

## **BRE welcomes ODPM's proposals for changes to Part L and implementation of the EU Energy Performance of Buildings Directive**

### **David Strong, Managing Director of BRE Environment reviews the consultation proposals**

Two and a half years on from the last revisions to Part L, the industry has been invited to comment on further suggested changes to the Building Regulations\* and recommendations regarding the implementation of the Energy Performance of Buildings Directive (EPBD). The 332 page consultation document contains several ideas that will make a very positive contribution to the reduction of carbon emissions. Other areas however, are of concern and will need further careful deliberation if they are to provide real material benefit.

BRE particularly welcomes the greater inclusion of existing buildings within the scope of Part L and believes the introduction of mandatory pressure testing of new buildings will result not only in more energy efficient buildings, but in improved construction quality as well. Also, growing concerns about Corporate Social Responsibility and brand equity mean that the introduction of building energy performance certificates from January 2006 is likely to dramatically change the tenant/landlord relationship and provide a very positive new incentive, which will deliver demonstrably more energy efficiency buildings.

However, we are concerned at the reliance placed on the Housing Bill and on the Secure and Sustainable Buildings Act to provide legislative vehicles for implementation. If either of these bills fall, many of the proposals will be significantly delayed. Also, there remain many unanswered questions associated with a new National Methodology for assessing the energy performance of non-domestic buildings.

There are two principal drivers for the current review. The first is the Government's aim contained in the Energy White Paper, to reduce CO<sub>2</sub> emissions by 60% by 2050, with real progress by 2020. Energy efficiency was identified as the 'cheapest, cleanest and safest' way of delivering its policy objectives. Since approximately half the CO<sub>2</sub> emissions arise from buildings, improvements in Building Regulations are seen as a major contributor towards achieving this aim. The other driver is the European Energy Performance of

Buildings Directive (EPBD) which must be implemented by January 2006. This requires that minimum energy performance standards are set for all new buildings (and for large buildings being refurbished). The EPBD also requires energy performance certificates to be provided whenever buildings change ownership/tenancy. There are also requirements for regular inspection of boilers and air conditioning plant.

The consultation contains two draft Approved Documents dealing with new buildings. ADL1A applies to new dwellings and requires a minimum energy performance standard for the building. The Dwelling Carbon Emissions Rate (DCER) is determined using the Government's Standard Assessment Procedure (SAP 2005). The elemental method and target U-value method will no longer be permitted. While this will still allow flexibility to vary properties of the building, such as U-values of different elements and air permeability of the envelope, these are constrained by a set of worst acceptable values. The aim is to ensure the performance of the dwelling will be reasonably robust against future alterations. Sample pressure testing is required in most cases to confirm that a reasonable standard of airtightness has been achieved and it is also suggested that these results would act as a useful proxy for general construction quality.

ADL2 covers non-domestic buildings and replaces the familiar elemental approach with a national calculation methodology. This determines the CO<sub>2</sub> emissions from a notional building that is the same size and shape as the proposed building, complying with given elemental standards, generally in line with those in the 2002 edition of ADL2. The emissions target for the actual building is then derived by reducing the emissions calculated for the notional building by a given improvement factor and by a renewables benchmark. This aims to encourage use of building integrated renewables and other low carbon strategies such as CHP. This flexible approach to low and zero carbon systems is very much to be welcomed and gives an important pointer towards the future.

However, the national calculation methodology for non-domestic buildings is not as well advanced as the SAP for dwellings and much work still needs to be done on its development. A major section of the consultation document discusses the issues, proposing an asset rating as a measure of the intrinsic performance capability of the building, calculated using the national calculation methodology. In addition, an operational rating as a measure of the in-use performance of the building (based on actual metered

energy consumption) may be included on those certificates, produced for public display purposes. This approach has much merit but needs further development.

The ADL2 proposals also make pressure testing for non-domestic buildings a legal requirement, rather than just guidance. This is a most welcome move as there is evidence that the previous guidance was often not followed.

All in all, it is estimated that the new proposals would lead to a 25% improvement in the energy efficiency of new buildings, and a reduction of 25% in the CO<sub>2</sub> they would otherwise have emitted. However, the majority of the buildings that will be emitting CO<sub>2</sub> in 2010 are already in existence and this question must be addressed if real progress is to be made. The new proposals therefore extend provisions made in the 2002 edition of Part L on various controlled services and fittings, and now encompass controlled elements - parts of the thermal envelope of the building such as walls, roof or floor. Minimum U-values for replacement elements are given. In addition, opportunities should be taken to improve the energy efficiency of the building as a whole. For example, when a dwelling is being extended and building work costs exceeds £8,000, not only must the extension meet current standards, but cost effective improvements to the existing part of the building, such as increased insulation of loft spaces, filling cavity walls or replacing the central heating boiler, could also be required. Although some of these measures may be unwelcome by some on cost terms, they would be cost effective and provide pay-back in a short time.

Section 7 of the consultation document covers the Implementation of the Energy Performance of Buildings Directive and refers to the inspection of boilers and air conditioning systems. The DEFRA strategy paper on boiler inspection suggests that the lowest cost route would be to provide simple inspection and advice for dwellings and for commercial building owners with boilers less than 100 kW (possibly during the routine annual boiler maintenance visit). For commercial properties with boilers over 100 kW self-assessment by the building owner or energy manager may be an option. However, questions remain over the qualifications and training of the advice providers and just how effective this approach will be at reducing energy consumption. For air-conditioning there is no alternative to inspections. The issue however, is a complex one and it may be preferable to extend the time to develop the inspection method properly, rather than to

rush it. BRE's general view on the question of independent inspections and certification for boilers and air conditioning is that important decisions must be made soon, since the schemes will need to be developed and tested, quality assurance frameworks put in place and independent experts trained to provide the qualified assessors called for by Article 10 of the EPBD.

On the general question of enforcement and compliance, there needs to be significant training and awareness raising if the planned energy savings are to be achieved. The industry needs the motivation to learn the new requirements. Whilst experience has shown that enforcement has not been effective in the past, BRE believes that if it is seen to be rigorously applied, then it will provide the right impetus (the introduction of mandatory pressure testing will help in this respect, since it will provide a simple objective pass/fail test of compliance). An important element of compliance will be development of further competent persons schemes and self certification. The document clearly states that there is a need for substantial additional resources for a successful dissemination strategy, but it is unclear where these will come from.

Of major concern, is the fact that the draft Approved Documents relies on the industry and the professions to provide approved technical references to support the changes. Without this input, specific requirements may be unclear and application could prove difficult. Support will be needed in the preparation and publication of these documents, as well as in training of inspectors and other professionals.

In conclusion, while the higher energy performance standards contained in the proposed amendments will make a valuable contribution to reducing carbon emissions, there is still much to be done. In particular, time is running out with regard to putting in place the necessary training, qualifications and quality assurance framework for the EPBD independent experts (to undertake building energy certification and plant inspection). Significant further investment will be needed in developing the non-domestic building methodology if the EPBD is to start being implemented by January 2006. BRE is also concerned that many of the changes will be resisted by organisations opposed to delivering higher construction quality and energy efficiency, and it would be unfortunate if the proposals contained in the consultation are weakened, as a consequence of lobbying from these groups.

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*\*Proposals for amending Part L and Implementing the Energy Performance of Buildings Directive* has been posted in the Building Regulations section of the ODPM website: [www.odpm.gov.uk](http://www.odpm.gov.uk). The consultation period lasts from July 21 to October 22<sup>nd</sup>, 2004.

Much useful background information on the EPBD can be found on the Directive Implementation Advisory Group website: [www.diag.org.uk](http://www.diag.org.uk)