

# **Introduction to Building Regulations and Energy Performance of Buildings**

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## What are Building Regulations?

Building Regulations set requirements for safe, sustainable, accessible and secure buildings.

**Building Regulations impact on a significant sector of the economy....so we have to ensure regulation is proportionate and smart.**

- The total UK construction sector was valued at **£135bn** in 2015 and supports a workforce of **2.3 million** people (ONS Figures). A substantial proportion of construction activity is covered by Building Regulations.
- Building Regulations apply to the construction of new domestic and non domestic buildings; extensions; material alterations and when the use of a building is changed.
- They also apply to types of building work like installing insulation, boilers and windows, and electrical work done in the home.

**The Regulations set technical requirements covering a wide range of health, safety and sustainability issues, access and security.**

- |                                                   |                                         |
|---------------------------------------------------|-----------------------------------------|
| • Part A Structure                                | • Part J Combustion Appliances          |
| • Part B Fire Safety                              | • Part K Protection from falling        |
| • Part C Resistance to contaminants and moisture  | • Part L Conservation of Fuel and Power |
| • Part D Toxic Substances                         | • Part M Access & Use                   |
| • Part E Sound Insulation                         | • Part P Electrical Safety              |
| • Part F Ventilation                              | • Part Q Security                       |
| • Part G Sanitation, Hot water & Water Efficiency | • Part R Broadband Infrastructure       |
| • Part H Drainage and Waste                       |                                         |

**The Regulations are functional and non prescriptive...**

- Most technical requirements are expressed as functional requirements – eg

**Part Q Security**

*Reasonable provision must be made to resist unauthorised access to - any dwelling; and - any part of a building from which access can be gained to a flat within the building.*

- Designers can propose any solution to the building control body, who will decide if the requirement has been met.

**...and are supported by guidance (Approved Documents) which if followed is taken as demonstrating compliance with the relevant requirements.**

- The Department publishes "Approved Documents" for each of the requirements.
- Approved Documents provide technical detail on how the technical requirements can be met.
- Designers, building control bodies and competent person schemes use these documents as a benchmark for developing & assessing designs.



## Building regulations have had a positive impact in improving new build housing. But there are still risks to address.

### Impacts

#### We have seen real improvements in fire safety, for example...

- In 1979, 865 people in the UK died from fires in dwellings, 30 years later this number had fallen to 353.



#### Poor sound insulation was a real problem which has been tackled...

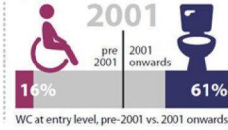
- In the 1990s noise transmission was a major cause of dissatisfaction for occupiers of attached homes.
  - Sound insulation standards were tightened in the 2003 edition of Approved Document E and in 2004 the Robust Details scheme was introduced.
  - In 2004, 7 households per 1000 contacted NHBC about noise problems.
  - In 2010, this was down to 4 per 1000.
- Source - NHBC Foundation report "Sound Progress"

#### ...and improvements in providing access for disabled people to new homes.

Visitability features were more common in homes built since 2001.



Wheelchair access to WCs has improved dramatically since 2001.



English housing survey figures

#### But there are emerging risks which we need to keep on top of, such as...

- Overheating as average temperatures rise. The independent Climate Change Committee is pressing for Government action.
- Highly energy efficient homes have to be air tight to avoid heat loss. This raises questions about indoor air quality and ventilation.
- Flooding & flood resilience. Building Regulations do not have requirements for flood resilience and resistance.
- We need to understand the risks which new methods of construction may bring eg timber frame buildings.

## Building Regulations are an important mechanism for tackling energy efficiency and reducing carbon

### Energy Efficiency

#### The Building Regulations set energy performance standards.

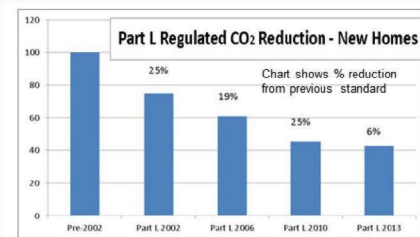
- The Building Regulations set energy standards for new buildings and the extension and renovation of existing buildings, including replacement boilers and windows in existing homes.
- Standards for new buildings have been progressively improved and are now 30% more efficient than before 2010.
- 1.5m domestic boilers are replaced a year – they must be 'A' rated condensing boilers.

#### New homes built to the latest standards are very energy efficient, reducing energy bills...

Annual household energy spend for a new build home built to latest building regulations compared to a Victorian home (with some modern improvements)

	Victorian home	New build home
• 4 Bed detached	£2,460	£1,050
• 3 bed semi-detached	£1,670	£780
• 3 bed mid-terrace	£1,430	£760
• 1 bed flat	£940	£500

... and saving carbon. Building Regulations are projected to save nearly 250 million tonnes of carbon over the period 2008 – 2032.



#### Issues and actions going forward...

- Standards for new buildings are at the point of diminishing returns so we need to balance the contribution to carbon reduction of strengthening standards against potential impact on development viability and housing delivery
- We have a duty under the Housing & Planning Act 2016 to review energy efficiency requirements for new homes.
- This review will look at cost effectiveness and will help to inform whether to strengthen standards further.
- However, there are significantly more carbon emissions from existing buildings than new ones – the big issue is how to tackle the existing stock.



## The Building Control System

The builder is responsible for ensuring requirements are met.  
Compliance is checked by building control bodies..

**There are two types of building control bodies – local authorities and private sector Approved Inspectors. The builder can choose which to use.**

- Local authorities must provide a building control service.
- There are 277 local authority building control bodies (including joint commissioning groups) in England.
- Local authorities have formal enforcement powers for dealing with breaches of the Building Regulations.
- Local authorities are also responsible for dealing with demolitions and dangerous structures.
- Local authorities can charge for some of their building control functions – but not all, in particular enforcement.

**Approved Inspectors (AIs) are appointed on behalf of the Secretary of State by the Construction Industry Council Approved Inspectors Registrar (CICAIR)**

- There are 95 Approved Inspectors on the CICAIR register.
- Approved Inspectors can carry out the building control function for building work anywhere in England and Wales.
- CICAIR vets all applicants to be Approved Inspectors and carries out periodic audits including compliance with relevant regulations and the CICAIR Code of Conduct.
- CICAIR deal with complaints about Approved Inspectors and may take disciplinary action where non compliance with relevant regulations and Code of Conduct are found.

**There is a substantial volume of building control activity and building control has scored well in surveys of developers.**

- A survey of building control bodies in 2014/15 showed that:
  - 140,294 building control applications were received by the 123 local authority building control bodies in England that responded.
  - 132,457 building control applications were submitted by 81 Approved Inspectors that responded for England and Wales
- The majority of projects for both local authority building control and Approved Inspectors were domestic alterations.
- A survey of industry views of building control service levels in 2011/12 scored 8 out of 10 in terms of a satisfaction rating..

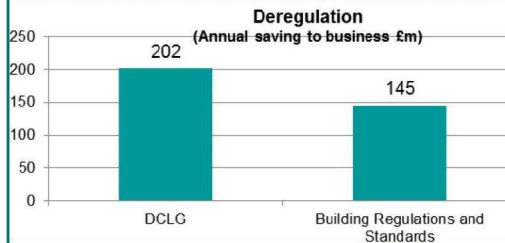
**Low risk work can be self certified by builders who are members of competent persons' schemes.**

- 3.5 million jobs are self certified by members of competent persons schemes.
- There are 17 schemes with around 132,000 members covering most building services such as heating & hot water and ventilation systems, electrical installations in homes and energy efficiency measures in existing buildings
- Scheme operators must comply with conditions of authorisation set by the Department.
- Scheme installers need to demonstrate they have minimum technical competences, set nationally by sector skill councils, to comply with Building Regulations.

## Building Regulations and Standards have delivered significant deregulation. There is potential for further savings to business.

### Deregulation

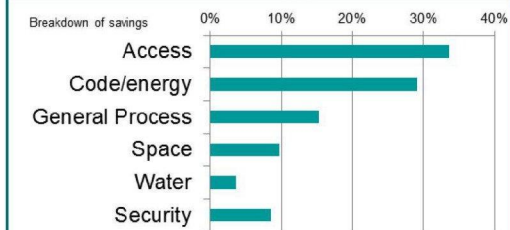
Building Regulations changes delivered over 70% of DCLG deregulation savings in the 2010-2015 Parliament.



A major review of building regulations in 2013 delivered around £50m of annual savings to business.



The Housing Standards Review simplified local standards to reduce hassle and cost to industry by around £100m.



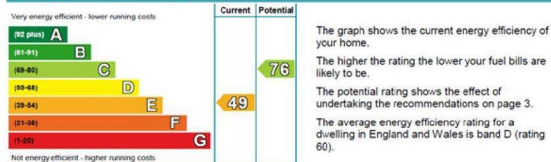
There is the potential to achieve further savings to business...

- The Government is committed to further reducing regulatory burdens on business and to reduce the regulatory burden on homebuilders.
- So identifying ways to de-regulate or reduce cost to business will be a fundamental consideration in our future reviews of regulations, the building control system or statutory guidance included in the Approved Documents.
- We think that there are opportunities, for example, to improve the Approved Documents and make them easier to use.

## Energy Performance Certificates

We are responsible for Energy Performance Certificates. EPCs help consumers understand the energy efficiency of their buildings.

### Energy Efficiency Rating



### Top actions you can take to save money and make your home more efficient

Recommended measures	Indicative cost	Typical savings over 3 years	Available with Green Deal
1 Increase loft insulation to 270 mm	£100 - £350	£141	✓
2 Cavity wall insulation	£500 - £1,500	£537	✓
3 Draught proofing	£80 - £120	£78	✓

See page 3 for a full list of recommendations for this property.

### An Energy Performance Certificate is required:

- When a domestic or commercial building is built. The underpinning data are used to demonstrate compliance with Building Regulations as well as informing buyers about the energy efficiency.
- When a building is sold or rented – they underpin the housing market
- To inform the public about energy efficiency of buildings occupied by public authorities.
- To inspect air conditioning systems over 12kW

### Certificates are used to:

- Help buyers and renters to understand the energy efficiency of buildings, the potential to improve a building's efficiency and how efficiency relates to expected energy bills.
- Support local authorities in developing local energy efficiency strategies and tackle fuel poverty.
- Help owners of large property portfolios, such as local authorities, to assess the energy efficiency of their stock overall, and target improvement works.
- Underpin a range of Government consumer energy efficiency policies such as Renewable Heat Incentive.
- Evidence that privately rented properties meet the minimum energy efficiency standards (coming into force in 2018).

## Systems to deliver EPCs

### DCLG establishes and oversees the systems to deliver consistent, reliable statutory certificates

#### Around 15,000 accredited, independent energy assessors produce around 1.8 million certificates per year

- Energy assessors must be accredited to produce certificates.
- Assessors are accountable to the accreditation scheme to which they belong for the certificates issued under that scheme.
- The market determines the price of an assessment that leads to an energy performance certificate. Using an average of £50 per assessment, this equates to a £90m market per year.
- The majority of certificates are for domestic properties (1.6m in the last year).

#### Seven schemes accredited by the Secretary of State oversee assessors and lodge certificates centrally

- DCLG approve and monitor accreditation schemes.
- Schemes must adhere to a set of 'Scheme Operating Requirements' and are audited annually against these.
- Schemes play a vital role in quality assuring certificates to support consistent quality and reduce fraud.
- Local weights and measures authorities are responsible for ensuring local compliance with the Regulations.

#### National calculation methodologies are specified and approved by Government, and commercial software approved for use

- There are a range of different calculation methodologies of energy performance used to show compliance with Part L of the Building Regulations and generate energy certificates.
- DCLG publish the methodologies relating to non-residential buildings, while the Dept for Business, Energy and Industrial Strategy publish those relating to domestic buildings.
- Similarly, each department approves the commercial software that produce the respective energy performance certificates.

#### Certificates are collected on a central Register to maximise their collective value

- Over 16 million certificates have been created since 2007, creating a highly valuable dataset for policy, research and practical use.
- A commercial supplier operates the Register and associated services on behalf of Government via a concession contract. The costs are recovered through a fee on schemes for each certificate lodged.
- Individual certificates can be retrieved via a public website and previous Ministers agreed a strategy to publish data in 'bulk' from October this year.



## Strategic Issues for Building Regulations and EPCs

We have a number of strategic issues to consider for the Building Regulations and EPC systems.

### EU legislation affects Building Regulations and Energy Performance Certificates so we need to consider Brexit implications.

- The EPC requirements and some of our energy efficiency requirements are governed by the EU Energy Performance of Buildings Directive.
- The Department is also responsible for the Construction Products Regulations (an EU single market measure).
- We regulate architects qualifications which are subject to the EU Mutual Recognition of Qualifications Directive.
- And we have used Building Regulations to implement an EU requirement on making buildings broadband ready.

### Building Regulations and EPCs play an important role in the Government's climate change policies.

- By early next year the Government has to issue a carbon emissions reduction plan and a plan on how it intends to deal with climate risks.
- With other Government Departments, we will need to consider whether energy performance standards for buildings should be raised and also how we address climate change risks like overheating and flooding.

### The building control system is faced with a number of challenges.

- The charging scheme for local authorities does not allow them to charge for all their building control functions. So building control is subject to the pressures on all local authority budgets.
- There is increasing concern about the quality of new build homes most recently a report from the All Party Group on Excellence in the Built Environment.
- There are worries that competition between building control bodies could reduce standards of compliance checking.
- And there are demands for greater transparency by making inspection records available.

### So there are a number of issues which we will want to discuss with you and on which we will be providing advice in the coming weeks into early Autumn. The main ones are...

- An initial analysis of likely Brexit issues.
- Ideas for simplifying the Building Regulations guidance and improving the building control system..
- The approach to the review of energy performance standards.
- We need to make some changes to regulations over the Summer to facilitate the EPC open data release in October.
- The publication of a review of the Architects Registration Board.
- Proposals from the Dept for Business, Energy and Industrial Strategy on strengthening boilers standards and a review into the quality and standards for energy efficiency schemes.