SOCIAL HOUSING BRIEFING NOTE

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Regulations and Standards

This briefing note summaries the Building Regulations 2006, Scheme Development Standards(SDS) and The Code for Sustainable Buildings (which is to replace EcoHomes standards).

A) Building Regulations 2006

The UK Government has recently reviewed Part L of the Building Regulations for England and Wales, in order to make buildings more energy efficient and tackle climate change. The changes took effect on 6 April 2006, and mean new and refurbished existing dwellings need to be better insulated and use more efficient heating systems. The last upgrade of the Building Regulations was in 2002.

The publication of the Energy White Paper and the EU Energy Performance of Buildings Directive has meant that the update was brought forward from 2007 to 2005, with the changes coming into effect in April 2006 (with the exception of boilers which was April 2005).

Standard Assessment Procedure 2005 (SAP2005)

SAP 2005 is now the only method of compliance to energy efficiency in the Building Regulations – both for new build and existing dwellings. SAP 2005 will be the single national methodology as required by the EU Performance of Buildings Directive.

SAP 2005 reverts back to a scale of 1 to 100, with 100 being a carbon neutral property (the scale can go over 100, for dwellings that are net exporters of energy). This replaces SAP 2001 which has a scale of 1 to 120.

Some other differences to SAP 2005 are:-

- energy for lighting is included
- solar water heating is revised to allow for different types of solar collector
- the effect of thermal bridging is taken into account
- additional renewable and energy saving technologies such as micro-CHP are included
- SAP also provides a method for estimating solar overheating

PART L1A covers new dwellings and PART L1B covers existing dwellings

1. L1A - new dwellings

The Carbon Index method has been replaced with the Dwelling Emission Rate (DER), which is based on CO_2 emissions per square metre of the dwelling.

DER is basically the predicted rate of carbon emissions from the dwelling.

Target Emission Rate (TER) is the maximum mass of CO_2 emissions that the dwelling **should** emit.

To show compliance with Building Regulations, the DER must be no greater than the TER.

And compliance with this will provide the information needed to prepare an energy performance certificate (see briefing note 6).

The DER will be calculated twice. First at the design stage and then again after the building has been constructed. This will take into account any changes to the performance that have been made during construction.

This method allows for maximum design flexibility, but it is necessary to make sure that future alterations or replacement works maintain the energy performance of the building.

To support this, there are worst acceptable U values for each of the design elements of the building fabric. (A 'U' Value is the measurement of heat flow through any given combination of materials, air layers, and air spaces). The lower the 'U' value, the more slowly the transfer of heat in and out of a building.

Changes to the building regulations for new dwellings include:

- On external lighting, either the lamp capacity must not exceed 150 W per light fitting and the lighting automatically switches off when not required at night and when there is enough daylight **or** the lighting fittings have sockets that can only be used with low energy light bulbs

- The Building fabric should be constructed so that there are no reasonably avoidable thermal bridges in the insulation layers and there is also a minimum SEDBUK ratings for boilers (SEDBUK – Seasonal Efficiency of Domestic Boilers in the UK)

- Renewable and low carbon technologies such as solar hot water and micro-CHP are to be encouraged as they are shown to make cost-effective contributions to achieving the TER.

- A limitation is placed on excessive solar gain so that in normal circumstances, reasonable comfort can be maintained without the need to install air conditioning.

- Better airtightness and failure to achieve better standards of airtightness will be penalised in the SAP calculations. Airtightness will be checked through pressure testing at various stages of the construction, so adjustments in construction can be made. There is a maximum air flow of $10m^3$ of air passing through a building/room in 1 hour at a pressure of 50Pa.

2. L1B – existing dwellings

Table of U Values for existing dwellings

	Old Building Regs 2002	Good Practice	Best Practice	Building Regs 2006 (replace element)	Building Regs 2006 (extension)
Walls	0.35	0.35	0.25	0.35	0.30
Doors				2.2/3	2.2/3
Windows	2.2 2.0	2.2 2.0	1.8	2.0	1.8
Floors	0.25	0.25	0.2	0.25	0.22
Pitched roof with insulation between rafters	0.2	0.2	0.13	0.2	0.2
Flat roof	0.25	0.25	0.13	0.25	0.2
Pitched roof with insulation at ceiling level	0.2 0.25	0.2 0.25	0.13	0.16	0.16

When building an extension and providing new thermal elements (such as the floor, roof, walls), there is a requirement to comply with the last column (Building Regs 2006 (extension))

When replacing a thermal element (eg material change of use – barn to a house), there is a requirement to comply with column 4 (Building Regs 2006 (replace element))

When providing new controlled fittings (windows, doors) in an extension, there is a need to comply with column 5. (When installing a window, install a window rated D or above, or a window with centre-pane U-value 1.2 W/m2K)

When replacing controlled fittings in an existing dwelling, there is a requirement to comply with column 4 (or when replacing a window, install a window rated E or above, or a window with centre-pane U-value 1.2 W/m2K).

When the development involves work on controlled services eg heating and hot water systems, work will need to comply with the Domestic Heating Compliance Guide (published May 2006). The Guide provides details of how to comply with Building Regulation requirements for space heating systems and hot water heating systems, and identifies standards of provision that meet the requirements for new and existing buildings.

Also, when a heating appliance is being replaced it should be replaced with an appliance with an efficiency not worse than two percentage points lower than that of the previous appliance.

When more than 25 per cent of the surface area of a thermal element is being renovated the whole element in question must be upgraded to the standard set out in column 4. If this upgrade is not feasible or would not achieve a payback of 15 years or less, you will need to comply with further guidance included in the Building Regulations.

When a thermal element is part of a building subject to a material change of use, and an existing element that as a result of material alteration has become part of the thermal envelope of the building whereas previously was not, the thermal element should be upgraded to comply with column 4, but only if U-values of those elements are worse than 0.7 for walls and floors and 0.35 for roofs. If this is technically, functionally and economically feasible and would achieve a payback of 15 years or less you should upgrade. If the U-values are better than these threshold U-values you do not have to do anything.

When building an extension, in most circumstances, the area of windows, roof windows, doors and rooflights in the extension should not exceed the sum of 25 per cent of the floor

area of the extension plus the area of any windows or doors which, as a result of the extensions works, no longer exist or are no longer exposed.

Additional Information

The U-values may be varied provided the area weighted U-value of all the elements in the extension is no greater than that of an extension of the same size and shape that complies to the U-value standards given and to the opening area AND individual U-values are not worse than: walls/floors-0.7, roofs-0.35 and windows/doors-3.3.

Where the extension is a conservatory it should be separated from the heated area in the existing dwelling (the building envelope). The U-values must comply with column 4. Please note that conservatories with a floor area less than 30m2 are exempt from the Building Regs.

With lighting, when a dwelling is extended or new dwelling is created from a material change of use, or an existing lighting system is being replaced, energy efficient light fittings should be provided – one per 25m^2 of the dwelling floor area.

External lighting must meet the same external lighting standards specified for new dwellings.

Boilers (new and existing buildings)

As of 1 April 2005 when installing or replacing a gas fired boiler, a condensing boiler rated SEDBUK A or B has to be fitted. This has been implemented as an amendment to Building Regs Part L1 2002.

The same rule will come into force in April 2007 for oil-fired boilers. This delay is due to the immaturity of the oil-fired boiler market.

However, in exceptional circumstances it is permissible to install a non-condensing boiler instead of a condensing boiler. A non-condensing boiler can only be installed if there has been assessment of the property by a 'competent person' (who is CORGI registered), which confirms that the additional cost of installing a condensing boiler is exceptionally high or impractical.

B) Scheme Development Standards 2003 (SDS2003) for Housing Corporation projects.

Scheme Development Standards (SDS) concentrate upon design and quality issues relating to individual schemes and procedural compliance issues. These issues will be audited as part of the Corporation's 'Compliance Audit' programme.

The SDS sets out the Corporation's requirements and recommendations for all housing projects which receive a Social Housing Grant (SHG). It is a guide for HAs and their consultants. It is also the basis upon which the Corporation will assess HAs' performance on developing housing projects.

Many aspects of the requirements reference other published guidelines to ensure proper interpretation.

Some of the SDS Requirements;

In order to meet SDS basic best practice requirements there must be:-

- Evidence available to show that the energy efficiency standards for NEW HOUSING accord with the 'Basic requirements' of the 'Good Practice Standard' outlined in the Government's Housing and Energy Efficiency Best Practice programme 'General Information Leaflet 72'.

- Evidence available to show that the energy efficiency standards for rehabilitation and refurbished housing comprise a package of energy efficiency improvement measures compatible with the opportunities matrix on page 4 of the 2001 Edition the Government's Housing and Energy Efficiency Best Practice programme 'Good Practice Guide 155 (2001 Edition)'.

Housing Quality Indicators

RSLs have been required to use a recently developed system of Housing Quality Indicators (HQIs) in planning new schemes. HQIs provide a basis for assessing the quality of schemes against 10 key aspects of design, including energy efficiency and sustainability.

The Housing Quality Indicators (HQI) are;

1. Location
2. Site – visual impact, layout and landscaping
3. Site – open space
4. Site – routes and movement
5. Unit – Size
6. Unit – Layout
7. Unit – noise, light and services
8. Unit – accessibility
9. Unit – energy, green and sustainability issues
10. Performance in use

C) Code for Sustainable Homes

The code sets higher standards for new homes to be rated against, in order to increase environmental sustainability and give home owners better information about the running costs of their homes.

The code is a voluntary initiative, by Government and Industry, to actively promote the transformation of the building industry towards more sustainable practices by requiring buildings that use:

- Energy resources more efficiently;
- Water resources more efficiently;
- Material resources more efficiently; and
- Practices and materials designed to safeguard occupants' health and well being.

The principal objective of the code is to become the single national standard for sustainable building that all sectors of the building industry will subscribe to and consumers demand.

Targets of the code are:

- Properties built to the code should be perceived by stakeholders as more marketable than other properties.
- Builders using the code will want to differentiate themselves in the market place as 'builders of quality'.
- Properties built to the code should be perceived by consumers as 'better built with lower running costs'.
- Compliance criteria should be simple, concise and clear.
- Compliance verification processes should be perceived as reasonable, manageable and worthwhile - not burdensome.

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In addition, energy efficiency ratings - which form one component of the Code, will be made mandatory for new homes and existing homes. The ratings will be included in energy performance certificates set out to EU standards.

The lowest levels of the code will also be raised above the level of mandatory building regulations.

In order to further promote on-site energy generation, new homes that use micro-renewable technology such as wind turbines and solar panels will also gain extra points in the code. **The revised code will form the basis for the next wave of improvements to building regulations.**

In addition the Government will be doing further analysis of other issues raised in the consultation including proposals for further ways to increase the take-up of the code, such as incentives in the planning system for new developments and the possibility of mandatory assessments against other code requirements.

The Government is also supporting amendments to the Climate Change and Sustainable Energy Private Members Bill to further support micro-renewable technology, to encourage more action on micro-generation by local authorities, and to improve compliance with building regulations.

EcoHomes will be merged into the final Code for Sustainable Homes later in 2006. There is a transitional period whereby schemes that satisfy EcoHomes criteria will be deemed to comply with the Code. As an interim measure all homes with English Partnerships or Housing Corporation funding will meet the new EcoHomes Very Good 2006 standard from 1 April 2006.

EcoHomes (to be merged with the Code For Sustainable Homes)

EcoHomes is an environmental assessment method for homes. It is the domestic version of BREEAM, the Building Research Establishment's Environmental Assessment Method. EcoHomes considers the broad environmental concerns of climate change, resource use and impact on wildlife. It balances these against the need for a high quality, safe and healthy internal environment.

The four ratings are pass, good, very good and excellent. The amount of carbon emissions that can be saved through the design and specification of the building envelope and through the lights, heating systems and appliances used throughout the lifetime of the house, all affect the rating.

The assessment is carried out against the operational requirements of the home, and not the actual energy consumption. It also takes into account the primary fuel source. Homes using gas will therefore perform better than those using other fuel sources, especially electricity.

Pass

Homes that are compliant with SDS2003 and Building Regulations will automatically achieve several of the EcoHomes credits.

It is possible to achieve a 'pass' rating for housing that is SDS and Building Regulation compliant with little or no extra cost.

Good

The developer needs to be able to demonstrate good practice in most areas. To achieve a 'good' rating more consideration needs to be given to the design and specification of a house. It is possible to achieve a 'good' rating for housing that is SDS and Building Regulation compliant at a moderate cost. A 'good' could be achieved for less than £200 per unit. These costs exclude site dependent credits.

Very Good

Developments that push forward the boundaries of environmental performance will achieve this.

To achieve a 'very good' rating additional credits are needed. It is likely that issues of material sourcing, land use and ecology and noise reduction will have to be

addressed. It could cost in the region of £1700 per unit to achieve a 'very good' rating. If site specific credits are included, costs could be reduced by £300 per unit.

Excellent

Developments which demonstrate exemplary environmental performance across the full range of EcoHomes issues will achieve this.

To achieve an 'excellent' rating, credits will have to be achieved in all categories. It could cost in the region of £3000 per unit. If site specific credits are included, costs could be reduced by £1200 per unit.

Construction Client's Charter

Housing Associations wishing to receive Social Housing Grant (SHG) allocations for new developments, involving significant construction costs, must have registered for and be actively pursuing either 'Client's Charter' status or 'Mini-Charter' status.

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Last updated – October 2006