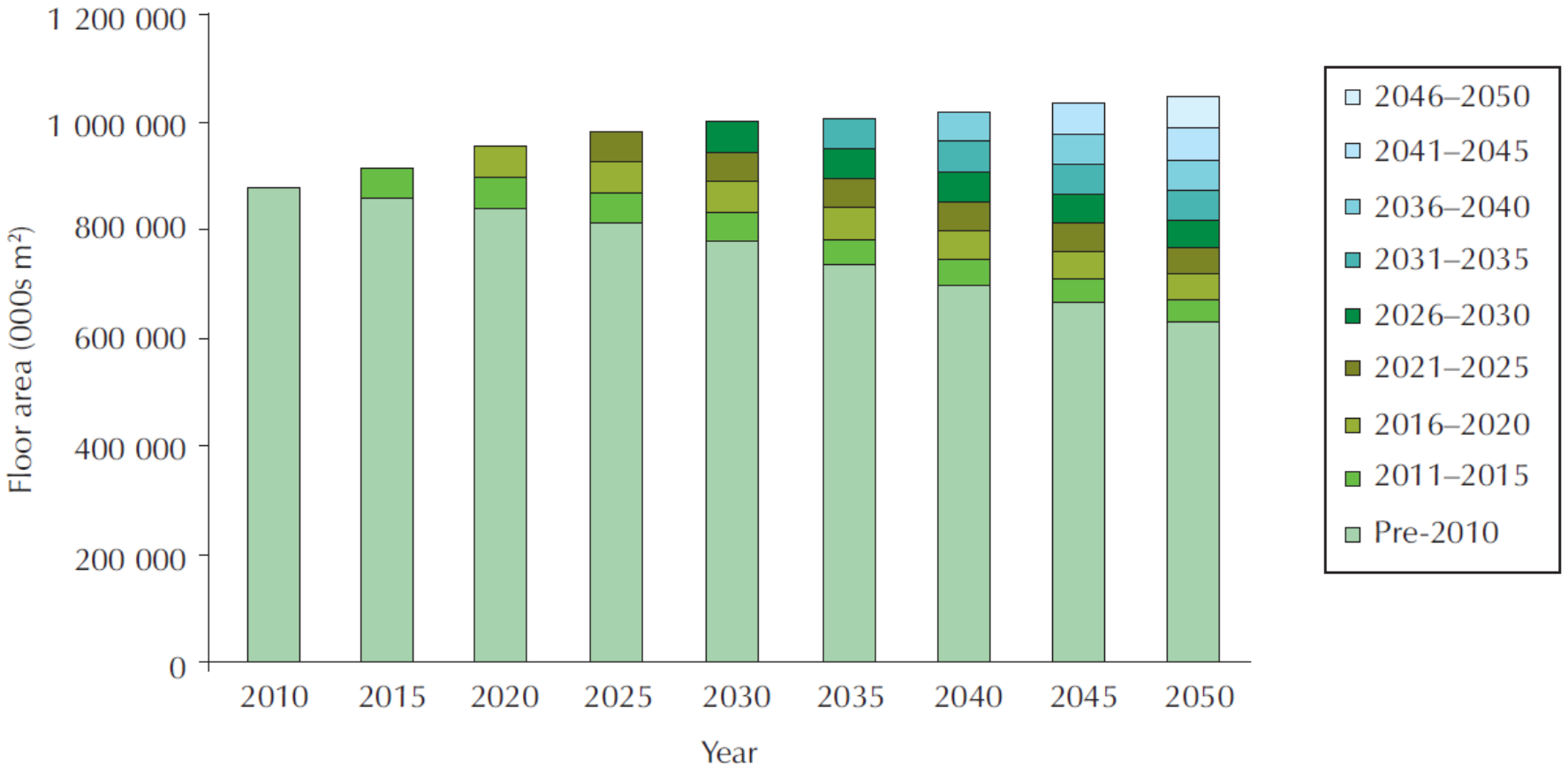
Content

- Introduction
- Improvements to current energy efficiency standards
  - Replacement of controlled fittings and services
  - Construction of extensions
  - Renovation of a thermal element
  - Retained thermal element
- Consequential improvements
- Conservatories and porches

Introduction

- Most attention is usually given to the energy performance standards of new buildings.
- The real opportunity for reducing national CO_2 emissions from the built environment is to improve the existing stock.
- To put it into context:
  - there are around 50 million m^2 existing non-domestic building floor space in Wales
  - the new build rate has historically been ~600,000m^2 per annum.

Wales Building Regulations 2013 Part L – consultation events



Source: "energy efficiency in new and existing buildings: comparative costs and CO_2 savings", BRE Trust

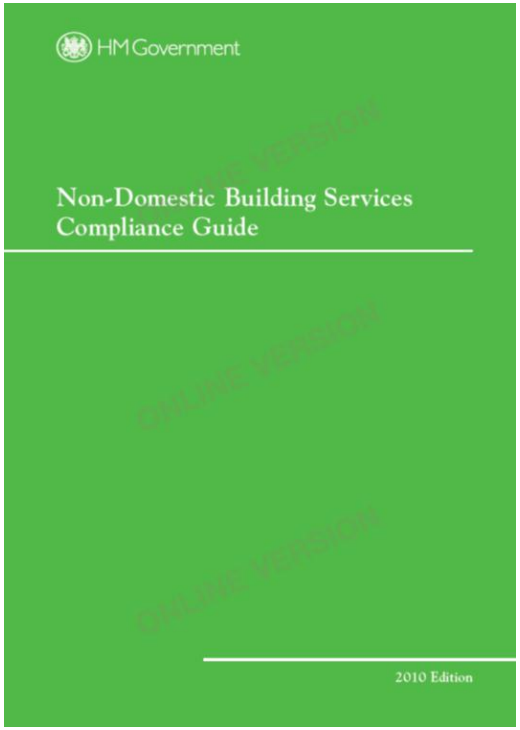
Introduction

- There are three main but related questions to achieving greater energy efficiency via Part L.
  - Can we improve the standards of energy efficiency required by Part L?
  - Can we improve levels of compliance?
  - Can we bring more building work into scope?
- In particular the first two issues can be interlinked
  - If the standards are set too high, building owners might seek to evade the regulations in order to avoid the “perceived” costs of compliance.

Improvements to current energy efficiency standards

Replacement of controlled fittings and services

- ADL2B recommends minimum energy efficiency for replacements
- May be sensible to achieve similar to new-build standards
  - Efficiency gain is locked into the product
  - No/little additional hassle for installer
- In general, we do not propose to change guidance for controlled fittings as they are in-line with new build standards.
- However, we propose improving service efficiencies in line with DCLG's *non-domestic compliance guide*



Improvements to current energy efficiency standards

Construction of extension

- ADL2A applies if extension is greater than 100m^2 and greater than 25% of the total useful floor area of existing building

- For ADL2B:
  - Recommends minimum energy efficiencies for thermal elements, glazing and additional fixed building services
  - Again, it may be reasonable to achieve close to new-build standards
    - Constructing an extension involves few constraints on design or specification of the thermal envelope
  - In general, we do not propose to change guidance for controlled fittings as they are in-line with new build standards
  - However, we propose improving service efficiencies in line with DCLG's *non-domestic compliance guide*

Improvements to current energy efficiency standards

Extensions for buildings that are essentially domestic in character

- These buildings are where the occupancy levels and internal gains are similar to domestic e.g. student accommodation, care homes
- In such situations, it would be more reasonable to have higher fabric standards for replacement and extensions (closer to dwelling standards)

Improvements to current energy efficiency standards

	Buildings essentially domestic in character	Other non-domestic buildings
Windows	WERS Band C or U=1.6 W/m²K	U=1.8 W/m²K
Wall	U=0.20 W/m²K	U=0.26 W/m²K ~~(0.28 W/m²K)~~
Pitched roof: insulation at ceiling	U=0.15 W/m²K ~~(0.16 W/m²K)~~	
Pitched roof: insulation at rafter	U=0.15 W/m²K	U=0.18 W/m²K
Flat roof	U=0.15 W/m²K	U=0.18 W/m²K
Floors	U=0.17 W/m²K	U=0.22 W/m²K

Questions

Q34: Do you agree with raising the standards for non-domestic extensions

Q44: Do you think that the Impact Assessment is a fair and reasonable assessment of the potential costs and benefits of raising performance standards for non-domestic extensions?

Improvements to current energy efficiency standards

Renovation of a thermal element

- ADL2B recommends minimum energy efficiencies where there is a significant renovation of a thermal element
  - 50% surface of element (or 25% of building envelope)
  - e.g. cladding/rendering external surface or dry-lining internal surface
- Proposal not to raise standards
  - Anecdotally, this is an area of poorer compliance
  - Practical guidance may achieve greater carbon savings
- However, usually only one opportunity to install additional insulation

Improvements to current energy efficiency standards

Retained thermal element

- ADL2B recommends minimum energy efficiencies where there is a retained thermal element:
  - Material change of use (e.g. warehouse to offices)
  - Existing element becomes part of the thermal envelope e.g. through a conversion
- Previously needed to meet same standards as for renovation but only if the current u-value is poorer than a defined threshold
- Proposed change to remove the threshold limit
  - Wish to improve the efficiency of existing buildings
  - Material change of use effectively produces a new building
  - Anecdotally, the threshold is often not applied for conversions etc
  - Only need to undertake work if technically, functionally and economically feasible

Consequential Improvements

- For buildings > 1000m^2, increasing the carbon footprint of the building requires consequential energy efficiency improvements
- Triggers are
  - An extension (or increase in habitable space)
  - Initial provision of a fixed building service
  - An increase in the installed capacity of any fixed building service
- Consequential measures are
  - Extensions: Select from measures in a table, to be capped at 10% of principal works. Measures selected to achieve payback in 15 years.
  - Services: Improve fabric in serviced areas and included additional measures as per extensions.

Consequential Improvements

- For all non-dom buildings < 1000m^2 propose to now trigger consequential improvement measures
  - by extensions or increases in habitable space (e.g. conversions)
  - but not through building services
- For all non-dom buildings, can select consequential measures from
  - Table 6 list of measures
  - EPC recommendation report
  - A Green Deal assessment
- Undertaking these works at the same time as other work, should reduce hassle and help future proof the building
- Only required where technically, functionally and economically feasible

Questions

Q39: Do you agree with the proposal to introduce consequential improvements upon extensions or increases in habitable space in non-domestic buildings below 1000m^2?

Q40: Do you agree with the proposal for eligible consequential improvement measures to be from

- the list of measures to generate Green Deal assessments, and
- the list SBEM uses to generate EPC recommendation report, and
- the existing list of measures in Table 6 of ADL2B

Q41: Do you agree that there should not be a major problem in extending the requirement for consequential improvements for the building control process? If you foresee issues, what are they and how might they be addressed?

Q46: Do you think that the impact assessment is a fair and reasonable assessment of the potential costs and benefits of the proposed options for consequential improvements for existing non-dom?

Conservatories and porches

- Conservatories and porches are currently exempt:
  - Where the floor area is less than 30m^2
  - Thermal separation between the dwelling and conservatory or porch
  - Where the heating system of the dwelling is not extended into the conservatory or porch
- There are arguments to remove this exemption as often open to the rest of the building and significant heat loss
- Not proposing to remove the exemption at this time
- Propose final bullet changed to “where there is no heating or cooling installed”
- However, would it be beneficial e.g. can subsequently install portable heaters?

Questions

Q35: Do you agree that the exemption for conservatories should be removed when an individual room heat or air conditioning unit is installed? How effective would this change be in limiting energy use/emissions, or are there other ways by which energy performance may be improved when conservatories or porches are installed?

Q43: Do you have any other comments on the proposed changes to ADL2B?

ANY QUESTIONS?