

# Foreword

The built environment is at the heart of our economy. It shapes how we all live our lives. But the manner in which it consumes natural resources means that it is responsible for some of the most serious global and local environmental change. The way we use natural resources for building and the levels of pollutants emitted in the process of building, and in the use of buildings once occupied, are unsustainable. The construction industry must embrace more sustainable forms of building. This means buildings that meet the needs of society and stimulate the economy, but with higher environmental performance, particularly in terms of energy and water efficiency and waste management.

The recommendations in this report are for both industry and the Government. They aim to rationalise what is sometimes a confused picture and provide clear direction on what needs to be done, when, and by whom, so that we build and maintain buildings more sustainably.

We believe there is a real urgency for change and reform. The regeneration of our city centres and post-industrial land is underway. The Government's policy for Sustainable Communities aims to deliver more housing and improved neighbourhoods. Recent reports by Kate Barker and Sir John Egan urge the Government to increase the output and speed of construction to revitalise our communities and boost their economic potential. With this level of political focus and support we are entering a period of opportunity, not only for the industry, but also for people who use and live in the buildings we are designing and constructing.

We have been here before. Much of the opportunity to re-plan and design our communities stems from the fact that we are currently pulling down the spectacular failures of the building boom of the 1960s. We must not make the same mistakes again. If we do the sustainable development debate of the last decade has been in vain. Economic growth must go hand in hand with social justice and environmental protection.

We now know more about environmental constraints and the pressures that accompany development. The energy used in constructing, occupying and operating buildings represents approximately 50% of greenhouse gas emissions in the UK. Too many buildings – old and new – are environmentally inefficient, making excessive use of scarce resources such as energy and water. We are experiencing an increase in the number of single person households, which together with rising domestic waste production and increased water consumption per person, requires improved environmental efficiency just to limit the impact of the existing stock of buildings.

To these pressures we can add climate change. In the UK we must expect the increased risk of flooding by coastal erosion and sea level rise, as well as periods of summer drought. Our built environment must be constructed to withstand these pressures and limit its contribution to them.

But there are opportunities as well as threats. The expected level of growth in activity is itself an opportunity to shift development towards more sustainable buildings. Sustainable construction techniques have been successfully pioneered in the UK and used to deliver projects such as the Great Western Hospital in Swindon and the Stamford Brook housing development in Cheshire. Similarly, the Millennium Communities initiative currently promoted by the Office of the Deputy Prime Minister is demanding high standards in new development. There is a will to do better in the public and private sectors although the take up of sustainability principles varies significantly. Some leading firms follow recognised good practice, but others still make little effort. The Better Buildings Summit in 2003 unified three Secretaries of State behind the importance of this agenda and their commissioning of this report demonstrates the Government's commitment to making a difference.

The Government is not short on advice in this matter, recently being in receipt of the Barker Report, the Egan Review, and the Sustainable Development Commission Report, to which we now add ours. The call for improved levels of quality is a theme that links them all. Some recent commentary has presented the debate in terms of quantity

versus quality, but it is not. We need both. High quality buildings, which are constructed and perform in an environmentally sound way, are central to the Government's drive for sustainable communities. Communities and neighbourhoods must be planned to lower their demand on natural resources whilst boosting the economy and providing for the individuals that live there.

Quality can cost. But not as much as is often thought, and when based on the whole life of a building, cost is far outweighed by benefit. Economies of scale will lower the cost for quality further as more and more developers adopt higher standards as common practice. Where additional costs are involved, they need to be seen as an investment in the future - they mean lower running costs for occupiers of buildings, and a reduced need for expensive corrective measures such as those required to improve thermal efficiency or flood resistance.

Even now we have excellent examples in the Housing Corporation and English Partnerships who are looking beyond lowest initial costs and demanding that development goes beyond the minimum standard required by Building Regulations. And there are lessons to be learnt from other sectors, where a step change in process delivered both economic and environmental improvement.

Our society, indeed our urban landscape, is being redefined and reshaped for the 21st Century. We must do it in a way that ensures we are not pulling it down and starting again in 20 years.



Sir John Harman  
Co-Chair



Victor Benjamin  
Co-Chair

# Acknowledgements

We want to extend our thanks to the Secretaries of State who commissioned our report and their departments – ODPM, Defra and DTI – that have provided us with support and advice. We owe a great debt to the diligence and patience of our secretary, Seth Davies, and his co-worker, Elliot Robertson of the Environment Agency. Above all we wish to thank the members of our Task Group whose commitment, experience, advice, good temper and encouragement have made it possible for us to deliver this report in such a demanding timescale. The structure of our advice – from the Code for Sustainable Building, through planning and regulation to market incentives – owes much to their clarity of thought and ability to bring out common positions and salient points from a mass of detail.

# Contents

Executive Summary	6
Main recommendations	7
1. Overview	9
2. Code for Sustainable Buildings	11
3. Building Regulations	17
4. Planning	19
5. Existing Building Stock	21
6. Information	23
7. Labelling	25
8. Incentives	26
Annex A	27
Annex B	29
Annex C	32
Annex D	36

# Executive Summary

A. The Sustainable Buildings Task Group was announced at the Better Buildings Summit and first met on 18 December 2003. Its remit is to advise the Government on practical and cost effective measures to improve the sustainability of buildings. Terms of reference are at Annex A.

B. The Group reviewed work on construction sustainability currently in hand. This is wide ranging and of high quality, and should continue. The Group is however concerned at the plethora of bodies in the field, and recommends that these should be reviewed and simplified by the Government (paragraph 1.8).

C. The Group looked at the context of the built environment and its substantial contribution to natural resource use, greenhouse gas emissions, and social well-being. These considerations add urgency for more sustainable buildings, and a more sustainable building process. Other recent reports to Government reinforce this message.

D. Some public sector clients are already building well above minimum standards. The Group welcomes this, and recommends that the practice should be standardised within the public sector to provide a lead to other clients and all sectors of the industry. It therefore recommends a unified Code of Sustainable Building (CSB) which will bring together best practice in a measurable way and over time will raise standards (paragraph 2.4). The CSB should be based on the Building Research Establishment (BRE) current Environmental Assessment Method (BREEAM) and EcoHomes systems. However, these will need adaptation, in particular, to ensure progress in the areas prioritised by Government, notably energy and water efficiency and waste minimisation (paragraph 2.9). The Group believes that implementation of the CSB will generally be cost effective both in the short run and over the life-time of developments (paragraphs 2.26 – 2.31).

E. The CSB should be produced urgently and kept under review. It should be the responsibility of a public and private joint venture body. This body should emerge from the review of existing organisations and should provide a much needed and currently missing focus for sustainable building policy. No new organisations should be created (paragraph 2.17).

F. The Group welcomes the Sustainable and Secure Buildings Bill designed to bring sustainability within the Building Regulations. It recommends that following the passage of the Bill the consequent regulations should be developed urgently (paragraph 3.4). In this way energy and water use in new and refurbished buildings should be improved significantly as will the resource efficiency of waste management. The new regulations will underpin the standards in the CSB.

G. The Government and local authorities should review enforcement of the Building Regulations. A new output performance based approach is needed, along with additional resources to ensure compliance (paragraph 3.13).

H. The planning system has an important part to play. The Group welcomes the current draft PPS1 *Creating Sustainable Communities*, which incorporates sustainable development principles in the planning system, and has commented accordingly. The Group considers that guidance is needed for local planning authorities on the application of these principles, and recommends the urgent production of an authoritative best practice guide (Paragraph 4.8).

I. The existing building stock is a major source of carbon dioxide emissions, but there is little by way of direct means of influencing performance. The Group recommends that the CSB should apply to major refurbishments (paragraph 5.2). It welcomes development of the green landlord scheme, and the Government's drive on Decent Homes (paragraph 5.15).

J. There is an important role for improved information to home-owners. The Group welcomes the proposed Home Information Pack, and recommends that it contain information on more efficient use of energy and water (paragraph 6.4).

K. The Group welcomes the proposed Central Point of Expertise on Timber, and recommends that the Government ensures that it is adequately funded (paragraph 6.7). The Group also believes that there is scope for more efficient waste management on building sites, and recommends more effective measurement techniques and greater use of recycling where it is cost effective (paragraphs 6.9 and 6.10).

L. The Group supports the setting up of a labelling scheme, probably on a European basis, for sustainable building products. This will act as an incentive to designers and clients (including the DIY market) to use such components, and as an incentive to producers for greater innovation. The Group recommends that the Construction Products Association and the DIY suppliers, in consultation with the Government's Advisory Committee on Consumer Products and the Environment, take this work forward (paragraph 7.5).

M. The Group sees a role for market instruments in influencing consumer and supplier behaviour. It notes that differential VAT rates are already in use to promote energy efficiency, and recommends wider application of this instrument (paragraph 8.3). It also recommends reduced Stamp Duty on buildings that conform to the CSB (paragraph 8.2). And it recommends differential water rates for major water users, based on wider application of metering (paragraph 8.7).

A list of the Group's main recommendations follows, with the full list given in Annex C.

## Main recommendations

### Paragraph 1.8

**The Group recommends that the Government review the advisory bodies concerned with sustainable buildings to simplify and consolidate them and to provide clear direction to the industry. The focus for this consolidation should be a joint venture body that the Group recommends in paragraph 2.17 to manage and maintain the Code for Sustainable Building (CSB).**

### Paragraph 2.4

**The Group recommends that a single national Code for Sustainable Building (CSB) be established.**

### Paragraph 2.9

**The Group recommends that the CSB be based on BREEAM and incorporate clearly specified minimum standards in key resource efficiency criteria (energy and water efficiency, waste and use of materials).**

### Paragraph 2.17

**The Group recommends that the Government and industry set up, within three months, a joint venture body to develop and establish the CSB. Once the CSB is established the Group recommends that the management and maintenance of the CSB should be undertaken by this body together with the consolidated advisory bodies that emerge from the review recommended in paragraph 1.8.**

### Paragraph 2.18

**The Group recommends that the public sector continue to lead the way by using the CSB on all its building projects.**

### Paragraph 3.2 and 3.4

**If for any reason the Sustainable and Secure Buildings Bill should fall, the Group looks to Government to legislate at the earliest possible opportunity to ensure that the legislative objective of the Bill is achieved.** We recognise that the passage of the Sustainable and Secure Buildings Bill is only the first part of the process. Once its provisions are in place it will be necessary to formulate, consult on and make detailed regulations to secure the desired ends in practice. **The**

**Group recommends that the Government should set out promptly how it intends to ensure this process is completed.**

**Paragraph 3.7**

**The Government should enshrine a 25% saving on average per capita water consumption in regulation by 2005. Similarly, a 25% energy efficiency improvement under Part L, and the provision of space for the separate collection of recyclable materials in multi-occupancy buildings, should be delivered through the Building Regulations in the same timeframe.**

**Paragraph 4.8**

**The Group recommends that the Government produce, as a matter of urgency, a best practice guide for delivering sustainable buildings to accompany PPS1 *Creating Sustainable Communities*.**

# 1. Overview

1.1 The Better Buildings Summit in October 2003 brought together decision-makers in the house building and construction industries to consider how best to improve the sustainability of all aspects of construction and design, including off-site construction and low carbon technologies.

1.2 At the Better Buildings Summit the Government departments of Defra, DTI and ODPM jointly announced the establishment of a Sustainable Buildings Task Group (hereinafter the Group or we). The aim of the Group is to develop ways in which industry and the Government can work together to promote sustainable development through better environmental performance in new and existing buildings, and improve significantly performance on key issues including water, energy, waste and use of certain construction materials such as timber.

1.3 Sir John Harman, Chairman of the Environment Agency, and Victor Benjamin, Deputy Chairman of English Partnerships, co-chair the Group. The full list of members and the Group's terms of reference are attached at Annex A. The Group met formally on four occasions (December 2003, February 2004, March 2004 and April 2004). At the first meeting the Group established four working groups to focus on water, waste, energy and timber and other construction materials. These working groups held a number of meetings and reported back to the main Group where the emerging conclusions were discussed and their practicality appraised.

1.4 An interim account of the Group's work was sent to the Secretaries of State of Defra, DTI and ODPM on 3 March 2004. The Group held an additional meeting to discuss the Government's consultation document PPS1 – *Planning for Sustainable Communities* – on which the Group has sent a separate response.

1.5 The Group was asked to report by the end of April 2004. Although this set a very tight schedule, it reflects the urgency the Government attaches to making tangible improvements in building performance, an urgency which we share and welcome. We have therefore concentrated our work on identifying practical priorities for action from the wide range of material already available.

1.6 The Group was made aware of the wide range of work initiated by Government, industry and activists on construction sustainability over recent years. Much of this work appears to be of very high quality and we saw no point in this rapid review in commenting on or evaluating the work of others. An overview of the work currently initiated by Government is attached at Annex B.

1.7 We found a surprising number of statutory and advisory bodies established by Government concerned with sustainable buildings. Although many are aware of the Government's commitment to sustainable development, the wide range of work and the surprisingly large number of diverse organisations associated with sustainability dilutes the overall message and fails to provide clear direction for the industry. That we received our terms of reference from three Government departments illustrates some of the complexity of working in this area.

**1.8 The Group recommends that the Government review the advisory bodies concerned with sustainable buildings to simplify and consolidate them and to provide clear direction to the industry. The focus for this consolidation should be the joint venture body that the Group recommends in paragraph 2.17 to manage and maintain the Code for Sustainable Building (CSB).**

1.9 We believe that the construction, development and house building industries (the industry) have not yet subscribed to much of the sustainability agenda, and have not been persuaded of its long-term benefits. The industry often cites the need to have a level playing field as one reason why it has not made faster progress. We were also made aware of the need to heighten interest in sustainability among those who procure buildings. Having said that, we came across many examples

where the industry has shown innovation in reaching high standards of environmental performance.

1.10 We are confident that the industry is capable of rising to the challenge of delivering buildings, which will be socially, environmentally and economically sustainable. The whole purpose of our work is to ensure that the built legacy for future generations should be of real and lasting quality – something which could not be said for much of the recent legacy we ourselves have received. We think that industry can also embrace this objective and therefore should have a leading role within the CSB in identifying, setting and achieving high standards of sustainable building.

1.11 As the foreword shows, there are very good reasons for policies which enhance energy and water efficiency. Clearly these are necessary to address climate change and other environmental effects. Against this background, we gave consideration to the economic impact of our recommendations. However, we had neither the time nor resource to conclude on this and because of the nature of many of our recommendations (which require further specification), it is not possible to look at cost conclusively at this stage. That said (see 2.26 - 2.31), we believe that particularly on the basis of whole life costs, the main recommendations are cost effective and improve efficiency across the industry.

1.12 In addition, in preparing our report, the Group was conscious of Sir Peter Gershon's Efficiency Review. We anticipate that our recommendations would improve quality and value for money of Government's procurement of buildings. And we recommend the rationalisation of a sometimes confusing multiplicity of working parties, advisory bodies and departmental responsibilities for the industry (a multiplicity of which, of course, we are part).

1.13 The Group's recommendations are intended to help the Government and the industry to improve sustainable practices and efficiency across all sectors of the industry. If adopted, the recommendations will give a clear signal to the industry about the future regulatory regime, and will also invite the industry to take a leadership role in setting and attaining improved standards of performance. The recommendations also support the adoption of common minimum standards across Government, to ensure that the public sector sets high standards in the procurement of environmentally efficient building projects.

## 2. Code for Sustainable Buildings

2.1 There is a willingness in parts of the industry to adopt sustainable development principles, which needs to be tapped in identifying, setting and achieving high standards of sustainable building. In establishing the Sustainable Buildings Task Group the Government sees a need to significantly improve environmental quality and performance of buildings. Widening the scope of the Building Regulations and introducing measures for more effective compliance and enforcement will set an improved level of minimum standards (see Building Regulations, section 3). But the Group's proposal will also encourage standards of performance above this regulatory floor.

2.2 Some Government agencies, such as English Partnerships and the Housing Corporation, already require contractors to build to a higher standard, such as the Building Research Establishment's (BRE's) Environment Assessment Method (BREEAM), BRE EcoHomes and Millennium Communities. The Office of Government Commerce (OGC) is currently developing common minimum standards for procurement of built environment projects in the public sector. We welcome these progressive approaches as evidence of the growing interest in sustainable building, but note that these approaches risk causing confusion and inefficiency as different standards evolve.

**East Ketley Millennium Community, Telford**, is part of English Partnerships Millennium Communities programme in which major development schemes demonstrate to the industry that innovation and sustainable development are not only practical but can also achieve a positive response from the market regardless of geographic location. Each scheme must meet environmental performance and construction efficiency standards that are far more challenging than current Building Regulation requirements or current industry practice. The assessment on EcoHomes "Very Good" standard is in many ways similar to the CSB we propose. It includes qualifications for energy, water, materials, pollution, transport, ecology and land use, health and well-being.

The tender process for East Ketley produced 20 expressions of interest, including a number of the top ten house builders in the country. Of these, 5 were invited to submit proposals, none of which found the required higher standards to be an issue.

East Ketley Millennium Community is a 35 hectare brownfield site for a development of 800 new homes.

2.3 The Group is convinced that the development of sustainable standards for buildings has now reached the stage when a unified national code is needed. We believe that such a code will improve business and resource efficiency. We were struck by the strength of feeling in the industry as a whole on the need for a better focus on the practical aspects of sustainable building. The following comment received in correspondence illustrates the point well:

*"Local authorities approach procurement in many and varied ways, both from within the same departments in the local authority and between local authorities. This lack of consistency was a real difficulty since it made it very difficult for the contractor to gauge the best way to approach a tender or in the execution of a job."*

Special Projects Manager, Construction Procurement, Hull City Council

**2.4 The Group recommends that a single national Code for Sustainable Building (CSB) be established.**

2.5 The CSB would provide a single, coherent and consistent framework for industry, clients and the public sector to construct buildings with higher levels of environmental performance than those stipulated by regulation. The CSB would offer practical guidance and a means of measurement where standards higher than regulation are desirable or necessary. Building to a specified level within the CSB would be an indication of quality and sustainability.

2.6 We have reviewed the range of existing standards and guidance and concluded that the framework and methodology of BRE's BREEAM and EcoHomes offer the most practical and applicable basis for the Code. BRE has undertaken considerable development work on its standards, and Government has invested time and resource to enable it to do so. The model, under which BRE accredit inspectors rather than carry out appraisal directly, is capable of being rolled out relatively quickly, and we are attracted to the flexibility offered by BREEAM where points can be accumulated by meeting a range of sustainability criteria (see Annex D).

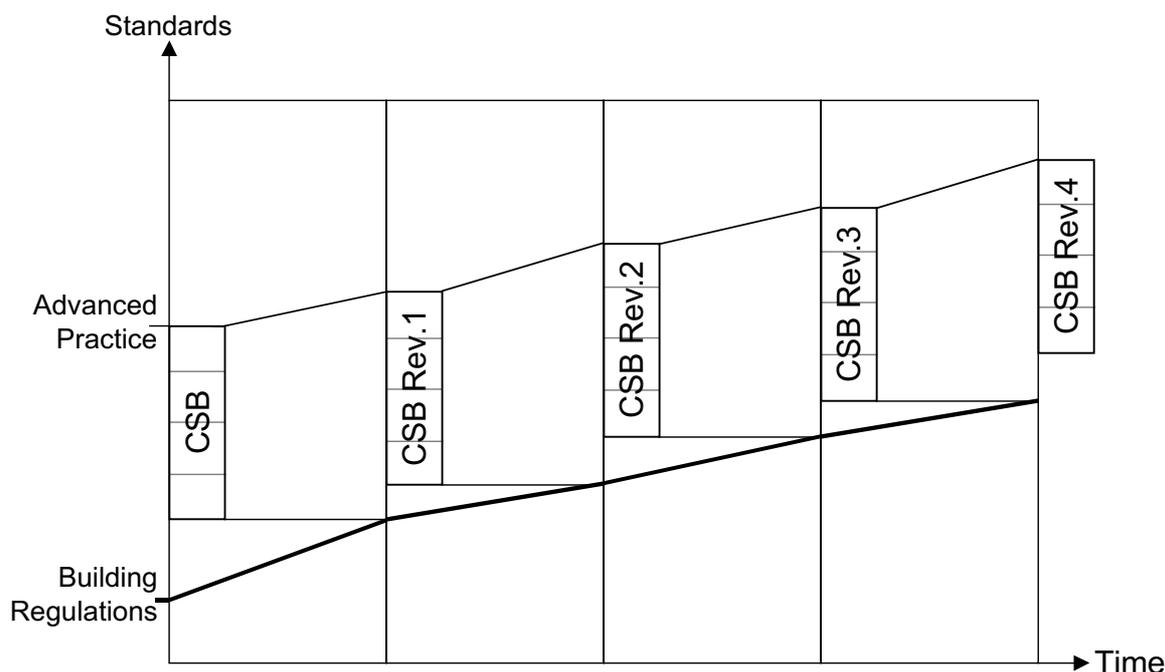
2.7 However, this flexibility is also a problem. At present it is possible to obtain, for example, a "Very Good" rating on the EcoHomes standard without necessarily achieving the improvements in resource efficiency which we wish to secure, because the points can be accumulated in other ways. If the BRE system is to form the core of the CSB then minimum standards in certain key areas must be specified, particularly resource efficiency criteria (energy and water efficiency, waste and use of materials).

2.8 The CSB will work by offering a series of levels as BREEAM and EcoHomes already do. While it will cover a range of criteria, including some qualitative ones, the resource efficiency criteria (energy and water efficiency, waste and use of materials) will advance in quantitative and verifiable steps from those set out in the Building Regulations. The base level of the CSB should be set marginally above those required under the Building Regulations and the highest level of the CSB would be current advanced practice. Thus some redefinition of the BRE standards will be necessary if it is to form the basis for the CSB.

2.9 **Therefore, the Group recommends that the CSB be based on BREEAM and incorporate clearly specified minimum standards in key resource efficiency criteria (energy and water efficiency, waste and use of materials).** For example, the use of Site Waste Management Plans could be included as detailed in paragraph 6.9.

2.10 The CSB needs to be a dynamic system improving over time, keeping it ahead of amendments to the Building Regulations and shifting its range as innovation and new research results become available and best practice more widely adopted. The relevant elements of the CSB would give an indication of the future requirement of Building Regulations, and as such would act as a ladder of continuous improvement and inform the pace of change in the environmental performance of buildings. See Figure 1 below.

**Figure 1: Building Standards Chart**



2.11 Higher standards of building design, output and process to improve sustainability of performance will not come through repeated application of traditional techniques and thinking. They call for an innovative approach from all concerned, and the sensible commissioning and application of research work throughout the industry. Some organisations and companies have pursued this enthusiastically. Many designers are excited by the changes instituted by Commission for Architecture and the Built Environment (CABE). These are strong foundations on which to build. Product suppliers also need to be encouraged through specification in designs of innovative products.

2.12 The Government's Energy White Paper will require innovative solutions to move society towards a low carbon economy, an integral element of which will be carbon-neutral buildings and reducing the carbon impact of the existing stock. We see the energy requirements of the CSB (and indeed of Building Regulations) evolving towards definitions based on carbon emissions rather than simply on efficiency.

**2.13 The Group recommends an emphasis by Government and industry on an integrated programme of built environment research to underpin the implementation of its recommendations.** This will include such topics as grey water recycling, rainwater harvesting, community heating, and better waste treatment and disposal methods.

## Establishing the CSB

2.14 Once agreed, the CSB should be annually reviewed. It will be necessary to keep in touch with developments on Building Regulations and on client and design standards to ensure that the CSB provides standards above the statutory minimum. These are substantial areas of work. The mechanism for taking the Code forward needs to ensure that this evolution is timely and also well-planned, so that changes in the Code and regulatory standards can be signalled and understood well in advance. This staged approach will ensure that industry experience and support are secured in the new version of the Code.

2.15 The Group has considered what kind of organisational arrangements might be best for undertaking this task. We have already remarked on the plethora of bodies and initiatives in this area, and the spread of responsibility between Government departments and its advisory bodies. We consider it essential that there should be no increase in the number of bodies in this area as this will increase confusion.

2.16 We recommended earlier, in paragraph 1.8, that the Government takes action to simplify, consolidate and provide direction to these bodies. We recognise that consolidation of such bodies may take many months to conclude. But this process of rationalisation must not hold up the next steps in developing the CSB.

**2.17 Therefore, the Group recommends that Government and industry set up, within three months, a joint venture body to develop and establish the CSB. Once the CSB is established the Group recommends that the management and maintenance of the CSB should be undertaken by this body together with the consolidated advisory bodies that emerge from the review recommended in paragraph 1.8.**

## Use of the CSB

2.18 **The Group recommends that the public sector continues to lead the way by using the CSB on all its building projects.** Public procurement across the board should be to high standards within the CSB. For example, we would envisage that all public procurement standards of housing would correspond to the existing BRE EcoHomes “Very Good” standard by 2005.

2.19 We welcome the common minimum standards for public sector procurement currently being developed by the Government, **the Group recommends that, for procurement of buildings, these standards should be aligned with the CSB.**

2.20 Already some Government agencies have committed to standards beyond Building Regulations even though they are currently operating on a unit cost basis. Encouraging developers to value the whole performance of a building in terms of costs and comfort would radically change the way development costs are assessed. **The Group recommends that the Government continues leading by example, and procures buildings on a whole life cost basis.**

2.21 The use of the CSB by public sector clients will drive considerable improvement in the standards of new and refurbished stock, which will lead a general upward pressure on industry standards and practices. But it is also important that private clients and firms building for sale on the open market use the CSB to effect improvement.

2.22 The Group considered why the normal operation of the housing market has not encouraged volume house builders or indeed, sellers of existing properties, to seek higher environmental standards. To take energy efficiency in new build as an example, it is evident that whole life costs are far lower for more efficient buildings. But it is also clear that few purchasers seem willing to accept the relatively marginal capital premium associated with this improvement; or, more precisely, this is the industry’s perception of the market.

2.23 We were not able, within our brief and in the short time at our disposal, to assemble data to diagnose this apparent failure in the housing market, though we note with interest some of the comments in Kate Barker’s report which describe a market in which standards and prices are led more by supply than by demand. We do not think that either house builders or purchasers are acting in an economically perverse way, but that the housing market lacks the features of choice, reliable labelling, product information and comparability which characterise consumer-led markets in most other goods – goods which account for a considerably smaller proportion of household expenditure than does housing and which do not share housing’s significance as a long-term investment. Further comment on fiscal and consumer incentives can be found in Information, section 6 and Incentives, section 8.

2.24 The CSB could also underpin a number of market-based incentives to increase demand for sustainable buildings and homes in particular. The Group is aware that the Halifax Bank of Scotland (HBOS) (the largest UK mortgage lender, estate agents and major investor in house building) recognises the growing importance of sustainability across the housing sector. HBOS is looking at a variety of ways in which this could inform the development of future products and services, offering benefits for both industry and consumers.

2.25 The Group has also talked to the Royal Institution of Chartered Surveyors (RICS) about the possible inclusion of sustainability standards and principles in commercial valuations. RICS wholeheartedly supports the Group’s aims in promoting sustainable development. RICS is well aware of the rapidly increasing importance being placed on such criteria. They note that this interest is emanating from all sectors of the property market, and that it is now stimulating significant discussion and research into the potential for its impact on property worth - and ultimately value. Indications so far suggest that a direct correlation is expected to emerge over the medium term.

## Cost Issues

2.26 Although the timescale of our work has not permitted a full assessment of costs (and in any case a full assessment cannot be made until the CSB is fully developed), we have seen a range of relevant practical evidence. Cost needs to be considered in the context of the improved quality that will also be delivered through higher standards. Indeed, we see the CSB becoming a proxy for quality and high standards generally. It should also be noted that in future some of the requirements, will be accounted for, not in the CSB, but in the Building Regulations and will therefore be part of the Regulatory Impact Assessment for that base.

2.27 The CSB will present a series of levels of increasing performance, and allow a degree of flexibility in design and construction, so it is hard to predict exactly how it will impact on costs. But we can take EcoHomes as presently designed as an indicator. BRE estimates the additional cost of achieving the current “Very Good” standard is between £2,000 and £3,000 per property. Much of this additional cost can be attributed to the higher standards of construction and materials required to deliver improved energy efficiency. Our assessment is that this estimate is a cautious one, made in an emerging market and on a small sample of houses. We think it probably overstates the cost. We anticipate that the cost of adopting higher standards will decrease sharply from the current estimate as volume increases.

2.28 This effect is commonly observed in other markets, and there is no reason to believe that building is an exception; but we also have practical evidence from recent experience in construction that supports our view. English Partnerships have specified the “Very Good” standard for new developments without any significant price impact, and the Housing Corporation is moving to the same position. The recent report by the National Trust on its Stamford Brook project (*Better Building: Principles into Practice*) documents how initial cost obstacles can be overcome.

### Stamford Brook Sustainable Housing Project

Stamford Brook Housing Project is a 650 dwelling development in Altrincham, Cheshire involving a partnership between Redrow Homes (North West Ltd), Bryant Homes and the National Trust. The buildings have been designed to exceed the required levels of environmental performance in the Building Regulations and challenge the common perception that it is not possible to reconcile costs with sustainability goals. The project will demonstrate what is achievable on a commercial scale by volume house builders.

Stamford Brook is participating in a ‘Partners in Innovation’ project to look at improving the energy efficiency of masonry dwellings. Leeds Metropolitan University is undertaking the project for the Office of the Deputy Prime Minister. Significant cost reductions on energy efficiency measures have been achieved over the course of the development. Environmental measures, which were thought not to be affordable by developers at the beginning, became so as the project proceeded. For example, as specifications were clarified the additional cost per dwelling reduced by 80% (for cavity wall insulation) and by 40% (for wall ties) in less than a year.

2.29 Our view, therefore, is that the costs associated with the CSB will be a small proportion of overall build costs, and that there are other changes in the industry (such as offsite construction, which reduces cost) that will have far greater impact. On a whole-life basis, the benefits will easily outweigh costs at this sort of level. But we are clear that cost needs to be a consideration, which informs the construction and development of the CSB, which is one reason for our view that the body charged with this should be a joint venture between the public and private sectors.

2.30 This discussion of cost principally applies to the housing market. For much commercial development, whole-life cost considerations can more easily be brought to bear on initial design, but as pointed out in paragraph 2.22 whole-life costs do not yet loom large in consumer decisions in the housing market. It is important to point out, therefore, that we do not expect any significant

price impact arising from the CSB. Where it is used to signal a certain level of quality of build and performance, it may in fact have a market value, but market price is determined by a range of factors of which location is the most powerful; in the great majority of cases, any additional cost arising from adoption of the CSB will either be set against other construction costs or the land price.

2.31 There may be sites where the land value – because of previous contamination or long-term dereliction – is marginal or even negative. Rather than accept this as an argument for tolerating low quality housing on such sites **we recommend that Government should further consider tax credits or other financial or fiscal adjustments, which would enable development in accordance with the CSB.** We note that the Government is already looking to extend the contaminated land tax credit to land that is long-term derelict and welcome this.

## 3. Building Regulations

3.1 There is no explicit statutory requirement that the Building Regulations should cover sustainability, even though some of the Approved Documents already do so. This is a substantial statutory barrier to progress on the sustainability of buildings. The Group is clear that the regulations should cover sustainability. Therefore, the Group is delighted that since its appointment, a major step forward has been taken with the presentation to Parliament by Andrew Stunell MP of a Private Member's Bill (the Sustainable and Secure Buildings Bill), that precisely aims to bring sustainable development within the scope of the Building Regulations.

3.2 We strongly welcome this development and the Government's support for it, and look forward to the early enactment of the Bill. **If for any reason the Bill should fall, the Group would look to Government to legislate at the earliest possible opportunity to ensure that the legislative objective is achieved.**

3.3 The Group stresses that bringing sustainable development within the scope of the Building Regulations is one of the most important steps forward to further the cause of sustainable buildings.

3.4 We recognise that the passage of the Sustainable and Secure Buildings Bill is only the first part of the process. Once its provisions are in place it will be necessary to formulate, consult on and make detailed regulations to secure the desired ends in practice. **The Group recommends that the Government should set out promptly how it intends to ensure this process is completed.**

3.5 Improving resource efficiency is one area in which the Group considers that the Government should consult on in revising the Building Regulations. **The Group recommends that the revised Building Regulations should specify a minimum percentage by value (at least 10%) of re-used/reclaimed/recycled materials in building projects.** The Government would also need to explore the wider economic impact of this recommendation on other Government commitments.

### Quick Wins

3.6 There are sustainability improvements to be made that are already within the scope of the Building Regulations. We have carefully considered the need to avoid excessive or unnecessary regulation. However, we are convinced that there is a need for a statutory minimum level of resource efficiency in buildings, as this will improve performance across the board and deliver potential cost savings to building owners and occupiers.

3.7 The Deputy Prime Minister stated, in July 2003 and October 2003, that 20–30% water efficiency savings are feasible and crucial and we agree. **The Group recommends that the Government should enshrine in regulation by 2005 a 25% saving on average per capita water consumption. Similarly, a 25% energy efficiency improvement under Part L, and the provision of space for the separate collection of recyclable materials in multi-occupancy buildings, should be delivered through the Building Regulations in the same timeframe.** There is no legal obstacle to further work in these specific areas.

3.8 The recommendation on water efficiency can be achieved at no, or at very marginal, cost by good initial design and specification of fittings and appliances. The recommendation on the proportion of recycled materials represents current good practice applied across the board. On the other hand, the energy target could increase costs to some extent. As the Government is already preparing the requisite changes in Part L, the associated Regulatory Impact Assessment will need to assess these.

3.9 We note that the Government has announced its intention to review how the regulations should be improved to deliver water conservation. We also note that the Water Supply (Water Fittings) Regulations 1999 already set standards for the maximum water use of some water fittings.

**The Group recommends that the Government review the scope for introducing tighter minimum standards for the use of water fittings and appliances, in both new build and refurbishment of existing premises.** This could include new regulatory controls, for example on showers and taps, as well as tightening existing standards on other products. This move would help drive water efficiency measures in existing homes.

3.10 The industry and local authorities should ensure that any building permitted on the flood plain should utilise appropriate flood resilient materials and techniques. We support the Government's planned research in this area, and urge it to make rapid progress, using the results to amend the Building Regulations and the existing guidance *Preparing for Floods*. **The Group recommends that at the level of an individual building, Building Regulations should require modern standards of flood resistance and resilience for all construction within areas of flood risk.** The Government and industry should consider how to encourage the use of more flood resistant and resilient design, products and techniques.

3.11 Although not explicitly in the current Building Regulations, **the Group recommends that insurance companies should require that repairs to previously flooded property are made using flood resilient products and in a flood resilient manner.**

## Enforcement

3.12 A significant improvement in the environmental performance of buildings is achievable through the Building Regulations. But it will only be delivered if all parties – the Government, local government, builders, clients and the public – can be confident that the performance of buildings constructed under the Building Regulations is being adequately checked and monitored.

3.13 It is vital that the Government urgently improves the enforcement of the Building Regulations. Passage of the Sustainable and Secure Buildings Bill will introduce new reasoning behind the regulations and shift their focus towards the performance of buildings post completion. There is a need for discussion with local authorities about the performance of building control departments and approved inspectors, and whether they are adequately resourced and trained for their existing duties and additional ones to be brought about by new requirements.

3.14 The present reliance on checking 'robust details' in building design may not be adequate. Poor site practice, or inadequate skills in the appropriate building techniques, can lead to the desired performance improvements being lost. **The Group recommends that the Government and local authorities should review the enforcement of the Building Regulations to ensure the regulators have the resource and training to conduct reliable post-completion checks on a proportion of all new and refurbished buildings.**

3.15 As an example of a post-completion check, we note that commercial developments over 1,000m<sup>2</sup> are already required to be pressure tested to demonstrate compliance with the Building Regulations. The Part L Working Party of the Buildings Regulations Advisory Committee supports mandatory pressure testing for housing, and the Government will be conducting a consultation this summer. This consultation process will provide an opportunity for those opposed to pressure testing to bring forward viable and practical alternatives.

3.16 One of the biggest challenges to delivering improved standards is the skills base of the construction sector. This needs to be addressed as a matter of urgency to ensure that the industry can build to higher standards once they are specified. We welcome Sir John Egan's proposal for the National Skills Centre for Sustainable Communities (NSCSC). **The Group recommends that the Government, through the Learning Skills Council and Sector Skills Council encourage sustainability in the construction industry through improved training and increased capacity.**

## 4. Planning

4.1 The Group has responded to the Government's consultation paper on Planning Policy Statement 1: *Creating Sustainable Communities* (PPS1). Paragraph 4.2 to 4.12 below form the basis of the response.

4.2 We support the main thrust of draft PPS1. In particular we welcome the Government's commitment to securing sustainable development and prudent use of natural resources through the planning system. The Group endorses the view that:

*"policies should reflect a preference for minimising the need to consume new resources over the lifetime of the development [and that] consideration should be given to encouraging energy efficient buildings, community heating schemes, and the use of combined heat and power in developments" (paragraph 1.21).*

4.3 The Group welcomes the new duty in the Planning and Compulsory Purchase Bill for plan-making bodies to have the objective of promoting sustainable development. PPS1 will be a crucial tool in delivering this duty, but we believe that it needs to be much clearer about the extent to which the planning system can *require* more sustainable building practices in support of the new sustainable development duty, as opposed to merely *encouraging* or *promoting* them.

4.4 The planning system has an important role to play in promoting sustainable building practices. It can do this in at least three ways:

- (i) by encouraging higher standards of building performance than the minimum required through Building Regulations;
- (ii) by promoting 'area-based' measures and infrastructure for improving building performance that are outside the scope of Building Regulations, such as sustainable urban drainage systems or the use of local combined heat and power (CHP) generation; and,
- (iii) by ensuring that the design, relationship and layout of new buildings support, rather than frustrate, people's desire to pursue a lifestyle that is more environmentally and socially sustainable. An example of this might be by providing convenient space for separate waste collection and handling facilities to aid recycling on housing and industrial estates.

4.5 We agree with the PPS1 consultation document that planning should not duplicate aspects of sustainable buildings dealt with by the Building Regulations. On the other hand, planning plays a positive role in delivering elements of sustainable development through more sustainable building practices that cannot be delivered through control of individual buildings alone. For example, the aspect of a building has a major impact on its energy efficiency (passive solar gain) but is not controlled by the Building Regulations.

4.6 The Group supports the Government's desire to speed up the planning process and make it more transparent. We believe there is great scope for pre-application discussions on planning applications and sustainability appraisal of development plans without causing delays or confusion in development control or plan making regimes. Clarification is needed so that any potential conflict in Government policies for increased delivery and improved quality are avoided. A much clearer policy lead is required at the national level to support the wide range of initiatives to promote more sustainable building practices that have been made at the local level in recent years.

4.7 Issues relating to design and spatial planning are already dealt with in various planning guidance documents and other standards. For example, site layout and external features are dealt with in the standards developed by CABI and English Partnerships. Good Practice Guides supporting various Planning Policy Statements, for example PPG3 *Housing* and the forthcoming revision to PPG4 *Industrial and Commercial Development* also deal with spatial issues. We believe that the best practice guide recommended in paragraph 4.8 below needs to be consistent with the relevant elements of the CSB, particularly as regards site layout and external features.

4.8 **The Group recommends that the Government produce, as a matter of urgency, a best practice guide for delivering sustainable buildings to accompany PPS1 *Creating Sustainable Communities*.** This guide needs to be consistent with the relevant elements of the CSB

recommended in paragraph 2.4 and should highlight where Building Regulations and the planning system complement each other. This guide should not seek to address issues that fall within the scope of the Building Regulations, but should deal with spatial issues such as drainage systems, community heating systems and waste management. In particular the guide should:

- bring together and cross-refer the wide range of guidance and good practice that has already been produced, for example the BRE Sustainability Checklist. We note and welcome that CABE, English Partnerships and the Housing Corporation are aiming to synthesise their standards. We also welcome the Government's support to develop the BRE Sustainability Checklist for all Regional Development Agencies.
- explain the complementary roles of the building control system and the planning system and promote better co-ordination between the two;
- suggest model development plan policies for sustainable building; and,
- promote examples of good practice in the provision of Supplementary Planning Documents and planning briefs.

4.9 In addition, the best practice guide should consider the full range of sustainable building measures that can be promoted through the planning system including:

- improved energy efficiency in development design and layout;
- renewable energy generation;
- improved water efficiency, including sustainable drainage, in development design and layout;
- reduction in use of materials and recycling in both the construction process and in the use of the completed building; and,
- design for sustainable transport.

4.10 In particular, **the Group recommends that Government should investigate how the planning system could support better water management.** The Group notes and welcomes the interim code of practice agreed by the National Working Group on sustainable drainage (SUDS). We note that the issue of funding for the maintenance of SUDS remains unresolved and urge the Government to address this issue.

4.11 There is increasing pressures to develop land that is close to or in the flood plain. We recognise the increased future flood risk estimates set out in the recent report of the Office for Science and Technology (OST) Foresight programme. Flood Risk Assessments should be produced for all development in the flood plain, proportionate to the development proposed. At the level of an individual building, the Building Regulations should require modern standards of flood resistance and resilience for all construction within areas of flood risk (see paragraph 3.10).

4.12 **The Group recommends that the Government should ensure that development and planning policy seeks to minimise, and where possible avoid adding to, the overall level of flood risk.** This should include reviewing and strengthening PPG25 *Development and Flood Risk* and making the Environment Agency a statutory consultee on flood risk in its forthcoming revision to the Town and Country Planning General Development Procedure Order (GDPO).

## 5. Existing Building Stock

5.1 We recognise that, for Britain's building stock to become truly sustainable, significant improvements need to be made to the existing stock and we note that approximately two-thirds of the existing building stock pre-dates the introduction of any environmental requirement in the Building Regulations. Progress towards improving the environmental performance of the existing stock will require a suite of programmes and initiatives. We recommend a number of specific policies, including improved information and fiscal incentives.

5.2 A relatively small proportion of existing buildings undergo major refurbishment. Relevant statutes, such as the planning system and the Building Regulations cover such works. **The Group recommends that the CSB should be developed to apply to major refurbishments.**

5.3 We also need to stimulate more sustainable building practices when the existing building stock undergoes routine maintenance and improvements that are outside the scope of the current regulatory system. There are precedents that could be helpful. For example, the recent amendment to Schedule 1 of the Building Regulations 2000, which extended the scope of the Building Regulations to include such things as replacement windows and central heating boilers. This approach might usefully apply to other critical areas of environmental efficiency. **The Group recommends that the Government consider further amending Schedule 1 of the Building Regulations, extending their scope to cover a wider range of sustainability issues when refurbishing the existing building stock.**

5.4 One of the most significant improvements in the environmental performance of buildings is improving their thermal efficiency. Public interest in and uptake of the simplest solutions, such as cavity wall insulation, is low – despite the reduced price offers made available through the energy suppliers as part of their Energy Efficiency Commitment (EEC).

5.5 Technical solutions for improving the thermal efficiency of solid walls are available but they either cause major disruptions or are not cost effective at present. The Group is aware of the Carbon Trust's Challenge Fund, which funds research into solid wall insulation. **The Group recommends that the Government and industry jointly fund further research into cost-effectively improving the thermal efficiency of the existing building stock.**

5.6 The Group considered all buildings and recognised that a considerable contribution to carbon dioxide emissions in England, and other resource efficiencies, are from existing housing stock. The remaining paragraphs in this section therefore deal with this sector.

### Housing - Private Sector

5.7 In paragraphs 2.23 and 2.24 we observe that the normal operation of the housing market has not encouraged volume house builders to seek higher environmental standards, and that: *“the housing market lacks the features of choice, reliable labelling, product information and comparability which characterise consumer-led markets in most other goods – goods which account for a considerably smaller proportion of household expenditure than does housing and which do not share housing's significance as a long-term investment.”*

5.8 We therefore believe it to be both environmentally desirable and economically rational for Government to promote a range of measures which will build a much greater awareness of the long-term value which is added to new and existing housing alike by building to higher environmental standards.

5.9 House sales are currently running at approximately 1.2 million units per annum, and new build is only a small part of this (approximately 150,000 units per annum). With more than one million previously owned properties being sold each year the Government needs to consider encouraging

new owners to improve the environmental performance of their homes. This encouragement could be made in two ways: ensuring that good information is provided to the consumer, and offering financial incentives through grants or tax breaks.

5.10 A significant number of these homes will be subject to routine maintenance or refurbishment by the owner. The timing of any of this investment is entirely at the discretion of the owner and here Government incentives and consumer information will be the main tools available. The aim will be to either encourage an individual who is already planning to carry out maintenance or refurbishment to a building to do so using high environmental standards, or to stimulate the activity in the first place.

5.11 A number of our recommendations in the sections following, especially “Information” “Labelling” and “Incentives” are directed at creating a much better informed consumer market which will drive producers to compete on quality, including environmental quality. We think that the experience of energy labelling of domestic appliances is instructive. In a very short time, a market which was led principally by price and in which suppliers did not prioritise energy efficiency because of a perceived price premium, has been transformed into one where the vast majority of appliances purchased are in the highest efficiency bands (A or B-rated). This has been helped by the cut price offers made available through energy suppliers as part of their Energy Efficiency Commitments (EEC). We see no reason to suppose that the housing market would be immune to such an effect.

## Private rented sector

5.12 We welcome the Government’s proposals in the 2004 Budget to introduce a landlord’s energy saving allowance, which provides landlords with up front relief on capital expenditure for installations of loft and cavity wall insulation in rented accommodation. We also welcome the development of the ‘green landlord scheme’, which would provide incentives to landlords to invest, possibly through recognition of properties that achieve a sufficient level of energy efficiency. **As part of the Government’s consultation the Group recommends it assesses whether the same treatment could be extended to water efficiency measures.**

## Social housing

5.13 Planned maintenance for social housing would in the first instance be stimulated by the Government’s Decent Homes standard, but could also be covered by the CSB. ODPM has a target to bring all social housing into decent condition by 2010 and to increase the proportion of vulnerable households in decent homes in the private sector.

5.14 We recognise that 80% of the 1.6 million non-decent social homes failed on grounds of thermal comfort, so currently have very poor energy efficiency and will be improved by 2010. The Decent Homes Standard is a minimum standard used to identify the worst condition homes and trigger action, not the standard to which the works will be carried out. Therefore, while the Group accepts that the social housing stock is very varied in its construction and condition, it thinks that “decent” condition should generally incorporate standards at the base level of the CSB as a minimum.

5.15 We support the Government in encouraging landlords to carry out works to a higher standard and actively encouraging housing providers to take advantage of the Energy Efficiency Commitment offers, to help support additional costs. We believe this simple ‘joining up’ exercise would be a very low or no-cost measure to Government, which will make a big difference to the energy efficiency improvements to non-decent homes.

# 6. Information

## Buildings

6.1 Information can be a useful lever for change. If owners know about the environmental performance of their building they can take action to improve it.

6.2 We welcome the EU Energy Performance of Buildings Directive, which requires all large (over 1,000m<sup>2</sup>) buildings to which the public has access to display an energy performance label. We urge the Government to fully implement this Directive and we think it would be both simple and effective for the Government to include all buildings. **The Group recommends that existing buildings should have an operational rating, as this could help to identify inadequate building management. Such a requirement would encourage building owners/occupiers to improve their knowledge of their actual energy consumption.**

6.3 The Group welcomes the introduction of the Home Condition Report, as part of the Home Information Pack, in the current Housing Bill. It will require vendors and landlords to obtain a survey report, which will include an assessment of the energy efficiency of the property. This will include a SAP rating, an examination of recent utility bills, and recommendations on cost effective energy efficiency measures that could be carried out to improve the property's Standard Assessment Performance (SAP) rating. The Group supports these proposals for energy efficiency in the Bill and **recommends that similar requirements need to be applied to the sale of new houses.**

6.4 Whilst it is recognised that measuring and meaningful reporting of water efficiency in homes is not as straightforward or advanced as energy efficiency, legislation should be drafted flexibly to enable take-up at a later date when water meter penetration is higher and water efficiency monitoring more advanced. **The Group recommends that the Home Information Pack legislation be drafted flexibly to enable inclusion of water efficiency information at a later date when meter penetration and monitoring is more advanced. The same applies to the inclusion of wider eco-labelling of homes, including those built to the CSB. In the short term, the Home Information Pack should include detailed information on water issues, particularly water efficiency, from 2006.**

6.5 The Group recognises that the Government through its Market Transformation Programme supports the improvement of product standards. The Group also notes the Government project looking into the feasibility of labelling water efficient products. The Group commends both these approaches and recommends that Government continue to support this area of work.

## Timber

6.6 The Government's policy to improve its own timber purchasing practices has raised awareness among suppliers of the issues surrounding 'legal and sustainable' sources of timber. The increased demand from the public sector has put pressure on the timber trade, and the UK Timber Trade Federation has developed a new responsible purchasing policy for its members in direct response to the Government's policy.

6.7 Key to the success of the policy is the Central Point of Expertise on Timber (CPET), which the Government has agreed to set up to provide guidance on timber from well-managed sources to central Government buyers. The Group is well aware of the private sector's own need for impartial advice, and the Group believes that the CPET could fulfil this role. The Group is therefore concerned that the Government has yet to allocate adequate funding for a full CPET service. **The Group recommends that the Government provide the necessary short term funding to implement the CPET.** The Group believes that by providing a service to the private sector as well as Government, the CPET would eventually become self-financing.

## Waste

6.8 There is scope for significant improvement in terms of reducing waste produced from all construction sites. Others, notably the Construction Industry Research and Information Association (CIRIA) and BRE, have produced guidance on how to operate an efficient site. Recycling seems to have noticeably increased on construction sites, presumably as a consequence of the landfill and aggregates levies.

6.9 We note that there is currently little meaningful or comparable data on construction site waste management. Individual companies collect data, which may be of little value unless collation and evaluation is done centrally. **The Group recommends that industry adopts more fully the use of Environmental Performance Indicators, which measure waste, and to report annually on progress both in terms of uptake and improvement.**

6.10 Recent work by the Government with the industry and the Environment Agency to develop Site Waste Management Plans is timely. **The Group recommends that the Government should consider using Site Waste Management Plans to encourage industry to improve resource efficiency and take a more responsible approach to waste management.**

6.11 Tighter regulations governing construction and demolition waste and hazardous waste come into force later this year. This is likely to make the disposal of such wastes more difficult. The Group is particularly concerned about the potential impacts this could have when redeveloping brown field sites, which are likely to contain hazardous wastes.

6.12 Reducing the amount of waste removed off-site by reusing material or by on-site remediation is an area that the Group considers merits further evaluation. **The Group recommends the Government brings forward the outcome of the waste permitting review without further delay. This will enable a single permit to be issued for remediation activities.**

6.13 Two barriers to the use of recycled materials appear to be a preference to use virgin materials and concern about the properties of recycled materials. Both of these barriers are perceived rather than real, and can be overcome by education and information, which is available from a range of sources, including the Waste and Resources Action Programme (WRAP) and BRE. The CSB managers should be tasked with reviewing the available information and recommending further work, if necessary.

# 7. Labelling

7.1 The Group was made aware of a number of environmental assessment methods, certification and information systems for construction materials and products that are currently available in the market place. The Group feels that the time has come to move towards a system for sustainability information for construction materials and products that will support the push for more sustainable buildings. Any such system would have to be appropriate for both consumer and professional purchasers of building materials and products.

7.2 The legal position is not complex – a mandatory scheme would be illegal because of the Construction Products Directive whereas a voluntary Environmental Product Declaration (EPD) scheme would be possible. In addition, any EPD system would need to be consistent with the establishment and ongoing development of sustainability standards in conjunction with the International Standards Organisation (ISO) and its European equivalent CEN. Due to the fact that many building products are widely traded, any system would have to be European or international to gain manufacturers' support.

7.3 Any system should avoid built in obsolescence arising from ongoing and improving standards, i.e. yesterday's "green" (good) score is tomorrow's "amber" (average) score. It should not only facilitate choice between similar products but also provide information to help consumers make informed choices on alternative products or designs. This can be as simple as choice between window types for a consumer e.g. between UPVC and softwood windows or it could involve fundamental choices made by a designer on building type e.g. lightweight timber with gas heating or high thermal mass clay masonry with passive solar heating.

7.4 The Group understands that existing EPD systems have a limited market coverage/usage, being mainly business to business, and the refurbishment, home improvement and DIY sectors are largely untouched by any current assessment system. Yet DIY and home improvements form a large sector of the construction market. The Group believes there is a need to stimulate more sustainable purchases in the DIY sector.

7.5 **The Group recommends that the Construction Products Association (CPA) and the DIY suppliers in consultation with the Government's Advisory Committee on Consumer Products and the Environment (ACCPE) look at the feasibility of introducing an Environmental Product Declaration scheme for sustainable construction products and materials that is applicable to both the consumer and professional market and is relevant at both product and building level. Such a scheme should be based on ISO 14020 in order to be internationally acceptable.** In addition, the Group believes that Government needs to consider introducing some incentives to encourage uptake by customers.

## 8. Incentives

8.1 Once the basic consumer information is in the marketplace, Government could also use fiscal incentives to encourage owners and occupiers of buildings, first to undertake the necessary maintenance and improvements and, second, to use the most sustainable products and appliances when they do so.

8.2 There is currently no incentive for home buyers to purchase property built to high environmental standards. **The Group recommends that new homes built in accordance with the CSB be subject to a reduced rate of Stamp Duty.**

8.3 The Group supports the use of fiscal incentives already introduced by Government to encourage consumers to purchase more sustainable goods and services. For example, differential rates of value added tax (VAT). Differential VAT rates are already implemented for some energy efficient products. The Group recognises that the introduction of differential VAT rates is governed by the European Union sixth VAT Directive and presently does not allow for differential rates for water or energy saving products (which are not professionally installed) or appliances. **The Group recommends the Government continues to negotiate in the EU to establish amendments to the VAT Directive that allows lower VAT rates to be applicable to a wider range of environmentally efficient products.**

8.4 We believe there is a need to provide incentives to home buyers, via a broadly revenue neutral mechanism, to carry out the recommended energy efficiency measures in their Home Condition Report. The rebate system should be broadly revenue neutral to the public purse and, when sufficiently good information is available, could be extended to cover water efficiency investments. The Group considers that the Stamp Duty regime could provide such a mechanism. **The Group recommends that the Government consider amending the Stamp Duty regime so that a rebate is made available to those home buyers who carry out such works within a reasonable time frame. When sufficiently good information is available, this rebate could be extended to cover water efficiency investments.**

8.5 The Group understand that the Government, in the *Water Industry Act 1999 – Delivering the Government's Objectives*, indicated that its was keen to see the introduction of tariffs which provide stronger incentives to economise on the use of water for discretionary purposes, without discouraging essential use, for example rising block tariffs. The Environment Agency's *Securing Water Supply* noted that:

*"Most water companies are predicting a significant increase in household metering to reach between 60 and 90 per cent of household customers by 2030"*

Recent water industry research suggests that metering households results in average water savings of 9 per cent, with a range between 2 and 14 per cent. This combined with the development of innovative tariffs has the potential to achieve some of the savings in per capita consumption that will be needed going forward, particularly if climate change exacerbates water resource problems. **The Group therefore recommends that Government should consider how to speed up the installation of water meters, particularly in areas of low water availability.**

8.6 **The Group recommends that water companies and their regulators should explore the potential for utilising more innovative tariffs, for example to charge at a higher rate for water used over a certain threshold, to encourage water conservation by domestic customers.**

8.7 **The Group also recommends that there is scope for a Water Industry counterpart to the Energy Efficiency Commitment (EEC), perhaps funded by a small tariff on water bills, and providing a range of services designed to improve domestic water efficiency.**

# Annex A

## Membership

The Secretaries of State invited the following to serve on the Task Group:

Michael Ankers, Chief Executive, The Construction Products Association  
Julian Barwick, Joint Managing Director, Development Securities  
Sheila Button, Board Member, The Housing Corporation  
John Calcutt, Chief Executive, Crest Nicholson (Convenor of the timber and other materials working group)  
Ian Coull, Chief Executive, Slough Estates (Convenor of the waste working group)  
Paul King, Campaign Director, WWF-UK  
Paul Noon, Co-Chairman, Trade Union Sustainable Development Advisory Committee  
Jennie Price, Chief Executive, The Waste and Resources Action Programme  
Philip Sellwood, Chief Executive, The Energy Saving Trust (Convenor of the energy working group)  
Peter Studdart, Head of Environment and Planning, Cambridge City Council  
Lynne Sullivan, Sustainability Director, Broadway Malyan  
Pamela Taylor, Chief Executive, Water UK (Convenor of the water working group)  
Bryan Woodley, UK Timber Frame Association  
Terry Wyatt, Chartered Institution of Building Services Engineers

## Terms of Reference

The terms of reference for the Sustainable Buildings Task Group are:

### **Objective**

The Group is tasked with identifying specific, cost-effective improvements in the quality and environmental performance of buildings which industry can deliver in both the short and long term, together with further actions that Government could take to facilitate faster progress.

### **Terms of Reference**

In order to do achieve this objective, the Task Group will look at four areas where the Government sees a need to significantly improve the quality of buildings to deliver higher standards of environmental performance in support of sustainable development in new communities but also through refurbishment and renewal.

These areas are:

- Water
- Energy
- Timber and other construction materials
- Waste reduction

The Group will need to consider which mechanisms could best achieve this in the context of current

and future regulatory requirements. Among the mechanisms to be considered are:

- The contribution the planning system can make to mainstreaming best practice
- The role of Government incentives for innovation
- The promotion of long term planning for dynamic improvement
- The promotion and adoption of best practice, including potential for the use of voluntary agreements
- The best means of sharing experience between designers, builders and utilities.

The group is asked that all work and subsequent recommendations should:

- Consider improvements to buildings within the context of creating high quality, well-designed, sustainable places
- Consider improvements to buildings that take account of issues of refurbishment and renewal as well as new build
- Consider matters relating to any regulatory impact assessment that could be required
- Assess the degree of robustness of cost assumptions and consider all cost implications
- Take account of maintenance issues in considering sustainability of buildings over their entire lifecycle.

# Annex B

## Examples of current Government activity that is working towards more sustainable buildings

The aim of this short annex is to provide the context to the work of the Sustainable Buildings Task Group. It gives outline information on the range of work underway across Government that is of relevance to the remit of the Group.

The **Office of the Deputy Prime Minister's** central aim is to create sustainable communities – places where people want to live – which promote opportunity and a better quality of life for all.

The **Department of Trade and Industry** is the lead department on supply side energy issues including security of supply, renewable energy sources, and micro generation.

The overall aim of the **Department for Environment, Food and Rural Affairs** is sustainable development. Defra leads on climate change, flood and coastal erosion risk management policy, water policy, timber procurement and demand side energy issues, including energy efficiency, combined heat and power, sustainable crop-derived construction materials and fuel poverty.

The **Office of Government Commerce** is responsible for a wide-ranging programme which focuses on improving the efficiency and effectiveness of central Government procurement. In addition, OGC has an important role in developing and promoting private sector involvement across the public sector.

Turning to the areas that the Task Group explored, some highlights within these Department's are:

### 1. The contribution of the planning system:

- **Planning reform and modernising guidance** within ODPM all makes for a positive approach to planning to help to deliver better practice. In particular draft Planning Policy Statement 1 places sustainable development at the heart of the planning system.
- **The Planning and Compulsory Purchase Bill** introduces a new clause which requires regional and local plans to be prepared with a view to contributing to the achievement of sustainable development. To ensure that these objectives are met, authorities will be required to subject their local development documents to a sustainability appraisal.
- We have also consulted on revised planning guidance (**PPS22**) which will facilitate the development of renewable energy resources, to help ensure that we are able to meet our commitments on renewable energy production and climate change.

### 2. The role of Government incentives for innovation

- DTI provides **Regional Development Agencies** with the resources to develop individual regional economic strategies, and is also active in many other areas such as championing action for enterprise via the **Small Business Service**, field trials for photovoltaic systems and the **major photovoltaic demonstration programme** and the **Blue Skies** programme.
- DTI also shares with Defra financial support for waste programmes (e.g. the **Sustainable Technologies Initiative**) as well as energy programmes (e.g. capital grants for renewables R&D).
- ODPM is incentivising improvements in the environmental performance of **new and existing social housing**. For instance, all new built homes funded by the Housing Corporation are required to achieve a BRE EcoHomes rating of 'Pass' as a minimum essential condition of grant, rising to 'Good' from April 2005. High standards also apply to most new developments

brought forward by English Partnerships.

- ODPM is committed to improving the heating and/or insulation of at least 1.3 million social homes as part of its target to bring all social homes up to set **standards of decency by 2010**. And the current Housing Bill will introduce **Home Information Packs** containing an energy report and advice on energy efficiency improvements for buyers. The Housing Bill also provides for a new **Health and Safety Rating System** to replace the existing fitness standard, which will enable local authorities to effectively tackle homes that are hazardous to health because of cold or damp.
- Defra's Combined Heat and Power Strategy (issued April 2004) details various incentives including the **Community Energy Programme** which provides £50m in grants for community heat networks. Defra work with the **Carbon Trust** and **Energy Saving Trust** on promoting energy efficiency best practice and innovation and the **Waste and Resources Action Programme** on promoting sustainable waste management.
- DTI's energy policy work in relation to Sustainable Buildings is carried out in two major areas – encouraging the use of renewable sources of energy and supporting micro-generation.

### 3. Promoting long term planning for dynamic improvement through:

- Across Government, Departments including DTI, ODPM and DEFRA, are working together through the **Sustainable Energy Policy Network (SEPN)**, which is responsible for overseeing the implementation of the Energy White Paper commitments. Defra published on 26 April 2004, 'Energy Efficiency: The Government's Plan for Action', which sets out how the government aims to cut carbon emissions by 12 million tonnes through energy efficiency over the next six years.
- Another Government-wide approach is the **Senior Officials Policy Group** led by OGC. This group has been asked to set out minimum / benchmark standards (including sustainability standards) that would be expected in the procurement of built environments across the public sector including where responsibility has been devolved.
- Defra work in close partnership with its Agencies and other partners to help achieve a variety of goals for waste, water, energy and forestry. For example, to recycle or compost 33% of municipal waste by 2015 and to promote an increase in the area of woodland certified against the Woodland Assurance Standard for sustainable forest management in England.
- Defra proactively looks to establish a variety of strategies to help promote sustainable improvement in energy, waste, water and forestry. For example, the proposed strategy for flood and coastal erosion risk management for England due for consultation in summer 2004, Waste Strategy 2000, which sets out UK waste policy and the Sustainable Consumption and Production Strategy (published September 2003).
- Defra work with water companies on their water resource plans, detailing how they plan to balance supply and demand for water over the next 25 years to counter the environmental stress caused by unsustainable rates of water abstraction, including through promoting the efficient use of water in buildings.
- ODPM regularly review **Building Regulations** in order that current standards are appropriate. They are also now looking at water conservation, and giving support to a Private Member's Bill the 'Sustainable and Secure Buildings Bill'.
- Similarly, within DTI lies producer responsibility initiatives such as the **Waste Electrical and Electronic Equipment Directive**.
- **Brownfield strategy** - ODPM is working with **English Partnerships** to develop a National

Brownfield Strategy to provide a coherent national vision for bringing previously developed land back into beneficial use. The Strategy will deliver an analysis of brownfield land, a guide to best practice, and tools for ensuring sustainable brownfield development.

#### **4. The promotion and adoption of best practice, including the potential for the use of voluntary agreements**

- Government is actively promoting good quality **modern methods of construction** to increase the supply of robust, environmentally sustainable housing.
- ODPM have a range of demonstration programmes, such as **Millennium Communities**. ODPM's agencies such as **Housing Corporation** have a number of positive programmes (e.g. web based tool for sustainable refurbishment called 'Green Streets').
- OGC produced the 'Achieving Sustainability in Construction Procurement Action Plan' which set out sustainability targets for government procurers in the procurement of construction projects. The targets are being reviewed and updated and will be linked with the DEFRA Framework for Sustainable Development on the Government Estate and the developing OGC Achieving Excellence guidance.
- And DTI is also developing a basic format that can be used by construction companies to create "site waste management plans".
- DTI and Defra, through the **Environment Agency and Envirowise** programme are working with key players (e.g. Constructing Excellence) to promote best practice in water efficiency in domestic and commercial sectors.
- Defra, through the **Carbon Trust and Energy Saving Trust** is promoting best practice energy efficiency across the private and public sectors and through the use of the Climate Change Agreements with energy intensive industrial sectors.

#### **5. The best means of sharing experience between designers, builders and utilities**

- Promoting good practice is one area common to all Departments. For example:
  - The ODPM funding for **CABE** that is largely targeted at programmes to drive up standards.
  - DTI supports the development of sectoral sustainability strategies – including the construction products sectors and the water industry, and is working with DfES and DWP to fulfil the commitments in the **Government's Skills Strategy**.
  - The **England Forest Industry Partnership**, established in 2003, works at a strategic level to strengthen the competitiveness of the forest industry sector and its ability to contribute to the delivery of the Government's wider objectives set out in the England Forestry Strategy.
  - OGC are producing a new '**Best Practice Guide to Sustainable Procurement**' for construction projects which will set out the processes by which government clients can ensure that they are taking full account of sustainability issues in the procurement of their construction projects.
- OGC also fulfils a general role to verify that proposed targets and processes that will impact on government as a construction client comply with best practice requirements, are practical, achievable and cost effective.
- ODPM will also be holding the **Sustainable Communities Summit** in Manchester on 31 January - 2 February 2005. The Summit will bring together the key people involved in delivering sustainable communities to discuss achievements and draw on best practice, from both the UK and abroad.

# Annex C

## Full list of Recommendations

### Paragraph 1.8

The Group recommends that the Government review the advisory bodies concerned with sustainable buildings to simplify and consolidate them and to provide clear direction to the industry. The focus for this consolidation should be the joint venture body that the Group recommends in paragraph 2.17 to manage and maintain the Code for Sustainable Building (CSB).

### Paragraph 2.4

The Group recommends that a single national Code for Sustainable Building (CSB) be established.

### Paragraph 2.9

The Group therefore recommends that the CSB be based on BREEAM and incorporate clearly specified minimum standards in key resource efficiency criteria (energy and water efficiency, waste and use of materials).

### Paragraph 2.13

The Group recommends an emphasis by Government and industry on an integrated programme of built environment research to underpin the implementation of its recommendations.

### Paragraph 2.17

The Group recommends that Government and industry set up, within three months, a joint venture body to develop and establish the CSB. Once the CSB is established the Group recommends that the management and maintenance of the CSB should be undertaken by this body together with the consolidated advisory bodies that emerge from the review recommended in paragraph 1.8.

### Paragraph 2.18

The Group recommends that the public sector continue to lead the way by using the CSB on all its building projects.

### Paragraph 2.19

Whilst the Group welcomes the common minimum standards for public sector procurement currently being developed by the Government; **the Group recommends that, for procurement of buildings, these standards should be aligned with the CSB.**

### Paragraph 2.20

The Group recommends that the Government continues leading by example, and procures buildings on a whole life cost basis.

### Paragraph 2.31

There may be sites where the land value – because of previous contamination – is marginal or even negative. Rather than accept this as an argument for tolerating low quality housing on such sites **we recommend that Government should further consider tax credits or other financial or fiscal adjustments, which would enable development in accordance with the CSB.**

### Paragraph 3.2

If for any reason the Sustainable and Secure Buildings Bill should fall, the Group would look to Government to legislate at the earliest possible opportunity to ensure that the legislative objective is achieved.

#### **Paragraph 3.4**

The Group recognises that the passage of the Sustainable and Secure Buildings Bill is only the first part of the process. Once its provisions are in place it will be necessary to formulate, consult on and make detailed regulations to secure the desired ends in practice. **The Group recommends that the Government should set out promptly how it intends to ensure this process is completed.**

#### **Paragraph 3.5**

**The Group recommends that the revised Building Regulations should specify a minimum percentage by value (at least 10%) of re-used/reclaimed/recycled materials in building projects.**

#### **Paragraph 3.7**

**The Government should enshrine a 25% saving on average per capita water consumption in regulation by 2005. Similarly, a 25% energy efficiency improvement under Part L, and the provision of space for the separate collection of recyclable materials in multi-occupancy buildings, should be delivered through the Building Regulations in the same timeframe.**

#### **Paragraph 3.9**

**The Group recommends that the Government review the scope for introducing tighter minimum standards for the use of water fittings and appliances, in both new build and refurbishment of existing premises.**

#### **Paragraph 3.10**

**The Group recommends that at the level of an individual building, Building Regulations should require modern standards of flood resistance and resilience for all construction within areas of flood risk.**

#### **Paragraph 3.11**

**The Group recommends that insurance companies should require that repairs to previously flooded property are made using flood resilient products and in a flood resilient manner.**

#### **Paragraph 3.14**

**The Government and Local Authorities should review the enforcement of Building Regulations to ensure the regulators have the resource and training to conduct reliable post-completion checks on a proportion of all new and refurbished buildings.**

#### **Paragraph 3.16**

**The Group recommends that the Government, through the Learning Skills Council and Sector Skills Council incorporate sustainability in the construction industry through improved training and increased capacity.**

#### **Paragraph 4.8**

**The Group recommends that the Government produce, as a matter of urgency, a best practice guide for delivering sustainable buildings to accompany PPS1 *Creating Sustainable Communities*.**

#### **Paragraph 4.10**

**The Group recommends that Government should investigate how the planning system could support better water management.**

#### **Paragraph 4.12**

**The Group recommends that the Government should ensure that development and planning policy seeks to minimise, and where possible avoid adding to, the overall level of flood risk.**

#### **Paragraph 5.2**

**The Group recommends that the Code for Sustainable Buildings should be developed to apply to major refurbishments.**

### **Paragraph 5.3**

**The Group recommends that the Government consider further amending Schedule 1 of the Building Regulations, extending their scope to cover a wider range of sustainability issues when refurbishing the existing building stock.**

### **Paragraph 5.5**

**The Group recommends that the Government and industry jointly fund further research into cost-effectively improving the thermal efficiency of the existing building stock.**

### **Paragraph 5.12**

The Group also welcomes development of the 'green landlord scheme', which would incentivise landlords to invest, possibly through recognition of properties that achieve a sufficient level of energy efficiency. **As part of the Government's consultation the Group recommends they assess whether the same treatment could be extended to water efficiency measures.**

### **Paragraph 6.2**

**The Group recommends that existing buildings should have an operational rating, as this could help to identify inadequate building management. Such a requirement would encourage building owners/occupiers to improve their knowledge of their actual energy consumption.**

### **Paragraph 6.3**

The Group supports the proposals for energy efficiency (a survey report which will include an assessment of the energy efficiency of the property) in the Housing Bill and **recommends that similar requirements need to be applied to the sale of new houses.**

### **Paragraph 6.4**

**The Group recommends that the Home Information Pack legislation be drafted flexibly to enable inclusion of water efficiency information at a later date when meter penetration and monitoring is more advanced. The same applies to the inclusion of wider eco-labelling of homes, including those built to the CSB. In the short term, the Home Information Pack should include detailed information on water issues, particularly water efficiency, from 2006.**

### **Paragraph 6.7**

**The Group recommends that the Government provide the necessary short term funding to implement the Central Point of Expertise on Timber.**

### **Paragraph 6.9**

**The Group recommends that industry adopts more fully the use of Environmental Performance Indicators, which measure waste, and to report annually on progress both in terms of uptake and improvement.**

### **Paragraph 6.10**

**The Group recommends that the Government should consider using Site Waste Management Plans to encourage industry to improve resource efficiency and take a more responsible approach to waste management.**

### **Paragraph 6.12**

**The Group recommends the Government brings forwards the outcome of the waste permitting review without further delay. This will enable a single permit to be issued for remediation activities.**

### **Paragraph 7.5**

**The Group recommends that the Construction Products Association (CPA) and the DIY suppliers in consultation with the Government's Advisory Committee on Consumer Products and the Environment (ACCPE) look at the feasibility of introducing an Environmental Product Declaration scheme for sustainable construction products and materials that is applicable to both the consumer and professional market and is relevant at both product and building level.**

Such a scheme should be based on ISO 14020 in order to be internationally acceptable.

**Paragraph 8.2**

The Group recommends that new homes built in accordance with the CSB be subject to a reduced rate of Stamp Duty.

**Paragraph 8.3**

The Group recommends the Government continues to negotiate in the European Union to establish amendments to the VAT Directive that allows lower VAT rates to be applicable to a wider range of environmentally efficient products.

**Paragraph 8.4**

The Group recommends that the Government consider amending the Stamp Duty regime so that a rebate is made available to those home buyers who carry out such works within a reasonable time frame. When sufficiently good information is available, this rebate could be extended to cover water efficiency investments.

**Paragraph 8.5**

The Group recommends that Government should consider how to speed up the installation of water meters, particularly in areas of low water availability.

**Paragraph 8.6**

The Group recommends that water companies and their regulators should explore the potential for utilising more innovative tariffs, for example to charge at a higher rate for water used over a certain threshold, to encourage water conservation by domestic customers.

**Paragraph 8.7**

The Group recommends that there is scope for a Water Industry counterpart to the Energy Efficiency Commitment (EEC), perhaps funded by a small tariff on water bills, and providing a range of services designed to improve domestic water efficiency.

# Annex D

## BREEAM and ECOHOMES

### BREEAM

BREEAM is a system for measuring the environmental impacts of any building and rating the performance on a simple single scale of PASS to EXCELLENT. This simple rating draws together a comprehensive environmental assessment process that covers all of the following aspects of a building: management; operational energy; transport; health and well-being; water; materials; land use; the ecological value; and pollution.

The scheme works by awarding credits to those designs that take positive steps to minimise their environmental impacts. The credits are grouped within the following issue headings:

- Management – Design; construction, commissioning, environmental management in operation
- Operational Energy – Reduced emissions of CO<sub>2</sub> arising from the operation of the building heating, cooling, hot water, lighting and ventilation systems
- Transport – Reduced emissions of CO<sub>2</sub> arising from the careful location and provision of transport mode choice for building occupiers
- Health and Well Being – Improved internal environmental conditions to improve the well-being and productivity of building occupants
- Water – Reduced consumption and wastage of potable water resources
- Materials – Specification of more environmentally friendly materials, which meet functional requirements, encouragement of more environmentally friendly waste management strategies in the operation of the building. Embodied Energy/CO<sub>2</sub> and other life cycle impacts of material specification are included
- Land use – Selection of brownfield and/or contaminated land
- Site Ecological Value – Use of land of low ecological value, minimising ecological change/damage, encouraging ecological enhancement
- Pollution – Minimising risks of pollution to atmosphere and water (excluding CO<sub>2</sub>)

The assessment process results in a detailed report covering the issues above, together with a formal certification of the rating.

The system is able to add the performance in a number of disparate environmental effects together (e.g. energy, water, ecology, etc) to produce a single score by using a weighting system based on a measure called 'Ecopoints' (based on the average impacts of a single UK citizen in a year).

The performance against each distinct credit can also be identified from the report. All ratings are in excess of current statutory requirements (like Building Regulations).

Assessment can be carried out on both new build and refurbishment schemes for all building types, and for commercial properties assessments of in-use performance can be undertaken.

## ECOHOMES

EcoHomes is a mechanism to assess certain defined aspects of the sustainable aspirations of housing and mixed-use developments. The rating system has been produced by BRE and licensed assessors carry out predictions and assessments. Assessments are Quality Assured and certified by BRE. BRE regularly update the criteria in line with changing legislation, such as the Building Regulations. Assessments result in a 'Pass', 'Good', 'Very Good' or 'Excellent' rating.

The EcoHomes scheme considers the broader environmental concerns (climate change, resource use and impact on wildlife) and balances them against the desire for a high quality of life with a safe and healthy internal environment. The issues are grouped into categories:

<b>Energy</b>	<ul style="list-style-type: none"> <li>• Reduction of Carbon dioxide emissions</li> <li>• Improved building envelope performance</li> <li>• Provision of natural drying space</li> <li>• Guidance on energy efficient light goods</li> <li>• Provision of controlled low energy external lighting</li> </ul>
<b>Water</b>	<ul style="list-style-type: none"> <li>• Reduction of water consumption in the home</li> <li>• Water harvesting for landscape/garden watering</li> <li>• Exclusion of ozone depleting substances</li> <li>• Use of boilers with low NOx emitting burners</li> <li>• Reduction of surface runoff into public sewers and watercourses</li> </ul>
<b>Materials</b>	<ul style="list-style-type: none"> <li>• Use of timber from certified sustainable sources</li> <li>• Provision for recycling domestic waste</li> <li>• Use of materials with an A rating from BRE</li> </ul>
<b>Transport</b>	<ul style="list-style-type: none"> <li>• Good access to public transport</li> <li>• Provision of cycle storage</li> <li>• Safe pedestrian access to a range of local amenities</li> <li>• Provision of space and services for a home office</li> </ul>
<b>Ecology and Land use</b>	<ul style="list-style-type: none"> <li>• Developing land that currently has a low ecological value</li> <li>• Improving the ecological value of the site</li> <li>• Effective use of the building footprint</li> </ul>
<b>Health and well-being</b>	<ul style="list-style-type: none"> <li>• Provision of adequate daylight</li> <li>• Improving sound insulation above current Building Regulation standards</li> <li>• Provision of private or semi-private outdoor space</li> </ul>